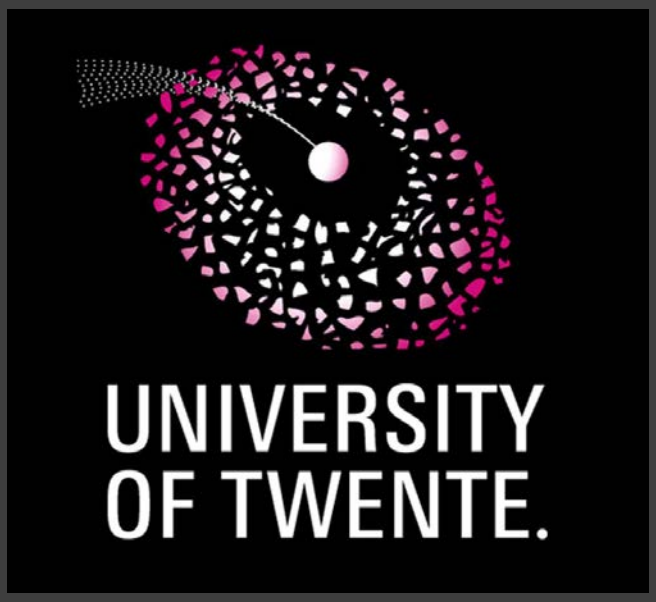

Marketing of the 21st Century

Marketing Science Institute Research priorities 2016-2020 through the lens of the future marketer

Student Essays from the Master Advanced Topics in Digital Marketing

Class September 2016, University of Twente (NL)

Volume 1

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Developing Digital Marketing Strategies for the Future

Principles and Foundations

In the very first edition of Kotler's benchmark Marketing Management textbook from 1967 the Marketing Management was described as "…the study of how business can best adapt resources and objectives to outside opportunities". Almost 50 years later while the tenets of this definition remained basically unchanged, the business resources, objectives and outside opportunities have little in common with those of the 60s: political, socio-demographic, economic, environmental but mainly technological developments around Information and Communication (ICT) have drastically transformed the marketing practice, the businesses and the consumers.

The emergence of the commercial Internet about 25 years ago marked the beginning of substantial changes in the Marketing Management practice but also in consumer behavior. Technology became the main disrupting factor not only because it provided new tools and ways to address various problems but mainly because it became ubiquitous and available not only to marketers abut also to customers.

The first wave of the commercial Internet in the 90s, also known as Web 1.0 or "broadcasting" Internet, gave to customers a number of unique advantages and empowerment: almost unlimited information and access to may alternative options on global scale. The second wave of the Internet at the beginning of the 21st century, also known as Web 2.0 or "interactive" Internet, gave customers new and unlimited and ubiquitous connectivity options through social networking and mobile computing; next to this the development of a new generation of applications gave consumers access to new forms of information and new forms of interactions and transactions.

The most interesting result of the technology explosion and easy access to it by consumers is the disruption of the market and the marketing practice. The customer today is an empowered customer, and in control of the interactive online media, content and communication process. The power of the traditional marketing tools and communication is diminishing and the customer has little trust to the corporate message and brand.

Technology is changing the context of and practice of marketing: marketers are increasingly forced to operate in a complex and changing world where they do not have any more the full control of the media and the message. Customer behavior is also changing: the customer is losing trust and becomes much more critical, smart, well informed and proactive than ever before. The online/ digital marketing domain is growing rapidly at the cost of the traditional marketing domain and the fast increasing volume of data from customer interactions, transactions and online social activity presents marketers with new challenges. New knowledge, new skills and new approaches are required by today and future marketers not only for understanding the changing and technology-enabled marketing environment but also for comprehending and communicating with the new customer. The Marketing becomes increasingly digital and continuous technological developments present marketers with new challenges and opportunities: Mobile marketing, Internet of Things, Analytics, Big Data, 3D printing, cloud computing, Artificial Intelligence, Consumer Neuroscience / Neuromarketing are some of the most interesting and

challenging domains where the future marketer are expected to must be able to function and deliver.

On academic level there is a growing interest in many of these new areas and domains. Yet academic research and teaching are not always in the forefront of developments, mainly in such complex and fast changing conditions. The need for a new generation of marketers is growing and institutions like the MSI are playing an important role in setting the future research and educational agenda.

In the University of Twente we have set a course of becoming a leading educational and research hub for the digital marketer of the future. In that respect we develop challenging and engaging programs for our students trying to bring them in touch with the state of the art in research and practice. This volume is a reflection of this effort presenting essays written by our Master students following the elective course Advanced Topics in Digital Marketing during the academic year 2016-2017. As part of the course program students were free to choose a topic for their individual essay, selecting a theme from the topics of the MSI Research Priorities 2016 – 2018 [1]. The essays had to be written in a short period of time (six weeks); the methodology used was that of a critical literature review. The topics chosen reflect the areas where our students as future marketers would like to focus their attention and for many of them this exercise was a warming up for choosing a topic for their Master thesis.

Four out of the five MSI research priority categories have been addressed in this volume; most popular topic the theme is nr. 2 "Delivering integrated, real time, relevant experiences in context" with fifteen essays followed by theme nr. 3 "Making sense of changing decision process(es)" with thirteen essays and nr. 4 "New Data, new Methods, and new skills – how to bring it all together" with twelve essays.
Presenting you this first volume of the essays from the class of September 2016 we are proud of the work of our students.
The essays have undergone a minimum of editorial intervention and therefore present the original opinions and findings of the authors; in this sense they should not been considered as mature scientific publications but rather as state-of-the-art literature review studies on research and practice in a number of issues that will shape the future of the Marketing field, from the perspective of the future marketer. Such work is essential in developing Marketing strategies and tactics and understanding the changes in the field while providing several topics that could become the basis for education and future research projects.

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[1] MSI Research Priorities 2016 – 2018 http://www.msi.org/research/2016-2018-research-priorities/

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Topic 1

Quantitative models to understand causality, levers, and influence in a complex world

Big Data Quality: Issues with Reliability and Validity

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ABSTRACT
The goal of this study was to critically review the current state-of-the-art literate concerning big data quality, reliability, and validity, and to discover the current trends and gaps in the research current being done on these subjects. A total of 20 articles were reviewed. Two main themes emerged, quality assessment and error checking, and quality improvement, with topics varying from universal data quality assessment systems to algorithms for error detection and data cleansing, some of which are very specific, due to the variety and veracity characteristics of big data. Universal data quality improvement are developed, which can be equipped with diverse algorithms based on the user's needs. There is much attention to combining efficiency with effectiveness, with resource consumption in mind. A standard for big data quality is missing and should be developed. Furthermore, limited attention is given to the combination of computational and human methods to improve data quality.

Keywords
big data, cleansing, filtering, reliability, quality, validity, error

MSI Topic nr.1: Quantitative models to understand causality, levers, and influence in a complex world

The author's view: Why this topic?

Today's capability of data generation is extraordinary and big data is everywhere. However, not all data is necessarily 'true' and this fact is sometimes forgotten. Before any knowledge can be derived from big data, it is imperative that one pays attention to its quality and checks for possible errors.

1. INTRODUCTION

One of the hot topics in today's marketing and ICT world is 'Big Data'. According to IBM 2.5 quintillion bytes, or 2.5 exabytes, of data is created every day (IBM, n.d.). McAfee and Brynjolfsson (2012) report the same amounts of data being created every day, and claim that number is doubling every 40 months or so, since 2012. To put the amount of data into perspective, a petabyte is equivalent to about 20 million filing cabinets' worth of text, and an exabyte is 1.000 times bigger. As a result of these enormous amounts of data creation, IBM (n.d.) reported that 90% of the data in the world today is created in the last two years, with sources ranging from sensors for climate information to social media, and online purchasing records. In an interview with CNBC (2012), Ann Winblad, investor in Silicon Valley, outlines the potential value of big data, as she says that "data is the new oil."

All this data available for business analysts and researchers to use seems like a utopia, however, Regalado (2013) states that 99.5% of newly created digital data never gets analysed. One of the reasons for this mind-blowing number could be explained by some of the problems with big data. Curzzocrea, Song, and Davis (2011) created an overview of some of the problems of analysing big data; data source heterogeneity and incongruence, strongly unstructured nature of data source, scalability, and filtering-out uncorrelated data to name a few. Wu, Zhu, Wu, and Ding (2014) introduce the HACE theorem, stating that "Big Data starts with large-volume, heterogeneous, autonomous sources with distributed de decentralized control, and seeks to explore complex and evolving relationships among data." and as a result, it is extremely difficult to discover useful information from big data. An example to illustrate the problems with big data is Google Flu Trends, which overestimated flu prevalence and predictions of doctor visits for influenza-like illness, and on the other hand, missed several flue seasons (Lazer, Kennedy, & Vespignani, 2014).

To improve the analytics performed on big data, it is necessary to sift through the data and keep only the information that is useful (Curzzocrea et al., 2011; Katal, Wazid, & Goudar, 2013). This is the motivation of choosing big data cleansing as a subject for this paper, as the quality of both academic research and business analytics can be significantly higher, by making sure only relevant data is used and all other extraneous data eliminated. The importance of big data cleansing is also outlined by MSI (2016), which presents big data cleansing as a research priority topic, and thus additional research is required. Fan and Bifet (2013) also underline the importance of additional research on big data cleansing, as this will help dealing with the challenges of compression and hidden big data. Furthermore, Fan, Han, and Liu (2014) talk about the noisy data challenge, where big data has a lot of noise (i.e. measurement errors, outliers, and missing values), and the importance of separating the noise from the useful data.

But how can one make the distinction between relevant and irrelevant data (noise) in an effective and efficient way? Or, differently put, how does one tackle the validity and reliability issues that come with big data?

In order to address these issues, this paper will critically review the current state-of-the-art literature about big data cleansing, reliability and validity, and quality, and will present and summarize the various opinions, findings, and conclusions that are found. In order to do so, a research problem and question must be formulated. The research problem is: "*big data contains significant reliability and validity issues, reducing the quality of useful knowledge obtained from big data".* With this research problem, a research question can be designed to provide an answer to solve this problem: *"What methods are currently available for improving the reliability and validity in big data?"*

The conclusions of this paper will help future researchers by providing an overview of the current methods and relating conclusions regarding big data cleansing, and help them identify areas that need additional research, supported by the suggestions for future research made in this paper.

The practical impact of this paper is that it provides an overview for relevant business analysts to see what the current state-of-art knowledge is about big data cleansing and perhaps apply gained insights onto their situation.

2. METHODOLOGY

2.1 Design

Since this paper will be a critical literature review, the methodology is partially based on Jesson and Lacey (2006).The goal of this paper was to create an overview of the current state-of-the-art literature on big data reliability and validity. Normally, the quality of the found articles will be checked based on several factors, including number of citations, impact factor, journal reputation, and publication date. However, since the goal was to find state-of-the-art literature, the criteria is based on publication date and journal reputation, as this kind of literature is new and not widely cited, making the other criteria significantly less useful. Using this strategy, 20 articles were found which meet the required quality standard. These articles were analysed and reviewed, which is shown in the sections results and discussion. Furthermore, in the discussion section this paper identified the current trends in the field of big data quality and reliability and validity issues, and provides an overview of the areas where additional research is required.

2.2 Sample and Procedure

The sample was constructed using the Google Scholar search engine using numerous search terms combined with big data, such as quality, cleansing, reliability, validity, and error. No articles dating 2012 or earlier were selected, in order to obtain the state-of-the-art articles. Of the 20 articles, most are published in 2015 and 2016, respectively eight and six, five in 2014, and only one is published in 2013.

2.3 Data Analysis

The sample was analysed, summarized, reviewed, and compared in order to abstract the current trends and areas currently lacking research regarding big data quality, reliability, and validity. Where applicable, relevant comments on the article have been added to the results.

3. RESULTS

When analysing the gathered data, two main themes quickly arose into which the data could be categorized. These themes are quality assessment and error checking, and quality improvement. Subsequently, these themes will be used to structure the critical literature review, starting with quality assessment and error checking, followed by quality improvement.

3.1 Quality Assessment and Error Checking

In order to improve the reliability and validity of big data, is it important to check whether or not the data is (partially) erroneous and to determine the quality of the data. In this section, the articles are divided into three categories (quality assessment, error detection - outlier, and error detection - anomaly), depending on the area and focus of the research.

3.1.1 Quality Assessment

Merino, Caballera, Rivas, Serrano, and Piattini (2015) found that none of the traditional data quality models have been adapted to

big data, and therefore, Merino et al. (2015) developed the "3As Data Quality-in-Use Model", consisting of three data quality characteristics for assessing the level of Data Quality-in-Use in big data projects: contextual adequacy, operational adequacy and temporal adequacy. Merino et al. (2015) argue that it can be integrated into any kind of big data project, as it is not dependent on any pre-conditions or technologies. The basis for their model are standards for traditional data quality, ISO/IEC 25012 and ISO/IEC 25024, and is focused on input data and the usefulness for which its intended use. Based on these standards Merino et al. (2015) devised the three characteristics of their model and provided seven steps how to measure them, which is clearly explained in their study, accompanied a working example. However, there is some ambiguity in how to read the results and as their model is just indicative and therefore perhaps less useful, the cost-benefit aspect is also relevant, but missing from their study.

Cai and Zhu (2015) constructed a hierarchal data quality framework based on big data environment characteristics and consists of big data quality dimensions, quality characteristics, and quality indexes. Using this framework, Cai and Zhu (2015) developed a dynamic assessment process for data quality from the perspective of the user. The data quality standard is composed of five dimensions of data quality, availability, usability, reliability, relevance, and presentation quality, with the latter being the only dimension that is dispensable (Cai & Zhu, 2015). The chosen dimensions are "commonly accepted and widely used as big data quality standards" and redefined to match actual business needs and have one to five elements (Cai & Zhu, 2015). The whole dynamics assessment process is extensive and reaches from the goals of data collecting to the final results (Cai & Zhu, 2015). Furthermore, each quality dimension needs different measurement tools, techniques, and processes, resulting in different assessment times, costs, and human resources (Cai & Zhu, 2015). As a result, this quality assessment process is a lengthy and extensive one, but provides a foundation for further research. However, the development of the dimensions and elements is unclear and should be further explained. Lastly, no working example is given.

3.1.2 Error Detection - Outliers

Aggerwal and Sathe (2015) examined the theory concerning outlier ensemble analysis and proposed more efficient variants of subsampling and feature bagging. With better understanding of the effectiveness of various combination methods, Aggerwal and Sathe (2015) propose two new combination methods based on bias-variance theory. Based on the experiments conducted in the study using data of the UCI Machine learning repository, Aggerwal and Sathe (2015) consider the averaging method to be low-risk low-reward, as it always reduces variance, although significant results are not observed. The maximization method is considered to be high-risk high-reward, as in many cases there is a reduction in variance, but occasionally an increase, the balanced schemes provided a modest reward, at low risk (Aggerwal & Sathe, 2015).

Souza and Amazonas (2015) proposed an outlier detection procedure using the K-means algorithm and big data processing using the Hadoop platform and Mahout implementation integrated with their chosen Internet of Things (IoT) architecture. As the architecture is modular, introduction of other algorithms for new applications and services is simple (Souza & Amazonas, 2015). To integrate their algorithm, Souza and Amazonas extended the LinkSmart IoT middleware. A proof of concept experiment was conducted with data from a single sensor and showed good quality of results, and this architecture reduces network traffic and overall energy consumption by only processing the raw data once in the middleware layer (Souza & Amazonas, 2015). The proposed architecture has not yet been tested with actual big data.

Cao, Wang, and Rundensteiner (2014) developed the VSOutlier system for supporting interactive exploration of outliers in big data streams. VSOutlier supports a rich variety of outlier type through innovative and efficient outlier detection strategies and provides an interface to explore outliers in real-time and track them, allowing analysts to more efficiently identify, understand, and respond to phenomena of interest in near real-time (Cao et al. 2014). VSOutlier uses Cao et al.'s (2014) novel outlier detection strategy called LEAP and is tested with a real-world dataset of the US stock market and of the moving objects dataset of MITRE.

3.1.3 Error Detection - Anomalies

Lu, Chen, Wang, and Lu (2016) studied anomaly detection in mixed-type data as current methods focus on computational efficiency and their correlation modelling between mixed-type attributes is heuristically driven, lacking statistical foundation. Lu et al.'s (2016) method integrates multivariate predictive process model with approximate Bayesian inference using Expectation Propagation and variational Expectation-Maximization. The approximation process and the optimization schemes provide more accurate and faster inference for the proposed predictive process model, and experimental results on synthetic and real datasets demonstrated that Lu et al.'s (2016) anomaly detection frame performs much better on detection accuracy.

Soleimani and Miller (2016) proposed an algorithm for detecting patterns exhibited by anomalous clusters in high dimensional data. Soleimani and Miller's (2016) method is focused on detecting groups, or clusters, of anomalies and can be used to detect the source of the anomalies. Specifically, Soleimani and Miller (2016) studied the case where the atypical patterns exhibit on only a small subset of the very high dimensional feature space. Traditional methods for individual anomaly detection fail to recognize such anomalies, whereas Soleimani and Miller's (2016) algorithm can detect such instances collectively, discover the shared anomalous patterns and identify the subsets of salient features. Experiments conducted on both synthetic and real-world text documents showed that Soleimani and Miller's (2016) algorithm accurately detected anomalous topics and salient features and had better detection performance compared to both standard group and individual anomaly detection techniques.

3.2 Quality Improvement

Research done on quality improvement of big data can be separated into several categories. In this section, the articles are divided into three categories (systems, frameworks, and algorithms), depending on the area and focus of quality improvement.

3.2.1 Systems

De Viana, Abad, Álvarez, and Arjona (2016) developed a novel multilevel wrapper verification system (MAVE) to overcome problems with changing and evolving websites, making traditional wrappers work incorrectly and extract erroneous data. Current proposals use verifications models based on the fact that the data is homogenous, independent, or representative enough, or follow a single predefined mathematical model (De Viana et al., 2016). MAVE makes use of categorical and numerical features in two different levels of verification and it outperforms every classical technique mentioned in literature, based on the experiments conducted in the article, which consisted of testing MAVE on 27 actual Internet sites (De Viana et al., 2016).

Tang (2014) developed a commodity data cleaning systems called NADEEF, a prototype for an extensible and easy-to-

deploy cleaning system that leverages the separability of two main tasks: isolating rule specification that uniformly defines what is wrong and how to fix it, and developing a core that holistically applies these routines to handle the detection and cleaning of data errors (Tang, 2014). NADEEF consist of three components: Rule Collector, Core, and Metadata management and Data quality dashboard modules, which are respectively tasked with gathering user-specified quality rules, compiling heterogeneous rules into homogenous constructs to allow for the development of default holistic data cleaning algorithms, and maintaining and querying various metadata for data errors and their possible fixes (Tang, 2014).

Khayyat et al. (2015) presented BigDansing, a big data cleaning system to tackle efficiency, scalability, and ease-of-use issues in data cleaning, and can run on top of most common general purpose data processing platforms. Using logical operators, user can define rules which are transforms into a physical execution plan while performing several optimizations, such as shared scans and specialized joins operators (Khayyat et al, 2015). Experimental results on both synthetic and real-world datasets show that BigDancing outperforms existing baseline systems and is more scalable, without sacrificing the quality provided by the repair algorithms (Khayyat et al, 2015).

3.2.2 Frameworks

Varghese, Varde, Peng, and Fitzpatrick (2015) developed a framework for collocation error correction in web pages and text documents. Varghese et al. (2015) argue that most English text comes from non-native speakers and therefore make collocation mistakes. Varghese et al.'s (2015) proposed framework CollOrder can detect collocation errors and suggest correctly ordered collocation responses for improving the semantics (Varghese et al., 2015). Integrating machine learning approaches with naturel language processing techniques, proposing suitable heuristics to provide responses to collocation errors, ranked in the order of correctness (Varghese et al., 2015). By correcting this type of error and unifying the data, the quality and reliability of data is improved. However, domain specific terms or literary allusion is a problem for this framework (Varghese et al., 2015).

Li, Li, Gao, Lu, Zhao, Fan, and Han, (2016) focussed on the problems arising when data is conflicting due to the fact that multiple sources are used. Li et al. (2016) argue that it is important to identify the true information, and that the reliability of the source is not always know a priori. Moreover, each source possesses a variety of properties with different data types (Li et al., 2016). Therefore, Li et al. (2016) model the problem using an optimization framework where truths and source reliability are defined as two sets of unknown variables. The objective is to minimize the overall weighted deviation between the truths and the multi-source observations, where each source is weighted by its reliability (Li et al., 2016). Using this framework on several real-world datasets, as well as simulated multi-source data, Li et al. (2016) showed the advantages of jointly modelling different data types in the framework.

Sampson, Morstatter, Maciejewski, and Liu (2015) developed a method to improve the quality of data coming from Twitter. Research has shown that the data obtained from Twitter contains biases which introduce noise, causing a reduction in accuracy (Sampson et al., 2015). In order to overcome this noise, Sampson et al. (2015) provided methods to mitigate this bias by improving sample population coverage using keyword clustering techniques, starting with round robin splitting, spectral clustering, and finally, a combination of both resulting in a balanced solution called K-means round robin. Sampson et al.'s (2015) methods significantly increased coverage compared to the original single stream method. By identifying more sources for overlap the sample could even be further improved.

Taleb, Dssouli and Serhani (2015) used a big data pre-processing framework in order to improve analysis and significantly reduce costs. The pre-processing phase consists several sub-processes, such as cleansing, integration, filtering, and normalization (Taleb et al., 2015). Taleb et al. (2015) propose a model incorporating all processes to support data quality profile selection and adaptation, while tracking the effects of every data transformation during the pre-processing phase. Taleb et al. (2015) distinguish between intrinsic and contextual data quality dimensions. Taleb et al.'s (2015) Big Data Pre-processing data Quality (BDPQ) framework's key components are data quality profile selection, adaptation, and data quality control and monitoring and is extensive as it focuses on all pre-processing activities. The framework allows for customization through rules, and techniques and data quality selection and will generate a data quality profile. An example with EEG data is provided in the article, however, as only the data quality selection module is implemented, only this module could be tested.

Wang, Song, and Li, (2014) proposed a generic semantic-based framework using parallelized processing model for effective big data cleansing and can deal with massive data from a wide variety of data sources using batch processing Map/Reduce model and real-time processing Storm Model, and Drools is used to invoke all cleansing rules. To deal with duplicate data, Wang et al. (2014) use an improved semantic-based keyword matching algorithm. Testing of the framework is done on a static real-world dataset and showed that the framework can identify duplicates with high recall and precision and has a good performance for big data cleansing.

Zhong, Huang, and Dai (2014) developed a big data cleansing approach for *n*-dimensional RFID-Cuboids. Zhong et al.'s (2014) cleansing approach is used to detect, remove, and tidy the RFID-Cuboids to increase the reliability and quality of the datasets (Zhong et al., 2014). The approach is tested using data from a real-time data warehouse, and outperforms other methods like statistics analysis in terms of finding incomplete and missing cuboids. The approach is equipped with algorithms suited for RFID-cuboids, and as a result, the generated data is streamlined and organized for presentation, as well as cleansed (Zhong et al., 2014). It is unclear whether the used data for testing is synthetic or real-world.

Tirunillai and Tellis (2014) proposed a unified framework to extract the key latent dimensions of consumer satisfaction with quality and ascertaining the valence, labels, validity, importance, dynamics and heterogeneity of those dimensions. Obtaining the key dimensions could increase the quality by unifying the dimensions. The framework used unsupervised latent Dirichlet allocation (Tirunillai & Tellis, 2014). The used sample consisted of user-generated content with rich data on product reviews across 15 firms in five markets over four years and results suggested that only a few dimensions with good face validity and external validity are enough to capture quality (Tirunillai & Tellis, 2014). The relevance and importance of dimensions varies over markets, with some dimensions being important across multiple markets (Tirunillai & Tellis, 2014). However, Tirunillai and Tellis (2014) did not analyse the rare words in the long tail of the distribution.

Lewis, Zamith, and Hermida (2013) developed an approach to improve content analysis through a hybrid approach of computational and manual techniques. Normally, computational techniques are used for big data analytics, but these techniques are insufficient on their own and more nuanced meanings are lost (Lewis et al., 2013). Therefore, a combination of both human and

computational techniques has the potential to improve the quality of the data (Lewis et al., 2013). Using a case study, Lewis et al. (2013) found that the combination of computational methods to objectively, systematically, and accurately filter the sample, while facilitating the work of human coder by removing several inefficiencies and potential for data-entry error that are typical in manual coding (Lewis et al., 2013). Furthermore, several problems with Twitter were exemplified, such as user labelling and the shortness of messages, making content analysis difficult.

3.2.3 Algorithms

Simpson, Srinivasan, and Thomo (2016) developed an algorithm to clear contamination in large online networks, such as Twitter, Slashdot, and Epinions. As more people use these kinds of networks as a source for information, disinformation prevention is important (Simpson et al., 2016). In order to do so, Simpson et al. (2016) model the problem as graph searching and introduced a novel approximation algorithm for clearing directed graphs. For each of the networks Simpson et al. (2016) did several experiments with the goal to observe the performance of their algorithm in various conditions. Simpson et al. (2016) found good performance in relation to the lower bound, and discovered that search time is unaffected by network size, yet significantly decreases with modest increase in searcher allocation.

Wang, Son, Zhu, Lin and Sun (2016) studied the recovery of missing events in event data, making provenance analysis unreliable. Following the minimum change discipline in improving data quality, Wang et al. (2016) use this approach to find a recovery that minimally differs from the original data. Using different experiments where Wang et al. (2016) randomly removed events from the data set and tried to recover them. Wang et al. (2016) repeated their experiments with systematic errors and found similar results. The conclusions are that the minimum recovery paradigm is effective and efficient in retrieving missing events, and significantly outperforms the state-of-the-art technique.

4. DISCUSSION

In general, we see several areas in which research is conducted, ranging from full systems to be implemented into a new or existing environment to very statistical and technical algorithms, designed to be as efficient and effective as possible, and to be implemented into a framework or system. Furthermore, as to be expected by the variety and veracity characteristics of big data, the frameworks and algorithms are sometimes very focused on a singular and specific problem, and are not directly applicable to other scenarios of big data problems, while others systems are more general and conceptual, and can be applied on a multitude of big data environments and/or problems. This allows for an interesting combination of introducing a universal system equipped with task-specific algorithms. However, this makes the theory concerning data quality, reliability, and validity somewhat fragmented and difficult to assess, making literature reviews of such subjects even more valuable.

There also seems to be a lot of attention for the efficiency part of checking and improving data quality, reliability and validity. Solutions not only have to be effective, resource consumption, (e.g., time and power) is also widely considered to be important, and often a trade-off has to be made between the both. However, current research is trying to find ways to maintain the effectiveness whilst increasing efficiency. Furthermore, cost related issues (e.g., storage and bandwidth) also play a part in these matters.

The degree of testing performed also seems to vary amongst the studies, as some researchers experimented with both synthetic and real-world data, while others only tested with synthetic data or even with singular, not big, data. As there is enough big data open for researchers to use, testing using only synthetic data is often a result of lack of time of the researchers involved, but testing with real-world data is essential to assess the quality of the works.

There is little attention to the combination of both human and computational techniques to improve data quality, which has the advantage of the human insights in the data, such as sarcasm and other nuances that would otherwise be lost. Ideally, a computational method would be able to detect such meanings, but such a method is currently not (fully) developed and most research found was focused on other types of errors, such as anomalies, missing and erroneous data.

From the quality assessment and quality improvement articles, it appears that there is a need for standard for big data quality, as now each study develops one separately. While all these separate concepts are somewhat similar, this will impair the usefulness of research as definitions amongst studies will vary and therefore limit comparison to other research. A starting point could be the standard data quality specifications developed by ISO/IEC, similar to Merino et al. (2015). However, from the quality assessment perspective, it would appear that that quality is relative to the environment in which it is supposed to be used, outlining the importance of the user perspective of big data. When creating a standard for data quality, this should be kept in mind.

5. CONCLUSION

This study's goal was to critically assess current literature on the topic of big data quality, reliability, and validity, and find current trends and gaps in the research being conducted. A total of 20 articles were gathered and analysed. Based on the results, two main themes appeared, quality assessment and error checking, and quality improvement, with topics varying from universal data quality assessment systems to very specific algorithms for error detection and data cleansing. Due to the variety and veracity characteristics of big data, it appears difficult to develop a universal big data quality improvement algorithm. However, required algorithms can be equipped in a data quality improvement system, designed to the user's need. There is much attention to combining efficiency with effectiveness, with resource consumption in mind. A standard for big data quality is missing and should be developed to standardize this concept, allowing for better comparison amongst research. Furthermore, limited attention is given to the combination of computational and human methods to improve data quality.

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Topic 2

Delivering integrated, real-time, relevant experiences in context

Brand and product awareness in a post-TV advertising world

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ABSTRACT
The world is changing in a rapid way. New technologies and innovative ways of media use have emerged within the last few years that have strongly affected the television (TV) market. These technologies and innovative ways of media changed the world into a multichannel, multimedia marketing environment. This world presents a new layer of challenges. The continuous fragmentation of audiences over the last two decades has created an increasingly competitive media marketplace. This means there is a new world of supply and demand. New demands from potential consumers and users translate directly into the need of the creation and development of effective marketing strategies for this new market. To understand this new market and to get to know the marketing strategies which are needed in this new world, a literature study is conducted. This study aims to create an image of the available data and to show where there is still room for further research. The following research question will be addressed in this study: *How do you build brand / product awareness in a multimedia world?*. Research shows that marketing efforts and the branding processes are shifting from traditional, static communication to customers to one that embraces change and lifestyle characteristics. When organizations create new interactive ways to communicate and connect, brands will create more awareness, will get more attention and could get more appreciated. In that way marketers can operate in a post-television world, but still create brand awareness with the goal to influence consumer behavior.

Keywords
Brand awareness, digital world, post-tv world, television, new marketing strategies, internet

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?
The world is changing in a rapid way. New technologies and innovative ways of media use have emerged within the last few years that have strongly affected the television market. What to do with this shift of brand advertisement?

1. INTRODUCTION

The world is changing in a rapid way. New technologies and innovative ways of media use have emerged within the last few years that have strongly affected the television (TV) market. These technologies and innovative ways of media changed the world into a multichannel, multimedia marketing environment. This world presents a new layer of challenges. The continuous fragmentation of audiences over the last two decades has created an increasingly competitive media marketplace. This means there is a new world of supply and demand. New demands from potential consumers and users translate directly into the need of the creation and development of effective marketing strategies for this new market (Lis & Post, 2013).

To understand this new market and to get to know the marketing strategies which are needed in this new world, a literature study is conducted. This study aims to create an image of the available data and to show where there is still room for further research. The following research question will be addressed in this study:

How do you build brand / product awareness in a multimedia world?

Furthermore, there will be sub-questions that have been formulated to answer this main question:

1. What are the recent developments in the world, in terms of media and marketing?
2. What are the recent findings on brand awareness?

This literature study will first focus on the change in the world and especially in the multimedia marketing environment. This will provide every bit of information there is about the change in the world, in terms of media and marketing. Second, the literature will focus on brand awareness and all recent findings on this topic in combination with the changing world. In the conclusion an answer on the main research question will be provided.

2. LITERATURE STUDY

2.1 Change in multimedia marketing environment

Many activities capitalized on the growth and expansion of television since the 1950s. However, recent years have seen a challenge to the supreme position of television in daily life. The Nielson Company reported in 2012 that, for the first time in twenty years, there was a decrease of one million homes across the United States, that meet their definition of a television household, where a home has at least one television and a cable, satellite, and/or antenna connection (Pfahl M. E., 2014). While hard data from many different contexts will vary with respect to television viewing, it is clear the trend is toward non-television content and access as well as assessing television content in non-linear ways via non-television devices.

Since the advent of video recording over thirty years ago, people have shifted their television behaviors slowly with the internet giving rise to a faster pace at which to find and to watch content that appeals to ever shifting tastes (Pfahl M. E., 2014). Similar data is being reported in Europe (Eurodata TV, 2013). People around the world are more augmenting television viewing or increasingly turning to mobile devices for content beyond television content. They seek content not produced for television or content accessed or saved to be watched on any number of devices. The content is also available specifically from and for the internet (Pfahl M. E., 2014). This is also stated by Atkinson & Strating (2016), who said that these days there is an audience fragmentation happening. Which means that individuals are not watching anything and everything anymore, but increasingly seeking out what they want versus what is available on television and therefore on the internet.

This shift can also be seen within social networking sites (SNS) such as Facebook, Twitter and Instagram. SNS are becoming more popular every day, because internet becomes more and more mainstream (Lin & Pena, 2011).

In sum, the mass media is no longer the center of the marketer's and the individual's world. The world is moving towards a digital context, the post-television world. In modern marketing, the post-television world refers to the social, economic, and cultural conditions that changed the ways organizations and individuals engage in the purchase and use of products and services.

2.1.1 The impact of the post-television world

In the past fifty years, marketing and brand efforts were developed and conducted within the construct of a television-centered world. In this world the mass message to a mass audience was important because it raised brand awareness and communicated, depending on the nature of the message, a lifestyle or worldview that would manifest itself through people aspiring to be that way and thus, consume that product or service (Sassatelli, 2007). In the early 1990s, integrated marketing communication emerged as a brand value chain and as a way to link macro and micro elements within the organization – consumer dyad (Keller & Lehmann, 2006). This moved marketing efforts in general, and brand efforts in specific, towards an understanding that the person buying a product or service was important to the processes at work to influence them to buy it (Cornelissen & Lock, 2000; Keller & Lehmann 2006). This meant that marketers worked to link feedback from customers to their messages in hopes the intended message would be understood by the targeted people (Blackston, 2000).

One key element of marketing and brand strategy research over the years is the organizationally-focused nature of how its elements are comprised and communicated. In a post-television world, old and new brand elements are needed to reach consumers in an ever changing context. The strategic processes used to develop and to grow a brand are contested by definition and complicated in practice (Keller & Lehmann, 2006; Stern, 2002). Grounded with this, Payne, Storbacka, Frow and Knox (2009) state that marketing ideology is a foundational principle of (co)creation where an individual has the potential to be involved in numerous aspects of the product or service, from design to utilization.

Second, the increasing popularity of SNS has brought extensive attention to the need to understand how these application can affect not only the nature of online conversations, relationships and communicative outcomes (Ellison, Steinfeld, & Lampe, 2007), but also the effectiveness of consumer-brand interactions in SNS and their consequential effects on online and offline consumer behavior (Bagozzi and Dholakia 2006; Brown, Broderick, and Lee 2007; McWilliam 2000; Taylor, Lewin, and Strutton 2011).

Social media is being linked increasingly to television viewing in a way that allows social contact at an individual or community level, while watching a mass medium. Concepts such as social television refer to the ways people communicate through social media platforms while watching television (Proulx & Shepatin, 2012). Additionally, the rise of user generated content (UGC) also adds complexity to the discussion as individuals become producers and users of information and content, sometimes simultaneously (Grant, 2006; Santomeir, 2008). Even in marketing literature, social networks play an imperative role in the diffusion of information (Steyer, Garcia-Bardidia, & Quester, 2006). Online text-based communication enables people to influence more others, minimizes the effort required to exert influence attempts, and increases flexibility for incorporating influence strategies; thus, influence in online social

networks is more compelling and pervasive than face-to-face interactions (Subramani & Rajagopalan, 2003).

One of the most significant values that the Internet adds to conventional media is its capacity for interactive activities (Ha & Chan-Olmsted, 2009). Such a characteristic is essential in the process of brand extension for organizations as 'interactivity' often leads to higher brand involvement and provides more opportunities for differentiation. The digital age is one of engagement, choice, selectivity and fragmentation (Tapscott & Williams, 2008). Whereas maximizing interactivity of one's website or brand is viewed as an immutable law of internet branding (Ha & Chan-Olmsted, 2009). According to them, a viewer's positive web visit experience, as measured by his or her perceived interactivity and flow of the website, is fundamental to any successful brand awareness and extension efforts. Therefore, interactivity is a crucial concept in the study of the web and new media (Ha & Chan-Olmsted, 2009).

2.2 Brand awareness

2.2.1 The definitions of brand and brand awareness

Changes occurring in today's mediated world lead to fragmentation of markets and the ever-present branding of all products and services to the point where if all things are branded, they can anything really be a brand? According to Grant (2006) a brand became a (co)constructed phenomenon that contains elements of traditional marketing and brand practices, but include less linearity and organizational definition of what something is for consumers. Brands can help consumers cut through the clutter in an increasingly complicated media marketplace by identifying the brands that are compatible with their needs and expectations (Chan-Olmsted S. , 2006).

Brand awareness is the ability of a consumer to recognize and recall a brand in different situations (Aaker, 1996). Brand awareness consists of brand recall and brand recognition. Brand recall is the ability consumers have to recall a brand name exactly when they see a product category. Brand recognition means consumers have the ability to tell a brand correctly if they ever saw or heard it. Hoeffler & Keller (2002) indicate that brand awareness can be distinguished from depth and width. Depth means how to make consumers to recall or identify a brand easily, width expresses infers when consumers purchase a product, a brand name will come to their minds at once. If a product owns brand depth and width at the same time, consumers will think of a specific brand when they want to buy a product. Brand name is the most important element in brand awareness (Davis, Golicic, & Marquardt, 2008). A brand name offers a symbol that can assist consumers to identify service providers and to predict service results (Janiszewski & van Osselaer, 2000). In this way, according to Keller (1993), will brand awareness affect purchase decision through brand association, and when a product owns a positive brand image, it will help in marketing activities. Macdonald and Sharp (2000) mention that even though consumers familiarize and are willing to purchase a product, brand awareness is still an important factor to influence purchase decision. When consumers want to buy a product, and a brand name can come to their minds at once, it reflects that product has higher brand awareness.

2.2.2 Brand awareness and media

As stated before, brand awareness can help consumers to recognize a brand from a product category and make purchase decision (Percy & Rossiter, 1992). Brand awareness also can be a critical factor in the consumer purchase intention, because certain brands can accumulate in consumers' mind to influence consumer purchase decision. A product with a high level of brand awareness will receive higher consumer preferences because it has higher market share and quality evaluation (Dodds, Monroe, & Grewal, 1991). Consumers' purchase decision can be influenced if a product has higher brand awareness. This explains why a product with higher brand awareness will have higher market share and better quality evaluation. While consumers select a product, they care about perceived quality and brand awareness.

For over two decades, a consumer-oriented focus has been a part of marketing and its common elements include an emphasis on understanding consumers in ways that work to satisfy wants and needs for individuals (Sheth, Sisodia, & Sharma, 2000). Akin to marketing communication for conventional brands, media companies address their audience as consumers (Siegert, Gerth, & Rademacher, 2011). Media brands' strategic decisions are driven by the uniqueness of media (Chan-Olmsted, 2006), which contribute to the brand positioning and help define their promotion (Siegert, Gerth, & Rademacher, 2011). Regarding media brands, one of the advantages of a strong brand image can similarly be to provide a potential viewer with a feeling of orientation, helping to master the variety of different media offers (Lis & Post, 2013). The next phase of media brand research turns to the strategic value of branding (Chan-Olmsted & Kim, 2001). According to McDowell (2004) is buying behavior synonymous with watching, listening or reading, and many conventional marketing concepts may serve as useful tools for the study of media brands.

2.2.3 Brand and marketing

Television has not disappeared, but the world is approaching a point where digital communications and engagement will be found as often on non-television technologies (Santomeir, 2008). In the future, television as it is now, will probably disappear to be replaced by an internet-based experience. Therefore, brand is in the midst of change, due to the post-television world. In such a situation, certainty decreases, perceived options to succeed abound, and there is no clear path, no singular winning strategy (Thurow, 1996).

The rising of consumer consciousness has made consumers choose to purchase their familiar and favorable brand (Chi, Yeh, & Yang, 2009). If businesses want to defeat their competitors, they have to make consumers love to buy their products and brands. In the digital space, content is key. It drives people to places, allows experiences to be developed and shared, and offers participation in the form of developed and shared user generated content available on platforms such as Youtube (Kim, 2012). Thereby, the digital space is highly malleable. It offers textual, visual and audio experiences that can be created, stored and delivered to all, to one, or to the chosen ones. Marketing is still grounded in strategic values and a strong sense of purpose, but they now have the flexibility to (co)construct messages with individuals and communities via changes in the competitive environment. Cutting through the message clutter in the digital space is not easy, but can be done with well positioned strategies. Figure 1 provides several main areas of content that can drive engagement as derived from the literature (Pfahl, 2001; Horne 2006; Tapscott & Williams 2008).

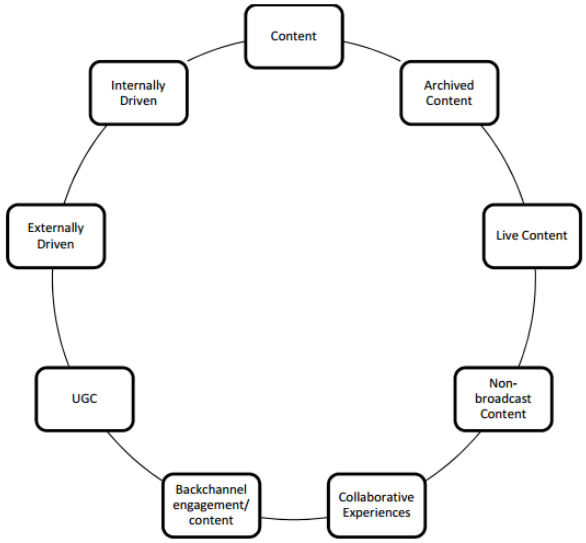

Figure 1. Content Idea Areas

Content is used to mean text, video, photographic, and other items available via the Internet (Pfahl, 2014). Archived content refers to content posted and saved on the internet for later access (Pfahl, 2014). Live content is streamed live, but not always available as archived content. Non-broadcast content refers to all content outside of live and archived content. Collaborative experiences are items created between two entities. Backchannel engagement and content is the idea of social television, where individuals can connect with each other or communities of individuals, during a television broadcast (Proulx & Shepatin, 2012). User generated content is content created by non-organizational personnel and placed in a variety of contexts on the internet (Pfahl, Kreutzer, Maleski, Lillibridge, & Ryznar, 2012). Finally internal and external forces are at work developing content and enabling and constraining each other in terms of demand and supply of content on the internet (Pfahl M. E., 2014).

2.2.4 Brand awareness in the post-television world

The internet provides a platform to reach single viewers and mass audience simultaneously (Hutchins & Rowe, 2009). While website visits for news and updated information are useful, digital experiences that engage consumers, and more importantly, keep them at the website, on the application, or engaged in another way for greater periods of time is a competitive advantage (Pfahl, Kreutzer, Maleski, Lillibridge, & Ryznar, 2012). The digital spaces and increased levels of engagement via different content raises numerous issues about upstream and downstream content creation, distribution, and ownership (Pfahl M. E., 2014). By providing a variety of content, the individual user's experiences with brands becomes a total marketing method for the individual to engage with the organization. In doing so, the organization can create customized individual and community level messaging that promotes events, products, and the general lifestyle of each organization. The increased engagement enhances the ability to market to people because the self-selection of the engagement process enhances the permission to market to the person (Barwise & Strong, 2002; Costly, Shukla, & Inceoglu 2010; Tezinde, Smith, & Murphy, 2002). The availability of the content across time and platforms means that organizations can be where the stakeholders are, be how they are, and be where they are to understand the level of success of a given total marketing initiative (Anderson, 2008; Grant, 2006). Creative content can only go so far, however, unless the activation opportunities are measured properly. Figure 2 depicts the interconnected elements driving post-brand and total marketing in the post-television world (Grant, 2006; Santomeir, 2008).

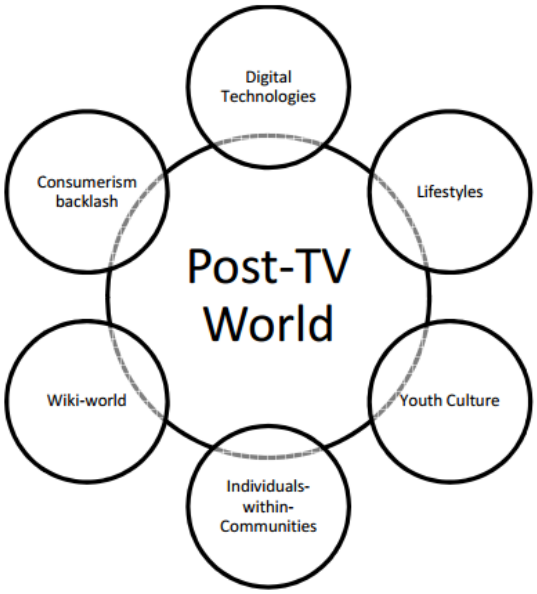

Figure 2. Drivers of a Post-Television World

Each element is important in its own way and is connected to others in various ways. Digital technologies refers to the changes to computer and other mobile devices that provide communication and content via the internet. Goods, services and technology become an intertwined entity and make a person both a producer and consumer of value added experiences. Lifestyles are organizational mandates where attributes of products and services have led to messages of ideal ways of living (Crane, 2012). These are defined individually and communally by people and expressed via numerous outlets such as digital means and physical ones. Youth culture is a social category defined by the actions, thoughts, ideas, rituals, institutions, and beliefs of, but not limited to adolescent and young adults. This element is causing a change in brand, because youth still follow mass culture trends, but are also starting trends by themselves. The fourth one refers to the interactions between an individual's actions and those of the communities he or she is a part of each day. Each individual's community has a culture and these cultures-of-communities are defined and define the individual (Pfahl M. E., 2014).

The result is a simultaneous individual and collective fragmentation into self-selected worlds. Such a context makes marketing a challenging occupation filled with opportunities to understand individuals and communities, if they allow themselves to be understood and heard. The fifth one is the collectivization of individual knowledge for various uses provides individual expression and collective control albeit not necessarily by traditional gatekeepers, in other words the Wiki world. This means that the contents of traditional storehouses of information and knowledge are being set free, what makes it hard for derived mass messaging to really say anything at all to individuals and communities of individuals. These frameworks trace the threads of collaboration and seek to understand individual contexts before placing them within broader sociocultural, political and economic contexts, which is an important strategic action as more and more individuals are becoming less supportive of overt consumerism (Klintman, 2006). The last one, consumerism backlash, is the resistance to consumer or capitalistic hegemony (Cherrier, 2009). Individuals and communities of individuals will review choices and make

decisions based upon ideological and critical vires of the information at hand, which is influenced by their past activities and community engagements (Lee, Motion, & Conroy, 2009). These six primary forces are interconnected and distinct (Grant, 2006; Parasuraman & Grewal, 2000; Santomeir, 2008). In the end, all of these elements demonstrate that change has arrived. Now, companies are developing more interactive ways to communicate and to connect with consumers and gather information beyond from more than just target market demographic variables. The implications of these shifts are important to understand how marketers can operate in a post-television, post-brand world.

3. CONCLUSION

The main research question of this literature study was:

How do you build brand / product awareness in a multimedia world?

It appears that competition for consumer attention becomes a key driver of engagement. Thereby, connections between television and brand awareness and the changes accompanying a shift to a digital, internet-based society were the key components of this literature study. Because while this shift might be applied unequally, it is occurring in societies all around the world leading to a re-thinking of marketing strategy and philosophy as well as what brand means in such a context (Pfahl M. E., 2014). Marketing efforts and the branding processes are shifting from traditional, static communication to customers to one that embraces change and lifestyle characteristics. All of these threads can be used to show the changes made in terms of how individuals are assessing information and entertainment in the current post-television world.

The mass media is no longer the center of the marketer's and the individual's world. The world is moving towards a digital context where viewing takes place amongst an integrated set of other web services and applications are destined to change the ways in which brand is thought about and enacted (Proulx & Shepatin, 2012). Traditional conceptualizations of brand had success as untold amounts of money were spent on advertising products and services in the television era (Grant, 2006; Santomeir, 2008). Yet, social, cultural, economic, political, linguistic changes fostered a need to examine past practices in light of new contextual elements. No longer can target market demographic categories alone define individuals, when individuals can use digital technologies to define themselves over time. Marketers must adapt total marketing. This post-brand paradigm refers to the multiple perceptions of brand that are constructed by consumers and their brands.

The emerging marketing context of the post-television world shows that while we are entering a digital age that is different from the television one, much of the integrated marketing communications and relationship practices and ideologies in marketing are derived from a television-centric model of understanding people, their cultures and their habits. While the inherent nature of the marketing and branding processes and relationship engagement opportunities are not new, significant changes occurred that make a re-examination of brand necessary in the post-brand, digital age. The digital age is one of engagement, choice, selectivity and fragmentation (Tapscott & Williams, 2008). Whereas maximizing interactivity of one's website or brand is viewed as an immutable law of internet branding (Ha & Chan-Olmsted, 2009). According to them, a viewer's positive web visit experience, as measured by his or her perceived interactivity and flow of the website, is fundamental to any successful brand awareness and extension efforts. At last, people utilize products and services, but they also produce and (co)produce as well. In other words, people must work to develop a lifestyle within a brand strategy's cultural ideas where molecules of cultural ideas interconnect and are malleable over time versus a more modernist, linear view found in traditional conceptualizations of brand in which they are connected, consistent, static brand image messages (Grant, 2006). People change over time and static messages will not work as well in the digital age. The immediacy of the individual in relation to the organization is rising causing mass messaging to be potentially less effective and calls for flexible marketing (Grant, 2006). Organizations need to develop more interactive ways to communicate and connect with consumers and customers and gather information beyond from more than just the target market demographic variables. When organizations create these new interactive ways to communicate and connect, brands will create more awareness, will get more attention and could get more appreciated. In that way marketers can operate in a post-television world, but still create brand awareness with the goal to influence consumer behavior.

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Importance of customer experience and online decision making

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ABSTRACT

This critical literature review presents a comprehensive analysis of recent empirical studies dealing with customer experience and decision making. Both topics are being explained and explored with the use of current literature. This literature review explores how customer experience is being developed in both web 1.0 and web 2.0. Drawing from customer experience literature and recent market research, this paper presents a conceptual framework with 6 key point to establishing an successful online customer experience. The second part consist of a review of current understanding on online decision making. A variety of decision making processes are being discussed and their relevance in online environments is being argued from a critical perspective. A conceptual framework for online decision making is presented in this paper. This conceptual framework combines the traditional decision making process with the dynamic and flexibility of online environments and the importance of the Zero Moment of Truth and Electronic Word-to-Mouth. The end of this paper consist of a combination of both subjects and explains why these subjects are bounded to each other. The conceptual frameworks that are presented are useful constructs for further research. The online environments is a dynamic and rapidly changing environment and created tools and frameworks should be constantly subjects for improvement in order to maintain relevant. Directions for further research are presented in the last chapter of this paper.

Keywords

Customer experience, Web 1.0 and Web 2.0, Decision making process, Customer engagement, End-to-end customer journey, Customer behavior

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context.

The author's view: Why this topic? Customer experience and decision making are being studied for decades and will increase in importance in the online web environment. This critical literature review tries to combine these subjects with the help of current literature.

1. INTRODUCTION

Many (e)-businesses know that it is no longer enough to compete on products and services, because it is increasingly important how a company delivers a product or services. Due to the increase in technical usage, customer behavior is changing. There is more media proliferation, a more multitasking public, less attention to traditional media and customers become more critical and individualistic. Traditional marketing tools are in decline and being replaced by alternative media. Also the digital tools have put customers in the driver's seat allowing them to easily research, compare and order products (ATDM lecture sheets, 2016).

Customers nowadays increasingly dictate the rules and expect a high level of satisfaction. This happens at almost every company no matter what industry they are. Companies that master to satisfy these kind of expectations become superior in relative to their competitors (Duncan et al. 2016). Also, the dynamic of e-commerce has been changing. There are more consumers utilizing the internet for shopping by using various devices. These devices are used before, during and after the online purchasing process. In these stages it is essential for firms to redesign, interact and deliver service to achieve optimum online user experience and to keep customers engaged. If firms don't think about these points, their competitors will surely do and will gain advantages (Bilgihan, Kandampully and Zhang, 2015). But companies have largely been reactive, trying to get themselves in a position where customers could find them (Edelman & Singer, 2015). Companies have to realize that they can use new technologies and processes to lead customers on their online customer journey rather than following them. The online demands of customers are changing and an integrated customer experience could help satisfy this new demand.

Secondly, do online customers behave the same in online environment regarding their decisions? Many literature studies are focused on the decision making process described by Engel-Kollat and Blackwell (1978) which is based on offline decision making. Various literature argue the relevancy of this decision making process for online environments and state that it needs improvement.

The decision making and customer experience aren't very new topics but trying to align them with an online environment is very different. Both topics are important in the current online environment which many companies use for various reasons like selling their products and/or services. But there hasn't been done much research on these topics which is very strange because these subjects could mean success or failure for certain firms.

The first part of this literature review is to discover what customer experience is and how it is used in the current online environment. The second part focuses on the decision making process. How is the decision making structured in current literature and is it applicable in the online environment?

The goal in the last part of this literature review is to show the combination of customer experience and decision making by combining the two subjects. Does customer experience have influence on decision making? And how can firms develop the best customer experience to influence the decision making online?

2. CUSTOMER EXPERIENCE

2.1 Customer experience definition

Originally customer experience has not been seen as a separate construct in the literature. But instead it was being measured as customer satisfaction and as an service quality tool. But in the last decades it has been theorized that consumption has experiential aspects and there has been some exploration in creating experimental marketing by having customers sense, feel, think act and relate to a company and its brand (Verhoef et al. 2009). Customer experience from a broad perspective for both online and offline environments reflects all customers responses to all direct and indirect encounters with a company (Bilgihan et al. 2015),

Verhoef et al. (2009) describe customer experience as holistic in nature and it includes purchase, consumption and after sales phases of the experience. The experience is created by elements that can be controlled like service, interface, atmosphere, assortment and price. But there are also experience elements that cannot be controlled like influence of others (word of mouth, (WOM) or electronic word of mouth, (eWOM)) and the purpose of shopping. Although there are many similarities, some differences can be found between physical and online customer experience. Constantinides (2004) state that online customer experience is more complicated than physical shopping experience because the web experience can be defined as the consumers total impression about the company. And a online customer is more than a shopper, he is also an information technology user. Online aspects that could influences these online sales also grow in importance because of the constant growth in online sales. Online environments create a wide range of possibilities to create an experience that attract and gain active loyalty and engage customers (Bilgihan et al. 2015). The use of customer experience in Web 1.0 and Web 2.0 environments are described in the next two paragraphs.

2.2 Customer experience in web 1.0

2.2.1 Web 1.0 definition

The main difference between web 1.0 and web 2.0 is that there were only a few who could create content at web 1.0 while at web 2.0 everyone can. Web 1.0 environments tent to be more hierarchical while web 2.0 environments resembles more like an social network (Cormode and Krishnamurthy 2008). Because the more future looking perspective of this paper, this chapter of customer experience in web 1.0 will be paid less attention compared to web 2.0.

2.2.2 Customer experience in web 1.0

Constantinides (2004) has analyzed the difference between online (web 1.0) and traditional consumers. He states that the uncontrollable factors (external and personal factors) are similar for both types of consumers. However, the controllable tools to influence buying behavior of customers are not the same. For traditional consumers the 4P's of the marketing mix are considered as controllable tools by marketers and for online consumers elements experienced during the virtual interaction are controllable. Those elements are:

- Functionality of the website which includes site usability and interactivity
- The psychological elements that need to lower customers uncertainty by communicating trust and credibility by the online company
- Content elements that includes the lay-out of the website and the addition of the marketing mix in the presentation of the website

2.2.3 Relevant customer experience goals in web 1.0

Companies that were active in web 1.0 increased the quality of customer experience by improving the efficiency of existing customer journeys and identifying and fixing pain points. Mostly the focus in the web 1.0 environment is on individual points instead of combining all subjects into one experience. But there are also similarities like the goals Novak, Hoffman and Yung (2000) mention in their article about online commercial

environments. Their goals to engage consumers so that they extend their visit duration, repeat visits and online purchase objectives are in line with current goals and objectives in web 2.0.

2.3 Customer experience in web 2.0

2.3.1 Web 2.0 definition

Web 2.0 is a term that is introduced in 2003 – 04 and is used to classify different sites on the World Wide Web. According to Kaplan and Haenlein (2010) web 2.0 does not refer to any technical update of the World Wide Web, but they see it as a new way in which software developers and end-users started to utilize it. Applications and content are no longer created and published by individuals like in the web 1.0 but are continuously created and modified by all users. Key attributes that makes web 2.0 different than web 1.0 is that web 2.0 includes the growth of social networks, bi-directional communication, a variety of combining technologies (e.g. social media) with websites and the diversity in content types (Cormode & Krishnamurthy 2008).

2.3.2 Customer experience trends in web 2.0

In web 2.0 there has been a considerable increase in online shopping and a change in behavior of online customers. Companies in web 2.0 compete in an online environment with diverse online channels and formats like e-commerce, m-commerce and social media. Mosteller, Donthu and Eroglu (2014) noticed four trends in the online shopping experience: (1) the growth of online commercial information, (2) the increasing variety of informational environments via all internet-accessible devices, (3) consumer growing use of online information and reviews to weigh their buying decisions and (4) the online environments are more cognitively demanding than offline environments.

these interactions between multiple online channels ,devices, customers and firms are important to create a holistic online shopping experience. Bilgihan, Kandampully and Zhang (2015) describe that online experience in this context includes every point of contact (social media, Web site, apps) that customers chose to interact with the firm. But they also point out that many firms lose potential revenue due to poor online customer experience. The customer experience have to attract the customer and let them stay focused on your online environment. Customer engagement and competitive advantage can be created by a compelling online experience, but to achieve this will cost a lot of time and effort.

2.3.3 Conceptual framework for developing an end-to-end online customer experience

Duncan et al. (2016) can conclude after several years of research on customer experience, that firms can create more value by customer experience though a complete end-to-end customer journey.

In web 2.0 customer journeys are becoming central to the customers experience of a brand. And for some firms as important as the products themselves in providing competitive advantage. Currently there is a shift in strategy in customer experience. While firms were largely reactive in their interaction with the customer like improving the efficiency of existing customer journeys and identifying and fixing pain points. while nowadays the focus has to be on reactiveness as a key point in customer experience. Creating customized experience that once customers get on their path, they are permanently engaged and create new value for the customer himself (Edelman and Singer 2015). Another important shift in the understanding of customer experience is the shift from individual touchpoints in customer experience to an end-to-end experience. Firms could score high on individual touchpoints such as call center and website, but if those touchpoints are not aligned with each other than the overall effect of customer experience decreases. Edelman and Singer (2015) describe 4 capabilities that all effective customer journeys have to possess also Duncan et al. (2016) identify 6 success factors in their research about customer journeys. To build up an unified customer experience Bilgihan et al. (2015) describe 10 key priorities to take into account. These 3 studies have quite some similarities and overlap, but to make it more understandable, a conceptual framework is presented below. All important points of each research has been joined into one conceptual framework and provide 6 key points in developing an end-to-end customer experience in today's online environment. (see Appendix 3)

- **Key point 1:** Divine a clear customer-experience aspiration and common purpose
- **Key point 2 :** Develop a deep understanding of what matters to customers and anticipate on that
- **Key point 3:** Use behavioral psychology to manage the customer's expectations and trigger them by using real time information
- **Key point 4:** Reinvent customer journeys using digital journey innovation
- **Key point 5:** Use customer journeys to empower your employees
- **Key point 6:** To improve constantly, establish metrics and a governance system or team

2.3.4 Conclusion customer experience

Compared with web 1.0, web 2.0 has given companies a greater variety of opportunities to create an online experience who fits their purpose and engages with the true need of their customers. But the process of creating the right customer experience is a time consuming activity and could result in a loss in revenue when it is not aligned with the company and its customers. In order to make this process more transparent a framework has been created with 6 key points for creating a customer experience.

Key to this model is to create unbreakable bonds with customers, understand their behavior to create a customized journey and respond immediately and in real time by personal engagement. For customer perspective all these 6 keys points are part of one and the same journey. Al these key points have to be treated in a way that they can merge in to one customer experience. Bilgihan et al. (2015) describe 4 outcomes of enhanced online customer experience. They state that it will lead to (1) repeat purchase,(2) positive worth-on-mouth, (3) positive electronic worth-to-mouth and (4) brand engagement. According to Luo et al. (2011) extended interaction channels that have integrated into a unified customer experience have a positive influence on the customer decision-making process.

2.3.5 Research agenda customer experience

But since online customer experience is a topic from the recent years, there is a lot to investigate in order to create an even better understanding of online customer experience. For example: the contextual understanding of customers is still a topic marketers think they master sufficiently, but according to the research of IBM Silverpop (2016) they still lack in that kind of understanding. Furthermore , making sense of the collected data from multiple platforms is a crucial point but also difficult to understand. And certainly to connect this analyzed data with a meaningful customer experience. As the customer expectations have increased so has the complexity of the online business environment with more channels, devices, solutions and more data. Extensive research would be very useful for almost all companies.

3. THE DECISION MAKING PROCESS

3.1 A linear process of customer decision making

When categorizing customer decisions Kotler and Armstrong (2011) mention two decision types: low-involvement decision making and high evolvement decision making. In this paper the focus is on high involvement decision making studies that have to be considered throughout the whole decision making process. In their literature review, Darley, Blankson and Leuthge (2010) point out that original decision making literature is focusing on the EKB model from Engel, Kollat and Blackwell (1978). This five stage sequential problem solving model for customer behavior consist of:

- problem recognition
- search,
- alternative evaluation,
- purchase
- outcomes.

The online environment influences the decision making according to Darley et al. (2010). They extended this model for an online environment by adding external factors to each stage of the decision making process. They mention three online characteristics that influences the decision making:

- Web site quality
- Web site satisfaction
- Web site experience

Senecala, Kalczynskib and Nantel (2005) explain that online consumers use different decision making strategies. They state that the online consumer is taking advantage of information sources and social networks would influence their decision making. According to Häubl and Trifts (2000) consumers are often unable to evaluate all available alternatives in depth and tent to use a two-stage process in their online decision making. (1) Consumers typically screen a large set of available products and identify a subset of most liked alternatives and (2) they evaluate their most liked products in more depth, perform relative comparisons and then make a decision. While some literature stay focused on the traditional decision making process other literature question if online decision making is a sequential process . In the following chapter these new ideas are explained.

3.2 Shift from linear decision making process to a dynamic and flexible process

Karimi, Papamichail and Holland's (2015) opinion is that online consumers often skip steps or do not follow all stages in the decision making process in a linear form. The earlier discussed shift in balance of power between consumers and companies has changed the traditional path to purchase and instead of a more hierarchical selection, customer decision making processes are subject to interruptions, diversion and delays (Deloitte, 2014**).** Online decision making Is a dynamic and highly flexible process. Decision makers are adaptive and as the process continues individuals can skip, sequence or reordering process steps. Consumers are not the rational decision makers assumed by traditional economic models according to Fredricks, Stenner and Hobman (2014). Consumer often act in a way that fail to align with their knowledge, values attitude and intentions. There is a wide gap between peoples values, their material interest and their actual behavior.

A variety of new literature suggest that the 'old' linear decision making process model needs an improvement. To extend the linear process model Karimi et al. (2015) presented a renewed decision making process for online environments (See appendix D). It supports the dynamic and flexibility of the online decision making by its loops in the process and the process stages are formulated in a more comprehensive way. Finally, model combines certain parts and elements of the traditional linear decision making process. Dependent variables in this online process are 1) the number of cycles, 2) the duration 3) the number of alternatives considered and 4) the number of criteria.

3.3 Difference in decision makers

While in offline decision making the demographics or product related characteristics are important, different variables are important in online environments. In online decision making, the knowledge of the product and the decision making style are important aspects that highly influence the actual decision making (see figure 1).

Four archetypes of online consumers.

Decision-making style	Knowledge of product	
	Low	High
Satisficer	Archetype 1: Satisficer with low knowledge of product	Archetype 2: Satisficer with high knowledge of product
Maximiser	Archetype 3: Maximiser with low knowledge of product	Archetype 4: Maximiser with high knowledge of product

Figure 1. Four archetypes of online consumers (Karimi et al. 2015)

Consumers with a high level of product knowledge are more aware of their preferences and tend to start with a smaller set of alternatives. These consumers have a reduced evaluation time and number of cycles while low knowledge consumers are limited in their ability to collect and compare products. They tend to engage in a more intensive process of cycles and time. Decision making style refers to two types of consumers: the maximizer and the satisficer. The maximizer seek the best possible result, search for more information and make intensive comparison between alternatives. Satisfices on the other hand search less intensive, have a smaller consideration set and uses less time during online shopping.

By combining these characteristics Karimi et al. (2015) introduce 4 archetypes of online consumers. Their contribution to the current literature is that they provide a better understanding in different types of consumers by segmentation of the various decision makers. Each archetype of consumer is following a different path in the decision making process. Online environment makers have to keep these archetypes in mind and should consider what type of consumer visits their site and how should they interact with them. Although these points are very important, there is still little empirical research on their variables effects in online decision making.

3.4 Lack of ZMOT and eWOM in the new decision making model

In their study about customer choice in renewable energy use, Fredricks et al. (2014) notice that consumer choices and behavior are to a large extent driven by cognitive biases, heuristics and other predictably irrational tendencies. Consumers are heavily influenced by other people (online). This is in line with Lecenski (2011) and Moran et al. (2014) who describe the importance of the zero moment of truth (ZMOT) and electronic word-of-mouth (eWOM). While this new model from Karimi et al. (2015) take new online customer decision developments in consideration, it lacks giving attention to SMOT and eWOM. ZMOT is a new addition to the decision making process, it is the new decision making moment that takes place a million times a day via mobile phones, laptop and wired devices. It is a short moment where all kind of interactions in an online environment takes place and where marketing, information and consumer choice affect the

success or failure in just a short time. For example: an office manager at his work comparing ink cartage prices before going to the office supply store. It is also an unique phenomenon because it could happen to low level involvement products and high level involvement products (Lecinski, 2011). At some points, decision making is brought back from a complete process to just a few moments of information gathering, comparison and determine what and where to buy Bilgihan et al. (2015). Furthermore, the emerge of web 2.0 and at the same time social media are causes for the development of electronic word-of-mouth (eWOM). e-WOM is defined as: *"any positive or negative statement made by potential, actual or former customers about a product or company"* according to Galan, Lawley and Clements (2015). Customers mostly get in touch with e-WOM in the information search and evaluation of alternatives in the original decision making process. After purchase they sent their own experiences online and create their own voice. So e-WOM could have a huge influence on the ZMOT decision points. E-WOM is stronger than ever due to the empowered customer who seeks advice from online reviews and ratings and influence their decisions.

ZMOT and eWOM. The below model is a result of the combination of various literature and news publications.
The goal of this model is to combine all current external influences on the traditional decision making and transform it into a model that would make the decision making process in this online environment more clear.

3.5.1 Research agenda decision making process

Interesting future research regarding decision making could be to identify this combination even further or maybe investigate if the ZMOT could become even more important in the coming decade. Also, how do the dependent variables (number of cycles, the duration, number of alternatives and criteria) influence this process. At last, further investigation is needed on how different decision makers characters go through this decision making process.

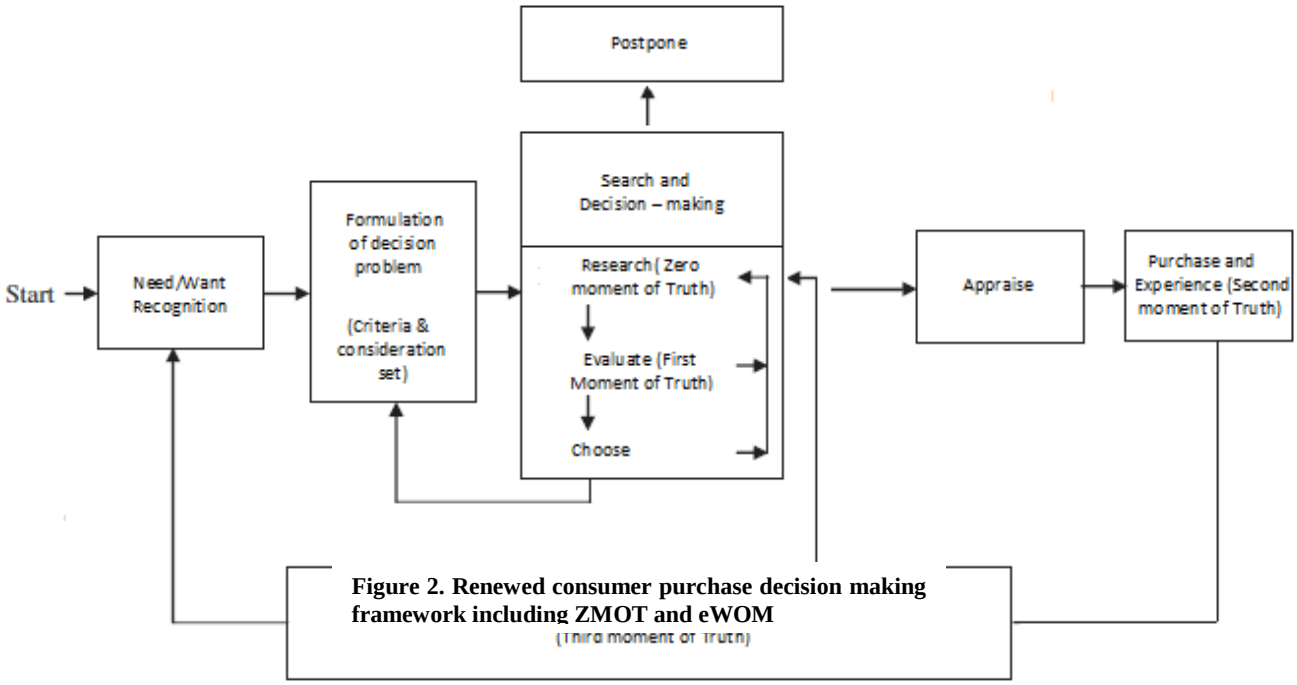

Figure 2. Renewed consumer purchase decision making framework including ZMOT and eWOM

3.5 Conclusion decision making and the introduction of a new conceptual model

While Karimi et al. (2015) have introduced an innovative model for online decision making that is relevant for the dynamic and flexible online process, they focus to little on some very important subjects like ZMOT and eWOM. Because of its importance, there has been decided to renew the online decision process model of Karimi et al. (2015) and to combine it with

4. COMBINING THE TWO SUBJECTS

The online experience starts at the beginning of the decision-making process when the potential customer uses a device to visit a website or search engine to find the service or product they are looking for (Bilgihan et al. 2015). Karimi et al. (2015) suggest that offering tools that could simplify the buying process of websites and facilitate consumers intended decision making can improve their experience. A more efficient and less time

consuming buying process could influence the decision making in a positive way. Surprisingly Häubl and Trifts (2000) describe in their article from 2000 some interactive tools that companies can use to make the online decision journey more easier for customers.

But at the moment it goes way beyond increasing usability and online product recommendation. Web 2.0 has given companies a great variety of opportunities. The main focus regarding online customer experience is to provide a compelling, customized and open-ended experience to online customers. This is only feasible when firms understand their customer and can react on their customer immediately and in real time. The goal is to create more personal engagement and loyalty which would gives companies a competitive advantage.

But does this new form of end-to-end customer experience influence decision making? With the more dynamic and flexible decision making process online, there is a greater need for an imbedded customer experience who can 'grab' the customer tight in a way that he won't make up his mind and search for another product or service. In the current online environment with a great variety of devices who are connected with the internet, more and more consumers are checking information, reviews and ratings for almost all products. Most of the time it is just a matter of a second where the consumer decide when he wants to look further for a product or service, or not. Online customers can make decisions while having a very short consideration step and an even shorter or missing evaluation step (Edelman & Singer 2015). In these moments customers are faced with various information and at the same time they determine what and where to buy (Bilgihan et al. (2015). The importance of ZMOT and e-WOM in online environments cannot be underestimated by companies. Decision making could be dependent on just a few moments of search by the customer. E-WOM could influence these moments and companies must focus on fostering positive e-WOM, so that the customer stays attentively in the decision making process (Moran et al. 2014). Integrating a customer at the beginning of this process immediately with a great outlined customer experience will get the customer stay attached to your site and maintain focused on your product and could influence their decision.

With all the evaluated literature for both customer experience and decision making we can assume that decision making and customer experience are bounded to each other. It could also work the other way around, decision making types (Karimi et al. 2015) are important in deciding the right customer experience. A satisficer with low knowledge of a products , for instance, demands a other experience than a maximizer with a high knowledge of product.

5. DISCUSSION AND FURTHER RESEARCH

As I am only limited to literature research, I hope that this paper is a stepping stone for new empirical research. There is still a lot unknown about online customer experience and online decision making. With the dynamic fast changing online environment certain customer experience tools could be outdated quickly or replaced by new tools. This means that the framework for establishing an online customer experience could be outdated very fast and should be improved once a year. According to Ostrom et al. (2015) research priority in these topics are: capturing and analyzing service oriented information for real time decision making in online environments. Although it is a crucial priority, using information to really understand the customer, is difficult to master. It would really help to improve the customer experience. More research is needed to make this topic more universal so almost every company can analyze and use data. Regarding decision making and customer experience, the combination is also a point for further research. How do different decision maker types walk through a customer experience and what kind of experience do they demand? ZMOT en eWOM are also subjects who will only increase in importance. But even the literature of the last years barely mention the importance of ZMOT. And ZMOT could have a major impact in current customer experience, this combination is also a research topic for the coming years.

6. ACKNOWLEDGMENTS

My thanks go to Dr. S. de Vries and Dr. E. Constantinides for their feedback and support.

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8. APPENDIX

Appendix A:

4 Point according to Edelman and Singer (2015

- Automation: streamlining the steps of the online customer journey. Make the journey a non-stop process and as easy as possible.
- Proactive personalization: this is not only the remembering of customer preferences by the website, but also analyzing real time data about customer

behavior on the website and tailor its next interaction accordingly.
- Contextual interaction: virtually tracking where a customer is in his virtually journey. So the website can sent key messages or change the screen to trigger the customer.
- Journey innovation: through ongoing experimentation and active analysis of the customer's needs, technologies and service to find opportunities to further improve the online customer journey.

Appendix B:

10 point according to Bilgun et al. (2015)

Easiness to locate – The ease which customers can find the website online via search engines, and to lesser extent the physical location (if the firm has one)
Ease of use - the ease and the efficiency with which they can access relevant information
can affect how much they feel in control of the site. Generally, ease of use is perceived as
a sign that the company understands, cares for and respects its customers
Hedonic (genot) features and utilitarian (geluk)- User interfaces that increase shopping pleasure and enjoyment considerably influence customer satisfaction Online consumers value the immersive and experiential aspects of the Internet. Therefore, it is both hedonic and utilitarian shopping values that create positive effects towards a Web site (Web sites should be fun to use. The Web site should contain elements that are different and make users want to come back to the Web site.
Usability - n line with the ease of use and the usefulness of the website according to the customers
Perceived usefulness – the opinion of the customer of the usefulness and the importance the online company gives this opinion.
Perceived ease of use - the opinion of the customer of the ease of use and the importance the online company gives this opinion.
Perceived enjoyment – the opinion of the customer about the level of enyoment and the importance the online company gives this opinion.
Social interactions –The social interaction dimension is considered as the social experience in e-commerce. Recent developments in Web 2.0 have enabled companies to interact socially with their customers. Similarly, customers interact with each other, thus providing word of mouth (WOM) on a greater scale. it is also important to remember that only humans can make other humans feel valued;
computers cannot do that. Therefore, companies are advised to provide positive experiences to their users by using social media.
Multi device compatibility: In the past, e-commerce marketers and Web site developers assumed that mobile users are task driven (e.g. want to get the restaurant's address, book a hotel room quickly on the go); however, contemporary consumers on any device are just as likely to shop online. Therefore, creating a unified customer experience is extremely important for service companies. Companies need to deliver Web, mobile and tablet touchpoints that align with core brand attributes and support business objectives. For example, Web design features of smartphone applications are advised to be identical with the browser-based e-commerce designs.

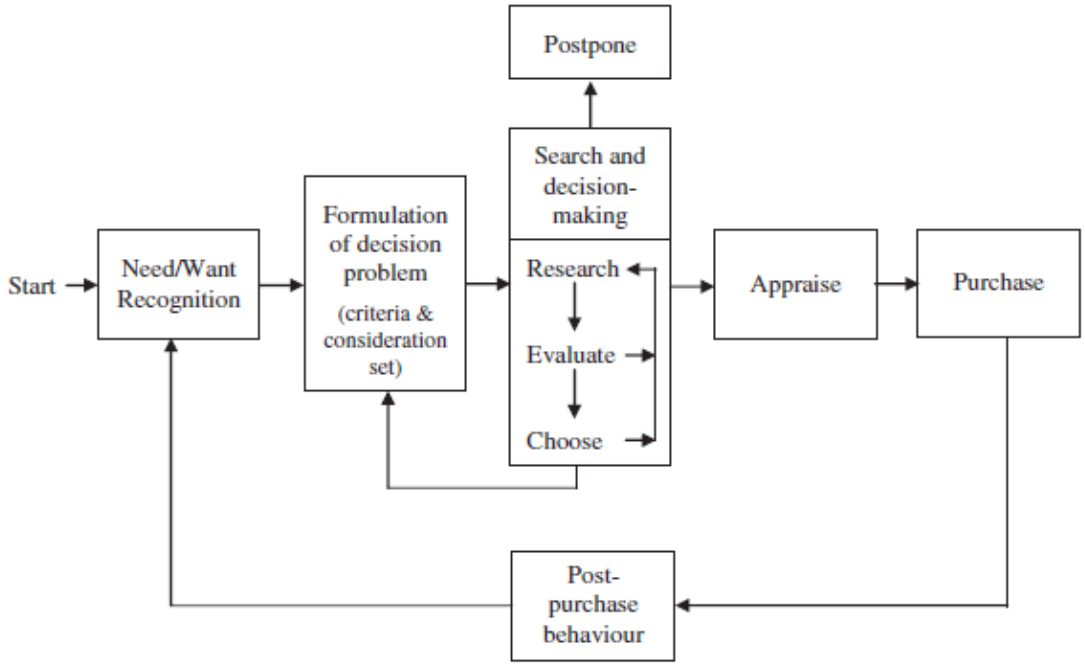
Appendix C: 6 key points to develop a online customer experience

Key point	How to execute this key point:	Tools and key words
Key point 1: Divine a clear customer-experience aspiration and common purpose	The root of customer experience comes from the purpose of the company to serve their customers true needs. Companies have to identify their aspiration or purpose and translate that in a set of simple principles or standards to guide the employees. And then find out how to combine this purpose with the true need of their customer.	Identify customers true needs, identify companies purpose
Key point 2 : Develop a deep understanding of what matters to customers and anticipate on that	If companies understand what matters to customers (most important key-factors of a product or most important customer journeys) they could maintain focus and have the greatest impact on the satisfaction of its customer. This could be measured by analyzing the big data the websites produces. Firms could anticipate on this by real-time proactively personalize the online environment based on customer preferences and behavior and/or contextual interaction by tracking the customer on their virtually journey and anticipate by sending messages or trigger the customer. This could enhance decision making across the experience.	Big Data, Advanced analytics, Proactive personalization software, Contextual interaction tracking software - usability
Key point 3: Use behavioral psychology to manage the customer's expectations and trigger them by using real time information	Creating added value by embedding behavioral psychology in the customer experience. This can be done by streamlining the steps of the online customer journey. Make the journey a non-stop process and as easy as possible. Identify the nuances, sentiments, emotional state, personal relationship and decide what is perfect moment to trigger the customer in their journey. This will generate positive feelings at their customers and deeper human engagement.	Behavioral psychology, triggering customers, human engagement, social interactions
Key point 4: Reinvent customer journeys using digital journey innovation	Journey innovation can be done through ongoing experimentation and active analysis of the customer's needs, technologies and service to find opportunities to further improve the online customer journey. Creating a unified customer experience by enabling important individual touchpoints into a end-to- end process is currently a hot topic. Align with core brand attributes and support business objectives	Unified customer experience, Multi device compatibility:

Key point 5: Use customer journeys to empower your employees	In order to deliver end-to-end customer experience an important aspect are the employees. Every company with a leading customer experience journey needs motivated employees who embody the experience and brand promises in their interaction with the customer.	Empowerment of employees via customer journeys, hiring of employees based on the purpose of the company
Key point 6: To improve constantly, establish metrics and a governance system (team)	In order to execute all these points a high level of customer understanding is crucial. Firms not just measure what happens but also use the date to drive actions throughout the organization and the customer experience. To move knowledge to action companies need proper governance and leadership by and individual team.	Metrics, Governance, Leadership, Advanced analytics

Table 1. 6 key points in establishing a online customer experience

Appendix D: Consumer online purchase decision making framework according to Karimi et al. (2015



Brand awareness in a digital society: A literature review on the challenges and future directions for generating brand awareness

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ABSTRACT
The internet has changed how consumers engage brands. Digitalization, along with the growing influence of Gen Y and Gen Z as target consumers, forced marketing communications to evolve as well. Growing power of the consumer, and weakening power of traditional media pave way for new marketing methods. This report provides literary views on the concept of obtaining brand awareness in a society where traditional marketing is becoming less and less effective. More recent and digital marketing methods used in gaining brand awareness are discussed, as well as implications for future research and future marketing practices.

Keywords
Brand awareness, Gen Y, Gen Z, WOM, meta marketing, OSNs, viral marketing, user-generated marketing

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?

The major shift in control on information flows from firms to consumers makes for a very interesting topic. I wanted to learn more about what marketing tactics are relevant seeing how consumers have become more powerful as well as less susceptible to traditional approaches. These developments invite challenges for creative marketing approaches, which, in my opinion, makes for a very interesting topic to learn about.

1. INTRODUCTION

Consumers today connect with brands in new ways, using new media channels. Often these channels are beyond control of the brand manufacturer. Whereas in the past, television was the number one channel to acquaint consumers with a brand, nowadays consumers turn to the internet. Proliferation of online networks has changed human interaction and the way customers engage brands (Edelman, 2010; Tiago & Veríssimo, 2014). This shift to the digital domain created room for more interaction, as opposed to one-way communication traffic. This, in turn, lead to consumers valuing peer judgments more than firm promotions (Berthon, Pitt, Plangger, & Shapiro 2012; Tiago & Veríssimo, 2014). Additionally, new media made communication more efficient and convenient. However, the large amount of information channels produces an information overload; it is harder for a brand to stand out among its competitors due to the sheer amount of information thrown at the consumer. Thus, the way to achieve brand awareness needs to change along with the movement to the digital domain. Added to that are the new generations of people, namely Generation Y and Generation Z, that grow up with technology embedded in daily life and are less susceptible to traditional marketing approaches. As such, strategies for gaining brand awareness have to evolve with both technological developments and consumer characteristics.

2. THE USE OF BRAND AWARENESS

In order to connect to the consumer, brand awareness is important to obtain and maintain. The concept of brand awareness is defined as the strength of a brand's presence in the mind of the consumer, and as a brand's ability to be identified under different circumstances, (Alhaddad, 2015; Ross, 2006; Rossiter & Percy, 1987). In this, brand recognition and brand recall are two types of brand awareness (Homburg, Klarmann, & Schmitt, 2010; Percy & Rossiter, 1992). The use of brand awareness is described by Kardes, Cline, and Cronley (2011) as a necessary first focus in monitoring and nurturing a product through its life cycle. In order to build a successful product, they mention building brand awareness as the first step, later adding promotion and advertising to stimulate growth. It is a necessary component for the communication process surrounding a product to occur (Jakeli & Tchumburidze, 2012). Aaker (1991) also states that creating brand awareness is the first step to building brand equity. In turn, brand equity is among the concepts that constitute a company's most valuable resources (Vomberg, Homburg, & Bornemann, 2015). Additionally, high levels of brand awareness aid firms in being trusted by customer, especially in online firms (Constantinides, 2004).

Increasing revenue can also be achieved by expanding brand awareness (Constantinides, 2002). This can be explained, as Kardes et al. (2011) state that brands should aim to be in the consideration set, which is the group of brands that consumers think about when they need to make a purchase, rather than aim to be choice brand immediately. This means brands should aim to be top-of-mind, to have high brand awareness, which is then related to increasing revenue, as the brands first considered are more likely to end up as the brand of choice. Also, this relates to brand equity, as well known brands are generally known to be more sought after, and brands that are perceived to be highly appreciated increase commercial value of said brand. Barreda, Bilgihan, Nusair, and Okumus (2015), Kim, Kim, Kim, Kim, and Kang (2008) and Hutter, Hautz, Dennhardt, and Füller (2013) link brand awareness to purchase intention directly, which further clarifies the importance of generating brand awareness.

3. GENERATING BRAND AWARENESS

3.1 Consumer characteristics

Considering the shift to digital and growing prominence of target groups in Generation Y and Generation Z, there is much to take into account when attempting to successfully create brand awareness for a specific brand. There are far more possibilities and pitfalls than in the past, both in terms of means of communicating the brand and consumer characteristics.

Generation Y and Generation Z are the generations reaching (young) adulthood now, and constitute the largest part of the consumer population. Gen Y consists of those consumers just reaching or having reached adulthood, entering and taking over employment. By the year 2020 this generation will comprise the largest part of the workforce and are expected to live and work longer than their predecessors (McCrindle, 2013). Pitts (2014) states that Gen Y is "facing an extremely diverse group of contemporaries [and] are at the tipping point of becoming the main source of worldwide influence in the world" (p. 5-6). Gen Y is further described as the most educated and materially endowed generation, being proficient with technology and globally aware. They are characterized as lazy, but also confident, self-expressive and receptive to new ideas (Pitts, 2014). Additionally, this generation is less sensitive to traditional marketing methods and less inclined to be brand loyal (McCrindle, 2012; McCrindle, 2013; Parment, 2013; Sima, 2016). Knittel, Beurer, and Berndt (2016) also found that Gen Y exhibits brand avoidance, and that aspects of advertising that contribute to this avoidance include content of the advertising, use of celebrity endorsers, and use of music in advertising. This further cements the idea that Gen Y should not be targeted using only traditional methods, as they are not only unresponsive, but can also respond negatively to such attempts. Instead, Gen Y is more responsive to peers and experiential influencers, as well as multisensory and visual cues to get attention. The way to approach this generation seems to be best done by electronic media, viral messages, and friends (McCrindle, 2012).

Gen Z is the generation currently reaching young adulthood. This is the generation that will follow after Gen Y , has integrated technology seamlessly into their lives, and will comprise 27 percent of the workforce globally by the year 2025 (McCrindle, 2015; Sima, 2016). This generation has purchasing influence beyond their own, since even in family households, Gen Z has a significant impact on household purchases. Many parents report that their teen influences their purchasing choice (Schlossberg, 2016; Van Den Bergh & Behrer, 2016). Gen Z is described as opinionated, connected, being in a state of constant partial attention, often using slang language, adept at filtering messages (Davies, 2013; McCrindle, 2015; Sima, 2016). Similar to Gen Y, Gen Z is characterized by a general lack of brand loyalty, as well as being difficult to reach through traditional media (Okazaki & Taylor, 2013; Ordun, 2015; Schlossberg, 2016). Thus, this generation is, like the one before it, rather cynical towards traditional marketing messages and untrusting of marketing communications. McCrindle (2012) states that they are more likely to be influenced by user-generated content and forums. Also, they are receptive to interactive campaigns, trends, and they seek positive brand association when buying products, meaning brand awareness is effective for this consumer group.

Taking Gen Y and Gen Z characteristics into account, there are some recurring themes in what does and does not work on these consumers. It can be established that digital media are most likely to reach these consumers, and that messages will be best received when they are not traditional marketing

communications, but rather peer generated communications. Also, since Gen Y and Gen Z are more aware of the marketing communications thrown their way, and are more cynical towards these communications, it can be said that the way messages are formulated can have a significant impact on how they are received. This leads to the conclusion that a few ways in particular might be useful to generate brand awareness. As such, the topics of word of mouth, meta marketing, online social networks, and viral marketing are discussed.

3.2 Word of mouth

Since the internet has increased consumer power, it is not illogical to transfer power to the consumer when trying to obtain brand awareness. In line with this, user-generated messages, and word-of-mouth (WOM) in particular, have gained much prominence in marketing. WOM has emerged as one of the most important methods of reaching customers. As stated by Kardes et al. (2011), "word of mouth communications are often weighted more heavily than marketing communications because consumers trust their friends and other consumers more than they trust marketers" (p. 174). It involves the act of one consumer talking to another about a brand, which can happen directly and indirectly, face-to-face and via a variety of media. Since the source of the message is a peer or someone familiar or trusted, WOM is authentic and credible. Also, if a brand gains customers or brand awareness through WOM as opposed to marketing communications, these customers generate more future WOM (Villanueva, Yoo, & Hanssens, 2008). This makes WOM one of the most powerful marketing methods (Kardes et al., 2011; Villanua). Some researches differentiate between two types of WOM, the first being simply sharing thoughts among people without the sales request, and the second being linked with a successive request to buy or follow the items (Bone, 1992; Haque, Momen, Sultana, & Yasmin, 2013). As can be seen in figure 1, brand activity can be linked to WOM. This model, as well as a model by Hutter et al. (2013), and research by Liao, Wu, Widowati, and Chen (2012) plead for brand awareness as an influence on WOM. However, this representation might be inadequate, as there might well be reciprocity, meaning WOM would also influence brand awareness. Other research showed that WOM does indeed increase brand awareness (Haque et al., 2013; Murtiasih & Siringoringo, 2013; Tran, 2014). Therefore, there is an interaction between WOM and brand awareness.

In order to generate WOM, several routes can be taken. One possibility is to target market mavens, the people who search, accumulate, and share product knowledge with others. Since they can be seen as "product data banks [who] keep the marketplace honest through their vigilant watch over marketers' pricing tactics and trends" (Kardes et al., 2011, p. 78), they are regarded as influential, and are likely to be sought out by consumers. Therefore, these market mavens could be effective in generating WOM and subsequently brand awareness. This is similar to targeting opinion leaders, which is also a known way to generate WOM (Li & Du, 2011), and using celebrity endorsers (Kardes et al., 2011; Lu, Chang, & Chang, 2014). These tactics involve having a well known or looked up to person as an ambassador for the brand. Thus, it is important to consider the starting point of the WOM. Aside from target groups that can help initiate or spread WOM, there are also marketing strategies and platforms that are often used to reach the objective of WOM. The most influential ones, which are the relatively unexploited so called meta marketing or self-ironising brands, social media, and viral marketing, are discussed in this article. They are addressed as separate ways to achieving brand awareness, however, they can all be linked to WOM and are further interlinked as well. However, in order to keep each topic clear, they have all been addressed separately.

3.3 Meta marketing

Given consumers' growing insensitivity and ability to 'see through' traditional marketing messages, a new type of marketing method is needed. Several brands have taken to complete transparency in their marketing methods, which means they do not try to sell a promotion message, but are honest about their underlying intentions with their communications. Case in point is a beer brand, as described by Van der Bergh and Behrer (2016), which often makes fun of common marketing practices in the beer industry:

> The brand's so-called 'No Bollocks' approach deals entirely with telling how they think it is. 'We're selling you beer': no more, no less. For instance, they promote their Facebook page with: 'Like us on Facebook so we can legally spam you with ads'. Their positioning compared to other brands is that they will never 'bullshit' their customers. Even the neon signs that get put up in bars and cafes are used in a meta way, reading 'A $400 sign to get you to buy a $6 beer'. (p. 106)

This approach to marketing can be called meta marketing, or meta advertising (Trend Hunter Marketing, n.d.; Van der Bergh and Behrer, 2016) , or can be described as "self-ironising brands" (Future Foundation, 2015). This type of approach proved effective, and resonates with Gen Y and Gen Z. This could be because of the lack of promotional messages that come off as untrustworthy, which gives the impression that there is

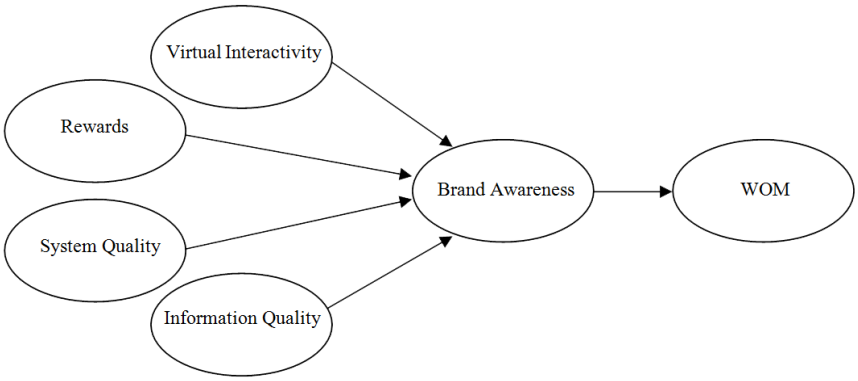

Figure 1. Structural model of brand awareness. Adapted from "Generating brand awareness in online social networks," by Barreda, A. A., Bilgihan, A., Nusair, K., & Okumus, F., 2015, *Computers in Human Behavior, 50,* p. 606.

less of an ulterior motive, and because of the use of humor and irony in a way that resonates with consumers. Andersen (2013), Paicu (2015), and Rognstad (2012) also mention the effectiveness of satire and irony for advertising purposes. Generally, these meta marketing practices are an effective way to get brand awareness, since it generates WOM and other media coverage (Beltrone, 2014). Since consumers are more inclined to talk about meta marketing messages and share them online, the brand's presence in consumers mind would be enforced. This also means meta marketing is an effective way to get exposure for a brand, which, according to the mere exposure effect, is one of the most basic ways influence consumers to like a product or brand (Kardes et al, 2011). However, whereas mere exposure through traditional media and tactics could lead to desensitization due to overexposure, meta marketing is designed to stand out and thus avoid desensitization. However, this concept of meta marketing has not been topic of much scientific research, which means that even though there is practical evidence that this meta marketing works, there is insufficient scientific backing to explain or further exploit it. Given more scientific backing, it could prove to be a valuable source for effective marketing communications.

3.4 Online social networks

The time consumers spend engaged on the internet has grown over the years, and it is the general consensus that social media are important in everyday life, especially for Gen Y and Gen Z. Online social networks (OSNs) have therefore grown as platforms for marketing as well. Whereas WOM is described as the most powerful methods of gaining brand awareness, OSNs are described as the most effective platforms to reach consumers (Haque, Momen, Sultana, & Yasmin, 2013). These platforms have also proven to be useful in generating brand awareness (Haque et al., 2013,; Li & Du, 2011). Findings by Hutter et al. (2013) demonstrate that engagement with a Facebook fanpage has a positive effect on consumers' brand awareness, as well as promoting WOM. This is further advocated by Lilley, Grodzinsky, and Gumbus (2012), who state that Facebook users are thirty percent more likely to share or otherwise engage a brand or advertising message if any of their friends like it or comment on it. Li and Du (2011) also state that Facebook is market leader among all the social media. Facebook is thus one of the most used and most effective OSNs to engage in when aiming to get brand awareness. However, there are other factors that contribute to effective use of OSNs to generate brand awareness.

Returning to figure 1, there are four components , all functions of OSNs, that influence brand awareness. The first component of the model indicates that virtual interactivity improves brand awareness. OSNs enable virtual interactivity, which means consumer and brand can communicate directly and without boundaries such as distance and time (Barreda et al., 2015). Previous research also advocates that when users virtually interact with a brand and other users, they are likely to develop a mental awareness of the brand (Macdonald & Sharp, 2003). This means brands that are quick to respond to consumer inquiries, which consumer increasingly often submit through OSNs, are more likely to be remembered, liked, and talked about. Barreda et al. (2015) also state in their research that out of the four components, virtual interactivity showed the strongest connection to brand awareness.

In addition, Barreda et al. (2015) show reward activities as the second component in their model that proves to be an influence on brand awareness. In this, reward activities are described as the extent to which consumers receive monetary, psychological, or membership privileges from a brand. Being rewarded after engaging a brand puts the consumer in a positive state of mind, which can then be linked to the brand itself, leaving the consumer with a positive, and ideally lasting, impression of the brand. Also, receiving rewards can be seen as a way to bind consumers to the brand, and urge them to share their rewards with those around them, thus creating WOM and brand awareness. In terms of Gen Y and Gen Z, this could perhaps be useful to bind Gen Y and Gen Z consumers to a brand where they would otherwise avoid brand loyalty.

Furthermore, system quality is addressed by Barreda et al. (2015) as a component of OSNs. This refers to the ease of use of the system, the user friendliness, and security of the brand's OSNs. By upholding usability on the brand's OSNs, consumers are more likely to come back to it. The less complicated a system is perceived as, the more effective the system is perceived as (Ruiz-Molina, Gil-Saura, & Šeric, 2013). Additionally, systems that have a high level of security systems are distinguished as part of high quality systems, which also counts for user-friendliness. These factors influence the perception of the quality of the brand and therefore whether consumers will want to engage it. This heuristic type of thinking prevails and is important in determining whether a consumer will choose to dismiss or further engage a brand.

The component of information quality on OSNs is similar to system quality characteristics in terms of how consumer consider a brand. High quality of information in OSNs helps consumers get a better understanding of the brand (Barreda et al., 2015). Heuristically, high quality of information is linked to high quality of product or brand, which means consumers are more likely to give a brand attention, engage it, and share it. Jang, Olfman, Ko, Koh, and Kim (2008) also argue that OSNs that offer reliable, updated, rich, and credible information to consumers have a distinct competitive advantage over their competitors.

Thus, to most successfully utilize OSNs to gain and retain brand awareness, consumers should be able to access brand OSNs to interact with each other and the brand, such as by posting reviews or being able to comment and engage in written conversation. Also, consumers should be able to receive rewards for their online activities, receive and provide updated, rich, and credible information relating to the brand

3.5 Viral and user-generated marketing

Taking into account all of the described information, it is clear that the voice of the consumer is more important than the voice of firms. WOM, in a meta fashion, and using OSNs accumulate to be most effective in reaching consumers and creating brand awareness. There are two specific methods utilizing the aforementioned methods to bring a brand under attention, namely viral marketing and user-generated marketing

3.5.1 Viral marketing

Viral marketing is closely linked to WOM and meta marketing, as it involves using the internet to spread a message. Youtube is one of the most effective platforms for viral marketing, as videos are most sensitive for going viral (Kardes et al., 2011). If consumers think a message is original, creative, shocking, or important, they are inclined to share it, which makes it possible for such messages to travel around the globe quickly. This is why new approaches in marketing, such as the meta, self-ironising method, are an effective approach. Viral advertising is most useful when the product being promoted is not exciting itself, so instead the message has to carry the 'wow factor' (Kirby & Marsden, 2012). However, viral marketing is not

always a sure bet, since much depends on how and if the consumer receives and shares. Therefore, it is argued that brands should not anchor viral marketing in their marketing strategy, but should not exclude it either, since it can produce hefty returns for brand awareness (Ferguson, 2008).

3.5.2 User-generated marketing

Similar to viral marketing, user-generated marketing also relies on the consumer for success. User-generated marketing is the creation of advertising or other marketing content by the customer. This is often done by organizing some sort of promotion of contest for customers to join, often giving them the opportunity to win a reward. As previously discussed in this report, giving customers rewards for their activities that are associated with the brand has a positive effect on their appreciation of the brand. And if the consumers have a positive attitude, they are more likely to stick with and recommend the brand. Furthermore, if consumers decide to participate in user-generated promotion events, they have to think intensively about the brand, which means they form a new depth of interaction with the brand (Kardes et al., 2011). The consumer would process the brand centrally, meaning it is far more likely that they will form a clear attitude concerning the brand. Moreover, the use of user-generated marketing goes beyond creating brand awareness. It is also an effective tool for measuring where a brand is concerning their brand awareness and brand positioning, since consumer responses to the promotional event create an image of how people feel about the brand. However, this type of advertising is not appropriate for every product. It would be unlikely for consumers to be passionate about daily household products, such as fabric softeners. Therefore, user-generated marketing is more appropriate for new or unique brands or products, or brands that have an iconic or distinct brand identity. Thus, whereas viral marketing is useful for simple, unassuming products or brands, user-generated marketing is useful for exciting or new products or brands.

4. CONCLUSION

This report discusses the situation of brand awareness in a society that has moved away from traditional media and has shifted to digital. The importance of brand awareness has not diminished during the shift to digital, with it still being one of the basic necessities for brand and product success. Along with the general digitalization, consumer characteristics have also changed. The currently growing and future generations show less receptiveness to the traditional media, less brand loyalty and harder to approach. It is generally concluded that the social media are the most effective platforms to approach today's and future consumers, however that cannot be done in traditional ways. Not only do consumers show less involvement with traditional media, they are also less influenced and more easily annoyed by traditional marketing communications. This is why communications for the improvement of brand awareness have to be carefully thought through. It can be concluded that there is a large following for WOM being an effective method to spread brand awareness. However, some research shows WOM as a result of brand awareness, and others show WOM as an influence on brand awareness. No studies have been found on interaction in the relationship between the two concepts. Either one way or the other was described. Since there seem to be evenly distributed researches in terms of which direction the WOM-brand awareness relationship, it might be concluded that there is indeed interaction, and the two concepts influence each other. Nevertheless, it still remains as a contradiction and gap in recent research.

Furthermore, there is a research gap in the field or meta marketing and self-ironising. Although this has be successfully applied by firms for advertising purposes, there is no significant scientific research on the topic, and neither is the term used in this report much used. This leaves much room for future research in mapping this concept out and giving it a clear definition and name. Nevertheless, the lack of scientific backing does not take away from the effectiveness of the meta marketing approach to advertising, and it is therefore recommended as a means to generate brand awareness, WOM, and if successful viral properties.

Concerning social media as platforms for communication, it is recommended to focus on these media for generating brand awareness. Using a variety of OSNs could benefit a brand, with Facebook being recommended as one of the OSNs. Viral marketing and user-generated content can often be linked or displayed on OSNs, as well as them being prime examples of WOM. Combined with a user-friendly interface, interaction between consumers and the brand, review and comment options, and rewards for using brand OSNs, this platform is exceptionally useful in generating brand awareness. Viral and user-generated marketing are best communicated through OSNs, and are prime examples of getting WOM and brand awareness spread quickly. However, these are methods that do not come with guaranteed success, which means brands would benefit from carefully planning viral and user-generated messages or events.

Overall, a lot has changed in recent years, and more will change in the years to come. This report, through assessing current research, has painted a picture on how to approach brand awareness nowadays, as well as where to head with future research. At its core is the message that traditional marketing is becoming increasingly outdated, and though it may not be completely disregarded, brands should attempt more new approaches if they want to attain brand awareness and recognition. New challenges will arise with every new development and generation It is therefore imminent to pay attention to Gen Y and Gen Z, since they are the current best predictors for future consumers. Additionally, these consumers are the ones that give indication for what is and is not effective on them. As such, monitoring developments while trying to keep up with current situation is what is the current challenge, and the current goal.

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From Interruption to Interaction: Inspiration as a New Marketing Discipline?

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ABSTRACT
As consumers are increasingly taking control of their own information flow, one central topic for today's marketers is to understand they can no longer rely on pushing messages to consumers, but instead need to pull consumers to interact with brands. The marketing-to-consumer relationship must shift from interruption to interaction, and from being linear to being reciprocal. This paper presents **inspiration** as an efficient new marketing discipline to overcome the challenges currently faced by marketing professionals. It aligns the function of inspiration in marketing to existing concepts, theories and developments, such as the goal systems or cognitive appraisal theory. Rather than conflicting with the theories, inspiration in marketing seems to fall right in center of existing consumer research, filling a gap not only in emotional marketing but also in consumer behavior research.

Keywords
Inspiration, emotions, consumer empowerment, consumer behavior, experience marketing, emotional marketing, inspirational marketing, digital marketing

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?
In Digital Marketing, it's often all about new technologies and methods. I wanted to distance from the technology perspective, and bring the consumer and his or her experiences and feelings back in. Inspiration as a new marketing discipline fills a gap in emotional marketing and consumer behavioural research, enabled through new digital channels.

1. RESEARCH CONTEXT AND SIGNIFICANCE

We are living in the age of empowered consumers, fueled by widespread adoption of digital technologies. Today's consumers can access more information and have more choices; resulting in a shift in the balance between companies and consumers.

As consumers are increasingly taking control of information flows, one central topic for today's marketers is to understand they can no longer rely on pushing messages, but instead need to pull consumers to interact with brands. The marketing-to-consumer relationship must shift from interruption to interaction, and from linearity to reciprocity. A new, but scarcely researched marketing function could possibly well-suit today's empowered and fragmented marketplace: **Inspiration**.

Social psychology has defined inspiration as a dualistic concept which includes a cognitive and motivational component. (Trash & Elliot, 2004)

Following this definition, inspiration includes the "*realization of a new insight or idea*" and "*creates a motivation to act on this inspiration*" (Böttger, 2015, p. 5). Inspiration may be an efficient way to get consumers to interact with a brand or product. This is especially true in time of technological advances and digital media – drastically increasing opportunities to inspire consumers.

Despite the powerfulness of this emotion and its practical relevance as a marketing function, research on inspiration in a marketing context remains scarce. Does inspiration as a marketing function cater to the characteristics and needs of today's fragmented and empowered marketplace? Does inspiration complement existing efforts of consumer research? The benefits of inspiration as a marketing function need to be examined and elaborated, to create a basis for understanding the practical benefits of using inspiration in marketing in today's communication landscape.

2. RESEARCH QUESTION

To find out how marketing functions can employ inspiration functions to shift from interruption to interaction during consumers' decision journeys, the central research question to be investigated is:

CRQ How does the emotional state and function of inspiration fit into today's digital, empowered and fragmented world, with the aim of positively influencing consumer interaction with a brand along the decision journey?

3. METHODS AND SOURCES

This research paper is a critical literature review of current findings on (a) implications of the digital revolution and empowerment on changing customer behaviors and (b) inspiration as a new marketing discipline. The research paper investigates the general usefulness of inspiration in marketing as a means of reaching the new consumer.

To do so, the research paper draws on various literature and research papers. It analyzes, compares and draws conclusion on the usage of inspiration in marketing contexts. Literature was selected to cover topics of digital revolution, empowerment, consumer behavior and decision making including motivation and goal theories, emotional marketing and emotions, and inspiration both as a psychological construct and in a marketing context. While all these topics certainly are topics of their own right and scope, this paper tries to provide a broad overview of the various themes, given that their collective advancements drove the conceptualization of this paper as inspiration as a new marketing function. Rather than going into detail, the sections about digital revolution, empowerment, changing consumer models and the current state of emotional marketing serve to create the backbone of this paper; to examine if inspiration could be a next logical step in the brand-consumer relationship function.

4. THE DIGITAL REVOLUTION AND CONSUMER EMPOWERMENT

The digital revolution refers to

> *"the advancement of technology from analog electronic and machinal devices to the digital technology available today"*. (Techopedia, n.d.)

The digital revolution had a significant impact on the structure of markets and the role of consumers. Possibly, the digital revolution is to consumers what the industrial revolution was to manufactures: Consumers evolved from passive receivers to active participants, situated in a marketplace that is becoming increasingly transparent, fragmented and interactive. (Harrison, Waite & Hunter, n.d.)

4.1 Key Drivers of the Digital Revolution

The digital revolution and its consequences for the set-up of markets and the role of consumers result of various factors, including the Internet, web 2.0 developments and mobile technologies.

Internet

Because of its "*decentralized and anti-hierarchical information architecture*" (Jordan, 1999; as cited in Kucuk, 2009, p. 330), the Internet opened new possibilities for information access and unprecedented communication abilities (Kucuk, 2009). With the Internet, users experience freedom and control (Jordan, 1999; Kucuk & Krishnamurthy, 2007; Wolfinbarger & Gilly, 2001). Conceptualized as superior flexibility (Thompson, 2003), nowadays, consumers can be anywhere at any time.

Web 2.0: Communities and Voice

In today's digital word, consumers easily communicate with others (Kucuk, 2008, 2009). Communities give consumers an influential voice, allowing them to create own content and amplifying reach (Labrecque et al., 2013), thereby creating speech equalization on the Internet (Wu, 1999). Consumers expect to be treated as partners. Listening to consumers is no longer a choice, but a minimum requirement.

Mobile

Mobile has had a significant influence on consumer behavior – from searching to evaluating to ultimately purchasing products and services. Mobile technology puts content and convenience in the hands of consumers. Showrooming is one practice that emerged out of the mobile development, i.e. using the smartphone for searching better deals online. (Claveria, 2014)

4.2 Power and Empowerment

The digital revolution shifted the power from marketers to consumers, resulting in a new type of relationship between the two parties and bringing significant changes for the marketplace.

What is Power?

Power is a key human concern that influences behavior (Schwartz et al., 2012). It is defined as "*the asymmetric ability to control people or valued resources*" (Labrecque et al., 2013, p. 258).

Transferring the concept of power to consumer contexts, power shapes consumers' everyday activities in manifold ways. Differences in power distribution among various stakeholders translate into differences in information distribution, influencing online consumer behavior and consumption options. (Labrecque et al., 2013)

What is Empowerment?

Empowerment refers to the

"*dynamic process of gaining power through action by changing the status quo in current power balances*" (Cattaneo & Chapman 2010; Clegg 1989; Sadan 1997; as cited in Labrecque et al., 2013, p. 258).

Consumer empowerment emerged along four sources of power, i.e. demand- and information-based power (individual) and network- and crowd-based power (network). The four sources coexist with fluid boundaries; enabling consumers to draw power from multiple sources simultaneously. Table 1 summarized the four consumer power sources. (Labrecque et al., 2013)

Source	Description
Demand-based power	Aggregated consumer actions, facilitated by Internet and social media.
Information-based power	Grounded in the abilities to consume and produce content: information access reduces information asymmetry; content generation provides an outlet for self-expression.
Network-based power	Draws from a many-to-many communication model and manifests itself in content dissemination, completion or modification.
Crowd-based power	Aggregates all preceding power basis to align power in the best interests of both individuals and groups.

Table 1: The four sources of consumer power

From Empowering to Inspiring

Generally, empowerment is considered a beneficial development for the consumer role. Nonetheless, there is discrepancy in what empowerment constitutes and how empowerment is seen by companies. Often, empowerment is conceptualized as a firm-centered strategy that serves to increase consumer power. Thus, it implies that one party (the company) has the power and the other party (the consumer) not. It implies giving part of the company's strengths to the consumers' weaknesses, rather than a mutual exchange of value.

However, consumer empowerment is a process that cannot be fully controlled by a firm. Instead of empowering consumers, firms should move beyond empowering and start inspiring, by instilling ideas, insight and motivation to do or feel something. This change in perspective overlaps with the change of consumer roles, as elaborated in the following section. (Goble, 2014; Siano et al., 2011)

4.3 A New Consumer Model

Changing Consumer Roles

A new consumer is emerging, shaped by the convergence of digital, mobile and social trends. The new consumer has employed technology and information to shift the balance of power towards him- or herself, and away from marketers. This new, sophisticated consumer is more demanding and difficult to influence, showing a systematically different behavior concerning purchase processes and expectations of interactions with firms and brands. Brands have lost control of the conversation, and instead rely on consumers actively seeking engagement with the brand. (Bolin, 2013; Labrecque et al., 2013; Venkatachalam, 2014)

Table 2 summarizes the characteristics of the new consumer. (Rosenbaum, 2015; Venkatachalam, 2014)

Characteristic	Description
Smart and highly-informed	The new consumer has access to multiple information sources and crowd-intelligence. The new customer checks sources before deciding.
Mobile	The new consumer uses the smartphone as a digital companion. It drives everything, from getting information to making decisions – wherever and whenever.
Hands-on	The new consumer creates own user experiences and content.
Committed	The new consumer is loyal and committed, but a pre-requisite is reciprocity. It is expected that brands understand needs and deliver truly engaging experiences.
Global	The new consumer role is able to shop across borders, patronizing brands that precisely meet needs.

Table 2: The new consumer characteristics

Changing Consumer Needs

Naturally, with changing consumer roles, consumer needs change, too. Consumer needs can be classified into two types, i.e. hedonic and utilitarian. Another distinction can be drawn between functional and emotional needs. Hedonic resp. emotional goods and services focus on the consumption experience and are associated with the psychological aspects of product ownership. Consumers search for items that transfer symbolic meaning and constitute a source of relationships and emotions. (Consoli, 2009; Siano, 2011)

Along the four Ps of marketing (Kotler & Armstrong, 2012), the new consumer no longer limits him- or herself to a certain place, but expects access to information, products and services across channels, i.e. at every place. A similar development is true for price: the new consumer and firms exchange increased information and pricing becomes fluid, from price to price discovery. Furthermore, the new consumer is not

as receptive to pushed messages anymore, but instead longs for great experiences and expects brands to encourage and enable them to talk about these experiences. Thus, instead of promotion, the new consumer wants a deep and reciprocal conversation. Good enough products are no longer good enough for the new consumer. Consumers look for experiences and solutions: products and services must engage them and fill their specific needs. A fifth P, people, might possibly be added: In today's marketplace, people are at the center. Building strong and engaging relationships is key to both consumers and brands. (Tapscott, 2014; Rick, 2013)

Drawing from the elaborations before, the new consumer needs might be conceptualized along a 4-E model of consumer needs, as presented in Figure 1.

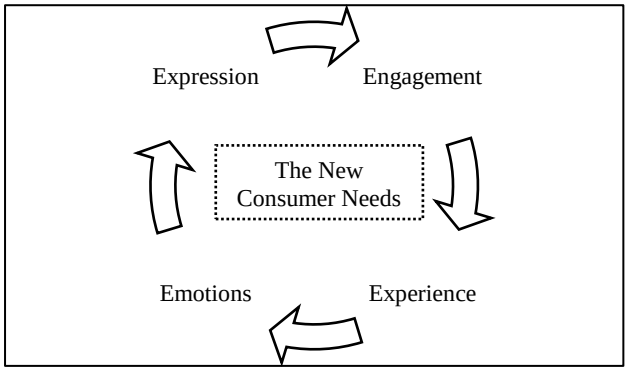

Figure 1: 4-E model of consumer needs

Changing Consumer Behavior

Naturally, the new consumer model including changing needs has implications on consumer behavior. This paper employs the Engel-Kollat-Blackwell model to elaborate changing consumer behavior along consumer decision journeys.

The benefits of consumer empowerment do not come without cost. More choice possibilities and information availability increases task complexity, and tradeoff and decision difficulty. (Broniarczyk & Griffin, 2014)

Need Recognition

As research demonstrated, the search for new ideas is one of the main motives for consumer shopping behavior. Concluding, consumers may be unsure about their needs and preferences; and ultimately seek brand engagement to define their own needs in respect to the market environment. (Arnold & Reynolds, 2003)

Information Search and Evaluation

For consumers, greater choice possibilities and information opportunities exist than ever before. Thanks to omnipresent information sources, consumers can easily find detailed product and service information including reviews and expert opinions. Additionally, consumers have increased possibilities to create and exchange information.

Being confronted with too many information sources, consumers' cognitive burden is intensified. With increased information possibilities, consumers experience uncertainty and are left to sort out discrepancies. To do so, consumers increasingly turn to additional information, thereby leading themselves down a "*slippery slope of search*" (Broniarczyk & Griffin, 2014, p. 614), where

"*further search increases their expectations […] yet diminish[es] satisfaction with the ultimate choice*". (Broniarczyk & Griffin, 2014, p. 614)

Purchase Decision

The vast amount of information and choice comes at the cost of increasing decision difficulty. To illustrate, prior research demonstrated decision difficulty when choosing among a greater number of goods at grocery stores (Iyengar & Lepper, 2000). At the same time, other research demonstrated consumers' preference for larger choice possibilities during initial decision stages, not recognizing the complexity large choice sets engender (Broniarczyk & Griffin, 2014; Iyengar & Lepper, 2000; Kahn & Lehmann, 1991).

Another factor contributing to decision difficulty is preference uncertainty, i.e. when customers are unable to define the offering with the best fit to their preferences (Broniarczyk & Griffin, 2014, Simonson, 2005).

Ultimately, decision difficulty leads to decision avoidance behaviors, such as choosing a default option or prolonging search (Anderson, 2003, Dellaert & Stremersch, 2005, Greenleaf & Lehmann, 1995; Luce, 1998).

Post-Purchase Behavior

As pointed out before,

"*further search increases [consumers'] expectations […] yet diminish[es] satisfaction with the ultimate choice*". (Broniarczyk & Griffin, 2014, p. 614)

Consequently, brands need to guide consumers' in their decision-making to keep the cognitive burden at an optimum. Consumers experiencing dissatisfied feelings after purchase or consumption might not recommend the brand or buy again.

5. THE MARKETING MOVE TOWARDS EMOTIONS

"To get customers, you need to go from the heart to the brain to the wallet." (Gary Vaynerchuk, as cited in Claveria, 2014)

Companies today need to find a way to connect with empowered consumers on an emotional level, as evidenced by changing consumer behaviors and needs. Emotions are central to the actions of consumers, triggering buying responses and mediating effects of product or service satisfaction (Bagozzi et al., 1999; Laros & Steenkamp, 2005). When brands inspire positive emotional reactions, rationality issues thrust into the background (Matyszczyk, 2016), enabling brands to engage consumers in conversations, delivering experiences and building strong relationships.

5.1 Emotions

Emotions can be described as

"*mental states of readiness that arise from cognitive appraisals of events or thoughts […] and may result in specific actions to affirm or cope with the emotion*". (Bagozzi et al., 1999, p. 184)

Emotions arise in response to appraisals, i.e. evaluative judgements about situations and contexts. Stemming from this concept are appraisal theories. The two key appraisals related to emotions are goal relevance and goal congruence (Lazarus, 1991). Thus, for an emotion to be produced, a person must have a personal stake in the context or situation (Bagozzi et al., 1999).

The Cognitive Appraisal Theory

Three stages of research on emotions within marketing contexts have been defined: the categories approach, the dimensions approach and the cognitive appraisals approach. The last of these three approaches, i.e. the cognitive appraisal approach, uses emotions' underlying motivational and evaluative roots to explain their influences on consumption behavior. The cognitive appraisal approach has been valued as

"*an especially relevant approach for understanding the emotional responses of consumers in the marketplace*" (Johnson & Stewart, 2005, p. 3).

Regarding the underlying dimensions of appraisal, two schools of thought emerged: (a) appraisal as an evaluation of a person-environment relationship (Lazarus, 1991) and (b) appraisal as a motivational response to pertain a goal (Averill and More, 1993; Ben-Ze'ev, 1994; Watson & Spence, 2007). Marketing-relevant is the subject of goals as direct drivers of consumer behavior.

Per Watson, the concept of appraisal constitutes of six dimensions, of which three concern goals: direction of goal congruence, degree of goal congruence and goal importance. Of Roseman's five appraisal dimensions (1991), one relates to goals (motive consistency); and of Nyer's four appraisal dimensions (1997) two are goal relevance and goal congruence. Additionally, Bagozzi et al. (1999) noted that

"*goal relevance and goal congruence are crucial for forming emotions*" (as cited in Watson & Spence, 2007, p. 491).

Obviously, goals are central elements of appraisals and emotions. The concept of goals is elaborated in detail in section 6.2 Inspiration, Motivation and Goals; in line with the motivational component of inspiration. But before, a closer look is taken at the current state of emotional marketing.

5.2 Emotional Marketing

Per Consoli (2009), emotions must be added to enhance products and services. Consumers search for items that transfer symbolic meaning and constitute a source of relationships and emotions (Consoli, 2009). An "*emotional channel of trust and mutual collaboration*" (Consoli, 2009, p. 996) is supposed to be established; and "*brands [must] become supplying centers of emotional energy*", as Consoli (2009, p. 1000) put it. With various marketing efforts companies are trying to arouse emotions for tying consumers to brands.

Relational Marketing

Relational marketing focuses on the relationship between the consumer and the brand. The emotions the product or service communicates are examined; to understand how brands can build relationships with customers via products and services. (Consoli, 2009)

Experiential Marketing

Experiential marketing is based on the emotional involvement of consumers through the creation of experiences. The best experiences are so engaging that consumers cannot help but pay attention. It differentiates from relational marketing in so far as that it adds another level to the customer offering, i.e. the experience. (Gilmore & Pine, 2002)

Interactive Marketing

Interactivity can be described as the possibility for consumers and organizations to communicate directly with one another. Interactive marketing complements both relational and experiential marketing, by enabling reciprocal communication between brands and consumers. (Blattberg & Deighton, 1991; Deighton & Kornfeld 2009)

5.3 Measuring Emotional Marketing: From Customer Satisfaction to Customer Inspiration?

80 percent of the organizations measure emotional marketing efforts by examining customer satisfaction as the primary metric (Dixon et al., 2010). While some studies demonstrate robust correlations between customer satisfaction and customer behavioral responses (Athanassopoulos et al., 2001; Bigne et al., 2008; Szymanski and Henard, 2001), others proved satisfaction to explain customer behavior to a small extent only (Kumar et al., 2013). As Böttger (2015) demonstrated, customers can be satisfied with an experience, yet not find it inspiring. The researcher also demonstrated that customer inspiration is conceptually different from customer satisfaction, with customer inspiration having direct effects on customer behavior, "*beyond those of customer satisfaction*" (Böttger, 2015, p. 46). When trying to explain customer spending, a model that included inspiration predicted customer behavior significantly better (Böttger, 2015). Furthermore, Böttger (2015) demonstrated customer satisfaction to be a consequence of customer inspiration, indicating that inspiration resides on a higher level to satisfaction.

For the afore mentioned reasons, customer inspiration might present a "*useful complement to traditional marketing metrics*" (Böttger, 2015 p. 22) that explains customer behavior more precisely.

6. INSPIRATION AS A NEW MARKETING DISCIPLINE

Aside from constituting a complementary marketing metric, customer inspiration might itself constitute a new marketing discipline. In a marketing context, prior research named searching for ideas as a shopping motive (Arnold & Reynolds, 2003); and transcendent customer experiences as leading to strengthened brand engagement and loyalty (Böttger, 2015; Schouten et al., 2007).

6.1 Inspiration

Social psychology has defined inspiration as a dualistic concept, including a cognitive (inspired by) and a motivational (inspired to) component: Per that definition, inspiration is based on a new insight or idea, and creates a motivation to act towards this new insight or idea. The motivational component characterizes inspiration as an appetitive state leading to a strong motivation. (Hart, 1998; Thrash & Elliot 2003, 2004)

The construct of inspiration is set up by three distinct characteristics, i.e. evocation, transcendence and motivation. Evocation refers to the process of being illuminated by an external or internal trigger; transcendence concerns the awareness of a new possibility; and motivation expresses the desire to act. The three characteristics attribute to the two component processes of inspiration as follows (Figure 2, based on Trash & Elliot, 2003, 2004):

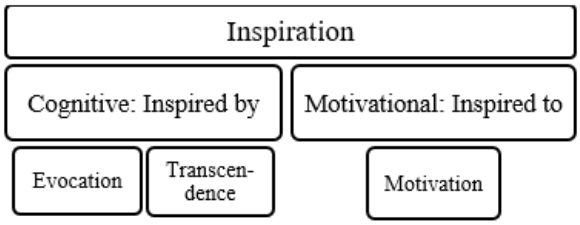

Figure 2:The construct of inspiration

Dahl and Stengel (1978) found inspiration to be characterized by positivity, activation and attraction. In Hart's studies (1998), participants described inspiration with feelings of connection, openness, clarity and energy (Thrash & Elliot, 2003). Furthermore, cognition, motivation and affects are related to inspiration (Hoffmann, 1986). Noteworthy, inspiration is more complex than emotional constructs, with emotions rather being a consequence of inspiration than a characteristic. The intensity of inspiration varies along a continuum of very low and very high, as evidenced by Thrash and Elliot (2003, 2004).

Inspiration has been demonstrated to increase general well-being; by heightening perceived competence, self-esteem, optimism, self-determination, absorption in one's task and positive affect (Thrash & Elliot 2003, 2004). In contrast, its absence has been linked to boredom, emptiness and depression (Hart, 1998). Furthermore, Maslow's concept of peak experience (1968) implies a relation between well-being and inspiration.

6.2 Inspiration, Motivation and Goals

Thrash and Elliot demonstrated that inspiration implies motivation and direction of behavior (Thrash & Elliot, 2003), serving a unique approach function:

"*it motivates transmission of the perceived intrinsic value exemplified in the evocative object*", (Thrash et al., 2014, p. 497)

Kruglanski et al.'s goal system theory (2002) focuses on cognitive and motivational aspects of human behavior, just as the construct of inspiration. Per Kruglanski et al. motivation is explained by distinct goal systems. Consequently, considering inspiration via goal theory perspectives is logical, especially in consumer behavior contexts, as Bagozzi and Dholakia demonstrated (1999). Amongst other, goal system theory has been applied in the consumer behavioral fields variety seeking (Etkin & Ratner, 2012) and impulsive buying (Ramanthan & Menon, 2006). Goals are defined as

"*representations of a future object than an individual is committed to approach*" (Elliot & Niesta, 2009, as cited in Böttger, 2015, p. 67).

Per Böttger (2015), applying goal system theory within an inspiration context of consumer behavior is based upon two propositions. First, the reception of a new idea or insight is based on novelty as a key to inspiration; with a new idea leading to changes in consumers' goal systems and thereby evoking inspiration. Second, the intensity of the inspiration is proportional to the strength of new goal-means association.

Goal systems are presented along a hierarchical structure, with abstract goals at the top and concrete goals at the bottom. (Böttger, 2015). In a more consumer-oriented context, shopping goal theory proposes that consumers move from abstract to concrete mindsets, as part of their decision journey (Böttger, 2015; Lee & Ariely, 2006). This theory is in line with Gollwitzer's mindset theory of action phase model (1990), positing that humans move from abstract deliberation to concrete thinking, and in line with Trope and Liberman's construal level theory (2003), positing that further away actions are perceived abstractly and closer actions are perceived concretely. As demonstrated by Bayuk et al. (2010), new insights did not influence participants with a concrete mindset. Böttger (2015) confirmed these findings: Exposure to inspiration initiatives was found to be less inspiring in a concrete mindset than in an abstract mindset.

6.3 Inspiration in Marketing

In marketing, consumers are presented with different marketing stimuli to create awareness and, ultimately, motivation to buy (Böttger, 2015). Without doubt, inspiring consumers with new ideas and product and service insights is one of the key functions of marketing (Böttger, 2015), especially in today's emotion-laden marketplace. Inspiration may arise as part of the customer experience, as evidenced by anecdotal evidence (Brakus et al., 2009). Per Rudolph, Nagengast and Weber (2014), customer inspiration is of key importance to differentiate brands. Nonetheless, there is surprisingly little research on inspiration as a marketing discipline (Böttger, 2015).

What is required to be a step ahead of competing brands are strong links with consumers, based on total experiences. As research demonstrated, consumers can find experiences satisfactory, but not inspiring (Böttger, 2015). With inspiration explaining a higher proportion of possible consumer motivation and goal-oriented behavior than satisfaction only (Böttger, 2015), successful brands need to deliver total experiences, including inspiration. The inspiration gap of current emotional marketing efforts needs to be filled, to connect deeply with consumers (Urbick, 2012).

Resulting of the digital revolution, increasing customer touchpoints and new technologies create more opportunities to inspire consumers along the entire decision journey, catering to the establishment of inspiration as a new marketing function. (Dahlströhm & Edelmann, 2013; Böttger, 2015)

As research demonstrated, the search for new ideas is one of the main motives for shopping behavior (Arnold & Reynolds, 2003). Thus, by inspiring consumers with abstract mindsets, brands can increase awareness, engagement and, ultimately, sales (Rudolph et al. 2013).

Customer Inspiration and Antecedents

Inspirational customers act as brand advocates, community members and brand owners (Lovemarks Campus, 2011).

As stated before, the search for new ideas and inspiration is a main shopping motive for consumers (Arnold & Reynolds, 2003). Customers may not only be open to inspiration, but "*actively seek inspiration*" (Böttger, 2015, p. 28).

Böttger (2015) conceptualized customer inspiration as a state evoked by marketing stimuli that incorporates the realization of new or enhanced consumption-related insights and motivates to purchase a product or service. This conceptualization is in line with the twofold view of inspiration by Trash and Elliot (2003, 2004): Inspired by and inspired to. It identifies marketing stimuli as source of inspiration, consumers as recipients, insights and ideas as object and motivation (e.g. to purchase) as outcome (Böttger, 2015).

Inspiration arises as part of the customer experience. Research by Böttger (2015) indicated that customer inspiration results of transcendent customer experiences and hedonic shopping motives. Prior research conceptualized these experiences as combinations of flow (Csikszentmihalyi 1991) and peak experience (Maslow, 1964; Schouten et al., 2007), conceptually very similar to the construct of inspiration. Both

presenting consumers with a new goal and a new means was demonstrated to add to inspiration (Böttger, 2015).

Customer Behavior: Consequences of Customer Inspiration

Results of a study by Böttger (2015) demonstrated a positive influence of customer inspiration on overall positive affect and overall customer satisfaction.

Given inspiration's transcendence characteristic, inspiration develops out of a stimulus not directly controlled. In a marketing context, consumers attribute inspiration not only to the object (such as an interactive advertisement), but also to the overall brand, firm or environment. Böttger (2015) proved this spill-over effect by measuring consumers' intention to recommend a brand, after an inspirational experience with a product only. The researcher demonstrated that customers' intention to recommend is consequence of customer inspiration.

In line with the motivational component of inspiration, customer inspiration increases spending, by strengthening the desire to buy a product or service (Böttger, 2015).

Another consequence of customer inspiration is impulsive buying (Beatty & Ferrel, 1998; Böttger, 2015). Böttger's findings revealed a negative correlation between impulse buying and all other consequences, indicating a competitive mediation through impulse buying: While consumers feel more satisfied through inspiration, the increased tendency to impulse buying diminishes positive affect, satisfaction and intention to recommend.

Effect of inspiration in marketing differ per a two-fold distinction of the stimuli recipients, namely experts and non-experts. While experts were more inspired by new means than new goals, the exact opposite is true for non-experts (Böttger, 2015).

Furthermore, inspiration effects can be distinguished by abstract versus concrete mindsets. While participants with a concrete mindset felt less inspired by new means than participants with an abstract mindset, participants with a concrete mindset felt just as inspired as participants with an abstract mindset by new goals. Following these observations, consumers might be less open to inspiration initiatives through new means as they move further along the decision journey and towards a concrete mindset. Thus, inspiration initiatives focusing on new means should be implemented at early consumer touchpoints along the decision journey. In contrast, consumers remain open to inspiration initiatives focusing on new goals along their entire decision journey. (Böttger, 2015)

6.4 The Value of the Inspired Customer

Inspired customers act as brand owners, brand advocates and deeply immersed community members. They articulate what they feel and think about a brand, and describe their own experiences through emotional story-telling. Rather than keeping their experiences to themselves, they encourage others to experience the same great relationship with the brand that they have, thereby actively and powerfully promoting a brand. (Lovemarks Campus, 2011)

6.5 Practical Recommendations

With inspiration as a marketing function, efforts in emotional marketing can be brought to a new level. The brand, rather than being just an image or promise, can become an actual relationship between a company and its customers.

Böttger (2015) proposed two ways to inspire consumers. First, consumers can be inspired via a new means to achieve an existing goal, such as an innovative product that presents a new and better way to achieve existing goals. Second, consumers can be inspired via a new goal, i.e. realizing that a given means serves "*a new goal that they did not associate with the means before*" (Böttger, 2015, p. 84). To illustrate, sales of a given product might be increased by communicating value-added aspects contributing to additional goals the product serves. Importantly, when choosing between both propositions, knowledge level of consumers and their respective position within their decision journey must be considered. (Böttger, 2015)

Co-creation presents another promising marketing function to increase customer inspiration. When co-developing products or services, companies solicit consumers' ideas as possible growth strategies. This is beneficial for both parties: While the company receives valuable insight, consumers feel as a valued partner that has the power to change. This new possibility might possibly inspire consumers. (Füller et al., 2009; Innovation-Point, n.d.)

Böttger (2015) developed a six-step, iterative process as a framework for inspiration in marketing, namely the customer inspiration circle (Figure 3). First, to build a basis for future inspiration efforts, the status must be examined. That can be done with a 10-item survey created by Böttger (2015). Second, the target audience must be defined, given that different audiences react differently to inspiration stimuli. Third, the right inspiration content must be chosen: whether a new goal or a new idea or insight shall be instilled. Fourth, the inspiration initiatives must be set-up. Fifth, digital media possibilities need to be examined. As pointed out before, digital media offers interactive touchpoints for reaching consumers, and therefore, is a key ingredient of marketing inspiration. Finally, impacts of inspirational stimuli must be measured, to build a basis for future campaigns.

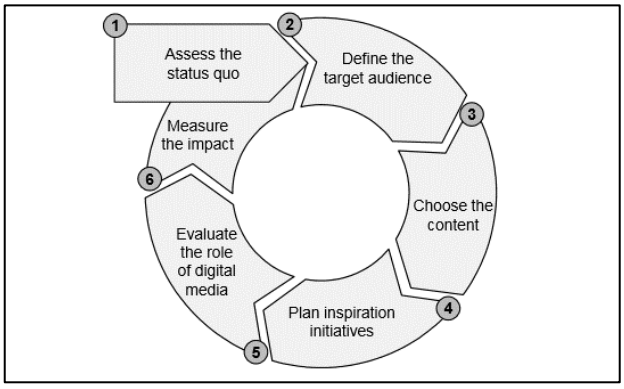

Figure 3: Customer inspiration circle (Böttger, 2015*)*

7. CONCLUSION

This paper posited the general effectiveness of inspirational initiatives in marketing contexts, based on a background exploration of why inspiration matches today's market developments and circumstances.

First, looping back to this paper's initial critique on the word and concept of empowerment, empowerment is firm-centered and -driven, thereby degrading consumers' value. It is proposed that firms should move beyond empowering and start inspiring, by instilling ideas, insight and motivation to do or feel

something. Companies should no longer control, influence or persuade consumers by pushing messages to them, but rather inspiring them by re-purposing knowledge, skills and resources in the customers' hands, thereby pulling them closer. This change in perspective overlaps with the change of consumer roles and behaviors. The marketer is becoming an interloper, more talked-about than talking; and marketing may be less a matter of domination and control, and more a matter of fitting in. By inspiring consumers with knowledge, information and engaging content that speak to them on their terms and gives them value and by connecting with consumers when and where they want it, brands strive and differentiate.

Second, after examining inspiration as a general construct, inspiration as a marketing function could well-suit the market development of today's time. The new committed, smart, mobile and hands-on consumer has changed needs, with a strong focus on hedonic resp. emotional attributes. The new consumer searches for expression, engagement, experiences and emotions – whenever and wherever he or she prefers. Inspiration could start right at this point, uplifting customer engagement and experience by deep and insightful stimuli and increasing outlets for expressions. The new consumer sometimes finds it hard to recognize a specific need, as indicated by the trend of idea shopping. Again, inspiration could start right here, by inspiring consumers to a specific goal and deeply instilling a need. During information search and evaluation, today's consumer is confronted with omnipresent information sources, possibly resulting in overload feelings. Employing inspiration might cater to both aspects: On the one hand, brands can increase differentiation; on the other hand, brands can create openness, clarity and energy in consumers via inspiration initiatives. Creating goal and motivation clarity could also positive influence (decrease) impulse buying behavior. Noteworthy, decreasing impulsive buying leads to heightened satisfaction among consumers and a stronger commitment to the brand while simultaneously reducing sales. Thus, this an issue of controversial perspectives, where marketing and management need to decide whether they want to cater customers or the company first. Next, during the purchase decision phase, today's new consumer often experiences uncertainty preference and decision difficulty, ultimately leading to decision avoidance. Again, as a demonstrated strengthener of self-determination, inspiration initiatives could foster the clarity of goals and motivations. In the last stage, the post-purchase behavior, the new consumer often struggles with diminished satisfaction because of too long search phases and thereof resulting too high expectations. Inspiration has been proved to positively influence satisfaction and positive affect; and therefore, could again serve in enhancing the overall consumer experience.

Third, based on prior research, this paper posited that goals are necessary conditions for the creation of emotions. Thus, while current emotional marketing efforts attempt at creating emotions, they may neglect the motivational component. Inspiration could add at this point, by linking marketing messages to inspirational, and thus, emotional outcomes.

Overall, this paper presented inspiration as an efficient new marketing discipline to overcome the challenges marketing professionals face. Given the scarce research on this topic, opposing views could not be detected within this scope of this review. Nonetheless, this paper served the critical purpose of aligning the function of inspiration in marketing to existing concepts, theories and developments, such as the goal systems or cognitive appraisal theory. Rather than conflicting with the theories, inspiration in marketing seems to fall right in center of existing consumer research, filling a gap not only in emotional marketing but also in consumer behavior research.

Gaps and future research possibilities

Based on the relations drawn between market developments, current marketing challenges and inspiration as a general construct, inspiration seems to be a fruitful function for future marketing efforts. However, research into inspiration in a marketing context is scarce; and only very few studies could be consulted within this paper. Further research is needed to prove the effectiveness of inspiration initiatives in marketing, across industries and contexts. For instance, studies employing various inspiration marketing stimuli should be conducted, to draw conclusions about inspiration effectiveness.

Next to inspiration stimuli, the media used to convey the stimuli needs to be researched. Is there a medium that works best for inspiration, such as social media? Or is it rather the combination of digital, interactive technologies and traditional brick-and-mortar that inspires customers the most?

How important is individualization, and then big data, for inspirational marketing? This paper did not include big data, but given the trend of increasingly individualized marketing messages, inspirations' effectiveness could possibly be heightened by employing it along with individualized marketing.

The definition of customer inspiration presented in this paper (Böttger, 2015) sets the direction of inspiration to flow from the brand to the consumer. Alternatively, the exact opposite flow could be investigated, too – for instance through co-creation.

Implications on the Marketing Field

This research paper investigated the general usefulness and state of inspiration in marketing along the decision journey of the new, empowered consumer. By joining recent developments of the digital revolution, including empowerment and changing consumer roles and needs, it positioned inspirational marketing as a new function of marketing. Inspirational marketing can possibly enhance and complement current efforts of emotional marketing, lifting efforts one level up. As this paper demonstrated, for emotions to be created, consumers need goals and motivations. With inspiration's strong motivational component, it might intensify links between marketing stimuli, emotional reactions and ultimate satisfaction.

An important question to ask is how marketing managers can make sure they move from push marketing that interrupts to pull marketing that inspires and creates interaction; and as stated before, research needs to put effort into investigating and developing further frameworks and best practices. As long as research remains scarce, inspiration in marketing will remain a function of trial-and-error; and that will pose hard challenges to marketing managers justifying inspiration initiatives.

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What are the opportunities of implementing marketing strategies on social media to reach consumers and to increase brand awareness?

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ABSTRACT
Today, social media marketing is an emerging field of interest among marketers and brands. In an increasingly competitive environment, where consumers hold the reins marketers and brands need to find the right strategy to embed marketing content that consumer actually want to receive. Therefore, several strategies exist embedding marketing content in a quite natural, non-commercial way. Yet little is known on how these strategies actually work for marketers and brand and besides hoe effective they are. Therefore the present paper aims to evaluate upon three marketing strategies, including marketer-generated content, electronic word of mouth and influencer marketing using scientific literature currently available.

The paper results in the conclusion that all three strategies can have positive impact on consumers and brand awareness when focus lies on creating engagement. A combination of all three strategies may be the best choice for todays brand and marketers to stay competitive after all and to create relationships with potential and/or current consumers.

Keywords
Social Media Marketing, Brand Awareness, Marketing Strategies, MGC, eWoM, Influencer Marketing

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: As a student of the master Communication Science with a specialization in Marketing, the focus on lately implemented marketing strategies for social media purposes as a research area was self-evident. Besides, creating common knowledge for the marketing professional on social media marketing needs to be seen as a research priority as this area is still emerging.

1. INTRODUCTION

With the rise of the so-called Web 2.0, Social Networking Sites (SNS) rapidly began to emerge into one of the most popular communication channel the world has ever seen so far (Love, 2014). One of the major changes that came along with was the change in power relations between consumer and firms (Kim & Johnson, 2015; Halliday, 2016). Kim & Johnson (2015) stated that, consumer are no longer being simply passively exposed by content and also no longer just passively consume products. Social media are the major reason for this change in power relations because they actively engage user to collect information and to share impressions (Kim & Johnson, 2015). This is called 'user-generated-content (UGC) which primarily refers to all kinds of content created, circulated and consumed by users online (Kim & Johnson). Content can be created and consumed in a huge diversity of social media applications available, ranging from Blogs, over Forums/Bulletin Boards to Social Networks such as Facebook, Youtube, and Instagram. With the rise and expand of social media applications and the growing engagement of online users, the advertising industry had to adjust its strategies to continue reaching consumers (Wood, 2016). According to Love (2014) this adaption took place quite quickly, with companies integrating advertising methods into social media sites like Facebook and Twitter. Nowadays, almost every company owns a social media sector and is representative on several platforms. This is today, in fact, even necessary for companies to stay competitive and to be able to take advantage of the enormous possibilities those platforms offer (Love, 2014). Research studies are available showing that a huge percentage of companies experienced an increase in sale after being active on social media for at least three years (Love, 2014). This goes in line with the findings that social media has a certain influencing power, with 74% of consumer stating that they rely on it to influence their purchasing decisions (Wood, 2016). However, research dealing with the diverse opportunities to embed marketing content on social media applications is current still lacking. Even more important, proper answers to the question in how far these different strategies are actually effective to reach consumer and to increase brand awareness are hard to find. Therefore the current paper will focus on marketing strategies based on content creation by managing accounts on social media: marketer generated content, electronic word of mouth, and influencer marketing.

2. METHODOLOGY

The present paper makes use of a critical literature review in order to identify the opportunities and drawbacks of several social media strategies to reach customer and to increase brand awareness. Next to scientific articles and books, also relevant academic literature is used. All literature was retrieved via the academic search engine Google Scholar.

3. SOCIAL MEDIA MARKETING

3.1 Development of Marketing

To understand the importance of social media marketing in today's society a quick overview of the history of marketing will be given.

According to literature, the traditional marketing concept, as we know it emerged back in times of classic economics. Back then, markets were founded to exchange goods for money (Halliday, 2016). However, in the late 1940s companies began to switch from a simple selling orientation to an approach that focused on discovering consumers needs and wants in order to increase profits and simultaneously enhance customer retention. (Kardes, Cline & Cronley, 2011; Halliday, 2016). As stated by Yudelson (1999) this approach is defined as relationship Marketing. Based on this new development, the Marketing Mix was born in the 1960s when Neil Borden identified 12 marketing elements that can be controlled by the company. As reported by Constantinides (2006), the elements where then reduced by Jerome McCarthy in 1964 to only four factors, providing a simple framework consisting of Product, Price, Promotion and Place. This framework was fast adapted as an adequate toolkit for marketing strategies and remains popular among marketers.

With the rise of the world wide web from 1993 onwards, companies began to jump on the bandwagon and offered consumers an enhanced selection of products and information easily accessible online. Because the access to the online environment became quickly affordable for most people, the consumer behavior began to change: Consumer became more individualistic, involved and independent (Halliday, 2016). However, during these times, online marketing was still based on one-way communication and the online user was a silent observer.

With the fast development of the Internet, the term Web 2.0 was quickly introduced, somewhere around 2005, however, with no general accepted definition (Constantinides & Fountain, 2008). In general, it sums up the changing nature of the Internet that came along with the rise of Social Media. Mentioned by Constantinides & Fountain (2008), the web 2.0 is interactive, based on participation of the user and encourages information sharing. Social media applications that build the foundation of the Web 2.0 are diverse, ranging from blogs, online communities, forums and content aggregators to social networks such as Facebook, Youtube, and Twitter (Constantinides & Fountain, 2008). In agreement, Halliday (2016) defines this development as a "peer-to-peer interaction culture". In a marketing perspective, the development of the Web 2.0 is an important milestone because it changed the power relations between companies and customers (Kim & Johnson, 2015). Consumers share their opinions online about products and brands (reviews, comments etc.), accessible for everyone and therefore not only influencing other users/consumers but also brands themselves (Mangold & Faulds, 2009).

To sum up, the change of power relations results in consumers who are no longer simply passively consuming but rather actively generating and distributing (Kim & Johnson, 2015).In consequence of this change, marketers had to adapt their marketing strategies as well. Fortunately, social media applications offer a huge amount of opportunities to embed advertisements as well as to interact with customers and to actively involve users and potential customers. Therefore, advertising methods were quickly integrated into social media sites like Facebook, Twitter and nowadays Instagram as well (Love, 2014).

3.2 Social Media Marketing

Social Media Marketing refers to advertising methods embedded in social media sites (Love 2014; Wood, 2016). When social media platforms became more and more popular, with a steady growing number of users (currently around two billion) the advertising industry had to adapt to this phenomenon to be able to continue reaching consumers (Wood, 2016). According to Love (2014), does almost every company own a social media sector nowadays, managing accounts on different social network platforms (like Facebook, as well as Twitter and Instagram) to be able to take advantage of the social

media trend. In 2013, 86% of marketers stated that they see social media channels as an important part of their marketing activities (Stelzner, 2013). Wood (2016) states that social media are especially attractive among the generation of 18 to 29 years olds, the so-called millenials, with around 90% of them being active on social media. Besides, Pate and Adams (2013) mention that the generation of the millenials is one of the groups with the most purchasing power and are therefore an important target group for marketers, reached via social media.

Social Media Marketing differs from traditional marketing in several ways. First of all, traditional marketing happened through one-way messages from company to consumer. Social Media Marketing is rather reciprocal, enabling consumers to interact with companies in various ways like commenting on posts or sharing them. Second, traditional marketing was based on advertising which means getting people to stop what they are doing and instead paying attention to the message, a one-way interruption. Today, online marketing is not about advertising and anymore. It tries to create content, to educate people and to enable communication with and within consumers. Third, traditional advertising is non- targeted, spread via newspapers, magazines, radio and for example television. That made it simply not possible to target specific buyers with individualized content. Therefore, advertising via traditional media happens to be wide and broad, trying to reach the general public. In contrast to that, social media marketing allows brands and companies to reach specific audiences and to promote niche products (Scott, 2015) Besides, the use of mobile devices is currently growing as well making social media applications available 24/7 with no geographic dependency.

In general, more and more marketing budget is spend on social network advertising. As reported by eMarketer (2015) was the total budget spend worldwide on social network ads 11.36$ in 2013 and hit the 23$ billion mark in 2015 already, with a growth percentage of 33.5%. Future prognoses see a further increase that will surpass the budget spend on traditional advertising somewhere around 2017 already (eMarketer, 2016). Embedding marketing content on social media can take place via several ways and can be used to achieve several marketing objectives. Marketing objectives that can be reached using social media are for example branding, research, sales promotion and customer relationship management (Ashley & Tuten, 2015). Social media branding strategies include for example paid display advertising, participating in a social network as a brand persona (MGC = Marketer generated content, brand managing own accounts on social media), developing branded customer cooperation and content marketing.

The present paper will refer to marketing strategies as the ones that focus on creating content through managing accounts on social media. This includes marketer-generated content, which is described by Ashley & Tuten (2015) as a brand managing own accounts on social media and influencer marketing, which refers to the development of branded customer cooperation (Ashley & Tuten, 2015). Besides, the influence of eWoM on brand awareness will be discussed, referring to content created by consumers without cooperating with the brand itself.

Focus will lie on elaborating in how far these marketing strategies are able to reach consumers and to enhance brand awareness. Brand awareness refers to the simple act of consumer having a brand in mind when considering a purchase. This basically means that consumer needs to be aware of the actual existence of a brand before putting in into a consideration that when deciding to buy something (Macdonald & Sharp, 2003). Social media marketing should have positive impact on brand awareness as exposure to a brand can be encouraged in several ways.

3.3 Marketer-generated content

Marketer-generated content (MGC) refers to marketers and brands managing own accounts on social media. They are present as brand persona and create and share own content. This is often done with the purpose of establishing a relationship on a B2C level, which then ideally leads to brand awareness and finally results in increased sales (Odhiambo, 2012). There are different ways brands can make use of social media as a marketing channel to reach their target audience, which allows different ways of customer engagement behavior. Abadin (2016) differentiated three different ways of generating advertorial content that differ in the degree of triggering customer engagement. According to Carah & Shaul (2016) is the creation of engagement a standard marketing practice and crucial for brand to make their content available in a wider flow of content. This is because every interaction with a post of a brand generates data. The three options a brand has to create engagement mentioned by Abadin (2016) are as followed:

First, the most basic and probably most common way of generating marketing content is the simple act of a brand broadcasting content on their feeds so that followers will receive it. Here, the user is passively consuming the content created by the brand and the post itself doesn't invite to any further action. Abadin (2016) refers here to advertorial dissemination. Brands that are successful with their social media presence often mix merchandise pictures and content with behind-the-scenes information from photo shoots and commercial films when making use of this strategy (Abadin, 2016).

Second, advertorial aggregation invites the user to directly respond to a post. Examples are so-called giveaways or contests in which user are asked to comment on a post, answer a specific question or tag a friend etc. to get the chance to receive something in return. This usually refers to the chance of winning a price, including products from the brand itself.

Third, advertorial instigation refers to the circulation of information. Consumers are asked to repost/regram a post from a brand or to produce an own post in the likeness of the original while referring to the brand. Frequent communication by a brand or a marketer can develop and maintain trust and relationship between business and customer (Gummesson, 2002).

However, brands need to be extremely cautious about content they share on social media. Careful planning and implementation is crucial according to Verma (2013). Any slight mistake can lead to huge consequences in an online environment like negative feedback going viral and therefore might harm the brand image and profitability (Verma, 2013). With regard to brand awareness, marketer generated content can only be effective when it circulates and starts to reach consumer outside of a brands network. The strategies to increase engagement mentioned above can therefore help to spread the word and finally can lead to increased brand awareness among users.

3.4 Organic electronic word of mouth

Conforming to Kim & Johnson (2015) does Electronic word of mouth indicate statements about a particular product, service or brand published in the online context by a potential, actual or former customer (for example product reviews). This is in line with the definition of WoM from Kardes et. al., (2011) saying that word of mouth is the act of one consumer talking to another consumer about a brand whether face-to-face or indirectly via

for example the internet. Electronic word of mouth is therefore engagement created by the consumers themselves (Carah & Shaul, 2016). Electronic word of mouth is extremely powerful since it is perceived as credible and authentic.

Today, this strategy is successful because of its credible and authentic way having people you trust share honest opinions about certain products Social Media. EWoM gets interesting for brands and marketers when user share branded content they received from a brand in their network or when they share own content including a brand mention. In fact, brands and marketers cannot control organic eWoM created by users. This makes it difficult to monitor what is happening in the online environment with regard to your brand image (Palmer & Lewis, 2009). Therefore, it is on the one hand extremely desirable when positive word of mouth is generated, but on the other hand extremely unwanted when user share their anger, disappointment or general negative emotions about a product, brand or service online. Negative eWoM can have huge impact because of its ability to spread further and faster than ever before (Kardes et. al., 2011). Therefore, brands and marketers should regularly track comments posted by users and make readjustments wherever necessary (Odhiambo, 2012). Besides, several monitoring tools on social media exists helping companies to track activities and keep positive online reputation (Odhiambo, 2012). However, this does not include the ability to completely stop negative eWoM once it has gone viral.

Speaking of brand awareness, positive eWoM is desired by every brand and marketer. It is an effective way to increase the scope of people being aware of a brand as users share content about the brand with others users, which than share it again with other users and so on.

Another specific form of eWoM is Influencer Marketing, which will be elaborated in the following chapter.

3.5 Influencer Marketing

The term *influencers* originally evolved somewhere around 2005 out of popular bloggers, who were seen as a form of micro celebrities sharing their personal; everyday lives through textual and visual narrations. This also included paid advertorials for products and services from several brands that were included in posts published on the blog (Abidin, 2016). When Social Media were quickly growing and gaining more and more interest, also Influencer took over using them, including Facebook and Youtube and Instagram amongst others.

Even though, the phenomenon of influencer marketing already evolved somewhere around the early 21st century it is still seen as a quite new phenomenon, with more and more brands discovering the potential impact lately (De Veirman, Cauberghe, & Hudders, 2016). Influencer marketing is a form of eWoM, including the share of branded content in cooperation with the brand itself. The most common form of influencer marketing is content promotion. According to Wood (2016) lies the core idea of influencer marketing in is focusing on specific individuals rather than on a target market as a whole. Recently, Keller & Fay (2016) defined influencers as "everyday consumers who are substantially more likely than the average to seek out information and to share ideas, information, and recommendations with other peoples". Based on this assumption, influencers refer to "normal" people on Social Media who built up a huge network of followers. Therefore, this people can be seen as "trusted tastemakers", or in other words people use them as a reliable source of information. That means that they function as a sort of opinion leader among their own network. This differs to the definition by Kardes et al. (2011) who define opinion leaders as those individuals that influence people of lesser standing like famous actors', musicians or politicians. However, since influencers are engaged by brands to spread the word about a product or brand among their personal network this comparison is made. Even though celebrities can be effective influencer as well, Keller & Fay (2016) pointed out that every-day people can have greater relationships with the people they 'influence'. Besides, every-day people are consumer themselves which make their advertorial posts more valid.

When a brand wants to integrate influencers in their marketing strategy, it is necessary that their target audience is congruent with the target audience of the potential influencer (Veirman et. al., 2016). Marketers or brands need to identify individuals that can have influence on potential buyer and then embed marketing activities around these influencers (Wood, 2016). To identify whether an individual actually can be seen as an influencer and whether fits to a certain brand can be difficult. Referring to Veirman et. al. (2016) is the number of followers an individual person has on social media applications an indicator for the real audience size. This means that a high number of follower lead to high diffusion of information among the followers. Nonetheless, does the number of followers not automatically predict the actual influence as a current research on Twitter revealed (Veirman et. al., 2016). After all, it can help to indicate the number of audience that at least passively will receive the content.

A so-called influencer agency can help find a suitable influencer and help arranging a partnership. This partnership is usually clarified in a contract, regulating the payment and possible restrictions or rules. In agreement, Hardley (2015) mentions that influencer have to state full disclosure when posting an image containing commercial content. This usually takes place by either mentioning the brand in the post or trough a #hashtag. The creative control of how to implement the brand and/or product in a post is most often in the hand of the account holder/influencer. However, this can vary per brand and is defined in a contract.

The most important issue when making use of influencer marketing is, according to Hardley (2015), authenticity. If authenticity is given, influencer marketing is able to endorse advertising in a way that blurries the lines between "normal" and paid advertising (Wood, 2016). Besides, Woods (2016) states that a sponsored post from a person a user follows results in more positive reaction than when this massages is directly coming from a company. This was demonstrated in a study by Twitter, which found that 40% of the participants already purchased an item online after seeing it used by an influencer on social media (Swant, 2016). Another study found that influencer marketing is able to trigger 11x times more return on investment than traditional marketing. The underlying reason for that might be that people actively chose to follow these influencers on social media and therefore to get their recommendations (Wood, 2016). This result in people desiring the products an influencer is presenting as well, which then leads them to the brand that is embedded in the post. To sum up, influencer marketing is a great opportunity to create and increase brand awareness. People who follow an influencer get aware of brands they like even if they were not aware of them before. Also brand awareness can be enhanced when followers already know a certain brand the influencer includes in their advertorial posts. Even if they did not used them in their consideration set before they might do so after seeing that the person they follow does so as well.

4. ETHICAL IMPLICATIONS

Several ethical concerns exist that need to be taken into account when elaborating on content marketing through managing social media accounts.

Talking about influencer marketing, authenticity is the most important issue. When an influencer agrees on cooperation just because of the monetary compensation and actually does not believe in or uses the product/brand it can be misleading and influencer are practically lying to their followers. Once that is discovered it cannot only damage the reputation and credibility of the influencer themselves, but also of the brand that is endorsed in the content. Another implication of influencer marketing can occur when influencer do not properly disclose that the product they represent is sponsored. This can get the brand into trouble and can negatively influence its reputation.

5. FUTURE GAZE

Today, social media marketing is function as a complement rather than a substitute for promotion and business (Hardley, 2015). It is questionable if social media marketing will be ever used as the only source of marketing for brands. However, a combination of different social media strategies and different channels offer great opportunities to do so. Besides, the landscape of influencer marketing is extremely competitive and the challenge of the future for both brands and influencer might be to being able to maintain influence and to stand out from the masses. The power of marketing content created through accounts of both brands and influencers relies today on its relatively non-commercial, non-advertisement driven nature. The challenge here will be to sustain this nature while expanding the revenue stream of social media related marketing activities (Hardley, 2015).

6. CONCLUSION

The present paper provided a detailed overview of literature available giving insights in the social media hype and how social media marketing works. Three social media marketing strategies where then further evaluated. The most important findings that were made will be shortly summarized again.

Marketers and brands can increase their brand awareness through encouraging customer engagement behavior on social media, which can occur through three different ways: Advertorial dissemination, advertorial aggregation and advertorial instigation. Besides, posting informational content not only about products but also about what happens behind the scenes can enhance customers' relationship with a brand.

Besides, organic eWoM created by users of social media can hardly be controlled by brands. As desirable positive eWoM for brands is, as disadvantageous negative eWoM can be for a brand and its reputation. Therefore brands should regularly track users activity about the brand and its product and should listen to and interact with users/consumers and their opinions.

Furthermore, influencer marketing is a very effective social media marketing strategies right now, when done right. The most important issue for successful influencer marketing is authenticity. Therefore brands need to find influencers that not only match in their content style but also in target audience. If influencer marketing is authentic it can have great effect on brand awareness.

To sum up, social media marketing based on content creation by the brand or marketing manager self, regular users or from paid influencers all can have positive impact on brand awareness. Important is the active engagement from both the brand side and the consumer, which can be engaged in several ways. However, this marketing strategy is not as easy to implement as it sound since users reaction are difficult to forecast. It requires a constant creation of content without being annoying and it requires the perfect tailoring of content to get a users attention.. Trial and error is right now the most common way for brands to figure out how to implement their social media marketing effectively. To conclude, today it might be the best way to make use of all strategies mentioned above. Combining them gives great chances to reach the target audience in a way that actually makes them want to stay in touch with a certain brand.

7. FURTHER RESEARCH

With regard to future research possibilities in the topic of social media marketing the following can be said:
First, a lot of research currently deals with the collection and evaluation of secondary data or with qualitative methods of data collection methods like interviews. Therefore focus should be put on quantitative data collection to fill in current findings.
Second, even though social media marketing is a common strategy among brands and companies today, not all companies actually experience an actual measurable benefit from it. This is because of the complex phenomenon behind it, being ambiguous to many people. More research on setting of an effective social media marketing campaign exploring different possibilities needs to be done, including tangible proofs for companies who want to improve their online reputation.
Third, as mentioned earlier influencer marketing has potential to become established as common marketing method on social media. However it is still in its infancy and literature is lacking. Besides it might be interesting to find out if the effectiveness of influencer marketing can be hold when its not a niche strategy anymore and gets more public interest.

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To what extend can neuromarketing influence the control of consumer information

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ABSTRACT

Since the trend in marketing is that all marketing becomes pull and no more push, new pull marketing methods arise. Neuromarketing is one of those new method which could be applied in pull marketing. Neuromarketing can be defined as a field of marketing based on neuroscience research. It can be said that neuromarketing is marketing, as well neuropsychology is psychology. While neuropsychology examines relation among the brain, human knowledge and psychological functions, so neuromarketing helps importance of looking at consumer behavior in terms of the brain. Though, the science has it criticisms concerning the degree of how ethical neuromarketing is. Does neuromarketing not influences privacy of the human? Or could neuromarketing account for more interesting insights then just finding the 'buy button'? Three popular neuromarketing methods are being treated, namely: the EEG (electroencephalography) method, the MEG (magnetoencephalography) method and the fMRI (functional Magnetic Resonance Imaging) method. This paper is an attempt to explore how neuromarketing can influence the information flow of consumers, what are so far the most used neuromarketing tools and what are there pros and cons. Furthermore will it show why push marketing changes into pull marketing and it will give insights on the ethics of neuromarketing.

Keywords
Neuromarketing, Neuroscience, pull-marketing, push-marketing, ethics, EEG, MEG, fMRI

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view:
With my background I knew already something about pull marketing methods, but I was unfamiliar with neuromarketing. During the master course Advanced Topics in Digital Marketing our professor Mr. Constantinides introduced 'neuromarketing, which really interested me, and I saw a lot of potential in.

1. INTRODUCTION

As the original quote *"All marketing is pull, no more push. Consumer controls all information flow, company is invited to react"* (2016) concerning my topic of the Marketing Science Institute says, the future of marketing will be pull marketing only. The 'Marketing Science Institute' (MSI) presents the main research priorities in the Marketing field for the period of 2016 - 2018 (2016). According to MSI is the topic which I have chosen a hot item in today's marketing. Every twee years, the MSI asks their member company trustee to provide input to help set priorities for the research that will guide activities for the next few years (2016). The trends of marketing show that in the future push marketing will disappear and it will be all about just pull marketing. This development is rather new, this is a reason for a lot of companies to acquire more knowledge about pull marketing. The companies are being curious how they can influence the mind-set of the consumer or how to adjust their products/services on the willing of the consumer.

There are three possible solutions when you talk about push and pull strategies. Using push marketing, pull marketing or a combination of pull and push marketing. It is up to the producer of the goods or services which strategy the company chooses.

Push marketing is basically that the producer of the goods or services focuses his marketing particularly on the brokering. Retailers and wholesalers are intensively processed by account managers and representatives of the producer. With extra reductions and other activities will the retail be persuaded to put the brand in their assortment. With this strategy the producer expects the retailers to promote their products or services. Of course it is important that producers do not lose the interests of the end-user [consumer] out of sight (2009). Often the small producers are using this strategy, with help of the retail they try to reach brand awareness by the consumers (2010).

Pull marketing focuses the producer its marketing communication not on the brokering, but immediately towards the consumers. With promotions, commercial campaigns and other marketing activities does the producer try to create brand preference by the consumers. If this works, then the retailers in the shops are constantly getting questions about the demand for the specific brand. Retailers will order the products or services of the brand, to make sure they do not lose any consumers. For the producer to create the feeling that retailers cannot continue without their brand, is it important to know that the producer their communication budgets has to be millions (2010). In most cases do many of the brand products obtain their shelf position in the busy commodity due to a pull strategy (2009). In this paper will the focus be on a new method of pull marketing, neuromarketing. The new method 'neuromarketing' will be discussed and provided with more insights at the upcoming pages.

The choice to choose for a marketing communication strategy push- or pull marketing has huge consequences. With a push strategy the emphasis at marketing communication is by communication on personal selling. By a pull strategy will the producer choose for consumer advertising and consumer promotions. Most of the time with new products push marketing is chosen, because the producer needs to get their products in the shelves. If the brand is already included in a shop, then a pull strategy can create extra demand by the customers, so that a retailer is more depending of the brand. Push and pull strategies can be used in combination then (2010). In practice it does not happened quiet often that marketers focus their strategy on one of two extremes, at the most the accent is on a pull strategy or a push strategy (2009).

The actual reasons for the move from push to pull marketing will be further explained in part 2.1 of this research. Due to marketing focuses more and more on pull marketing, there are coming more techniques which enables companies to influence the consumers. One of those booming techniques is 'neuromarketing'. "Neuromarketing is an emerging field that bridges the study of consumer behaviour with neuroscience. Controversial when it first emerged in 2002, the field is gaining rapid credibility and adoption among advertising and marketing professionals" (2011). Neuromarketing is one of the new techniques which will be used in the future to influence the consumer, therefor it is really interesting for companies, it is a new way of creating brand awareness (2007). Though to what extend is neuromarketing still ethical? In part 2.2. will be more told about neuromarketing and its ethics. Part 2.3. examines on the most used tools concerning neuromarketing, the pros and cons and how these particular tools measure.

2. RESULTS

2.1 The change from push marketing to pull marketing

When we talk about push and pull marketing, there have been a lot changes occurred within the last decade. Back in time, in the peaceful days of mass media, people read their local newspaper and watched one of the three nationally broadcasted television channels. In the past, a company could reach a large mass of consumers through any of these mass media outlets (Urban, 2005). Nowadays people cannot imagine a life without internet, multiple television channels and getting the news through mobile devices. Today, the daily newspaper readers are in the minority, the internet has diverted peoples' attention to a fragmented web of online sites. The national broadcasts have lost market share to a dizzying array from hundreds of channels available on cable or by satellite. This also makes it more difficult for marketers to push their messages to the millions of viewers (Urban, 2005).

Even if prospective customers are exposed to a television advertisement, only one-third of them actually watch it; most viewers mute the advertisement, switch channels, or leave the room (Tandemar Corporation, 2000). In a 2004 study, the market research company Yankelovich found that 79% of viewers flip channels during commercials compared with 51% in 1986, and 53% turn down the volume compared with 25% in 1986 (Smith, Clurman, & Wood, 2005). Advertisements lose out in the competition with the refrigerator, the bathroom, family members, other television channels, electronic games, and the Internet (Urban, 2005). Someway it is kind of surprising that the costs of television advertisement only raise, while the reachability reduces. For example Network prime-time television cost per thousand exposures rose 18% from 2000 to 2003 (Media Dynamics Inc., 2003). There are coming more and more a replacements for the live television. Take for example the 'on demand' function, the online television most providers provide and Netflix or anything like that. People can see the programs, movies or series they want with the minimal commercials and if commercials come by people will be busy with other things like mentioned above. The influences of push marketing on the future consumer will decrease, people do not want to be guided and they choose their own path.

The hours of online per week do also influences the approach of how companies can reach their consumers. According to Jupiter research (Jupiter Research, 2002) was in

2002 the average use of internet 15 hours per week. According to Statista (2016) was in 2015 the median time spent online per week 18 hours. As you can see is that the hours online per week raises in 13 years with 20%. We life in a world which becomes more and more digital (Brodie, 2009), so it is predictable that the hours online per week will raise even more in the future. Mobile media takes a big part into account when we talk about 'online hours'. Mobile media are compelling channels for digital marketers and advertisers due to their potential to support one-to-one, one-to-many and mass communication both cheaply and effectively (Watson, McCarthy, & Rowley, 2013). In addition, the reach of mobile marketing is large and growing. Access to mobile networks is available to 90% of the world's population (International Telecommunications Union, 2010).

Push marketing does not really influences the hours that people are on internet. When people are online they have their own reasons for that, not because of push advertising from companies. While applying pull marketing it is interesting to understand for which reasons people are online and can try to influence the people during their online journey.

The old school way to receive the customer with mass media does not work nowadays as well as it used to do in the past. Petrison et al. (Petrison, Blattberg, & Wang, 1997) their thought is that the general marketers who have in the past relied on mass marketing will increasingly use more targeted and individualized means by which to communicate with their customers, and that database marketing will therefore become integrated into the overall marketing environment. Database marketing is a form of direct marketing that uses databases of customers to generate targeted lists for direct marketing communications (Marketing-Schools, 2016). Customers do whatever they want, if a company does not respond to the demand of the customers, then it is possible that it affects its business and could have huge consequences. So companies should focus more on the information that particular consumers are looking for. Pull marketing is the approach that creates needs by the customers. The trend is that people buy or watch what they want, push marketing has limited influences on that. In contrast is pull marketing the solution for the trend that occurs, it tries to find out what possibly could influence the consumer and reacts on it. This is the most important reason why push marketing changes in pull marketing.

Neuromarketing is a new tool in the world of pull marketing. An effort to completely understand the needs of consumers became the basis for the creation of a new field of marketing communication called neuromarketing. Neuromarketing, which is a combination of two disciplines, namely neuroscience and marketing. The purpose of this field, sometimes considered controversial, is to understand the mind of consumers via techniques of neuroscience (Durďáková, 2016).

Neuromarketing, which can be defined as a field of marketing based on neuroscience research, is one element of new neuroculture. This new trend provides views into the development of brainbased narratives and into the potential problems that they could pose for medical ethics and the public understanding of science (Fisher, Chin, & Klitzman, 2010). Any definition of neuromarketing must take into account this diversity of research. Neuroeconomics defines itself as "the application of neuroscientific methods to analyse and understand economically relevant behaviour" (Kenning & Plassmann, 2005). According to Lee et al. (Lee, Broderick, & Chamberlain, 2007) neuromarketing as a field of study can simply be defined as the application of neuroscientific methods to analyse and understand human behaviour in relation to markets and marketing exchanges. Such a definition has two main upshots: firstly, it moves consideration of neuromarketing away from being solely the use of neuroimaging by commercial interests for their benefit; secondly, the scope of neuromarketing research is widened from solely consumer behaviour, to include many more avenues of interest, such as inter and intra-organisational research, which are common in the marketing research literature.

2.2 Neuromarketing and its ethics

Millions of dollars are poured each year into developing products that will never see the light of day. Countless campaigns fail to attract consumer attention and successfully impact our memory banks. Ignoring neuroimaging as a way to understand consumer behaviour would be as absurd as astronomers refusing to use electronic telescopes. Placing legitimate worries on ethics aside, there is no question that neuroimaging provides powerful lenses through which we can observe and understand the mind of a consumer (Morin, 2011). Marketers are excited about brain imaging for two main reasons. First, marketers hope that neuroimaging will provide a more efficient trade-off between costs and benefits. This hope is based on the assumptions that people cannot fully articulate their preferences when asked to express them explicitly, and that consumers' brains contain hidden information about their true preferences. Such hidden information could, in theory, be used to influence their buying behaviour, so that the cost of performing neuroimaging studies would be outweighed by the benefit of improved product design and increased sales. In theory, at least, brain imaging could illuminate not only what people like, but also what they will buy. The second reason why marketers are excited about brain imaging is that they hope it will provide an accurate marketing research method that can be implemented even before a product exists. The assumption is that neuroimaging data would give a more accurate indication of the underlying preferences (Ariely & Berns, 2010).

The aim of neuromarketing studies is to gain objective information regarding inner workings of the brains of consumers without referring to the subjective reports that have long been the main part of marketing studies (Murphy, Illes, & Reiner, 2008). Due to the development of new technologies and new neuroscience findings, the desire to understand the brain of the consumer is increasing. Methods of neuromarketing can be used to identify the needs and wishes of consumers. The acquired information can then be applied to marketing, which helps to persuade, inform or influence current and also potential customers (Durďáková, 2016).

Although there are also critics about using neuromarketing as a tool to identify the need and wishes of consumers. According to Lee et al. (Lee, Broderick, & Chamberlain, 2007) there appear to be some barriers in collaboration between business and neuroscience research groups. In particular, while neuroeconomics appears to have raised nary a ripple of moral concern, recent opinions on 'neuromarketing' within the neuroscience literature have strongly questioned the ethics of applying imaging techniques to the purpose of "finding the 'buy button in the brain' and …creating advertising campaigns that we will be unable to resist" (Nature Neuroscience, 2004).

It can be said that neuromarketing is marketing, as well neuropsychology is psychology. While neuropsychology examines relation among the brain, human knowledge and psychological functions, so neuromarketing helps importance of looking at consumer behaviour in terms of the brain (Morin, 2011). So neuroeconomics question about whether neuromarketing is ethical applicable or not. Does using neuromarketing tools not limit the privacy of humans? Remarkable is that the questions and critics about the 'buy

button' do not apply for the 'love button'. The 'buy button' would be a finding of interest to academic marketing researchers certainly, but then so would something like the 'love button' to psychological scholars (Lee, Broderick, & Chamberlain, 2007).

It seems that when the science talks about 'neuromarketing', it is seen as research which is purely designed to sell products to the public. In the view of science is that not where science should account for. According Donald Kennedy, a known American scientist, is neuromarketing not ethical,

"brain imaging will be used in ways that infringe personal privacy to a totally unacceptable degree" (The Lancet, 2004).

On the other hand, there is potential that neuromarketing results in more interesting findings, which lead to that neuromarketing becomes more ethical. Neuromarketing could provide a perspective that is not only concerned with commercial applications, but with developing a greater understanding of a critical area of contemporary human society. Research into advertising effectiveness – which has caused so much consternation in neuroscientific circles – can contribute more than just finding the aforementioned 'buy button' in the brain. In fact, exploring exactly what elements of an advertisement are critical to awareness, attitudes and evaluations of products, and whether these differ for different groups, should reduce firms' reliance on the 'blunt instruments' of blanket coverage, shock tactics, or sexual imagery. The application of neuroscience to marketing may form a basis for understanding how human beings create, store, recall, and relate to information such as brands in everyday life (Lee, Broderick, & Chamberlain, 2007). Results like mentioned above could take away the ethical problems that neuromarketing carries with it.

2.3 Popular neuromarketing tools with their pro and cons

The interest for neuromarketing becomes lager, but what are the most popular neuromarketing tools? What does the particular neuromarketing tool measure and how could that neuromarketing tool provide information which gives insights about how the human brain thinks? This section will elaborate on some popular neuromarketing tools. These neuromarketing tools are: the EEG (electroencephalography) method, the magnetoencephalography (MEG) method and the fMRI (functional Magnetic Resonance Imaging) method.

Literature that teaches us about emotions learns us that, usually there are two aspects of emotional engagement defined, namely emotional valence (how pleasant or unpleasant the emotion is) and emotional arousal (how calming or exciting the emotion is (Bradly, Greenwald, Petry, & Lang, 1992); (Russell, 1980)). Emotions are expressed at three different levels: through subjective experience, through expressive behavior, and through physiological changes (Ekman, 1992). An intriguing possibility to study emotional responses to marketing stimuli lies in directly recording the neurophysiological responses (i.e. brain activity) that are associated with the emotional response, since different emotions are associated with distinct physiological patterns (Ekman, 1992). Emotional brain responses have been extensively measured with the two major neuroimaging methods: fMRI and EEG. Thus, there is a clear view on which aspects of fMRI and EEG signals are indicative of emotional engagement. All three the imaging techniques (EEG, MEG and fMRI) are non-invasive and therefore can be used safely for marketing research purposes. That is why they constitute the bulk of studies that have been published in the last five years. Each method has its pros and cons (Kenning & Plassmann, 2005).

EEG is a rather old technology in neurology but is still considered a good way to measure brain activity. The cells responsible for the biological basis of our cognitive responses are called neurons. We have over 100 billion neurons and trillions of synaptic connections which represent the basis of neural circuitry. In the presence of a particular stimulus like a piece of advertising, neurons fire and produce a tiny electrical current that can be amplified. These electrical currents have multiple patterns of frequencies called brainwaves which are associated with different states of arousal. When EEG is used for a marketing research experiment, electrodes are placed on the scalp of a test subject, typically by using a helmet or a band. Brainwaves can be recorded at very small time intervals. Some of the new EEG bands can record up to 10,000 times per second. This is valuable considering the speed at which we acquire information through our senses and the speed of our thoughts (Morin, 2011).

A disadvantage of EEG according Bastiaansen et al. (Bastiaansen, et al., 2016) is that modulations of the event-related-potentials relating to positive and negative emotions are very similar, which necessitates additional evidence for qualifying emotional responses as being related to either positive or negative emotional valence. The limitation of EEG however is that it does not have good spatial resolution which means it cannot precisely locate where the neurons are firing in the brain, especially in deeper, older structures. This is simply because the electrodes on the scalp cannot pick up electrical signals that reside much beyond the cortex (Morin, 2011). In addiotion on that, according Bastiaansen et al. (Bastiaansen, et al., 2016) does the EEG not allow a three-dimensional view into the brain, recording only from its surface. This makes it problematic to relate the recorded signals directly to neural activity in specific brain structures. Morin (Morin, 2011) adds that it is widely considered by cognitive scientists as weak if not dubious for the purpose of understanding and predicting the effects of advertising. While insights gained by using EEG can be helpful to assess the value of a piece of advertising, they are insufficient to help us understand the cognitive process responsible for triggering activity in the entire brain.

Though Bastiaansen et al. (Bastiaansen, et al., 2016) mentions that EEG constitutes to be a more accessible alternative for neuromarketing research. EEG recording systems are widely available, and the costs for purchasing and operating such a system are only a fraction from that of fMRI systems. Current EEG systems often have up to 256 electrodes to monitor brain activity, making them much more precise (Madan, 2010), though it stil cannot monitor the deeper, older structures of the brain. EEG can locate where a response comes from on the skin, so there is a possiblity that it creates physiologically meaningful data (Kenning & Plassmann, 2005). Madan (Madan, 2010) metions that EEG equipment is relatively light and portable, so it is easy to transport. Furthermore, EEG allows participants to sit and view stimuli in a relatively natural manner while recording reactions in the brain at a very high (millisecond) temporal resolution. In a sense, EEG records mental actions truly in the moment that they occur. All in all, however, the relatively natural setting of EEG and its superior time resolution makes it useful for neuromarketing research. (Bastiaansen, et al., 2016)

Considered a cousin to EEG, MEG emerged in the midsixties and has gained considerable attention in the last decade because of the tremendous improvements made in measuring and imaging magnetic fields in the brain. As we discussed earlier, brain activity is a function of electrochemical signals between neurons. Neuronal activity creates a magnetic

field that can be amplified and mapped by MEG (Morin, 2011). However, in contrast to the EEG, MEG is also able to depict activity in deeper brain structures (Braeutigam, Stins, Rose, Swithenby, & Ambler, 2001). The inverse problem basically applies to MEG as well, so that source localization depends on valid assumptions, too (Kenning & Plassmann, 2005). MEG is also seen as an expensive cousin of EEG, with its $2 milion price tag (Ariely & Berns, 2010). MEG has excellent temporal resolution, but more importantly, a better spatial resolution than EEG. So, while MEG is continuing to improve and provides an excellent way to record nearly real-time responses to cognitive events, it is not ideal to conduct marketing research studies investigating both higher cognitive functions (cortical) and emotional (subcortical) (Morin, 2011). Most researchers working with MEG combine both MEG and fMRI in order to optimize both temporal and spatial resolution issues and/or provide the added value of time stamping critical cognitive sequences at the incredible speed of just a few milliseconds (Bastiaansen, et al., 2016).

Unlike both EEG and MEG, the fMRI modality is based on using an MRI scanner to image the change of blood flow in the brain (Morin, 2011). fMRI involves the participant lying on a bed, with their head positioned inside the large magnetic ring of a scanner (Madan, 2010). Morin continues with "when neurons fire, they need to use energy which is transported by the blood flow and quickly metabolized. The key element for a marketing researcher to understand is the contrast of the BOLD signal measured by the fMRI. BOLD is an acronym for Blood Oxygen Level Dependant. When faced with a particular stimulus such as an ad, areas of a subject's brain receive more oxygenated blood flow than they do at rest time. This change creates distortions in the magnetic field emitted by hydrogen protons in the water molecules of our blood. The basis of all fMRI studies is to consider that the change in the BOLD signal is an accurate measure of neuronal activity, even though it does not directly measure electrochemical signals generated by our neurons".

The where of brain activity is more easily assessed, is by fMRI (Kenning & Plassmann, 2005). The fMRI method has major advantage of being able to image deep brain structures, especially those involved in emotional responses. fMRI scanners are also quite expensive but more widely available than MEG equipment (Morin, 2011). Bastiaansen et al. (Bastiaansen, et al., 2016) agrees on Morin, fMRI technology is expensive and adds to that, that it requires participants to dress in a hospital gown, lay still on a narrow table, and wear earplugs while stimuli are beamed through a projection headset. Participants can only interact with stimuli by pressing one of two buttons, one held in each hand. This could have influences on results. While the spatial resolution of fMRI is 10 times better than EEG the temporal resolution of the technology is considered rather slow. Indeed, there is a delay between the times a neurons fires and the time it takes for the BOLD signal to change: usually a couple of seconds (Morin, 2011).

Other neuromarketing methods that are used, but not as often as the three mentioned above are: the NIR (near infrared spectroscopy) method, the GSR (galvanic skin response) method, the FA (facial coding) method, the eye tracking method and PET (positron emission tomography) method. These neuromarketing methods allow marketers also to show what is actualy happening in the brain.

3 CONCLUSION

Traditional marketing is based on pull marketing, although this is changing. *"All marketing is pull, no more push. Consumer controls all information flow, company is invited to react"* (2016). People choose to decide their own path instead of simply following the media. This trend makes sure that companies have to change their approach to remain successful in customer retention. Neuromarketing is a new method in the world of pull marketing. Using neuromarketing, researchers can evaluate an advertisement's effectiveness much more scientifically, in terms of the viewer's attention to the ad, as well as how the ad affects the viewer's emotional(Madan, 2010). Neuromarketing is also the tool to see where people particular focus on.

Marketers are excited about brain imaging for two main reasons. First, marketers hope that neuroimaging will provide a more efficient trade-off between costs and benefits. The second reason why marketers are excited about brain imaging is that they hope it will provide an accurate marketing research method that can be implemented even before a product exists. The assumption is that neuroimaging data would give a more accurate indication of the underlying preferences (Ariely & Berns, 2010).

Although there is much criticism from the world of science about Neuromarketing, though the field shows great promise as being the next step in market research. When neuromarketing research will provide more usefull information; like a greater understanding of a critical area of contempaory human society, instead of just finding the 'buy bottun', then neuromarketing will probaly be seen as more ethical research.

In summary, all currently available neuroimaging techniques have advantages and disadvantages. While the where of brain activity is more easily assessed by fMRI, the question of when – e.g. the discrimination between parallel and sequential processing – can be more precisely answered by EEG or MEG (Kenning & Plassmann, 2005). It seems that a combination of neuromarketing tools is currently the best way to receive useful insights. Right now neuromarketing has some influence on the control of consumer information, though neuromarketing is still in a early stage. Also the influences of the ethics on neuromarketing ensure that there is still only limited attention for.

4 FUTURE RESEARCH

Future research should prove that neuromarketing does not only consist to find the 'buy button' or other commercial reason. It should show that neuromarketing could develop a greater understanding of a critical area of contemporary human society. If this could be proven then the science would have less criticism concerning the ethical problems of neuromarketing.

Furthermore, would it be interesting to find new methods that enables to bring neuromarketing to a higher level. However, the current methods do their job, they still have a lot of disadvantages. What probaly could be even more easy is to find out how current methods can reinforce each others.

Incidentally, it may also be interesting to understand people their interest better while applying neuromarketing research, so neuromarketing is better applicable and results can be more valuable. This taken into account for future research could result in refreshing insights.

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New Marketing: Brand Awareness and the Cool Kids

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ABSTRACT
This literature review delves deeper into brand awareness and how it can be raised among the generation of Millennials and Gen Z. After establishing who these generations are and what drives them, current literature on raising brand awareness will be explored. By linking all this information an answer will be provided as to how to raise brand awareness among Millennials and Gen Z.

Keywords
Brand Awareness, Gen Z, Millennials, Generation Y, Generation Z

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?

The younger generations are no longer as brand-loyal or as driven as previous generations. Having been bombarded with advertisements since youth, they are also not as susceptible to traditional advertising. The question then is raised of what does drive these generations and how they can best be reached?

1. INTRODUCTION

Consumers are increasingly in control of information flow. They are in charge of what they see. This is especially true for generations Y and Z. Generation Y is the generation of post-babyboomers, born during 1977-1994 (Williams and Page, 2011). Heavily influenced by technology and the internet, these consumers have evolved differently from previous generations, making it a challenging group to target (Lester et al., 2005). Generation Z is the generation following the Millennials. This generation continues trends in technology use. They are influenced by new media, virtual friends, and the power that comes with technology (Williams and Page, 2011). As Williams and Page (2011) claim; they have a shortened attention span and heightened awareness of visuals. Taylor and Consenza mentioned in 2002 already that as Generation Y graduates from college and enters the workforce, their earning potential will make them a powerful consumer group.

Their focus on technology is observable in an increase in the use of it to make decisions that affect corporate outcome. Park and Cho (2012) mention for example that in shopping for fashion, consumers have used their personal connections on social media as an information source about different brands and products and to seek approval of their peers before making a purchase decision. Building a strong brand provides numerous financial rewards to firms, and has become a top priority for many organizations (Keller, 2001). Generation Y and Z are in the marketplace with the numbers and purchasing power to have an unprecedented impact on the economy (Noble, Haytko & Phillips, 2009). According to Hanford (2005) the purchasing power and technological expertise of Generation Y will play a large part in determining whether online retailers succeed over the long term. Marketers have the ability to customize experiences, offers and content to what the customer wants. To do this they must know who the customer is and what they want.

Wolfe (2004) mentions that despite consumer power unrivaled by any preceding generation, Generation Y is not as brand-loyal or as driven by the same kind of brand label consciousness as the previous generation was at the same age. While different generations have always posed a challenge for marketers, generation Y has been described as an enigma to most marketers and new marketing techniques are being used that will more effectively reach Millennial consumers (Bellman et al., 2009).This research aims to discover what the best way is to engage Millennials and Generation Z in order for companies to raise awareness.

The research question is as follows: *How can companies raise brand awareness among Millennials and Gen Z?*

While there is plenty literature available spanning the subjects of brand awareness (Percy & Rossiter, 1992; Wheeler, 2003; Keller, 2009) and what drives Millennials and Generation Z (Noble, Haytko & Phillips, 2009; Nowak, Thach & Olsen, 2006), there is a need for a summarization of this literature in order to discover how these two subjects influence each other. In the following section literature on raising brand awareness in general will be described. Then literature regarding what drives and how brands are currently approaching Millennials and Gen Z will be further explored. By tying these two contexts together we hope to discover how companies can raise brand awareness among the targeted group of Millennials and Generation Z.

2. PROFILING GENERATION Y AND GENERATION X

Born between 1977 and 1994 generation Y is currently aged between 22 and 39, and make up a much larger generation than their previous generation, generation X (Nowak, Thach & Olsen, 2006). Back in 2001 Gen Y or millennials were described as the best educated and most culturally diverse generation in history, a combination which has made this generation exceedingly tolerant and open-minded toward different lifestyles, such as homosexuality, single parent households, etc (Morton, 2002). Generation Y was raised in a more nurturing environment during economic prosperity and are regarded as optimistic and entrepreneurial (Fernandez, 2009). Gen Y has more economic clout than their predecessors, a fact that is supported by Grant and Stephenson (2005) as they name Gen Y a rich target for companies with economic power unlike anyone before them. They state that Millennials are regarded by retailers as an attractive growth market. Furthermore they found that this generation's spending habits are a result of distinct social trends like two-parent incomes, fewer children and more discretionary income to spend. This generation being children from families in a time of increasing divorce levels and a rising number of household where parents had full time jobs, the guilt factor drove parents to indulge this generation with designer clothes among other things. They conclude that this has made the majority of millennials more self-indulgent and materialistic. In line with this Tan (1999) found that this generation is indeed hedonistic and "live for the moment", having expectations of greater material wealth than their parents, however it should be mentioned that his research was limited to the Asian context. They are expected to be the highest-educated generation to date, with incomes that should follow (Williams, Page & Hernandez, 2010).

Generation Y is the first to for which technology is a given and not a right (Williams, Page & Hernandez, 2010). They are internet savvy and use e-mail, cell phones, and text messaging to communicate. Over 90% of the 18-29 year old group is online in the US, and social networking is a key distinction for this generation (Dickey & Sullivan, 2007) . This is also notable in results found by the Pew Research Center (2010) that states that Millennials are living their lives on the internet.

Moving on to Generation Z, this generation born after 1994 (Williams, Page & Hernandez, 2010) are the youngest generation currently relevant to marketeers. They mention that Gen Z has 43 billion dollars in spending power and influencing another 600 billion of family spending. In terms of characteristics Labi (2008) mentions three key ones; instant gratification, success as a given, and liberal social values. These individuals are the new conservatives. They are planned, structured, and self-controlled. They are more conforming, less likely to take risks and engage in violence, being more aware of consequences. They are more responsible and don't expect others to look out for them. Many embrace traditional beliefs and value the family unit, with parents who marry later and that are less likely to get divorced since divorce rates have been declining since the 1990's (Miller, 2014). This generation too is accustomed to high-tech and multiple information sources, with messages bombarding them from all sides (Benjamin, 2008). They follow Generation Y and have never lived without such a thing as the internet.

3. WHAT DRIVES THESE GENERATIONS?

Syrett and Lamminman (2004) found that Millennials are more likely to respond to campaigns based on irony, humor and unvarnished truth than sophisticated image-building. This is due

to the fact that Millennials have been on the receiving end of up to 20.000 commercials a year, they are far more aware of circumstances when they are being manipulated and have far lower tolerance for this. Research has shown that this generation is media and technology savvy, and worldly enough to see through many advertising tactics (Beard, 2003; Bush et al., 2004; Stevens et al, 2003; Bennet & Lachowetz, 2004; Freestone & Mitchell, 2004; Shearer, 2002). Gen Y is far more market savvy than its previous generation when it comes to consumer purchases. Generation Y has grown up in a media-saturated, brand-conscious world, and is keeping advertisers on their toes (Fernandez-Cruz, 2003). Generation Z follows this trend and therefore for them the same can be said. This is echoed by De Paula (2003) who mentions gen Z being street smart and having considerable marketing savvy. Traditional brand awareness strategies do therefore not work. Advertising does however seem to be an important variable when marketing to Gen Y as it plays a significant role in conferring brand values and establishing an image for the product (Fernandez, 2009).

Peer pressure is a relevant topic to discuss when it comes to these generations. Williams and Page (2011) mention that Gen Y value and are looking for brands that resonate with their peers, and their peers often guide product and brand choice. For Gen Z the same seems to apply, as Soltan (2004) found that peer acceptance is very important to this generation. He found that their self-concept is partially determined by the group to which the individual belongs.

Fernandez (2009) found support for the statement that peer pressure plays an important role in Millennials decision making. She also found that Millennials are looking for cues that express individuality, status, an image of being "cool", trendy and classy to assist them in the socialization process and be included in a group. She further theorizes that celebrity endorsements have a huge impact on brands as this consumer group wants to imitate celebrities to forge an image and identity. She concludes that creating a 'buzz" through celebrity endorsement and viral marketing should be an integral part of a communication strategy in reaching out to Millennials. However, Fernandez (2009) only interviewed a Malaysian millennials in a specific geographic location, calling to doubt whether and to what extent the results are generalizable.

Pate and Adams (2013) discussed how social media networking sites influence the buying behavior in Millennials. Their research showed that Millennials are indeed influenced by what their friends "like" or "share" on social media, and also that this generation is more likely to purchase items endorsed by celebrities. This is resonated in research by Weigand (2009) which showed that in general social media is positively associated with providing instrumental value that assists consumers in making decisions about what product to buy, when to buy, and where to buy the product from. Although not limited to Millenials or Gen Z, Duan, Gub & Whinston (2008) research also indicates that in general people appear to trust seemingly disinterested opinions from people outside their immediate social network, such as online reviews. In the context of box-office movies, they further found these serve a purpose of raising awareness. While Duana, Gub and Whinston focused purely on box-office movies, the results of their research have found support from other researchers regarding the effect of online-reviews on consumers' decision-making (Chen & Xie, 2004; Mudambi & Schuff, 2010). Williams and Page (2011) conclude from a literature review that to market toward Gen Y companies should take full advantage of technology and its allure to Millennials. The key words herein are collaborate, connect, co-create, and control, mostly with their peers.

From the above follows that Word-of-mouth advertising is very important in reaching the younger generations. This is confirmed by Art (2009) who draws the same conclusion based his findings that referrals from people they know influence Millennials. For Gen Z, the next generation of social and virtual networking sites makes it possible to build online communities that are more like someone's closes group of friends (Williams & Page, 2011). This would mean that the internet social networking sites would facilitate a greater network of peers to influence the new generation. This also seems to apply to Millennials, as Colucci and Cho (2014) who studied trust inducing factors of generation Y blog-users mention blogging communities, where personalized posting of information introduces an emotional component that allows blog readers to develop temporary social relationships. Johnson and Kaye (2004) found blogs play a crucial role in creating trends, sharing news and opinions, and spreading information through word-of-mouth communication. In fact Williams, Page, Petrosky and Hernandez (2010) found that information provided by blogs, specifically in the form of peer recommendations, is particularly influential for Generation Y, and often valued over expert opinions. Seeing as Millennials are also technologically savvy, blogging can be seen as one example of an extension of social network through use of the internet that influences millennials.

As mentioned Fernandez (2009) found celebrity endorsements to be an effective way to engage millennials as well. Celebrity endorsements have long been viewed as successful ways to reach consumers, by being highly dynamic and having attractive and likable qualities, adding value to endorsed products due to physical attractiveness and status, and being able to transfer cultural meaning to the advertised product (Atkin & Block, 1983; Friedman, 1979; McCracken, 1986). While limited to sports celebrity, Bush, Martin and Bush (2004) focused on the influence they have on millennials intentions and behaviors and found that celebrities role model influence is positively related to favorable word-of-mouth and brand loyalty. Wei and Lu (2012) also studied the effect of celebrity endorsements on consumer shopping behavior as well as the effect of online reviews. They found that celebrity endorsement evoked attention, desire and action, while consumer recommendations was found to stick in the memory of the consumer better and share attitudes toward the product. It should be noted that this study was limited to women ranging from 16 to 35 years of age, with 80% being between the age of 16 en 25, so while only females participants were Gen Y as well as Gen Z.

Results found that interviewees were best able to recall celebrity endorsers whom they considered attractive, funny and expressive. A majority of the interviewees perceived that using a celebrity in an ad would increase brand awareness, attract the celebrity's fans, encourage trial, and enhance purchase confidence.

While only in the context of Interesting Chinese adolescents using convenience sampling and the inclusion of only local celebrities, Chan, Yu-leung and Luk (2013) found that these were best able to recall celebrity endorsers whom they considered attractive, funny and expressive. Also, brand awareness was increased, fans attracted to the celebrity, trial of the product encouraged and there was enhanced purchase confidence. Interesting to note is that celebrity endorsements do not always have the desired effect, and researchers have concluded a possible cause is that celebrity endorsers may have not always connect or identify with the intended target market (Sukhdial, Aiken & Kahle, 2002). It can be concluded however that peer reviews and recommendations as well as celebrity endorsements drive the younger generation to form positive attitudes and

behavioral intentions toward consumer goods. Taking this and the previous into account it could be stated that the new type of celebrity might be better fit to drive millennials and Gen Z. This could explain the rise over the last couple of years of social media influencers.

4. RAISING BRAND AWARENESS AMONG MILLENNIALS AND GEN Z

Consumers make countless decisions every day in regard to purchase decisions and have to deal with increasing information overload. They are being bombarded with advertisements from all directions. To deal with this mental overload, consumers develop habits and heuristics which form shortcuts in decision making (Scammon, 1977). Brands are these habits used in the contemporary marketplace. They facilitate purchase decisions and offer reassurance as they connect current and future decisions to experiences, satisfactions, and knowledge (Keller, 2009). While the younger generations, as mentioned earlier, grew up in this environment, and therefore are less easily persuaded by all those advertisements, they too still can be brand loyalists (Charon, Favier & Li, 2006). Brands play an important role in decision making and guide consumers in making purchase decisions. Nowak, Thach and Olsen (2006) found that a positive emotional experience combined with product quality, excellent service and fair pricing contributed to brand equity for millennials.

There are multiple hierarchical models that aim to explain the relationship the customer has with a brand, which refer to the fixed order in which consumers perceive, process and use advertising and marketing communication information. The hierarchy of effects model is one of the models that helps explain the mental stages of the relationships of consumers with a specific product or brand. It states that advertising or marketing communications are first processed cognitively, then affectively and third conatively (Barry & Howard, 1990). In other words, first awareness and knowledge is raised, then an attitude is formed, and finally this leads to purchase or nonpurchase. Another well-known hierarchy of effects model is the AIDA model, which consists of building phases awareness, interest, desire and action. Yet another model is the one by Lavidge and Steiner (1961) which states seven phases; awareness, knowledge, liking, preference, conviction and purchase. It is important to note that in all these hierarchical models the first phase or step is awareness.

Brand awareness refers to the extent to which customers can recall or recognize a brand, or whether or not consumers know about a brand (Keller, 2008). Brand awareness refers to the strength of a brand's presence in a one's mind. Keller (1993) defined three major reasons that brand awareness is important when it comes to consumer decision making. First, it is important that consumers consider a brand when making a purchase decision in the product category of the brand. Raising brand awareness increases the likelihood that a brand will be part of the consideration set when making a purchase decision (Chakravarti et al., 2003). Second, brand awareness can influence decisions even when there are no other associations with the brand. Research has shown that are more likely to purchase familiar and well-known brands (Jacoby et al., 1977). Third, brand awareness influences the formation and strength of brand associations making up the brand image. For a consumer to create associations with a brand, that brand needs to be present in the mind of the consumer. The strength of that presence decides how easily different kinds of information can become attached to the brand (Keller, 2008). Brand awareness is created by exposure to the brand. This can happen through advertising, promotion, publicity, public relations, etc.

Advertising has historically been the main communication choice for marketers to quickly raise brand awareness and brand knowledge (Duncan, 2005). However, as mentioned earlier being bombarded with advertisements all their lives the newer generations respond less well to traditional forms of advertising. McLaughlin (2000) supports this statement by claiming that Gen Y are skeptical of advertising because they have been inundated with it. Furthermore, the new generation isn't spending their time watching television or listening to the radio. They are on the internet.

Research has shown that Millennials carry the internet with them and feel at loss if not tuned into what is happening with friends, celebrities, or favorite retailers (Miller, 2010; Jones et al., 2009). For Gen Z, the next generation of social and virtual networking sites makes it possible to build online communities that are more like someone's closes group of friends (Williams & Page, 2011). Online community participation provides a range of potential benefits for improving brand sales performance (Rapp et al., 2013). More than half of online shoppers interact with retailers on social networking sites, and retailers and brands are capitalizing on this new dimension to strengthen customer relationships.

The social media revolution has changed the communication landscape and thereby impacted marketing communication. Facebook, YouTube and other applications are becoming more and more important in consumers' lives and influencing their communication habits. This is especially notable in Gen Y and Gen Z who are as mentioned before very tech savvy. Because more time is spent on social media, more communications are taking place in these new social network environments. Jansen, Zhang, Sobel and Chowdury (2009) mention that collaboration and community are important characteristics of Web 2.0 development and are key features of social communication services like social networks, virtual reality, and online communities. Therefore, it can be concluded that new opportunities are arising for raising brand awareness should be taking place in this new realm of communications.

As mentioned before, millennials and Gen Z are heavily influenced by peer pressure and increasingly attaching importance to the opinions of people they don't even know through their activities on the internet. Social media have given consumers a wider audience, and has given the wider audience opportunity to build wider social networks. This has led to far larger social networks, and therefore more peers to be pressured by and pressure and take advice from and give advice to. This has resulted in consumers turning into an influential constituency (Booth & Matic,2010). Consumers have been transformed from passive participants to active creators and influencers (Kozinets et al., 2008; Merz et al., 2009) and power has shifted from brands to consumers (Constantinides & Fountain, 2008). Barthon et al (2008) conclude that traditional one-way communication in marketing has been transformed into a multi-dimensional two-way peer-to-peer communication reality.

Hutter, Hautz, Dennhardt and Fuller (2013) studied the impact of user interactions in social media on brand awareness and purchase intention. They found that brand page commitment has a significant positive effect on brand awareness. Brand page commitment and brand awareness in turn have a significant positive effect on Word of Mouth. Brand awareness has a positive effect on purchase intention. This study only looked to social media Facebook, which has a user group with an average

age of 40, however 50% of respondents were aged between 14 and 28, and another 32% between 28 and 39, with an average age of 30.4.

This presents new marketing challenges and opportunities for companies with regard to marketing and raising brand awareness. People, and especially the younger generations who are constantly connected to social media, rely more than ever on their social networks when making decisions because it has become so easy to access (Hintz et al., 2011). With this increase, brand ownership is increasingly being shared among consumers and brands. Through social networks, blogs and videos, consumers are spreading the information. Media are not communicating a brand's message to consumers, but consumers are broadcasting personal or second-hand stories to their social networks and the word, becoming the new brand ambassadors (Booth & Matic, 2011). Word-of-mouth is becoming the new advertising channel. Word-of-mouth is a naturally occurring phenomenon in consumer behavior (Kozinets et al., 2010) and refers to all kinds of interpersonal communication about a company, brand or product (Duan, Gu & Whinston, 2008). As mentioned before So it is safe to say that peers and social networks play a role in the introduction of new brands to Millennials and Gen Z. This is confirmed by a study done by Duan, Gu and Whinston (2008) who found that online user reviews influence product sales through awareness effects, because the reviews convey the existence of the product and thereby put it in the choice set of consumers.

Going back a bit we have learned that celebrity endorsements also play a role in decision making for these generations, especially if these celebrities are easy to connect and identify with. The effect of celebrities on consumers were called unique by Speck, Schumann and Thompson (2220) because they are already well known to consumers. Combining this with the information found on the importance of WOM and the internet for Gen Y and Gen Z this leads us back to the concept of Social Media Influencers. As mentioned earlier, millennials and gen z are spending more and more time on social media. They are not only consuming content on these channels but also creating it. The content they create is spread through their growing social networks and also helping them to grow their social networks. Posting photos on Instagram with hashtags, uploading videos on YouTube using tags and tweeting on relevant topics makes them findable on these channels. There are now YouTube, Twitter, Facebook and Instagram users with thousands and millions of followers all gained through growing their social network this way. These ordinary people who have large followings have become famous through social media and have the opportunity to influence their peers. These are the new celebrities, except they're just like you and me, so easy to identify and connect with, combating the problem of identification and connection with celebrity endorsers that Sukhdial, Aiken and Kahle (2002) found. These social media influencers (SMI's) represent a new type of independent third party endorsers who shape audience attitudes through blogs, tweets, and the use of other social media.

The platform on which SMI's communicate is different, but the concept of Word-of-mouth marketing has existed for a very long time. When people talk about a brand awareness about that brand is raised. Social media influencers use eWOM to influence consumers. eWom is defined as "statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet" (Hennig-Thurau, Gwinner, Walsh & Gremle, 2004, p. 39). Hennig- Thurau et al (2004) mention that while eWOM is less personal than face-to-face, it is more powerful because it is immediate, has a significant reach, is credible by being in print, and is easily accessible. Hall (2010) found that if a brand puts content on its Facebook page, it is less likely to go viral than if an influential consumer puts the same piece of content on his or her page or posts it to a relevant community of enthusiasts. It's safe to say that SMI's do have an influential impact and can raise brand awareness.

Fredeberg et al (2010) did a study into the attributes that SMI's possess, were able to construct a fully representative sample group, and found that giving advice and being turned to for advice were characteristic attributes for SMI's. They assume in their study that credibility is also an important factor when it comes to SMI's. A recent study done by Lu, Chang and Chang (2014) found that even when bloggers mention product review being sponsored, consumers do not have a negative attitude toward such recommended posts, implying a great level of trust toward the blogger. This study was is however limited in generalizability, as the sample was obtained only from Taiwan. Booth and Matic (2011) constructed a influencer index, which produces a influence score and can help practitioners identify various influencers. In this index they take among other things viewers per month, post frequency, engagement into consideration. Using this index companies can judge which influencer would be most beneficial for them to approach. .

5. CONCLUSIONS

The aim of this study was to review the current literature available about raising brand awareness among Millennials and Gen Z. By examining the two generations and what drives them, we came to the conclusion that word-of-mouth and celebrity endorsement were the most important. Growing up in a world bombarded with advertisements, they seem to be wary of companies and put more trust in their peers. Furthermore, what their peers do is important to them as they want to fit in, which would explain peer recommendations taking an important role in the decision making of this younger generation, and seem 'cool' to their peers. This need to be cool can be achieved through imitating someone who the majority think are 'cool'; celebrities.

When delving deeper into brand awareness, it becomes apparent that brand awareness is an important factor that leads to purchase decision. Examining hierarchical models relating to buying behavior AIDA and Hierarchy of Effects which both but brand awareness first prove this. Therefore we can conclude that brand awareness is an important factor in influencing consumers. However, marketing to millennials and Gen Z proves to be a bit of a challenge as traditional advertising methods need to be abandoned.

As mentioned before word-of-mouth is increasingly important when it comes to millennials and gen z. These generations are spending more and more time on the internet and communicating increasingly through social media. The before mentioned word-of-mouth is also moving from face-to-face to social media. Celebrity endorsement was as mentioned more effective when the celebrity in question can be easily identified and connected with. Celebrities are people with a big following, who are trustworthy, believable, persuasive, and likeable (Freiden, 1984). It can be concluded that there is a new type of 'celebrity' that may be more effective in driving millennials and gen z than traditional celebrities. These are Social Media Influencers.

Social media influencers are people who are millennials or Gen Z and have large followings on the internet. They are not as far removed from the consumer as traditional celebrities and are more easy to identify with and easier to connect with. They engage in conversation with you and give the feeling of being just like you. With large followings on the internet, these are to

all intents and purposes celebrities. People look to them for the latest trends and advice, trust their opinions, believe them, like them and are persuaded by them. It is therefore concluded that these 'new celebrities' are the best way to reach Millennials and Gen Z. By sponsoring their content brand can raise awareness among their followings, and as discussed earlier even when admitted to being sponsored posts they aren't perceived as less trustworthy. The Social Media Influencers combine the best of both worlds, being peers that the millennials and Gen Z look to and converse with while at the same time having the advantages of being a celebrity endorsing a product or brand.

6. ACADEMIC AND PRACTICAL IMPACT

The aim of the paper is to add new information to the field of brand awareness marketing. While there is information available in literature about raising brand awareness among millennials, by combining this literature into one comprehensive article a clearer understanding of all the factors that drive brand awareness in the new generation is generated. All conclusions above were come to by combining current literature. Seeing as there was little literature regarding raising brand awareness among millennials and gen Z specifically, literature regarding what drives purchase intention and regarding brand awareness in general were used. This literature was not in all cases generalizable and in some cases did not specifically involve the generations specified in this review. Literature regarding what drives these generations and what influences their purchase intention was also included, and this in some cases acted as a substitute for the lack of literature on brand awareness among the generation.. Research is therefore needed to test whether or not information found, and conclusions based on that, is indeed relevant for millennials and Gen Z. Furthermore, as the factors that influence brand awareness among millennials and Gen Z are purely reached through literature review, researchers should build on this by conducting empirical research in order to develop practical models and prove or disprove the above conclusions.

This research has practical implications as well, as organizations can use this information to raise brand awareness among the new generation of consumers. Generation Y and Z are unique and influential consumer group. They have a tremendous spending power (Kennedy, 2001), which means research into the topic of raising brand awareness among this group could potentially lead to a significant increase in income for companies if they apply this information to target the group. This would mean thinking of collaboration with Social Media Influencers to profit off the influential power they have among their following of mainly millennials and Gen Z.

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Understanding the Customer in the Decision-making Process: Building up Loyalty through Interaction, Engagement and Adaption

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ABSTRACT

Marketers face the challenge of reaching the customers through the decision-making process. The goal of marketing is to reach the customer at the moments where they can influence the customer the most. For years, these touchpoints were linked to the traditional marketing funnel. The marketing funnel consist of four phases; awareness, interest, desire and action. Customers narrow down through the funnel and the companies were using company driven marketing. Nowadays, customers are more empowered and change their brand consideration. Due to the new IT technologies, the customers have embraced the new communication channels on the internet, which enables them to give their opinions about the products and search for opinions. This is affecting the traditional marketing purchase funnel. Marketers can use the customer decision journey to react on the changes. The customer decision journey consists of other phases, which allows the marketers to interact with the customer. When the customer is satisfied with the purchase, the customer can adapt in the loyalty loop. Hereby the company can engage with the customer by setting up a loyalty program. This provides the company information about the customer and the customer with benefits. The use of consumer-driven marketing will result in better touchpoints for the marketers in the customer decision journey.

Keywords

Brand consideration, Empowered Customers, Customer-driven, Customer Decision Journey, Loyalty, Purchase Funnel, Touchpoints

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view:

Due to the changing environment and the empowered customers, the classic customer journey is no longer useable. This change caught the interest of the author. Conducting a literature research provides an understanding of the customer in the changing decision-making process.

1. INTRODUCTION

Nowadays, the availability of digital user-generated documents has dramatically increased, this is affecting the traditional shopping behavior. Customers have embraced the new communication channels, which gives them the opportunity to talk about their shopping experience and search for opinions. This is a part of their decision-making process (Vázquez et al., 2014). Vázquez et al. (2014) argue that internet has transformed from consumer's word-of mouth into digitized customer feedback information. But Nielsen's[1] research has shown that 70% of the customers trust buyers' reviews, while 92% trust recommendations from peers, family and word-of-mouth above advertising. This opens opportunities for the traditional businesses to grow, innovate and improve their relationships with their customers. Due to the new IT technologies and the variety of digital channels, customers increasingly go online during their shopping process. For marketers, it is important to understand the consumer journey, "to make the right decisions in matching different target markets with different purchase behaviors- or different local markets with different digital environments" (Hyun & Kwon, 2015, p. 48). The topic of this literature review is delivering integrated, real-time relevant experiences in context. According to the Marketing Science Institute (2016) "consumers are increasingly in control of the information flows and marketers now have the ability to customize experiences, offers, and content" (p. 8). Hitting the right notes at the right point in the path to purchase or decision journey (Marketing Science Institute, 2016). Marketing has one goal, reaching customers at the moments that most influences their decisions (Court, Elzinga , Mulder, & Vetvink, 2009).

Therefore, the objective of this research is to inform the marketers how they can interact, engage and adapt within the customer journey, during the decision-making process. The research question of this literature review is: *How can marketers interact, engage and adapt, in a continuous manner, across the decision-making process of customers?* To answer the research question the following subjects will be discussed in this literature review. Firstly, the phases that the purchase funnel consist of. In the second part the changes are visualized, as a result of these changes the purchase funnel is no longer accurate for todays' business. This contributes to the changed touchpoints, brand consideration and empowered of customers. In the last part, the customer decision journey will be introduced. By building up loyalty and the use of consumer-driven marketing, a marketer can interact, engage and adapt within the customer journey. This study is providing a descriptive model for marketers, which they can adapt for use in their daily business activities.

2. THE PURCHASE FUNNEL

The goal of marketing is to reach customers at the moments that most influence the consumer's decisions. For years, these touchpoints were linked to the purchase funnel (Court et al., 2009). The purchase funnel, which is proposed by Lewis (1903), is a marketing model that shows the purchase process in different stages. It starts when a consumer is aware of the existence of the product (awareness) to the moment when he or she buys the product (purchase). The phases in the traditional purchase funnel are awareness, interest, desire and action. Figure 2.1 shows the traditional purchase funnel.

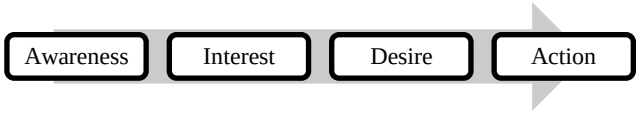

Figure 2.1 Traditional purchase funnel (Lewis, 1903)

Awareness refers to the first contact with the product or brand, with or without willingness to buy (Vázquez et al., 2014). Interest refers that the consumer is actively expressing an interest in a product or brand. Desire refers to that the consumer is aspiring to a product or brand. The last phase is action, hereby the consumer is taking the next step towards purchasing the chosen product (Bell, 2015). This model is also known as the AIDA model. Edelman (2010) explains that the customers start at the wide end of the funnel and narrow down to their final choice. They start with many brands, narrow down to fewer brands, go to their final choice and buy their product. Figure 2.2 shows the funnel metaphor.

Figure 2.2 The funnel metaphor (Edelman, 2010)

As can been seen there is no after purchase interaction between the company and the customer. The relationship mostly focuses on the product (2010). Companies traditionally used the paid-media push marketing (Edelman, 2010). Court et al. (2009) agree that customers were impressed by the touchpoints, like advertisements, news reports, conversations with family and friends, and product experiences. Edelman (2010) argue that companies used paid-push marketing to build awareness, drive consideration and ultimately inspire purchase.

3. CHANGES NOWADAYS

In the purchase funnel, companies have been reacting to the customers, trying to position themselves in the shoppers' path to navigate the journey from consideration to purchase (Edelman, 2010). Now, through the new technologies, the customers become empowered, Therefore, the touchpoints in the customer journey change, as does the brand consideration.

3.1 Touchpoints

Before describing the touchpoints that the companies need to adapt, it is important to give the definition of a touchpoint, to understand the concept of touchpoints. Companies have long emphasized touchpoints. Touchpoints are the critical moments when customers interact with the organization and the company's offerings on their way to purchase and after purchase (Rawson, Duncan, & Jones, 2013). Baxendal, Macdonald and Wilson (2015) define touchpoints as "an episode of direct or indirect contact with the brand" (p. 236). However, touchpoints include, but are limited to channels as defined by Neslin et al. (2006) "a customer contact point, or a medium through which the

[1]http://www.nielsen.com/us/en/reports/2012/global-trust-in-advertising-andbrand-messages.html.

firm and the customer interact" (p. 96). During this moments, the customer is the most open. For years, these touchpoints have been understood through the purchase funnel, but today the purchase funnel fails to capture all the touchpoints and key buying factors, this results from the enormous choice of products and digital channels. Court et al. (2009) suggest that a third of the touchpoints are involved with company driven marketing, but the change of decision making of the customers makes that the marketers need to change to the customer-driven touchpoints.

3.2 Brand consideration

The literature describes the following about brand consideration. Brand consideration is defined by Baxendal, Macdonald and Wilson (2015) as "the extent to which the customer would consider buying the brand in the near future" (p. 238). "In particular, conceive of the consumer decision journey as an interplay between multiple touchpoints and the consumer's evolving brand consideration" (Baxendal, Macdonald, & Wilson, 2015, p. 238). Häubl and Trifts (2000) provide evidence that virtual recommendations and comparative product information assist customers in brand consideration. In contrary Court et al. (2009) say that fragments of media and the proliferation of products helps them to reduce the number of brands. In the funnel metaphor, the number of brands now needs to expand instead of narrow down if the customers are seeking for information. Now, brands may interrupt the decision-making process in the first stage and even force the rivals to the exit (Court et al., 2009). The change in behavior of the customers provides opportunities for marketers by creating and adding touchpoints, when the brands can have an impact. "Brands already under consideration can no longer take that status for granted" (Court et al., 2009, p. 97).

3.3 Empowered customers

The change in the outreach of customers to marketers is becoming more important than the marketers outreach to the customers (Court, et. al, 2009). Court et al. (2009) argue that the traditional advertising, where companies pushed their advertising to the customers, fails often to reach the right customers at the right time. Constantinides (2010) states that "empowered customers have devised new tactics in searching, evaluating, choosing and buying goods and services" (p. 4). The control by the customer over the commercial process is increasing, because of the customized products, active market participation, co-creation and interaction (Constantinides , 2010). According to Edelman (2010) the explosion of digital technologies has created empowered customers. They become expert in use of the tools, use the information to hunt down to what they want, which is the lowest price. Erdem, Keller, Kuksov and Pieters (2016, p. 3) add that the technology advances have created new customer capabilities, which give them the opportunity to:

- Use the internet as a powerful information and purchasing aid;
- collect fuller and richer information on products, services, brands and firms;
- search, communicate, and purchase on the move;
- tap into social media to share opinions and express loyalty with others;
- interact actively with firms;
- digitally receive ads, coupons, and other marketing materials;
- easily compare prices and seek discounts.

In the same way, these technological advances created new capabilities for the companies, which give them the opportunity to (Erdem et al., 2016, p. 3):

- Use the internet as a powerful information and sales channel;
- collect fuller and richer information about markets, customers, prospects and competitors;
- reach customers on the move with mobile marketing;
- tap into social media to amplify their brand message;
- facilitate and speed external communication among customers;
- send targeted ads, coupons, samples and information to customers;
- dynamically set prices to reflect different levels of supply and demand.

It stands out that the empowered customers create opportunities for the companies. These opportunities provide the companies information about the customers and they can interact with customers and listen to them.

4. NEW APPROACHES

Through the changing touchpoints, brand consideration and customer empowerment, the classic journey is becoming more complicated. De Bruyn and Lilien (2008) argue that the classic customer journey has evolved over the years, but the basic marketing model stages consist in all the evolved consumer journey. Court et al. (2009) created a linear purchase funnel in cooperation with Mckinsey, they used the traditional funnel metaphor, but added a fifth phase. It is a linear process, all customers start in the awareness phase, continue to the familiarity phases, go to the consideration phase, complete the purchase and the customer becomes loyal to the company. This way may be useful to map the journey for the new customer (Court et al. 2009). Edelman (2010) argues that by making the customer loyal, the customer will skip the first phases and will continue to the consideration phase. According to Vázquez, et al. (2014) modern versions of the consumer journey take into account the influence of internet, social media, and also include the post purchase phases. Forrester[2] shows a consumer journey which is usable as a funnel and provides a better fit with marketing in 21st century. It consists of the following four stages engage, discover, explore and buy. "Knowing the exact stage of the decision journey where the customer is located is essential in order to design specific promotional campaigns, interact with customers at the appropriate touchpoints and improve customer relationships management systems" (Vázquez et al., 2014, p. 70). To understand this an analysis of the different social media needs to be done, because the conversations between the customers online play an important role in the consumer decision journey (Divol, Edelman, & Sarrazin, 2012). These two new approaches add already more interaction and engagement with the customers, but it does not take the new technologies and the empowered customer into account.

5. CUSTOMER DECISION JOURNEY

Two new approaches were already mentioned, but the literature defines also an online customer journey and a customer decision journey. Anderl, Schumann and Kunz (2016) define an online customer journey or path to purchase "to include all contacts of any individual consumer with a retailer over all online marketing channels, prior to a potential purchase decision" (p. 185).

[2]http://blogs.forrester.com/steven_noble/10-10-28-its_time_to_bury_the_marketing_funnel

Contacts refer to the direct visits on the website, clicks on the online advertisements of the website and the views of online advertisements, which not lead to a click. The digital journey consists of more phases than the classic customer journey. Edelman and Singer (2015) suggest that:

> "In the classic customer journey the consumers engage in an extended consideration and evaluation phase before either entering into the loyalty loop or proceeding into a new round of consideration and evaluation that may lead to the subsequent purchase of a different brand" (p. 90).

According to Edelman and Singer (2015) "the new journey compresses the considered step and shortens, or entirely eliminates, the evaluate step, delivering customers directly into the loyalty loop and locking them within it" (p. 90). Figure 5.1 shows the start of the classic journey and the start of the new journey.

Figure 5.1 Streamlining the decision journey (Edelman & Singer, 2015)

The above figure consists of six phases, these are the consider-, evaluate-, buy-, enjoy-, advocate- and bond phase. The first phase is the consider phase, in this phase the customer considers to buy a product, but in this phase the number of brands is the highest. Secondly the evaluate phase, the customer is evaluating the different brands, which are available on the market. The third phase is the buy phase, here the customer makes the decision to buy or not to buy. Different factors play a role in the decision, such as price and availability. The fourth phase is the enjoy phase, hereby the customer has the first experience with the product and evaluates it. Fifthly, the advocate phase, this depends on the outcome of the enjoy phase, the customer can advocate or criticizes the product. The last phase, the bond phase, is relying on digital interactions, if the customer is satisfied the customer will engage with the brand and the customer will come in the loyalty loop. If the customer is not satisfied the customer decision journey starts again with the first phase, consider phase [3]. McKinsey also developed a customer decision journey (Court et al., 2009). The customer decision journey is visualized in figure 5.2.

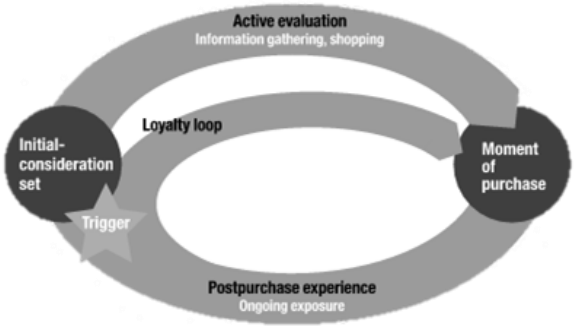

Figure 5.2 Decision-making process (Court et al., 2009)

This decision-making process is a journey with four phases instead of six phases. The four phases are; initial consideration, active evaluation, closure and post purchase. At the start of the initial consideration phase is the trigger, these stand for stimuli, that makes someone a potential customer. In the initial consideration, the customer considers an initial set of brands, based on brand perceptions and exposure to recent touchpoints. In the active evaluation phase, the customer adds or subtracts brands as they evaluate what they want. In the closure phase, ultimately the customer selects a brand at the moment of purchase. Lastly, the post purchase experience, after purchasing a product or service, the customer build expectations based on experience to inform the next decision journey (Court et al., 2009).

There can be seen in both customer decision journeys that they are about creating a loyalty loop. This loop of loyalty will arise if the bond of the customer with the brand is strong enough. This results if the customer repurchases without think about other brands. Edelman (2010) states that in the loyalty loop the customer "remains in a monogamous and open engagement with the firm" (p. 91). It provides the customers that they can follow the brand after the purchase, respond to content sharing and meet the customer expectations[4]. These two models can help the marketers to interact, engage and adapt within the decision-making process of the customers.

5.1 Loyalty

Loyalty is mentioned a several times in this study, the literature describes that loyalty arises from customer experience. Customer experience can be useful to manage the customer journey. McLean and Wilson (2016) identify a positive customer experience by the satisfaction, trust, re-visit intention, re-purchase intention and loyalty. McLean and Wilson (2016) highlight that "the customer experience is a holistic process made up from the customer journey, deriving from the sequence of touchpoints a customer has with an organization" (p. 603). During a search the emotions of the customers are a critical part of the influence, the decision making and the behavior of the customers (Kuhlthau, 2004). Customer satisfaction is one of the most important conditions to be loyal to an organization and to complete subsequent purchases (De Vries jr. & van Helsdingen, 2009). First the touchpoints in the purchase funnel were used in the marketing. Through the new developments it is important to create loyalty among customers. "Loyalty enables firms to direct their efforts into investing resources in retaining those customers who have the potential to be lifelong customers" (Whyte, 2002, p. 19). The use of loyalty programs is popular in a variety of industries, companies use the loyalty programs to collect information, increase customer retention and enhance customer relationship and loyalty (Stathopoulou & Balabanis, 2016). Dorotic, Bijmolt and Verhoef (2012) define loyalty programs as "continuity incentive programs offered by a retailer to reward customers and encourage repeat business" (p. 218).

Dorotic et al. (2012) emphasize on the importance of a reward system which is integrated and structured. This system needs to be customized to the needs of the customers. Through the reward system, customers can gain three categories of benefits; utilitarian, hedonic, and symbolic benefits. Utilitarian benefits are related to monetary savings, like discounts, points and vouchers. Hedonic benefits refer to the entertainment and exploration, which are provided through the pleasure and collecting points, like trial of new products, information about trends, events or promotional offers. Symbolic benefits are recognition and social benefits, like social status, sense of belongings, special treatment, social approval and recognition by

[3] http://essay.utwente.nl/71076/1/de%20Witte_MA_BMS.pdf

[4] http://essay.utwente.nl/71076/1/de%20Witte_MA_BMS.pdf

the organization (Stathopoulou & Balabanis, 2016, p. 5802). Hedonic and symbolic benefits are psychological benefits, this can make customers feel appreciated and valued. Companies which want to build up long-relationship with their customers must choose for hedonic and symbolic benefits. Loyalty can take care of the engagement during the customer decision journey.

5.2 Consumer-driven marketing

Consumer-driven marketing is a marketing strategy that can be used. In the funnel metaphor companies used the company driven marketing, in other words push-marketing. Companies must invest in consumer-driven marketing, where they can interact with the customers. Consumer-driven marketing is defined as[5] "offerings, plans or strategies motivated by customer demand or expectations." Court et al. (2009) argue that the internet is the epicenter of the consumer-driven marketing. This is crucial during the active evaluation phase, in the customer decision journey, as the customers seek for information, reviews and recommendations. Companies at this point in the customer decision journey need to perform strong, this is requiring a mind-set change from buying media to developing properties which are attractive for the customer (Court et al., 2009). Court et al. (2009) suggest the following developing properties; digital assets such as websites about products, programs to foster word-of-mouth and systems that customize advertising by viewing the context and the customer. Consumer-driven marketing can help the companies with interacting with the customers.

6. CONCLUSION

The objective of this study is to understand the decision-making process of the customer. There can be concluded that marketers need to use the customer decision journey instead of the traditional purchase funnel. By using this customer decision journey companies can interact, engage and adapt continuously during the decision-making process. Due to the changed customer behavior and the new technologies, the customers become more empowered and this is affecting the brand consideration. Marketers must change the company driven touchpoints into consumer-driven touchpoints to reach the empowered customers. Empowered customers have more capabilities which provides them the opportunity to share opinions, compare prices and interact with companies. But it also provides the company with different opportunities which the marketers can use to interact within the customer decision journey. These opportunities are collecting information, send customized information and set prices. In the decision-making process the customer goes through different phases. These phases lead the customers through the purchasing path. After following the path in the customer decision journey the customers complete the purchase and when they are satisfied, the customers will have a positive shopping experience. A good customer experience will result in trust, re-visit intention, re-purchase intention and loyalty. The customer will be engaged with the brand and the customer will come in the loyalty loop. The loyalty loop provides customers that they can follow the brand, but the company can react on the content sharing and meet the customers' expectations. When the customer is in the loyalty loop, the brand can define loyalty programs. With these loyalty programs the company can reward the customer and encourage repeating business. Marketers can better choose for hedonic and symbolic benefits, because these are psychological. The use of consumer-driven marketing will take care of the interaction with the customer. Companies can set up digital assets, foster word-of-mouth and create systems that customize advertising. The use of the customer decision journey, will lead to interaction, engagement and adaption within the customer journey. By providing the right touchpoints, the companies can build up loyalty.

7. DISCUSSION

In the discussion, the research will be evaluated. The theoretical and practical implications, limitations and the need for further research will be conducted.

7.1 Theoretical implications

From a theoretical perspective, this study contributes to relationship marketing literature and also extends on the decision-making process and the customer decision journey literature. This study provides an integrated descriptive model, that can be replicated in different settings and enhances current knowledge. The study on the changing behavior of the customer and its impact on the purchase funnel, provides new opportunities in the customer decision journey. The study also finds that loyalty can help with building a relationship with the customer.

7.2 Practical implications

The findings that this study provides can help marketers appropriately and design the customer decision journey for their customers. The use of the customer decision journey makes it possible for the marketers to interact, engage and adapt within the customer journey. When it is done in the right manner, the customer will come in the loyalty loop, this means that the customer will be loyal to your brand and repurchase products.

7.3 Limitations and further research

With regard to the knowledge in this literature review there cannot be determined what approach fits the best in a particular industry. A limitation is that there is less literature available about the customer decision journey, this is because of the complexity and it is quite a new topic. The reader should keep in mind that the study is based only on existing literature. This is limiting the findings; therefore, it is recommended to do further research on this concept. Not only do a literature review, but also a case study, with provides a company with a model of how to interact, engage and adapt within the customer decision journey.

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Literature review based on the usability of personalized content in improving e-satisfaction

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ABSTRACT

This paper entails a literature review based on the usability of personalized content in improving online customer satisfaction, or e-satisfaction. Because the internet provides an immense amount of content, personalized services are increasingly popular in the online world. Currently the problem is not the amount of content available on the internet, but finding the right content that fits an users information needs. This literature review gives an in depth overview of the concept personalized content. Multiple aspects and applications of personalized content are mentioned. E-satisfaction is another topic in this literature review and multiple determinants of e-satisfaction are mentioned. These are the determinants trust, perceived value, convenience (ease of use), merchandising (information availability and content) website design (graphic style), privacy/security, information overload and the effort that is required to acquire certain content. Different types of content are assessed based on their ability to improve these mentioned determinants. Content recommenders is a type of content that is able to enhance e-satisfaction by reducing the search effort of the user, reducing information overload and improving convenience. Therefore this content should be personalized to achieve higher e-satisfaction. Other types of content need more research in relation to the determinants of e-satisfaction in order to tell if this type of content should be personalized or not.

Keywords

Personalization, Content, Personalized content, E-satisfaction, Customer satisfaction, Service quality, Information overload

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?

Content marketing is an important topic in the field of digital marketing and personalized content may help to improve the content marketing strategy of e-commerce organizations. Therefore this literature review is conducted to get a better understanding in the content that should be personalized to improve e-satisfaction.

1. INTRODUCTION

The internet is a place that is able to provide an immense amount of content its user. This can be in the form of news articles, products, movies, music, etcetera. Currently the problem is not the amount of content available on the internet, but finding the right content that fits an users information needs (Das, Datar, Garg & Rajaram, 2007). This is due to the information overload that exists on most platforms (Xiao & Benbasat, 2007). With personalized content it is possible to combat the information overload by tailoring particular content to individual customers, based on their interests. This means that content-recommendations can be given, or that the most relevant content will stand out (e.g. highlighted or placed on the homepage of a website). Since the introduction of the topic, the field of personalized content has advanced towards a point where it is imbedded in a wide range of commerce and content applications (Konstan & Riedl, 2012). Amazon for example greets customers with personalized messages and offers product recommendation that are in line with past purchases (Tam & Ho, 2006). Another example is the Ringo system (Shardanand & Maes, 1995) that is able to provide music recommendations and the Video Recommender "VideoZapper" from Boavida, CabaÇo and Correia (2005) that gives recommendations of movies towards its users.

Current research in the field of personalized content is mainly focused on the positive and negative effects of personalized content (Liang, Lai & Ku, 2006; Konstan & Riedl, 2012) and algorithmic research to improve given recommendations (Adomavicius & Tuzhlin, 2005a; Burke, 2002; Das et al., 2007; Ekstrand et al., 2011; Herlocker et al. 1999, 2004). But research about what content should be personalized and what content should not be personalized is limited. Besides this there is no research based on the relation between specific personalized content and e-satisfaction. This is however an interesting topic, because according to Liang et al. (2006) providing content that fits with the interest of the user can result in saved time and effort. But more importantly, existing literature has shown that personalized sellers can ask more money for personalized products (Dewan, Jing & Seidmann, 2000). The research question stated below will investigate what content should be personalized:

> *What content should be personalized to achieve higher e-satisfaction?*

This paper entails a literature review that is divided in multiple chapters to answer the research question. First an extensive definition of "personalized content" will be given. The following chapter will focus on the definition of "e- satisfaction" and will investigate how e-satisfaction can be improved by mentioning multiple determinants of the concept. This chapter is followed by exploring the relation between Personalized content and e-satisfaction. Finally, the last chapter will make clear which content should be personalized to enhance e-satisfaction.

2. PERSONALIZED CONTENT

Many different definitions of (web) personalization (content) exist but all include the same characteristics of the concept.

- The definition mentioned by Kobosa (2001) states that "Web personalization allows product offerings, sales promotions, product news, ad banners, etc. to be targeted to each individual user, taking the user's navigation data, purchase history and other previous interactions with the electronic merchant into account. From a more general perspective, personalization allows the relationship with customers on the Internet to migrate from anonymous mass marketing and sales to `one-to-one' marketing."(pp. 53-54).

- Vallet, Castells, Fernández, Mylonas and Avrithis (2007) state that "Personalized multimedia content access aims at enhancing the information retrieval (IR) process by complementing explicit user requests with implicit user preferences, to better meet individual user needs." (pp. 336)

- Adomavicius and Tuzhilin (2005b) state "personalization is the use of technology and customer information to tailor electronic commerce interactions between a business and each individual customer. Using information either previously obtained or provided in real time about the customer, the exchange between the parties is altered to fit that customer's stated needs, as well as needs perceived by the business based on the available customer information" (pp.83).

What these different definitions have in common is that they all mention the requirement of certain information to provide content that fits the needs of the customer. In short Web personalization refers to making the platform more responsive by acknowledging individual person's needs. It is important to note however that (web) personalization includes more web data concepts then only content. According to Srivastava, Cooley, Deshpande and Tan (2000) web data is divided in content, structure, usage and user profile. In this literature study only the concept of content is important, for further information about the other forms of web data I refer the interested reader to Srivastava et al. (2000). According to Srivastava et al. (2000) and Eirinaki and Vazirgiannis (2003) content is the data that is presented to the end user in a structured manner. This can be as simple as flat text, images, videos, structured data (e.g. information retrieved from databases), etc.

An important aspect of personalized content is the recommendation system or the recommender system. This is an information system that delivers content that is focused on the individual customer information needs (liang et al., 2006). The recommendation system is able to identify user preferences and can assess how important different types of content are for each individual customer. When content matches the preferences of the

individual customer it can be highlighted on the homepage of the online platform. The process of selecting the most relevant content is called information retrieval or information filtering, because the most relevant content has to be retrieved in a large database of content.

There are four types of personalization mechanisms. The first mechanism is called *collaborative filtering*. This mechanism is able to recognize similarities between its users based on their consumption history (Li, Chu, Langford & schapire, 2010). Collaborative filtering generates groups of "nearest neighbors" that share the same interest and consumption history with high correlation. If multiple nearest neighbors in this group have consumed certain content, this content will be recommended to the other consumers in the group (Balobanovic & Shoham, 1997). This mechanism is an ideal solution for a platform where overlap in the consumption history is high and where the amount of content is static. However, the downside of this approach is that it is unable to identify similarities between users for new products (Li et al., 2010). The second type of personalization mechanism is *content-based filtering*. This mechanism identifies similarities in its content, instead of its customers. It tries to recommend those types of content that are similar to the content in the consumption history of the user (Balobanovic & Shoham, 1997). So when a customer consumes relatively many political news articles, more political news articles will be recommended. Some researchers, for instance Eirinaki and Vazirgiannis, (2003) and Mourlas (2008) also add the *manual decision rule* system to the list of personalization mechanisms. This system allows certain rules to be established based on user demographics, profiles, session history or a set of question that have to be answered. Finally the user receives his personalized content based on the information provided. The last personalization mechanism is a *hybrid approach*. This mechanism combines the previously mentioned mechanisms. The hybrid approach has the benefit that it is able to dismiss the inability of the collaborative filtering mechanism to recommend new items, by applying the content-based filtering mechanism. As shown by prior studies, the recommender system approach might be difficult to apply (Dervin, 1992). This is due to the frequent changes of content on most platforms. Another problem is the significant number of new visitors that do not have a content history, this is called a *cold start* by Ho and Tang (2001). This has implications especially for the collaborative filtering approach as mentioned before.

According to Liang et al., (2006) and Zhang and Seo (2001) there are two different methods to retrieve the data that is necessary for personalizing content, the explicit method and an implicit method. The explicit method requires input from the content consumer by asking their preferences explicitly. The feedback received can be used to generate a customer profile and provide the customer with content that fits this profile. According to Gauch, Chaffee and Pretschner (2003) the explicit method is not recommended due to the additional burden that is placed on the user. Another downside of the explicit method is that some users may not accurately report their interests and that their interest may change over time, while the created profile remains static. The implicit method, in contrast with the explicit method, does not require consumer feedback. By monitoring the users behavior, like keystrokes and hyperlinks and online searches, a consumer profile can be generated. Although this method does not require user input, it still performs as good as the explicit method according to Lai, Liang & Ku (2003) and Zhang and Seo (2001).

2.1 Application of Personalized Content

To get better knowledge of personalized content it is important to know how personalized content can be applied. Below are different applications of personalized content discussed. Personalized content has mainly been implemented in e-commerce, online news, music, video, online advertisements, web documents and e-learning (Tam & Ho, 2006; Ha & lee, 2009). First, in the e-commerce product recommenders are used by organizations as Ebay and Amazon to recommend certain products to its users based on their interests (Schafer et al., 1999). Amazon for instance has the "customer who bought" section where products are noted that other customers bought, which might be interesting for the individual customer. In the online news business Bharat, Kamba, Albers. (1998) and Jokela, Turpeinen, Kurki, Savia & Sulonen (2001) created an personalized news platform by recommending news based on the users preferences. In the field of web documents Konstantas and Morin (2000) developed a recommendation system for the dissemination of electronic documents. Wei, Chiang & Wu (2006) created document-clustering techniques that support individual preferences in document categorization. Both Kuo and Shan (2002), Li, Myaeng and Kim (2007) and Chen and Chen (2001) created a music recommender that recommends music based on their music style and melody taste. As mentioned, video content is also a topic where personalization has been applied. Examples of a video recommender is the "VideoZapper" from Boavida et al. (2005). Online advertising is also a field that made use of personalization. Kazienko and Adamski (2007) created AdROSA which is a system that enables personalization for web banners. This program uses past web usage to show personalized banners. The final field where personalized content is often applied is in e-learning. Hsu (2008a), for instance created an English teaching recommending system which recommend English reading lessons that the user finds interesting which will result in higher motivation to learn.

3. E-SATISFACTION

Customer satisfaction is a topic that has been well researched. E-satisfaction, however is a relatively new concept and less literature is written on this topic. To define customer satisfaction we can take the definition stated by Oliver (1980): Customer satisfaction is the customers' evaluations of a product or service with regard to their needs and expectations. The definition of e-satisfaction (Anderson and Srinivasan, 2003) is in line with the definition of Oliver (1980), however it adds the

requirement of an online platform to the definition. Anderson and Srinivasan (2003) defined e-satisfaction as ''the contentment of the customer with respect to his or her prior purchasing experience with a given electronic commerce firm'' (p. 125).

3.1 Electronic-Customer Satisfaction Index (e-CSI)

Multiple researches have spent their time on developing models that show the determinants of e-satisfaction. Hsu (2008b) created the (e-CSI) model that is based on the American customer satisfaction index (ACSI) (Fornell, Johnson, Anderson, Cha & Bryant,1996). The e-CSI model focusses on three determinants of e-satisfaction, as shown in figure 1. These determinants are Trust, e-SQ and perceived value. The model also mentions customer complaints and customer loyalty as consequences of high or low e-satisfaction. This model is however only focused on e-retail organizations and not on all content providers (e.g. online news providers).

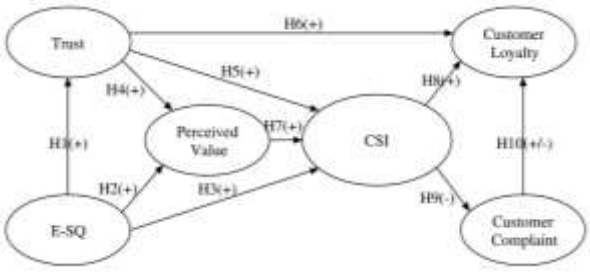

Figure 1 E-CSI model (Hsu, 2008b)

3.1.1 Trust

The problem with the online world is that there are trust issues. First purchasing goods online tend to be more risky due to uncertainty. This is due to the fact that customers cannot physically check products, have to hand out private information over the internet, etc. (Reichheld & Schefter, 2000). The customers perceived trust in an organization and website might affect their willingness to buy products or consume content from a certain organization (Papadopoulou et al., 2001). According to lee and Turban (2001) the lack of trust is one of the most important reasons of customers to not make a purchase from an online shop.

3.1.2 Perceived Value

Perceived value is defined as "the consumer's overall assessment of the utility of a product, based on perceptions of what is received and what is given. It is the trade-off between a received benefit (i.e., the benefits that a buyer derives from a seller's offering) and a cost (i.e., the buyer's monetary and non-monetary costs in acquiring the offering)." (Hsu, 2008b, pp. 3036). Perceived performance is important in an online setting because customers are able to easily compare products and prices of products which alters the perceived value (Anderson & Srinivasan, 2003).

3.1.3 Electronic Service Quality (e-SQ)

The final antecedent of e-satisfaction is e-SQ. Traditional service quality (SQ) literature is focused on people-delivered services which is not fully applicable for e-SQ (Li et al., 2002). The factors of SERVQUAL for instance are tangibles, reliability, responsiveness, assurance and empathy. According to Li et al., (2002) the dimension *quality information* should be added and, *tangibles* should be deleted to create a better measure of e-SQ. Zeithaml et al. (2002) on the other hand suggest that the dimensions *Information availability and content, ease of use or usability, privacy/security, graphic style* and *fulfillment* should be included in e-SQ.

- **Information availability and content**
  The information that is available on a website is a very important information source for customers, because it is easily accessible. The relevance, timeliness and accuracy (e.g. transparent and detailed information) of information is important. (Li et al., 2002)

- **Ease of use or usability**
  Online transactions are complex according to Li et al. (2002) and therefore websites should be easy to use. This determinant included ease of navigation, intuitiveness, user interface and search facilities.

- **Privacy/security**
  Because websites often require personal information the topic privacy and security is an issue. To provide a high degree of e-SQ an organization should have taken sufficient privacy/security measures. (Li et al., 2002)

- **Graphic style**
  Websites consist of multiple types of content like text, pictures and videos. To enhance SQ the graphic style should be appealing to the customer. Graphic style includes color, layout, print size, etc. (Li et al., 2002)

- **Fulfillment**
  Besides the front-end processes (e.g. website design) the back-end processes (e.g. delivery) should be sufficient. (Li et al., 2002)

3.2 Model of E-Satisfaction by Szymanski and Hise (2000)

Besides e-CSI there is another model that derives multiple determinants of e-satisfaction created by Szymanski and Hise (2000). This model, as shown in figure 2, states that the online convenience, product offerings, product information, site design and financial security are the determinants of e-satisfaction. These results are quite in line with the e-CSI model. Evanschitzky, Iyer, Hesse and Ahlert (2004) replicated the study from Szymanski and Hise and got similar results. Both studies state that the online convenience and website design are the most important drivers of e-satisfaction. This model is also only focused on e-retail organizations and not on all content providers (e.g. online news providers).

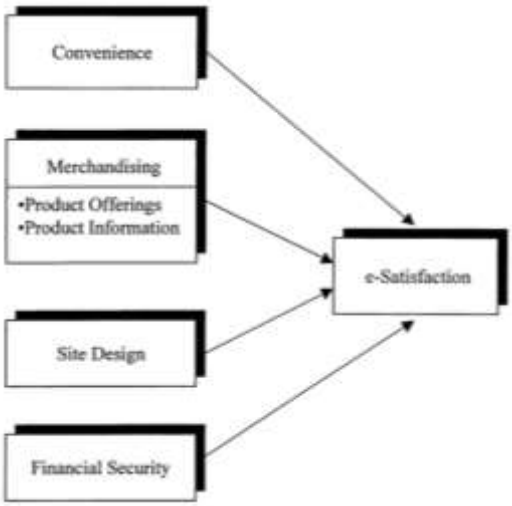

Figure 1 Determinants of e-satisfaction (Szymanski & Hise 2000)

3.3 E-satisfaction Theories

Liang, Lai and Ku (2006) took a different approach to assess e-satisfaction by researching different theories related with information personalization and its effect on e-satisfaction. The most important theories related to content personalization and e-satisfaction are the principle of least effort (Zipf, 2016) and information overload theories. The least effort theory states that every individual will try to minimize the effort of achieving a certain purpose. Related to information seekers, this results in individuals minimizing the effort of acquiring certain content, also when this results in lower quality or quantity content (Liang et al., 2006). The information overload theory states that more information is provided to an individual than they can process in a given timeframe. This will lead to users being unable to efficiently locate the content that they need and overlook the content that they consider critical (Herbig & Kramer, 1994). According to Ho and Tang (2001) the factors that cause an information overload are: information quantity, information quality and information format.

4. WHAT CONTENT TO PERSONALIZE

As mentioned before the trust, perceived value, convenience (e-CSI: ease of use), merchandising (e-CSI: information availability and content) website design (e-CSI: graphic style) and privacy/security are the main determinants of e-satisfaction (in e-retail organizations). Also information overload and least effort are important theories in relation to e-satisfaction. In short, all content that positively influence the determinants of e-satisfaction, decrease information overload and lower the effort of acquiring content, need to be personalized.

As mentioned before content recommenders are a well-known and well-researched, therefore the impact of content recommenders on e-satisfaction can be derived from the literature. According to Liang et al., (2006) personalized services can increase the online customer satisfaction by recommending relevant content, thus recommender systems enhance e-satisfaction. One of the main reason that recommender systems enhance e-satisfaction is the reduction in search effort of certain content (Bechwati & Xia, 2003; Häubl & Murray, 2006; Haubl & Trifts, 2000), thus they increase convenience, and decrease effort and information overload. According to Pedersen (2000) the users of recommender systems spent less time searching for information, reported a larger number of information sources, collected more information and were generally more satisfied. To maximize the users e-satisfaction generated by content recommenders Liang et al. (2006) concluded that the number of items and recommendation accuracy had significant effects on the satisfaction of the user. According to Swearingen and Sinha (2001) effective recommendation systems also inspire trust in the system (which is one determinant of e-satisfaction), have transparent system logic, recommend not-yet-experienced content, provide extra information about the content (e.g. pictures and ratings) and provide ways to alter recommendation by including or excluding particular types of content.

Other than content recommenders no extensive reliable research on the effects of other personalized content on the determinants of e-satisfaction has been conducted. The research is currently concentrated on the recommendation systems, but this is not the only type of content. It seems likely that personalized content like personalized greeting messages can increase the determinant trust, that personalized pictures may improve website design, etc. But extensive research is necessary to discover the impact of other content on e-satisfaction.

5. CONCLUSION

The research question of this literature review is "*What content should be personalized to achieve higher e-satisfaction*?". Personalized content is able to enhance e-satisfaction if it is able to improve the determinants trust, perceived value, convenience (e-CSI: ease of use), merchandising (e-CSI: information availability and content) website design (e-CSI: graphic style), privacy/security, information overload and the effort that is required to acquire certain content. Content recommenders is a type of content that is able to enhance e-satisfaction by reducing the search effort of the user, reducing information overload and improving convenience. Therefore this content should be personalized to achieve higher e-satisfaction. Other types of content need more research in relation to the determinants of e-satisfaction in order to tell if this type of content should be personalized or not.

5.1 Implications and Limitations

Extensive research on the topic e-satisfaction is required. Currently the determinants of e-satisfaction are clear for e-retail organizations. However other platforms also deliver personalized content, for example providers of video or music content. Therefore the e-CSI model(Hsu, 2008b) and/or the Model of e-Satisfaction by Szymanski and Hise (2000) should be extended to other types of platforms. Liang et al (2007) state that websites that provide specific information (e.g. news and products)

may advantage more from personalized content then websites that deliver content for entertainment. This has to be researched.

Another topic that requires more research is the relation between personalized content and the determinants of e-satisfaction as mentioned in this literature review, with the exception of recommender systems, because it is clear that content recommender systems can improve e-satisfaction. It seems likely that personalized content like personalized greeting messages can increase the determinant trust, that personalized pictures may improve website design, etc. But extensive research is necessary to discover the impact of other content on e-satisfaction.

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Marketing to Gen Y and Gen Z: Insights on consumer behavior and loyalty

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ABSTRACT

Purpose – Delivering integrated, real-time, relevant experiences in context can make or break businesses today. The topic of better customer insights to enhance marketing techniques and a firm's product/service portfolio, is one of the most pressing current research topics. In the recent years, with increasing possibilities and immediate access to different kinds of information channels, the power of the customer is at its peak. Gen Y and Gen Z represent large generations with a high spending power and strong influence on $billions/year of family spendings. Yet, with technological disruptions, changing expectations and increasing transparency and customer knowledge, Marketers still struggle to find right ways to address the younger segments of customers and gain their loyalty and interest. To advance this important concern,

Approach – The data consists of an extensive literature review of academic publications and research conducted by consulting companies as well as other relevant media (newspapers, books, industry magazines, commercial reports, conferences)

Findings – A comprehensive literature analysis shows that the topic of Marketing to Gen Y and Gen Z is still complex and lots of research needs to be done in the future. Many of the prior contributions in journals seem to lack clear evidence of the future implications of trends on businesses either by separating generations, gender or cultures. Only a handful of authors have contributed specifically to developing dialogues between theory and real practical implications.

Originality/value – This paper gives a compact overview of the literature and a review of the latest trends around this topic. It helps to further enhance the development of new theories of consumer behavior and awareness creation and also provides practical value and suggestions for companies and Marketers through an extended conceptual framework. Further this paper also identifies research gaps and approaches for future research.

Keywords
Brand loyalty, Consumer Awareness, Generation Y, Generation Z, Consumer Behavior, Digital Age, Integrated Marketing Communications, Millennial Marketing

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?

Even if I belong to the Gen Y myself, I have an interest in better understanding the next generation of customers. With professional experience in the fashion and luxury industry and a personal interest in sustainable development, I would like to explore what it takes for established companies and startups, to change consumer awareness in today's environment and stay relevant as a brand.

1. INTRODUCTION

In today's business environment, it is all about delivering integrated, real-time, relevant experiences in context. The topic of better customer insights to enhance marketing techniques and a firm's product/service portfolio, is one of the most pressing current research topics.

In the recent years, with increasing possibilities and immediate access to different kinds of information channels, the power of the customer is at its peak. The old days of "classical" Marketing are over. The way business and Marketing is conducted changed rapidly from generation to generation (Williams et al., 2011). This fast-paced, digitalized economy with constantly changing consumer expectations and daily product and service innovations, makes it increasingly difficult for brands to reach – and keep their customers. Especially, with the new digital age and consumption being high at a very young age as personally witnessed in daily life – influencing the economy and how brands communicate, it is necessary for established companies and start-ups, to understand what influences the most recent generations. How do they choose brands when purchasing a product or service and what influences them in becoming loyal consumers? In the past years, more and more research has been conducted on these generations. Research and consulting companies studied what is important to Gen Y and Gen Z, how they work and how they live.

This paper aims to give an overview of the current literature and consumer behavior trends in this field of research. It could further enhance the development of new theories of consumer behavior and awareness creation in the digital age by adding psychological and sociological factors of "Gen Y" and "Gen Z" consumers to better understand what drives them. This research also aims to deepen the knowledge of marketers of the future and to identify research gaps and relevant future areas of research. Providing a conceptual framework that is derived, the paper helps firms and corporations – who better want to understand and anticipate the wants and needs of the new generations of consumers, focusing on the B2C market by raising the following research question:

How can companies increase awareness and positively influence customer loyalty of Gen Y and Gen Z?

Before further elaborating on the research trends in this field, it is important to understand:

- Who are Gen Y and Gen Z?
- What drives them and what influences them in their daily lives?

1.1 Generation Y

The Gen Y/Millennials are individuals born between 1977-1994. According to Glass (2007) and Clausing et al. (2003), Generation Y individuals are very well educated and very self-assured. Bakewell and Mitchell (2003) as well as Moschis and Churchill (1978) mentioned, that Generation Y has been socialized to believe that they live in a materialistic oriented society and they act accordingly.

Later Hawkings and Mothersbough (2010) added, that Gen Y is accustomed to a diverse universe where anything seems possible. The characteristics, lifestyles, and attitudes of Gen Y include older teens and young adults. They are self-absorbed and self-reliant with a strong sense of independence and autonomy.

In the United States alone, there are about 80 million Millennials with a spending power of $600 billion/year. By 2020 – researchers expect their spending power in the United States to rise up to $1.4 trillion annually and represent 30% of total retail sales, having a strong impact on other markets as well as the global consulting company Accenture published in their study.

Every generation is shaped by historical and political events during the formative years. In the case of Millennials (people born before the year of 1995), the event of 9/11 shaped the lives of these people. Younger generations cannot process the significance in the way Millenials can says Jason Dorsey, Co-Founder of the Center for Generational Kinetics during his TED Talk.

1.2 Generation Z

Gen Z or iGen refers to the newest of the generational cohorts. Gen Z has been described as the first generation of "true digital natives". For members of Gen Z, technology is not new because they do not know a life without internet, Instagram, Whatsapp, Face-time or smart phones, Jason Dorsey explains (TEDxHouston, 2015).

They are today's and tomorrow's customers, already 23 million in the United States alone, even if their parents are (still) paying the bills. Within the next five years, GenZ is becoming the fastest-growing generation in the market– and workplace. Williams and Page (2011) explain that today's Tweens represent the first generation to practice adolescent independence on the Internet. This means they no longer rely on the knowledge of their parents and teachers to help them gather information.

What is significant about Gen Z is their ability to form communities and use social media as their megaphone. According to Soltan (2004), peer acceptance is very important to Generation Z and their need to belong. Their self-concept is partially determined by the group to which the Tween belongs. Labi (2008) adds, that Genz Z is a global and diverse generation whose members come from a wider mix of backgrounds with different experiences and ideas. These findings are confirmed by newer research of Jason Dorsey, Co-founder from the Center for Generational Kinetics, who considers Diversity the number one trend of Gen Z impacting society and business. Gen Z being the most diverse generation in the United States, "only seeing diversity when it is absent".

Jason Dorsey further explains: "Gen Z members are still largely kids and adolescents, many of their

adult characteristics are yet to be vetted. Early indications are that they are increasingly self-aware, self-reliant, innovative and goal-oriented.“ Generation Z values authenticity and “realness.” – especially when it comes to products (Source.

Yet, it is important to understand that their reality is the reality of all generations. The authors of the book “Gen Z Effect” explain, that Gen Z are the leading indicators of behaviors that we are all embracing. They just adopt technologies and innovations faster than their prior generations. It is a significant finding that they are bell weathers of what’s coming next and why it matters. In other words, for businesses globally, this means when they fail to pay enough attention to the needs and expectations of Gen Z, they automatically miss out on business opportunities of other generations.

2. LITERATURE REVIEW

In the past few years, certain trends from Gen Y and Gen Z that will have a significant impact on the way we do business and live as a society have emerged. In the first part of the literature review, some of the major trends will be explained, then latest findings and studies of consumption behavior of these generations will be presented and in the last part of the review, customer loyalty and awareness in the digital age will be discussed.

2.1 Trends affecting business and society

2.1.1 Breaking Generations

Mannheim (1952) defined social generations as cohorts of people who were born in the same date range and share similar cultural experiences. Prior generations were defined and influenced by different cultural events and the generation their parents lived in.

The latest research on generational cohort, especially research conducted on Gen Z has found out that one of the most profound changes in business and society is the emergence of the post generational world. As Thomas Koulopoulos and Dan Keldsen write in their book the Gen Z Effect: “Before Gen Z, no other generation in the history of mankind has had the ability to connect every human being on the planet to each other and in the process to provide the opportunity for each person to be fully educated, socially and economically engaged.“ So rather than cause generational cohorts to drift apart, Gen Z will bring them closer together, blurring the generational borders.

This theory is further supported by Jason Dorsey, CSO of the Austin-based Center for Generational Kinetics and one of the leading speakers and researchers on Gen Z. According to him, older generations will also end up looking more like GenZ than vice versa. His recent research shows that technological adaption is starting with the youngest and spreads to the oldest –parents mimicking the behavior of their kids. Contrary to previous research and history, which suggests that the development and behavior of generations starts at the top – with the oldest, going down. But today, it has become different. Older generations are starting to look more than younger generations and consumption behavior is no longer limited to age groups.

2.1.2 Diversity

Gen Z is the most diverse generation in US History. They are so diverse they do not see diversity, unless it’s absent. Today, it is normal to communicate with friends internationally, and to get inspired by the behavior and work of cultures globally without leaving the house. Diversity is empowering. According to Koulopoulos, the 85 richest people in the world have as much wealth as 3,5 billion of the poorest people. Yet, one should not forget, that the 3,5 billion people at the bottom of the pyramid have a large amount of collective wealth, but until now, they did not have a unified voice. This could change with Gen Z. This generation can be seen as the unified voice of all of the people and change the world from affluence towards influence.

2.1.2 Technology and Innovation

Gen Zers are growing up within start-up environments and adapting the latest technology. They already have an entrepreneurial mindset (72%) and own an average of 5 electronic devices but also the previous generation – Millennials – is considered to be “tech-dependent”. A british study (Versapak, 2013) found out, that 51% of the survey participants experience an “extreme tech anxiety” when separated from their devices and 28% of them being stressed. Research shows that by 2100, there will be 100 times more computing devices than grains of sand on all the world’s beaches (Koulopoulos, 2014). Technology also allows companies to create a unified user experience without a painful learning experience – since in today’s world, all generations started to use it. Years ago, internet was only available to a few people and definitely not anytime and anywhere in the world.

Another important issue in the future of business is the increasing shift towards open intellectual property, the speed of innovation (eg. 3D printing) and new sources of funding (eg. crowdfunding) could sooner or later could put companies out of business. (The Gen Z Effect)

2.2 Retail consumption behavior

What is especially important for companies and marketers today, is how and where people shop. Appendix 1 shows differences in the behavior between Gen Y and Gen Z.

Accenture Australia conducted a global market research, namely a consumer survey of 6.000 participants (around 30% being Millennials and the rest Baby Boomers and Generation X), as well as a retailer survey involving 60 international retailers and face-to-face interviews with 50 individual consumers to analyze shopping behaviors across 8 countries. The research findings show, that “Millenials are not only transforming their own shopping behaviors, but also have a significant influence on their parents behavior and digital

learning curve." The consumers of different generations are increasingly demanding "seamless shopping experiences" which means for companies and business to adapt to a fast changing retail environment – many retailers being endangered to falling behind if they do not take certain steps today.

According to Accenture's study, Millennials do not differ significantly in their shopping behavior than previous generations. More than half of the survey respondents (from all generations) said they would seek out "the cheapest return option." What is increasingly changing is the fact that many customers prefer to check out the product at a shop nearby, to see how the merchandise looks and feels , before checking for the cheapest price and eventually shopping for it online. As one Millennial said: "You want to touch it; you want to smell it; you want to pick it up." 89 % said that their decision of where to shop would be influenced by access to real-time product availability. This shift can be explained by the increased use of smartphones. As studies and personal experience confirm, today's customers can easily compare prices and other customers' reviews online. Online and mobile channels are important for customers at the stage where they seek sources of information, reviews and comparing prices and quality to make sure they purchase the best quality at the best price.

This presents one of the major challenges for retailers – today's omniscience of the shoppers. They expect promotions to be the same in-store than online and with this, they want to have mobile coupon scanning possibility which enhances the seamless shopping experience across all channels (Accenture, 2015).

Kids also highly influence the spending behavior of their parents, also known as "kidfluence". Currently, members of the Generation Z influence around $600 billion of family spendings (Abramovic, 2015)

2.3 Customer awareness and customer loyalty in the digital age

Customer loyalty is an important factor for companies worldwide. Dick and Basu (1994) explain customer loyalty as the relationship between an individual's relative attitude and repeat patronage and is seen mediated by social norms and situational factors. While having loyal customers was considered easier during the old days of "classical" Marketing with less transparency – in today's economy "only" having a good product is no longer enough for customers to stay loyal to one brand. Their expectations towards brands and advertising have changed. (Appendix 1)

These days, even industry leaders struggle to keep their customers and the No. 1 challenge for 40% of them is the Millennials' lack of loyalty. Constrastingly – according to the study Accenture conducted, Millennials can be exceptionally loyal customers – if they have the feeling they've been treated right. As one Millennial explained, "There is [something] about the product and its cost, but there's also a big part about being treated like a valued customer."

2.3.1 Brand loyalty programs

Yi and Jeon (2003) defined a loyalty program as "a marketing program that is designed to build customer loyalty by providing incentives to profitable customers. Brand loyalty programs are an important topic in today's business environment. It is a trend throughout all the retail surveys mentioned before. Showing the customers they are respected and being loyal to the customers by offering "goodies" seems like a "must-have " when marketing to the new generations of consumers. According to the study of EY (2015), Gen Z is considered to be the most pragmatic generation of consumers. When speaking about loyalty programs – free shipping, additional price discounts and flexible return options are on the top of the list for Gen Zers. Contrasting to Millennials and Generation X who expect much more personalized advantages from loyalty programs. (Appendix 2)

A shift goes into the direction of personalized, targeted promotions and discounts as the price for their loyalty. At least 95 percent of the Millennials say they want their brands to court them actively (Accenture, 2015). The results of Yi and Jeon (2003) show, that customer involvement is an important factor in designing a loyalty program. The success of loyalty programs differs with the level of involvement (fried-chicken store = low involvement vs. beauty salon = high involvement). They state: "Under high involvement, program loyalty is formed based on value perception, and the loyalty program affects brand loyalty via both direct and indirect routes. Under low involvement, there is no direct route between value perception and brand loyalty." This means that the value of a loyalty program affects loyalty towards a brand only through program loyalty to the extent that the program provides value to the customer. They further suggest that brand loyalty programs are more suitable for brands with high product involvement. The question remains – what steps can companies with lower customer involvement do, to enhance loyalty?

2.3.2 Social networks (on – and offline)

In a survey of 2015, Addeco found out that Gen Z consumers spend an average of 7,6 hours per day socializing with friends and family, followed by checking social media for around 4,5 hours. Concluding that personal interaction and following their peers is important to Gen Z.

The online behavior of Gen Z differs from the Millennials in the social media channels they use. Many members of Gen Z consider Facebook for "old" generations. Consumers at the age of 19 and younger prefer social networks like Snapchat, Secret, and Whisper, and a quarter of 13- to 17-year-olds have left Facebook this year (Abramovic, 2015).

A research from UCLA Powell Library (2013) confirms this movement by claiming that younger audiences are moving away from mainstream

channels. They are spending less time on Facebook and are moving more towards visually focused networks like Instagram or Snapchat. Instagram has proven to be a great to for the interactivity among users – even for public institutions like the UCLA Powell Library. They claim that at Instagram, they have the most rewarding user interactions at the moment.

Snapchat is another popular app that has been created by students of Stanford University in 2011. It is used for sending quick photos or videos to friends or to a semi-public audience. The most special feature of Snapchat is, that its content destructs itself and is automatically deleted just seconds – or at latest 24hours after the recipient opens it. In May 2012 around 25 images were sent per second. Six months later, Snapchat users are sharing 20 million photos per day (Gallagher, 2012). Its popularity can be explained because of the need for security of Gen Z members (Wood, 2013). Unlike Millennials, Gen Z is more aware of the privacy issues that come with the use of social networks. As Mr. Gould, a trend consultant for Sparks & Honey, a New York based advertising agency said: "As far as privacy, they are aware of their personal brand, and have seen older Gen Y-ers screw up by posting too openly."

What seems to be very contrasting in the publication of Wood is, that the author mentions Gen Z is longing for security, but at the same time she subsumes the attitude of Millennials and Gen Z to be the same when it comes to privacy (less likely to be concerned with privacy issues) which does not make sense – and is contradictory to other trend researchers (Yao, 2014; Dorsey, 2016).

It is a well-known fact, that Millennials are heavy users of social media, but their usage of social media does not necessarily mean they are loyal customers – just by "liking" a brand or a retailer on Facebook. Marketers can easily misinterpret this. For Millennials, it is a way to find the best offers and get access to coupons, deals or more information. Just having a presence across social media channels is not enough for brands or companies to raise awareness of customers. To really being able to reach them, a brand or product must become a routine part of their conversations (eg. through information, updates and special offers), as Accenture (2016) found out. This is also confirmed by the EY retail study (2015) – claiming that "social media plays a limited role in driving customer loyalty."

2.3.3 Reaching consumers

Syrett and Lamminman (2014) explained key attitudes of millenials and the long term implications for business and companies. They most important attitudes to influence consumption behavior are Loyalty, Awareness and Balance. Millennials' primary loyalty is to the social circle they created. For them, their peers opinion is crucial. This means that companies rely on focus group feedback and attitude-based field research when planning the roll-out of marketing campaigns. Awareness of millennials is a key to reach them. Millennials get overfloated with around 20.000 commercial messages a year (Abramovic, 2015). They can quite well differentiate between manipulation and honest brand communication – classical advertising does not work for Millennials, neither for Gen Z. Also Neuborne already stated in 1999 that ironic, humorous and honest campaigns are the ones most appealing to Millennials.

This theory can be drawn further to the use of celebrity endorsements. Blackston (2000) considers relationship development between customers and the brand critical for building brand equity. For Tsui and Hughs (2001) this means, to involve the customer emotionally. In the past years, brands increasingly worked with celebrity endorsements. Braunstein and Zhang (2005) consider celebrity endorsements a facilitator towards the creation of a personally involved relationship with a brand, for the simple reason it makes the brand "more tangible" and valuable for consumers. Yet, if the celebrity endorser cannot be directly linked or connected with the brand, this could harm the business more than it helps. Kamins (1989) as well as Kahle and Homer (1985) already highlighted the importance of the right match (image) of the product and the celebrity.

3. CONCLUSION

Summarizing the findings of previous contributions, it is a new era of Marketing. For businesses and companies, this means, that they have to act very agile on their marketing strategies and how they address consumers. Having a company Facebook presence is a must, yet customers are looking for direct, personal interaction that adds values to their daily lives and shows them, that they are valuable customers for a company.

Suggestions or must-haves the previous publications imply for companies are helpful but at the same time some suggestions seem to remain very questionable with regards to their practical feasibility. Of course it should be no problem for a company to adapt the online communication strategy at a relatively low cost, but with the increasing pace in mind – is it really worth investing that much money in profound organizational changes, (e.g. Cross-channel transparency of a company's data, holistically managing their inventory or developing an app and providing same day delivery – especially for small shops) when the customers might ask something completely different by the end of next month? For this, companies would probably have to make long-term investments in R&D and innovation strategies to always stay one step ahead of the future development, which would not only be –cost but also highly resource intensive.

Based on the literature review, the paper developed a conceptual framework highlighting crucial factors to increase customer loyalty and awareness in Gen Y and Gen Z consumers (see Figure 1).

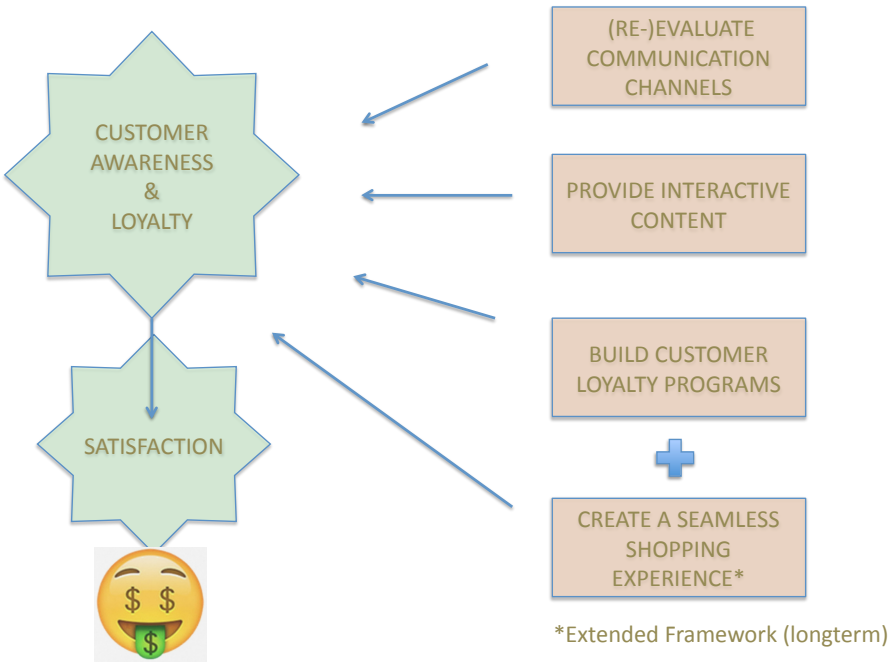

Figure 1. Conceptual Framework for increasing customer awareness, satisfaction and loyalty of Gen Y and Gen Z consumers

The conceptual framework that has been developed, assumes that customers are happy with the quality and price of the product. The framework includes different variables which research considers as key elements to gaining today's and tomorrow's customer awareness and loyalty. It comprises two different timeframes. The basic conceptual framework consists of companies are expected to apply in the short term at relatively low costs. This mainly involves direct communication to consumers by:

- **Re-evaluating** the **communication channels** (Facebook, Instagram, Snapchat)
- **Providing interactive content** for consumers (e.g. by involving celebrities or contests)
- **Building up valuable loyalty programs** (e.g. free shipping, flexible return options and exclusive promotions or sale-events for the "recurring" customers)

More and more brands are working with influencers to increase awareness and push interaction across different consumers among social media channels. It is common to ask an influencer (models, bloggers, designers, musicians) to "take over" a company's Instagram account for a week to keep it interesting for the followers. But this also requires an increase of resources – more budget to hire influencers and/or a highly socializing and well-connected communicator with an innovative mindset within the company.

Many companies also already started to use Snapchat as a communication tool to promote special offers or give a sneak peak to the next season's collections.

The conceptual framework can be applied across various industries ranging from food (welcome drink, free coffee) to cosmetics (getting one product/service for free with a loyalty card) and clothes (access to pre-sale / exclusive collection previews) to increase awareness, loyalty, and strengthen the company-customer relationship.

The framework and a company's long-term strategy, can be extended, by enhancing a seamless shopping experience as different studies (Accenture, EY etc.) suggest.

4. SUGGESTIONS FOR FUTURE RESEARCH

Although, there already exists literature regarding consumption behavior in the digital age as well as a wide range of studies about characteristics of "Gen Y & Gen Z", marketers and market researchers still have to deepen their knowledge and understanding about this new generation of consumers. Academic research seems to have widely overlooked the impact iGen and technology has on the changes in consumption behavior of individuals from prior generations. Only looking at special generational cohorts has been criticized in the past, because it is unable to capture the differences among generations. With these mentioned findings of the latest research in mind, it would be important in the

future, to further look at these impacts for business and society from a perspective that is rather bridging generations instead of separating them.

Future research also should look at the behaviors of individuals across generations (eg. families with kids from Gen Y and Gen Z and their influence and factors – for example level of education and income – on their parents purchase decision making or the effects of loyalty programs across generations) rather than differentiating between generations. As Koulopoulos (2014) put it: "Ultimately the idea of a generational gap holds us back from connecting and collaborating across ages, personally, professionally, and as a society."

Other limitations future studies should tackle is the sampling. Some of the studies in the field of consumer behavior focused only on a female sample, which is one of the major limitations of these studies. Therefore, it is highly suggested that future studies should also increasingly investigate males' behavior towards consumption and the use of technology and how they perceive the value of a brand.

Also, most of the previous research focused rather on Millennials than on iGen, which –by now – already seems to be outdated. In the past years, no truly influential academic research in this field can be found and the sources are quite limited. According to the Center for Generational Kinetics, statistically valid, national data (US) was woefully missing from the conversation about the generation after Millennials. Lots of people have opinions, but virtually none of them had any real research.

One of the significant findings of the literature review was, that a large percentage of the recent studies have been conducted in the United States. Future research should therefore also consider regional differences and cultures.

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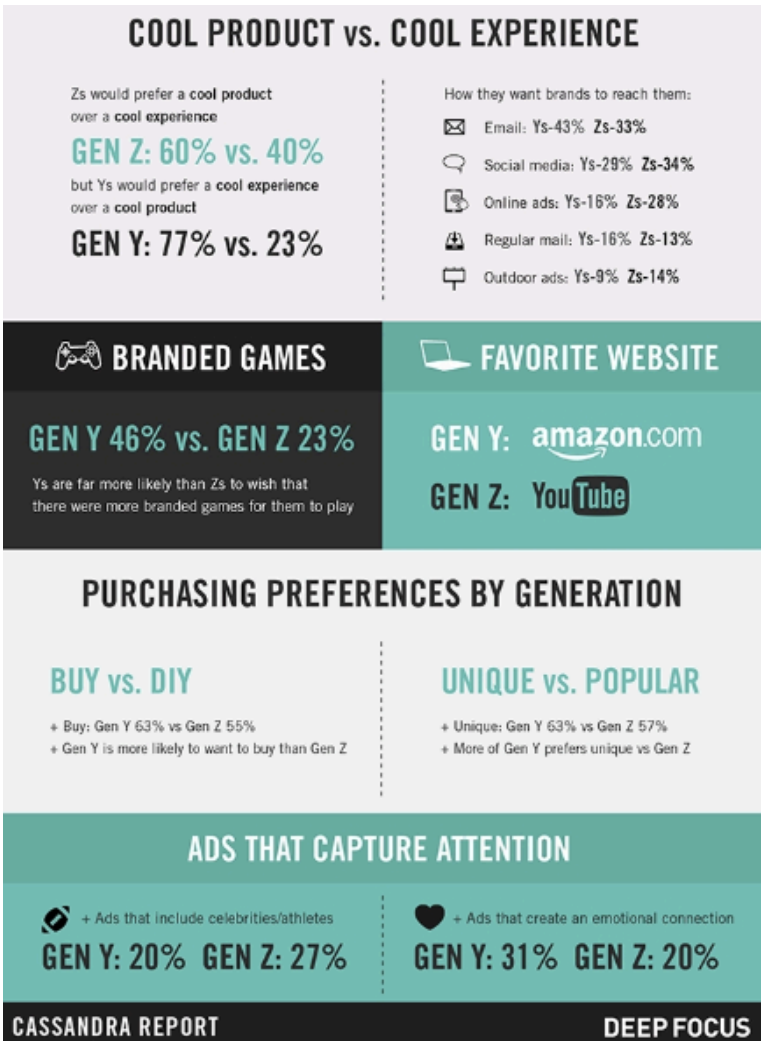
APPENDICES

Appendix 1 – What new generations expect from brands - Gen Y vs. Gen Z



Appendix 2 – What is important to shoppers in retail rewards and loyalty programs

Base: 400 Gen Z; 1,000 Adult Respondents for Generations and Race	Adults	Gen Z* 1997–2000	Millennial 1981–1996	Gen X 1965–1980	Boomers 1946–1964	Caucasian	African American	Hispanic
	1,000	400	274	273	321	705	120	94
	%	%	%	%	%	%	%	%
Free shipping or delivery	71	80	74	74	71	69	73	80
Special sales or discounts	69	77	70	74	68	68	68	74
Flexible return policy	64	50	64	65	66	61	69	73
Get special offers via email	50	46	55	58	45	45	59	66
Get special offers sent to my home in the mail	47	46	51	55	43	44	55	61
Can order online and pick up in the store	45	46	56	49	37	39	62	63
Services available only to members (e.g., free tailoring, free returns, free samples, personal shopper, concierge service)	42	46	51	48	32	36	55	61
Customized offers based on my purchasing habits	40	41	48	47	33	35	51	59
Retailer involvement in supporting local community	36	30	44	40	30	30	44	57
Invitations to member only events	34	31	44	37	28	28	48	53
Special store opening times	31	26	41	38	24	24	49	54

Q: On a scale of 1 to 10 where 1="not at all important" and 10="very important," how important are each of the following features of a retailer rewards or loyalty program? Top 3 Box Summary

Source: EY America's Retail Report, June 2015 http://www.ey.com/Publication/vwLUAssets/EY-americas-retail-report-june-2015/$FILE/EY-americas-retail-report-june-2015.pdf

Brand Awareness 2.0: Does customized content replace TV-Advertisements as main driver for brand awareness in the digital age?

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ABSTRACT

The world of marketing is ever-changing since the rise of the digital communication channels. But fundamental advertising principles remain a necessity – a brand only becomes important the moment it enters and stays in consumer's minds. This paper aims at analyzing how brand awareness is created in the post TV-advertisement era and if this era already has ended.

To put it in a nutshell, yes, the role of TV-advertisements has changed but did not lose its raison d'être. Entering the minds of consumers requires more high-quality information and increasingly messages customized and tailored to sub-groups of the targeted audiences. Even more, awareness is most efficiently created by using interactive two-way communication channels, such as blogs and online social networks, which indeed are successful because of their target audience directed content. Next to that, the timing of communication messages has emerged to a fruitful characteristic for creating brand awareness. Research has shown that effective synergy can be created by cross-channel marketing using the real-time display of customized content to sub-groups of the target group across different channels. The findings have indicated that customized content in digital branding entails great potential but simultaneously demands huge creation as well as research efforts, despite theory for standard models as brand awareness need to be updated and adapted to the new digital landscape.

Keywords

brand awareness 2.0, brand recognition, brand recall, internet, decision process, customized content

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?

Content is the key to the decision-making process of the customer; thus it is essential to deliver the most suitable and effective content.

1. INTRODUCTION

The discipline of marketing has changed ever since the internet was introduced as platform for advertising, but was hasn't changed is that brand awareness remains the first step needed to take for entering consumer's minds and persuading the consumer decision making process (Hoyer and Brown, 1990). Until the rise of the internet TV advertising was commonly agreed upon to be the most useful marketing instrument for creating and increasing brand awareness (Carter, n.d.). However, the importance of TV advertising is steadily declining, as the eMarketer (2016) announced in the beginning of the year 2016, the expenses for digital advertisements are surpassing TV advertisement spending's in the United States – the digital channels officially took over.

Brand awareness aims at getting brands into the memory of consumers' minds (Aaker, 2008), but how to stand out in a digital world full of prominent stimuli and uncountable advertising messages? The internet offers consumers multiple platforms and websites for finding the most suitable and cheapest products and services all over the world - the challenge for organizations is to take a stand in this flood of advertising messages. Organizations already noticed the importance of satisfyingly respond to consumer's information requests by making increased use of content marketing through creating and distributing relevant, valuable and consistent content to attract and acquire a defined target audience to drive profitable customer action (Content Marketing Expert Project – CMEx, 2014).

Thus, content becomes increasingly important, but next to information quality the timing and way of spreading content as well as the target group customized communication become essential parts of effective advertising messages. Technologies such as SEM, blogs, online social networks (OSN), and affiliate tracking marketing offer first possibilities to provide more real-time advertising with customized content to those queries. But does customized content in online advertising benefit creating brand awareness among targeted consumers?

2. RESEARCH QUESTION

As marketing becomes an increasingly versatile and fast-changing discipline, in terms of number of channels, technology and software, consumer demands the strategies to promote brand awareness need to be updated and adapted continuously. Research on such trending topics is rare. Especially, research on digital brand awareness is scarce. Next to that, research on brand awareness in the digital environment is mostly specified on single channels.

Additionally, digital marketing techniques bring a lot of new technologies along, those are mainly controlled by big software companies, working profit-oriented and not theory or research oriented. The Marketing Scientific Research Institute identified the need of researching the way how communicate with customers more efficiently. They identified the following guiding future-oriented questions for the field of customized content and brand awareness: *How do firms provide information that consumers want to receive or even seek out? How do you get customers to initiate contact with the firm — to signal that they are interested? How do you build brand/product awareness in a post-TV advertising world?*

Consequently, the following critical research questions is derived:

Brand Awareness 2.0: Does customized content replace TV- Advertisements as main driver for brand awareness in the digital age?

3. BRAND AWARENESS

"The power of a brand resides in the minds of customers" (Keller, 2008), as Keller puts it neatly.

According to Keller (2008), brand awareness describes whether consumers can recognize or recall a brand. Brands that are known by consumers are more likely to be part of the consideration set of consumers (Hoyer and Brown,1990; MacDonald and Sharp, 2000). Hence, knowledge of a brand is a competitive advantage as it increases brand market performance as well as it plays an important role as decision making heuristic in the purchase process of consumers (Hoyer and Brown, 1990; MacDonald and Sharp, 2000).

Rossiter and Percy (1991) state that brand awareness is the first step in building a brand. While numerous authors favour the association between brand awareness and buyer behaviour (Assael and Day, 1968; Hoyer, 1984; Nedungadi, 1990; MacDonald and Sharp, 2000) they disagree over the specific measures that should be used.

The role of brands is undoubtedly imperative, to put it simple: products can be copied but not brands (Christiansen et al., 2009). Brands constitute to build emotional relationships with customers, which in turn create valuable returns for organizations, such as customer loyalty and brand identification (Kathuria and Jit, 2009; Hagel and Armstrong, 1997; Chaffey et al., 2000). Having and maintaining a strong brand is a valuable asset for organizations (Aaker, 1991, 1996; Keller, 2003; Aaker and Jacobson, 2001). To remain competitive brands, need to offer distinctive and/or unique characteristics (Farhana, 2012). Farhana (2012) enhances the definition of brand awareness to the strength of a brand in consumers 'minds by the consumer's ability to recognize different brand elements, such as brand name, logo, symbol, character, packaging and slogan. One of the approaches to increase brand awareness per Farhana (2012), is to adopt the differentiating approach for multiple components of the brand itself (Farhana, 2012).

Prior studies have shown the direct impact of brand awareness and brand image on consumers' brand choice (Erdem & Swait), widely known brands are more likely to be considered, and consequently chosen, than unknown brands. The better known the brand is, the more often would consumers intend to purchase and recommend the service or product (Horng, Liu, Chou, & Tsai, 2011).

Nowadays, according to Hatch and Schulz (2009), the role of branding is changing from the product-consumer relation of product branding to company-stakeholder relations (Hatch and Schultz,2009). Brands represent more than just products, services, or a company that stands behind them; even more a brand represents the vision and all the interests that unite different stakeholders in the aim to achieve a common goal.

However, the way consumers connect with the brand has been fundamentally changed by the internet (Edelman, 2010), real touch points with products decrease in their meaning and information about the product becomes essential for consumers' decision process. Implying that information about products become more important to customers than tangible assets of products.

3.1 Digital Brand Awareness

The power of brand awareness indicated the importance to effectively translate brand communication efforts to digital channels. The digital environment offers uncountable ways to promote brands in the world-wide web. By now no all-embracing model which demonstrates how brand-awareness is formed in online channels has been developed, Barreda et al (2015) conceptualized a model for establishing brand awareness in online social networks (ONS), which I will elaborate on later.

Common ways to digitally advertise to increase brand awareness are amongst others using banners on other and partner websites, optimizing Search engines (SEO), being mentioned and referred to on other websites, blogs or online forums or social media interaction. Affiliate tracking also displays a way to track customer's interests with affiliated advertising messages or displays from previous shop visits or purchases and consequently adapt advertising messages on the next homepages to the previous online activities (Gründerszene, 2016). I will refer to each method in the following paragraphs. Online banner advertising is described as "rectangular graphic displays that stretch across the top or bottom of a website or down the right or left sidebar" (Investopedia, n.d.). As studies, have shown digital banner advertising is obsolete. Consumers attribute banner advertising as annoying and ignore them as has been proven by eye-tracking studies. (Eby, n.d.; Brenner, Banner Ads Must Die!!!, n.d.). The average click through rate is 0.1% (Eby, n.d.), and especially on mobile devices, 50% of these clicks occur by accident (Eby, n.d.; Brenner, Banner Ads Must Die!!!, n.d.; Gold Spot Media, 2012). Hence, exclusively venturing on optical appeal and extensive virtual brand advertising display do not lead to the desired consumer attention or behavior.

Continuing with search engine optimization, a website can be ranked by Google according two different methods: Organic search and Google paid search (support.google.com). Organic search displays the regular Google search results and is free of charge. The ranking of websites is evaluated by an algorithm which evaluates how relevant the content on the website is according to the search query. The more relevant the content of the website is for the search query, the higher in the ranking the website will be. Google paid search is, as its name indicates, a paid search where organizations that paid for advertisements appear in the right-side column of the page or in the top in a yellowish background. Google guides the online marketing industry by differently weighing their algorithm variables, the latest so called Panda update heavily build emphasize on the relevance a quality of the content (Haynes, 2014).

On the other side, online forums provide consumers the ability to share their experiences, opinions and knowledge with others on specific topics (Bickart & Schindler, 2001). Online forums can be described as "sites on the Internet where […] users can communicate in real time, typically dedicated to a particular topic" (The Free Dictionary, n.d.).

Several studies have shown that forums offer the some of the same assets as social networks for companies: Brands or companies can interact with consumers, help with specific problems, create a network and enhance image and brand awareness (Crum, 2008; Anderson, 2014). Online forums are proved to be significantly more effective in generating product interest than corporate websites thanks to the two-sided communication, the interaction and the tailored information (Bickart & Schindler, 2001).

A blog can be defined as a "frequently modified web page in which dated entries are listed in reverse chronological sequence" (Herring, Scheidt, Bonus, & Wright, 2004). In the age of content marketing, corporate blogs have developed and blogging has quickly become the leading mean for online communication (Rimmer, 2013). 37% of marketers' value blogs as the most important tool of content marketing (Feldmann, 2013). Several studies have shown the benefits generated by blogs, like blogs double the traffic for a corporate website and generate an up to five-time-increase of leads, thus awareness is shifted to the websites of the brands (Rimmer, 2013; Melin, 2013; Feldmann, 2013; Schäfer, n.d.).

A blog's ability to be a successful part of a company's online communication depends on its ability to add value for prospects and customers. Relevant, interesting, entertaining, helpful and fresh content creates goodwill, engagement and credibility plus awareness for a company (Beever, 2012; Better Business Blogging, n.d.; Dywer, 2007). Successful blogging also positively influences search engine performance, positions a company as a thought leader and builds and enhances brand image and visibility (Beever, 2012; Rimmer, 2013; Better Business Blogging, n.d.; Eridon, 2013; Feldmann, 2013; i-scoop, n.d.; Schäfer, n.d.; Marketo, 2010). Thanks to the share-ability of the content, marketing reach is multiplied and a company's social media presence is maintained (Beever, 2012; Eridon, 2013; Feldmann, 2013). Every blog post is a long-term asset that will positively influence a company's online presence, communication and performance (Feldmann, 2013).

Other platforms to generate brand awareness on are online social networks (ONS). Beginning with Facebook, as the world's largest social platform, with over 1.8 billion users worldwide (Süddeutsche Zeitung, n.d.). On Facebook, people connect with others for stay in touch and sharing experiences in writing and pictures. Facebook is a network primarily for private life. Businesses can form part of the Facebook community and connect with existing and

potential customers to build long-term relationships that generate repeat business and maintain brand awareness.

On Twitter advertisements, can be placed in form of promoting tweets or the general account based on either keywords or interests and companies (Narcisse, 2014). Twitter chats, a platform which allows users to participate in real-time hashtag conversations, can drive high levels of awareness (Narcisse, 2014). Thus, establishing strong brand awareness among OSN users influences users to recommend and influence purchase desire (Oh, 2000).

3.2 Brand Awareness Model ONS

Barreda et al. (2015) developed a model for creating brand awareness in online social networks. Until now, organizations mostly try creating brand awareness using limited one-way communication channels. Online social networks enable two-way communication with consumers participating in discussions, giving recommendations and commenting on organization-relevant issues (Lim, Chung, &Weaver, 2012). Given the importance of brand awareness and the possibilities for social networks to enhance brand awareness Barreda et al. (2015), developed a model on creation of brand awareness in online social networks. Profiles of organization in online social networks appear to be the natural extension of the brands 'corporate website. Organizational profiles function as powerful and effective tools for driving targeted traffic, customer engagement, conversions and even sales. But most importantly they are also very effective for boosting brand awareness. As previously heard building strong brand awareness is a fundamental goal for marketers. The study presented by Barreda et al. (2015) tested the differential effects of online social network elements, such as virtual interactivity, rewards for activities, system quality and information quality on brand awareness which in turn, influence word of mouth. Results of the study have shown that each of these constructs positively affects brand awareness, virtual interaction being the strongest driver (Barreda et al. (2015). Next to that brand awareness has a positive influence on word of mouth. Successful online social network profiles of organizations allow consumers to interact, post reviews, receive and provide updated, credible and rich information related to their product/service-experiences. It is known that without the generation of brand awareness, other higher levels of brand knowledge as influencing purchase intention cannot be reached. Barreda et al. (2015) suggest that brands should strengthen their efforts to stimulate virtual interaction, provide high-quality of information and system. Developing brand awareness though social networks is a fruitful possibility for organizations, this model nicely summarizes drivers of brand awareness in online social networks. This model could constitute as first step for an integrated online channel brand awareness model.

4.CONTENT

4.1 Information Quality

The role of information has emerged to become increasingly important, with greater emphasis on the quality and timing dimensions of marketing messages.

As Zhang and Whats (2008) examined, high-quality information in online social networks help users have a better understanding of the brand, to feel support from other users and make better decisions. High information quality assists consumers who wish to obtain information related to a service or product and receive advice on a specific topic. Information quality plays an important role in creating benefits to users (Zheng, Zhao, & Stylianou, 2012). Social networks offering reliable, updated, credible and rich information to consumers have a noticeable competitive advantage over their competitors (Jang, Olfman, Ko, Koh,&Kim, 2008). Thus, online social networks that offer quality of information may be perceived more attractive (Gorla, Somers,&Wong, 2010. The quality of information influences the level of individuals' brand awareness over time (Biedenbach & Marell, 2009; Smith & Swinyard, 1982) and allows these individuals to recognize and recall the brand using product/service-related online social networks. It can be concluded if the information shared on online social networks organizational profile is of high quality, it would heighten the awareness of the brand. Thus, the following hypothesis linking information quality and brand awareness is proposed. Accordingly, brands should focus on providing well-crafted, high quality content, and on other channels.

4.2 Tailored Content

Considering the volume of content available online nowadays, having customized content appears to be an absolute necessity (Cohn, 2015). If an organization or brand does not figure out ways to customize the content how to customize the advertising content, most probably competitors will do so. Cohn (2015) suggests to start customizing content for the entire target audience and in a second step to customize content further by forming and focusing on subgroups of the target audience. Further, Cohn (2015) emphasizes the need for consistency and persistency when it comes to a brands communication content. Next to that, Cohn (2015) states that consumers will pay more attention to customized content than to non-customized content, if the content remains to be compelling and of high quality. Another statement of Cohn (2015) is that customized content truly supports and helps target audiences, thus adding additional value. Customers feel that they benefit from content that addresses them on a more individual basis. The stronger a brands ability to solve customers' problems, or to specifically address their needs the more consumers are willing to interact with the brand. Interaction becomes increasingly important, as two-way communication forces brands to individually respond to single consumer's needs. If brands allow their target audience to easily access the customized content, the relationships are strengthened in terms of loyalty and duration. Cohn (2015) for example proposes interaction by actively asking the audience for their needs and interests. Lastly, customizing content keeps customer's audience holding on to a brand. "Customized content is the tie that binds you (brands) to your target audience" (Cohn,2015). Individually shaped content makes customers pay attention and creates lasting demand for more information.

Timing

Next to the content of a message the exact timing has become essential for marketers, timing demands developed from the need for the latest to real-time information. Moreover, timing across different channels can result in beneficial cross-marketing campaigns as the Nissan example demonstrates.

Mobile phones as second screen are distracting consumers from the commercial break, thus all expensive TV advertisements. Most TV viewers reach to their mobile devices when the ads start playing (wywy.com, 2015), to come over this incident Nissan synced TV and digital ads, for winning back the audience's attention by telling a connected brand story across both screens and significantly increasing brand awareness.

Nissan is one successful example of using real-time advertising entailing customized content for the TV-watching sub-group of the target audience.

Accordingly, the largest polish media house MEC measured the effect of dual influence of television and online advertising on key marketing indicators. The research confirmed the results of previous measurements, which indicated a synergy effect between online and TV advertisements (Kolanowski, 2014). Combining both marketing channels to address the consumer with marketing messages results in 13 percent more campaign effectiveness on the performance indicators of building brand awareness compared to the reach with television alone. (Kolanowski, 2014).

"Apparently, in the dimension of both building awareness and influencing willingness to recommend and willingness to buy, the advertiser must reach prospective customers with twice as many messages online as on television", per Tomasz Kolanowski. The Internet Advertising Bureau (IAB) research has found that online advertising delivers uplift in brand and ad awareness, whilst TV increases favourability and purchase intent (Internet Advertising Bureau, 2011). Both channels together form an even more effective synergy. This analysis indicate that one channel does not replace the other but substituting in with being stronger in reaching an intended communication goal.

5. DISCUSSION

Brand awareness is not anymore solely about distinctiveness of a brand but also about how it is communicated, dimensions such as timing, information quality and tailoring of messages become increasingly important. Next to that the role of a brand is more and more enhanced from a product/service-customer level to representing of the entire organization to stakeholders. Also, the type of channel to communicate through does not swift but the number of channels increased to create optimal brand awareness. Furthermore, the two-way communication and interaction increasingly has been identified as driver for brand awareness.

As lifestyle changes so does the way advertising and marketing professionals need to think – by so far customized and real time content has not been adopted by many organizations and advertising agencies. But early adopters as Nissan reported great success in term of increasing brand awareness. Due to rapid developments, consumer data insecurities and immense content and it efforts needed to invest.

By so far customized content in advertising messages did not replace TV advertising entirely, first research has shown that a smart combination of channels creates effective synergies for building brand awareness among consumers. Concluding it can be said that brand awareness once more gained an additional valuable mechanism to communicate unique and distinctive brand attributes to consumers.

5.1 Research Gap

However, the role of brand awareness in digital channels has not been focused on by research. As brand awareness, does play an important role in branding as well as in the decision-making process, it should be examined how brand awareness can be efficiently build over the numerous online and offline channel. Further, it should be examined if individualized messages for consumers have an adverse effect on the corporate brand, as brand attributes are customized and thus communicated differently to consumers. Also, the hypothesis should properly be tested which influence customized messages have on consumers in terms of trust and interest and attention.

Digital marketing and branding remains to be an exciting and dynamic disciple; I am looking forward to the next developments.

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Privacy concern and the efficacy digital channels - when too much consumer data scares off the consumer in the age of Big Data

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ABSTRACT

This paper reviews the terms and literature surrounding the current "Big Data" trend and tries to cover a topic in literature that has not yet been analyzed together – what are the pitfalls for consumer in the age of big data and what are the privacy issues and regulation surrounding it. To answer the question what is the influence of privacy concerns on the efficacy of digital marketing channels, multiple analysis and reports on the topic by Deloitte and McKinsey were taken into consideration. The impact of big data analysis was seen through the perspectives of the various stages of consumer journey – consumer behavior online, the consumer journey and consumer satisfaction among raising privacy concerns. Practical suggestions for marketers were summarized in the Recommendations and conclusion section.

Keywords
Big data, consumer behavior, digital channels, privacy

MSI Topic nr.2: Delivering integrated, real-time, relevant experiences in context

The author's view:

The issues of personalized content used for marketers to optimize and deliver more efficiently their advertising content and creatives generates many opportunities but also raises a lot of concerns about how far can marketers go until the consumer is scared off by the amount and type of personal data that different actors in the marketing network have access to. The topic of privacy concern and the long-term efficacy of personalized content in digital and mobile channels is a topic that has not been discussed so widely by researchers. There seem to be a selection bias that may lead to a failure to recognize some shortcomings of the new audience data management bubble that is currently happening.

1. INTRODUCTION

With the development of the digital and interconnected technologies innovations such as cognitive solutions and artificial intelligence begin to diffuse gradually in the devices we use every day. Just a very simple example is that now while typing the word "cheers" or the German translation "Prost" automatically generates an emoji with a picture of two beer glasses in the text field in the Facebook Messenger App while you tell Siri to turn off all your smart lighting in the room can give you a glimpse of the level of the technology diffusion of integrated digital solutions.

Innovation can create marketing opportunities and challenges (Sharl, Dickinger, Murphy 2004). This technological diffusion has been the result of not only technological advancements but also thanks to the enormous amount of personal and behavioral data generated from consumers by marketers, companies, governments from all over the digitalized world. (Newman, 2008) What was considered to be the most exciting marketing tool, the internet and the world wide web (Strauss & Frost, 2001) has now opened up myriads of new possibilities through the internet-of-things and the new digital possibilities through personalization of personal consumer data, producing the term "big data" (Boyd & Crowford, 2012).

The term big data refers to the enormous amounts of data produced very quickly different sources such as sensors, applications, online and offline sources. [1] Usually these data can come as a structured or unstructured form. Some of the purposes of big data find applications in the banking and securities industry, monitoring financial activities and the state of the financial sector; healthcare providers, governments, energy and utilities, communications, media and entertainment. [2] (Chen et al. 2012) The role of marketers is to utilize this data in the most efficient way. In the last couple of years, companies are increasingly investing in realizing the potential benefits of the right application and analysis of big data Chen et al. (2012), Golden (2013). Consumer data is of such a high value to companies, that it didn't come as a surprise when in 2015 the CEO of MyFitnessPal, co-founder of the free smartphone app that tracks health, diet and exercise data and that by that time had 80 million users, announced that his company will be acquired by Under Armour for $475 million USD in a strategic move to use data from online fitness communities in order to boost sales. [3]

However, this data contains a myriad of privacy details of the consumer, not only as location and IP address but also patterns of personal buying decisions such as prescribed drugs, buying alcohol or tobacco products just to mention few of those. Ensuring personal data protection becomes more challenging as information is multiplied and shared ever more widely around the world. Information regarding individual's health, location, electricity use, online activity and so forth can be exposed, raising concerns about profiling, discrimination, exclusion and loss of control. (The EU Data Protection Reform, 2016)

Disputes are rising related to the amount of data organizations are having at their disposal. Pariser (2011) and Benkler (2006) argued that in exchange for increased amount of personal data and the subsequent personalization of content can lead to unimaginable dangers for the freedom of choice and liberty of people by creating these "filtering bubbles" in which consumers "reside" online.

This is where regulation steps in to define the boundaries of the use of personal consumer information advertisers, companies, and the business in general. The EU has defined a law, related to online behavioral advertising (OBA) included in the Data Protection Act 1998 and the Directive on Privacy and Electronic Communications (e-Privacy directive). [4] The OBA term is defined by the Article 29 Data Working Party as a "tracking of users when they surf the Internet and the building of profiles over time, which are later used to provide them with advertisements matching their interests." Whether extensive regulation helps consumer as well as businesses will be a question for my critical analysis on whether too much personal data is actually economically viable to firms and to what extent.

The approach used in this paper will try to summarize and explain the current literature available on the ongoing big data race and its effects on consumer behavior as well as the privacy concerns of too much personal data held by companies. Then I will critically analyze the literature of the current economic viability of digital channels and whether more data is actually needed or it is better that companies invest more in the actual analysis of data than just piling up more and more information about people.

This paper proceeds in three parts. The first part introduces the big data literature and summarizes current reports of what constitutes big data and why it is of a growing importance to marketers to effectively utilize it. It also shows what are the internal challenges marketers face to prove the effectiveness of their digital marketing campaigns and projects. In the second part, the paper deals with consumer behavior during the "new" customer journey in the age of big data, emphasizing on the growing privacy concern from the society and the individual consumer and how can companies and public institution deal with it. The third part summarizes the current proposed recommendations for the future of digital marketers as suggested by researchers and policy analysts.

2. "THE BIG DATA RACE"

The Harvard Business Review coined the job position of a Data Scientist as "the sexiest job of the 21st century" [5], further defining it as a "high-ranking professional with the training and curiosity to make discoveries in the world of big data"[6]. But what does this actually tell is that information is the new gold mine. In the most recent report and thorough report by McKinsey, by April 2011 235 terabytes of data were collected by the US Library of Congress. The most recent estimations, published by the White House in 2014, the estimations are that digital data will reach on a global level about 8 zetabytes (for clarification, 1 zetabyte =1 trillion of gigabytes).[7] These data now comes from various sources such as millions of networks sensors that are embedded in mobile phones, security sensors, smart energy meters, automobiles, industrial machines.[8] With the fast development of underlying technology and innovation that changes industries by the hour, more and more devices are now creating, exchanging and communicating data in the so called "internet of things". Increased use of wearable devices such as the health indicator tracking bracelets such as Fitbit or NikeFuel Bands. The most recent example of an application of data, retrieved from wearable devices came from employment litigation cases and personal assault criminal charges, where the court used data such as heart rate or indication of physical activity to prove that an injury that occurred during the working hours of the employee. [9]

What defines Big Data

The "three Vs" – volume, variety, and velocity are the three words that describe big data Russom, (2011).

Volume defines the average quantity of data units per category generated. As I have mentioned earlier, the current volume of data generated is unprecedented. The *variety* of sources now comes from both digital information and also information from analog devices such as voice and video recording, which is transformed in a digital format and it can be both structured or unstructured.[10] Sources of data can come by the public web; social media; mobile applications; federal, state and local records and databases; commercial databases that aggregate individual data from a spectrum of commercial transactions and public records; geospatial data; surveys; and traditional offline documents, which are digitalized. [11]

Velocity - the speed of data generation is now key for businesses that rely on customer information such as orders patterns and predictions on a given date. Analysts from MIT Media Lab used location data from mobile phones to track how many people parked in a Macy's parking lot on a Black Friday so that they can have some rough predictions of how many people will visit the store and then calculate an estimated sale for the given Black Friday even before sales emerge. [12]

It is important to note that big data is not only small data, aggregated from various sources to create a single bigger data. Big data, as a term refers to the aggregation of multiple data elements, which have causal or interrelated relationship with other data, in such a way that a predictive and/or reactive model for the future can be created, based on that big data elements.[13] The term is more precisely to be explained as the capacity to search, aggregate, and cross-reference large data sets (Boyd & Crawford 2012).

Uses of Big Data

The uses of Big Data for companies can be myriads. They can serve in predictive analytics for each company unit, such as marketing, financial, sales, logistics or HR. A case study prepared by the MIT Digital Center with the partnership of McKinsey, had 330 structured interviews with managers from top public companies about their organizational and technology practices and they compared their answers with performance indicators from annual reports and other sources. Their results show that the more companies characterized themselves as data-driven, the better they performed on objective measures such as financial and operational results. [14] Some technological giants, that are "born" digital such as Amazon, Google, or Facebook, have the advantage of exploiting the enormous data from their customers and thus creating dozens of new profit streams, such as the most recent and innovative solution of Amazon – Amazon Dash - a Wi-Fi connected device that allows users to build a shopping list by scanning bar codes and saying product names out loud.[15] It connects with AmazonFresh, the company's online grocery delivery service and claims benefits such as "never forget an item again" and suggests users keep the device on the kitchen counter or refrigerator so that every member of the family can add items to its grocery list.[16] The U.S electrical supplier GE is to become the first manufacturer to have multiple product lines such as dish washers and laundry machines, that use the Dash Replenishment service through their new GE Kitchen app.[17]

The importance of Big Data on traditional as well as digital marketing channels

Marketers use the term personalization to define the merging of many different types of data, that is processed in real time and can be transformed to deliver the exact message for a product or a service to the exact consumer as well as more precise and tailored marketing message to a preselected target audience.[18,19] In the last couple of years Big Data is recognized by marketers for its ability to bring dramatic difference in sales, customer loyalty and long-term profitability of businesses. Gathering customer, product and promotion data helps tailoring better promotions in the future, to increase the effectiveness of promotional and marketing campaigns and boost sales further Rygielski, Wang, Yen, (2002); O'Sullivan *et al.* (2008); Solcansky, Simberova (2010); N. G. Nwokah & A. I. Ahiauzu (2009).

Companies now are starting to rely heavily on Apache Hadoop – an open-source software framework for storing data and running applications on clusters of commodity hardware. [20] According to technology analysts, it provides huge storage for any type of data, it has an enormous processing power and the ability to handle virtually limitless tasks or jobs a relation providing ultra-high scalability and low cost compared with other conventional relational databases. [21]

According to McKinsey & Co.2, 56% of all customer interactions happen during a multi-channel, multi-event journey. This is sometimes called a "Customer 360" centered view, where companies employ strategies to get data from multiple channels, capturing information on every step of their customer journey. This insight can be now generated using Big data platforms based on Hadoop, Dean & Ghemawat, (2008), which can enhance the capabilities of digital marketing channels by capturing and analyzing data about customer behavior online and thus providing better profiling, specific segmentation, more successfully tailored products and services and better targeted advertising.

Sears, one of the largest and oldest US department stores for appliances and retail from

the brick-and-mortar era is currently trying to face competition from other department stores such as Target and Wal-Mart, but also the growing giants like Amazon and Alibaba. in an ultimate and most efficient way. In 2011 Sears rolled out the first steps of a strategical customer loyalty and retention plan, trying to customize promotions and deals. *The Shop Your Way Rewards* membership program is Sears' implementation of Apache Hadoop. The move was part of a strategy to reduce mainframe costs and to speed up and deepen the use of customer data. In the second quarter of 2013, Paul Swinand, commented that without the program, sales would have been much worse. [22] Productivity growth and consumer surplus can come as a result of big data, according to the estimations of McKinsey report which predicted that a retailer utilizing the entire big data potential can increase operating margins by 60 percent. The winners from big data vary from retailers, financial and insurance companies to governments. The result of this development will be an enormous amount for data analysts with high analytical skills but also a stronger need for privacy and regulation compliance.

Companies using big data analytical tools are able to capture and analyze clickstream, transaction, video and social media data, digital advertisers are able to spot trends and patterns, unearth new relationships, and optimize their ad campaigns by adjusting campaign tactics in real time. But this also raises privacy concerns about basic customer right to retain the information websites share with third parties and other security issues of how this personal data can be stored securely.

3. CONSUMER BEHAVIOUR

Consumer behavior and customer journey are some of two most important aspects of importance to marketers. According to McKinsey, the goal of marketing has always been how to reach consumers at the most critical points in order to influence or stimulate their buying decision. With the current abundance of possible outlets to reach customers – traditional media, social media, smart devices, the opportunities for companies are growing, but so is the power of the consumer to make a better informed choice and to "pull" information from marketers through word-of-mouth, reviews from websites dedicated to that and forums. [23] What marketers need right now is a more precise and efficient way of satisfying customer demands and effectively managing word-of-mouth.

Big data has the following benefits for companies:

- It can unlock the potential of information by making it transparent and usable at a higher frequency.
- It can help organizations store more transactional data in a digital form and also collect more detailed and accurate performance information
- Leading companies can use data to conduct experiments and test predictions and adjust their businesses
- Allowing more sophisticated analytics and precise segmentation leading to tailored campaigns for products/services
- Improving development for next generation of products/services

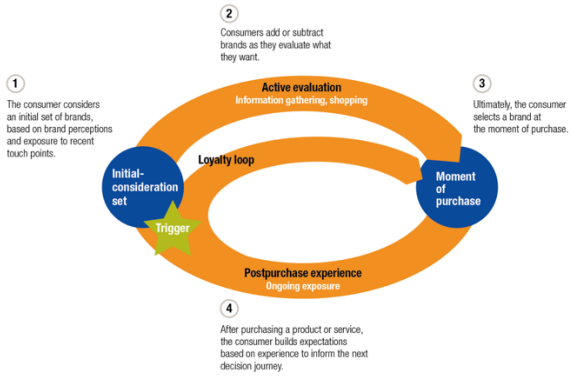
Customer journey

Data-driven marketing can deliver insights for better product and services and transform customer experience, brand recognition and marketer-consumer relationship. Microprocessors and sensors embedded in mobile devices, cars, electric appliances and packaging are connecting the offline world with the virtual one, making marketers

With the consumer becoming increasingly well-aware and informed it is the role of marketers to not only employ customer-centric strategies but to align those marketing tactics among all the supply chain – agencies, production companies, media partners and CRM departments. According to analysts, it is now crucial for companies to understand this changing situation and sophistication of consumers so that consumer data is not only gathered but also used efficiently to understand customers' desires and needs and to deliver the right message to them. [24]

Consumer journey nowadays faces a dramatic change (Maila, Stahlberg, 2013). The way consumers are researching for a product and taking a buying decision has changed from what was traditionally known as the traditional purchase funnel, where the process from finding information for a product until the moment of buying a product was by far a linear process and it started with a huge clutter of companies the consumer has in mind, which are constantly narrowed down until the moment of a purchase decision.

But the main drivers of change – technological developments and the internet, mainly, have transformed the process into a more circular one.



Source: McKinsey, 2009

What McKinsey found was that actually people start their consumer journey initially with a few brands in their mind that they would like to consider. One explanation for that is the constant bombardment of messages on all possible channels of communications and in a way, people select only a few of them that have captured their attention somehow. Then the next step in the process is the active evaluation and gathering of further information – from friends, relatives, word-of-mouth, magazine articles. What researchers have identified in this step is that the number of brands actually increases in this phase of Active evaluation, where the more you research on one product the more other similar products appear in consideration, which is exactly the opposite of what it was previously believed that people start with a huge clutter of brands and companies in mind and then narrow down their choice to make a buying decision.

Marketers also face pressure from the side of CEOs and other managers on a chief position. According to a FournaiseTrack survey conducted with 600 CEOs, 73 % of them think that marketers lack business credibility and are not effectiveness focused enough to generate incremental customer demand and that they focus too much on the creative, "arty" and "fluffy" side of marketing and not enough on its business science and also that they rely too much on advertising agencies to come up with the next "big idea". [25] Another, more recent survey, performed by the same company shows that when it comes to applying a Customer value proposition, only 17 % of the marketers have applied the correct definition – the promise of potential value that the company brings to the customer and they don't focus enough on what message they deliver. The discrepancy between the opinion of marketers and management is not a new trend. The difference now is that marketers can now focus and exploit data in a more efficient way thus perform better in tailoring more specific and customer-centered ads and campaigns.

Consumer behavior online

The emergence of a new behavioral power online is extremely consumer driven. Even one consumer can be influential among a group of followers on social media platforms or other interactive online platforms. As analyst from McKinsey Company Jacques Bughin, suggests in a report [26], those businesses that are able to target and connect those influencers will have a competitive advantage over others. He also suggests that there is a greater opportunity to make important business decisions, using big data, which may lead to influencing potential buyers more accurately, because of data analysis the time frame between search and buy has been reduced in some market segments, as reported by McKinsey. [27] The role of brand trust has become a central one, influencing consumer buying behavior online Lee, (2002); Liebermann & Stashevsky, (2002). Cooperating with influencers and users in general can help companies not only create new and innovative customer-centered products or services, but can also open up new business systems and improve

platforms such as the Android or Apple app market platform. Thus businesses can leverage this cooperation successfully for their own benefit.

Omni channel marketing

Here comes the importance of the multichannel approach – a 360-degree marketing approach of following a comprehensive and multichannel approach toward reaching a customer on every possible touchpoint in various offline and online channels. Initially, the approach was seen as an approach to reach a target audience with a specific type of message that bears the desired campaign goal across all possible channels of communication – social media, websites, emails and newsletters, sales points, events. Nowadays, the 360-degree marketing view is enhanced by the use of digital technologies and the technological diffusion of smart devices, allowing marketers to reach customers individually. The new trend now is called optimized cross-channel experience. An exemplary situation might be that of a young couple, that recently got married. They decided to buy a family electric car, so they had some brands in mind, that they've heard to offer efficient and affordable vehicle types and good aftersales support. They google the name of the brands they focused on, check where the closest dealership is or download the app of the dealership and schedule an appointment with a personalized seller. The moment they enter the auto dealership, an NFC reader indicates their arrival and a welcome message pops up on their smartphones – offering only today, a zero-amount of down payment and an after sales support for the first 12 months after purchase of the vehicle – calculated carefully based on prior CRM and after-sales customer data. Then a sales representative greets them, offers them to take a look around and have a refreshing non-alcoholic beverage and offers them a test-drive. With the app, they've downloaded since they entered the showroom, they can now test drive and unlock every car model from a specific brand, that works exclusively with this retailer. In the meantime, the spouse of the one driving can share online the experience of the first test drive. What the approach just described shows is the amount of new opportunities that digital technologies open up to marketers. What stands behind those opportunities is customer data.

Scalability in digital marketing

To get the full advantage of tremendous data, marketers should also be concerned about scalability. The biggest question businesses face is how effective they use their data. For marketers this is a tipping point for proving how money invested in traditional and digital campaigns on social media platforms, collaborations with apps and third parties are worth it. The greatest importance for marketers is their ability to relate Big data to the respective KPIs they use to keep track of sales, marketing campaign success and other digital channel performance.

4. PRIVACY CONCERN

Choice is an illusion created between those with power and those without." A famous quote from the Matrix movie seems to exemplify the situation of common people in the era of big data. There is a growing concern about the situation of the consumer, in the center of this data driven businesses. Most of the times the consumer is actually unaware of what is happening behind the curtain. In the age of big data, information privacy refers "the claim of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated to others" (Westin, 1967, p. 7). Online information privacy is related to the collection of the user's personal information by websites, others' access to the user's personal information, the user's control over the collected information, and the user's awareness of how the collected information is used (Malhotra, Sung, & Agarwal, 2004).

The social media network sites (SNS) are by far the fastest growing networks of active users, with Facebook and WhatsApp leading with more than billion users globally in 2016 (Statista.com). Despite the growing concern of privacy issues, the rate with which Facebook user data base has seen a significant and steady rise since its inception up until now.

An independent survey created by two professors from the University of Pennsylvania

and University of California 2009, showed that 2/3 of the internet users object online tracking by advertisers, while the majority of them, 92 % agree there should be a law that requires "websites and advertising companies to delete all stored information about an individual, if requested to do so." The authors of the survey also imply that the survey results clearly show that what the concern most Americans have towards marketers tailoring ads and other forms of tracking is wrong. [28]

Discrimination, privacy and security concerns

Johnson (2009) tests several propositions, concluding that improved targeting benefits may make consumers worse off. From a social perspective, his research shows that consumers may underutilize ad-avoidance technologies. Again from the aspect of social welfare he refers to earlier findings of Hirshleifer (1971), who observes that companies/parties invest heavily in information acquisition, but in the end, this information serves no socially productive role but instead redistributes wealth.

He also discusses the two negative consequences he finds specifically on more precisely targeted advertising. He argues that although consumers may gain from the appearance of more relevant ads while they are browsing or just using their smart devices for example, it may happen that the number of ads received may increase. He argues that this is bad for consumers "because, in equilibrium, they tend to disdain marginal ads although they may appreciate inframarginal ones."

Another issue is discrimination in terms of pricing, as reported in the Obama issued report on Big Data in 2014, where it was acknowledged that behavioral targeting that leads to biases, created by "filter bubbles" that prevent someone of getting a certain information based on the previously assigned ideologically or culturally segregated assumption by the algorithm. Filtering people can also lead to economically harming situations, where for example, a price might change. There is also discrimination in terms of pricing, services and opportunities offered offline. According to a study, published in the same report, researchers found that web searches involving black-identifying names such as e.g.,"Jermaine" were more likely to display ads with the word "arrest" in them than searches with white-identifying names (e.g., "Geoffrey"). This research however did not explain the reason why a racially biased result occurred, recognizing that ad display is the result of a number of variables and processes and it is algorithmically generated automatically. [29] depending on the location of a person, tracked by his/her IP address. [30]

Civic rights concerns are currently of increased interest by policy and law makers. Barocas & Selbst (2016) suggested that "data mining can inherit the prejudices of prior decision-makers or reflect the widespread biases that persist in society at large." [31] In their essay, the authors argued that using data predictively can not only affect people economically, but also create a situation of "winners" and "losers" that may resemble discrimination by inflicting unconscious and implicit biases, such as the ones created by the algorithm of data selection. Discrimination in that sense can occur unintentionally and be based on the data mining process itself. [32] The White House Report (2014) states, that "big data analytics have the potential to eclipse longstanding civil rights protections in how personal information is used in housing, credit, employment, health, education, and the marketplace."

Cookie consent is present in Europe and most of the time a consent is required to use customer information by third parties, but what about all the applications and devices that we use daily, which are set by default to share your location for example. (Example: the iPhone) Or when a person has installed a camera surveillance system at home, but is unaware of the risk of that camera getting hacked and releasing all the records of his/her private life. Precautions are needed the more devices we add to our home, networks, cars and live in general.

A worrisome trend is the increased number hacking cases where distributed denial of service attacks (DDoS) occur. Those attacks are meant to temporary enslave machines using internet connectivity such as printers, cars, WiFi routers

and other network enabled devices, by creating an arrangement of a malware infected network called "botnet" The botnets are coordinated into a way to overwhelm a cluster of machines or servers and to make them impossible to operate. Victims of hackers attacks can be individuals such as Brian Krebs, an American journalist who reports on internet crimes and criminal cases including those who run DDoS services. On October 21 the servers of Dyn, a company that controls much of the domain name system (DNS) infrastructure were hit, which brought down sites including Twitter, the Guardian, Netflix, Reddit, CNN. [33]

Elsewhere, in Australia there was a heavy negative response from the public in the recent 2016 census. The government has announced that it may impose heavy fines on those who refuse to share their personal information such as name and address. The public reacted very negatively to the act because of a growing concern for the security of data. The concerns of Australians were not without a reason since a few months later the Census website was under a malicious DDoS cyber-attack that led to a complete collapse of the website and caused IBM to apologize officially and to pay the damages for failure to complete the A$10 million contract with the Australian government. [34]

5. REGULATION

According to a McKinsey Global Institute Report there are several key areas related to regulation and policies that must be addressed effectively. Key areas include policies related to privacy, security, intellectual property and also liability need to be addressed in the world of big data.

Although all advanced and developed countries face now the problem of dealing with the vast amount of personal data and how to secure it successfully, different governments have taken divergent approaches. The US and Asian countries for example exhibit more limited systems of regulation while the EU have adopted a vision of privileging consumer protection and individual privacy over economic interests of the firms and the public sector (Newman, 2008).

An EU Directive 2011/83/EU on consumer rights adopted in October 2011 has dealt explicitly with digital content, including it among the issues regulated by the Directive. The new EU Directive on consumer rights appears to be a first – desirable – step toward a balanced intersection between copyright and consumer/user protection. [35]

The U.S. Federal Trade Commission is also extending its regulatory reach in order to monitor big data practices that can have potential negative impacts on low-income and underserved segments of society, including discrimination in lending and job opportunities. [36] They have also enforced two other laws - Fair Credit Reporting Act, or FCRA, and the Equal Credit Opportunity Act, or ECOA – that targets companies, that collect, analyze, market and use big data, especially data related to consumers. [37] The consumer rights enforced in the US include the right to know what information about you has been gathered, whether that information is correct in case of insurance and employment disputes where there is an inaccurate information provided and also to limit "prescreened" offers of credit and insurance. [38]

In 2016 Japan has made passed the amendments to its Data Privacy Laws and has enforced the Personal Information Protection Act which now gives more leverage to third parties and especially to business and marketers to use anonymized personal data, (data without names and personal identifiers). This law will allow companies to use and sell "big data" about their customers even though many Japanese consumers are very sensitive towards data privacy issues. [39]

6. RECOMMENDATIONS AND CONCLUSIONS:

Automated technologies are providing marketers with the opportunity to predict customer's next interest and optimize the target message through all digital channels based on past behavior and improved cognitive predictive analysis. Advanced predictive models can dynamically serve content and offers based on a user's current and past online behavior. Making sure these tools are on hand can ultimately help the

business build consumer-centric promotional strategies. (Forbes) In this way, marketers can make a shift towards creating an engaging personalized customer journey in a way that was not possible before. Nevertheless, there are key issues of concern toward the successful implementation of personalized content on digital channels. Therefore, it is important for managers to understand the rising role of personal trust in the brand itself, that can significantly mitigate the reluctance of sharing personal information Malhotra, Sung, & Agarwal, (2004), Yin, Kaynak (2015).

Crucial for marketers who would want to continue to use various forms of behavioral targeting in their interactions with consumers, is that they must work with policymakers to open up the process so that individuals can learn exactly how their information is being collected and used, and then exercise control over their data. Several key issues are: letting users opt-out; encouraging transparency and customer control over private personal data, including the ability to erase/download or archive your whole personal data; limits on the retention of data for a given amount of time. Brand trust is also crucial for the decision making process of whether consumers are willing to share data. While some accommodations may need to be made for keeping data for security reasons, firms should not be able to use data for marketing purposes for periods longer than those consumers want, (Conroy et al., 2014).

Those actions should be taken when emerging contemporary data-gathering activities are disliked by the public in general.

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The fine line between privacy and promotion: Critical literature review discussing the relation between digital marketing and privacy threats

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Abstract
Because of recent societal agitation on user privacy with regards to modern marketing principles and the research gap specified by the Marketing Science Institute where the flow from push-marketing to push-marketing is described, modern literature was reviewed in order to give a clearer distinction on how digital marketing and user privacy are related. It was found that more recent literature is more relevant to the topic and better in predicting future trends, since this field is changing fast. However, in relation to push- and pullmarketing, it is found that a wide range of authors agree on the fact that effectiveness of marketing can be improved by changing from a push-perspective to a pull-perspective: it is possible to better target customers and their behavior and adjust the tone of voice to this single customer. In other words, reaching out to customers in a more personalized way will have positive results on their behavior (from multiple angles). Through time, more and more information from users is available for marketeers to work with. However, there is little known information on the exact friction between user privacy and the developments in this field of marketing.

Keywords
Online Marketing; Digital Marketing; Push-to-Pull; Consumer behavior; Digital advertising; Privacy;

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?
The author finds this topic interesting because of recent read articles, and therefore created curiosity about the tension between pull- and push marketing in modern literature, in regards to nowadays societal discussion.

1. INTRODUCTION

Before the global introduction of the Internet, the consumer life's were offline and thus their interactions as well: information was pushed towards consumers, by newspapers, by radio, through TV, in person (Treadaway & Smith, 2010). A TV commercial, for example, is displayed on a certain channel, on a certain time and focused on a certain public. Receivers of the message did not have any influence on the message, the tone of voice or the content.

A far-reaching change was the start of a new way of marketing. In 1989, Tim Berners-Lee introduced "a system of information cross-referencing, access and retrieval across the rapidly growing internet based on 'hypertext' links" (Ryan & Jones, 2009), the internet as we now know it. The way Berners-Lee thought about the architecture was not new at all, but linking documents stored on different computers definitely was. Slowly it became public, with an unexpected result: between 1991 and 1997, the web grew with a whopping 850% per year (Ryan & Jones, 2009). The authors of the book 'Understanding Digital Marketing', Ryan and Jones, state next that "it was only a matter of time before innovative tech-savvy marketers start to notice the web's potential as an avenue for the marketing message."

This old-fashioned, traditional way of mass media marketing was replaced by a new way of personalized marketing where the consumer decides when, how and where he is approached. Consumers seem to be more in control of the information flow (Marketing Science Institute, 2016). Consumers, nowadays, provide information for marketeers to use in their campaigns. According to the New York Times (2008), companies are observing the internet closely and gathering information about the personal preferences of a user multiple times a month. Multinationals as Nike, Disney, Coca Cola and more are using the user-generated content to communicate and interact (Constantinides & Fountain, 2008). User information is extensively used by marketeers to create personalized content as it is assumed that people will be more interested to buy a product when it is made personally relevant (Tam & Ho, 2006).

The information you share with Facebook is used to create relevant advertisement in order to persuade you into a purchase. "My profile is being sold to an advertisement party […] and they can even guess how old I am" was stated by Hekman (2016) from the HU University of Applied Sciences. The phone number you just obtained from the girl in the bar is shared by WhatsApp and gathered by Facebook, giving you the option to become friends, even without mutual friends. This however, makes a customer (part of) the product (Tokmetzis, 2014) since the main channels such as Facebook, Twitter, Instagram, Google and many more are free to use in exchange for specific data about the user. These gatherings do not only exist on social media, but also within regular search engines: searching for information on certain topics may result in seeing advertisements for these products and/or services later on (Story, 2008). All kinds of data is retrieved by a diverse range of software, like location, earlier visited websites, current operating system, network provider but also account information like Facebook-likes and Twitter-posts (Tokmetzis, 2014).

What happens with all this obtained data is mostly not visible for a regular user. All sorts of information is being sold to marketeers which makes Facebook advertising so interesting that it is becoming big business for small and large size businesses (Yang, Kim, & Dhalwani, 2008). In the end, organizations are able to find out to know exactly where their target group lives, what they prefer and how they behave (Unni & Harmon, 2010). However, approaching target groups based on personal information could be seen as an infringement of privacy (Ayres & Funk, 2003). Immediately, societal agitation develops about the distinction between user privacy on the one hand and marketing goals on the other (van 't Wout, 2016).

2. RESEARCH PROBLEM

Where push-marketing is focused on sending a message to what you believe your target group is based on earlier research, pull-marketing is more about finding out who and where your potential customer is by retrieving personal data and sending a message based on that specific information. Marketers slowly respond towards development of technological opportunities which make it possible to retrieve information from potential customers in order to improve marketing in general.

Until recently, pull-marketing was not interesting enough, but since 2010 this way of obtaining information and targeting customers is becoming more and more relevant (Smutkupt, Krairit, & Esichaikul, 2010). This shift in current modern marketing leads to new insights about privacy itself and the relation to this contemporary way of marketing. Therefore, this paper aims to clarify pull-marketing and its possibilities and how this is related to the privacy of internet users by evaluating current relevant literature.

In this paper, the following research questions are being answered:

1. **How could digital marketing infringe user privacy?**
2. **How does current literature describes the relation between digital marketing and user privacy?**

3. METHODOLOGY

To answer these two questions, a critical literature review will be conducted. Firstly, more (background) information is provided to clarify the possibilities of pull-marketing and the related relation between marketing goals and user privacy. By investigating which possibilities currently exist for marketeers to obtain and use user data and how this is related to user privacy, it is possible to describe this topic in general.

Furthermore, relevant scientific literature will be assessed to find out how this topic is described in current research. Multiple scientific papers will be evaluated and based on this information, the main view of this topic will be addressed, as well as different relevant opinions. Selecting relevant scientific literature will be done by the so-called Grounded Theory Literature-Review Method (Wolfswinkel, Furtmueller, & Wilderom, 2011). By executing the five steps described in the paper *(Defining, Searching, Selecting, Analyzing and Presenting)*, the reliability of this research will be strengthened.

4. DEFINITIONS

Within this field of digital marketing, it is relevant to clarify which terms are used. The following definitions are derived from the Oxford Dictionary.

Consumer: a person who purchases goods and services for personal use.

Cookies: a packet of data sent by an Internet server to a browser, which is returned by the browser each time it subsequently accesses the same server, used to identify the user or track their access to the server.

Customer: a person who buys goods or services from a shop or business.

Data: facts and statistics collected together for reference or analysis.

Digital: involving or relating to the use of computer technology.

Marketing: the action or business of promoting and selling products or services, including market research and advertising.

Offline: not controlled by or directly connected to a computer or the Internet.

Online: see Digital.

Privacy: the state of being free from public attention.

Target: to select as an object of attention.

Target group: a particular group at which a product such as a film or advertisement is aimed.

User: a person who uses or operates something.

It is self-evident that all concepts are related to the digital topic of this paper. Therefore, it is important to perceive the concepts in their right context and to be aware of that.

5. ANALYSIS

5.1 Digital marketing

According to Ryan & Jones (2008), the number of people online grew quickly in the beginning of the 21st century: in March 2000, an estimated 304 million people had internet access. Three years later that figure had doubled to 608 million and in December 2007 that number doubled again to 1.3 billion users. As the number of people online kept growing, the allure of digital marketers grew as well since this was a big pond to fish in.

Slowly a difference between offline and online media started to exist. According to Ha & McCann (2008), the differences are definitely worth mentioning. First, offline advertising can be avoided by consumers as they could choose to ignore the message by changing channels (radio & TV) or leaving the area where the offline media is displayed. In the online world, it is possible to use aggressive banners or pop-ups that will stay in the face of the user. Of course, the user still could walk away or turn off his computer, but in his online environment he does not have a way to avoid this marketing mechanism. The author also states that it is possible to use online advertisement as editorial content where the user is more in charge of the provided information.

The amount of products and services offered online grew as well, as more and more companies saw the potential of the internet. Kannan et al. (2001) stated that the offering of goods via digital mediums is a solution in a time-starved environment that the world is becoming nowadays. According to Ryan & Jones (2009), that was not the only reason. As for the products and services sold online, these needed marketing just as their offline counterparts did. Consumers took more and more ownership of the information and entertainment they were consuming and marketers must shift their approach if they wanted to connect with them (Ryan & Jones, 2009).

However, according to Blythe (2009) two key factors are crucial in digital marketing: its acceptance by consumers and its acceptance by marketers. He states in his book 'Principles and Practice of Marketing' that "acceptance by consumers depends on a degree of computer literacy, access to computers, a belief that the companies online are honest and reputable and reassurance about security of cash transactions online. In general, the people who are most likely to respond favorably to Internet marketing are those with high levels of social escapism (people who enjoy the entertainment value of the Internet, in other words), high Internet ability (because of the perceived informativeness of the Internet) and high information motivation." However, based on recent information, it is relevant to state that Blythe was not completely right: the number of internet users is still increasing (see Figure 1) and the technology is not only for nerds and social awkward people.

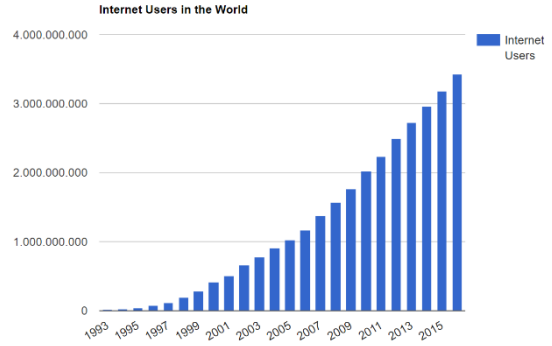

Figure 1: Percentage of Internet Users (Internet users in the world, 2016)

According to Internet Live Stats, the number of users is still expanding. France, Germany, Canada, the United States and the United Kingdom are the countries with the highest rate of internet users (80% of the population).

With regards to traditional marketing, the focus of digital marketing lies around distributing relevant information to the customer at the right place, time and in the right context (Mort & Drennan, 2002). Ryan & Jones (2009) state in their book that digital marketing provides marketers to both broaden or narrow the scope of the marketing activities. It is possible to connect with customers all over the planet as well as communicating with potential customers for a niche segment.

According to Kiani (1998), digital marketing has three basic advantages compared to traditional mass media: addressability, flexibility and accessibility. First of all, the internet provides a "memory": everything a user is doing or has done is captured. This memory makes it easier for marketers to create better fitting content to their potential customers. Traditional media is also able to use addressable tools, but it is not as low-cost and high-speed

as digital marketing. Second, advertising can be flexible: based on consumer feedback, ads can be updated to better fit with the actual reality and/or the demands of the user. Third and last, the digital world provides possibilities to be accessed 24/7 which makes it easier for not only national marketing but also for international marketing. However, it has to be taken into account that these three advantages are not fixed: since the internet is a technology itself that is progressing extremely rapidly, the written literature might not be relevant anymore (Blythe, 2009).

The studied literature describes digital marketing as a potential promising construct (Barnes, 2002; Blythe, 2009; Kannan, Chang & Whinston, 2001; Mort & Drennan, 2002; Tam & Ho, 2006). Back in 2001, marketers would still not see and use the full potential of the Internet (Arnott & Bridgewater, 2002). In contrary, Manchanda, et al. (2006) states that the role and effectiveness of internet advertising is still to be assessed. They therefore come up with a mathematic model to investigate purchase behavior based on customer data. It is stated in the limitations of this paper that they found that data differ in their influence on purchase drivers. For example, earlier purchasing history and demographic data was not taken into account in the research, where the authors state that this might affect customer behavior.

Based on the relevant information, it is possible to derive a trend from the studied literature. Papers and book from the early years in the 21st century are not able to foresee how marketing would develop itself in the coming years. For example, Kiani (1998) and Arnott & Bridgewater (2002) could only state that they find the possibilities for marketers on the internet interesting. Barnes (2002) however was able to see that the push-marketing focus was slowly shifting towards a pull-marketing focus, even though the dominating vision was still push-marketin-orientated. However, the more recent the literature, the more relevant and precise the constructs. For example, Heng, Hock-hai, Tan & Agarwal (2010) could provide a specific idea on how to use data about the location of a user in a marketing perspective.

On the other hand, there is also literature that does not follow this trend: relatively new literature would write unclear about digital marketing where relatively old papers describe precise examples on the topic of digital marketing and its potential. For example, Sarathy & Robertson (2003) suggests that pharmaceutical firms could increase sales "by obtaining data from pharmacies about customers to whom […] rival drugs have been sold, and then using the information to prepare personalized marketing communications offering customers their own pharmaceuticals as a replacement for their current prescription […]". The example provided by Sarathy & Robertson is precise and relevant in the current marketing environment.

Ryan & Jones (2009) and Blythe (2009) are quite vague about digital marketing: Ryan & Jones focus in their book mostly about e-mailmarketing where according to Yang, Kim & Dhalwani (2008) e-mailmarketing is on its way back and social media is more effective. Blythe (2009) is not clear at all in his statements, only saying that there is potential in the "Internet" but he does not give any proper examples of how to use this potential besides a brief description of a case study on this topic.

5.2 Push vs. Pull-marketing

Recently, marketers tend to shift from a push-marketing perspective to a pull-marketing perspective. "Moreover, with information about consumers' geographical locations, service providers could channel their marketing and advertising opportunities into tailoring wireless content delivery for different consumers" is stated by Heng, Hock-hai, Tan & Agarwal (2010) and an example how data can be useful for marketers to target potential customers more effectively by for example create personalized ads. Data such as location, age, sex, education, work status, marital status, preferences and more can be used to show ads that better fit with a potential customer and therefore increasing the change of a purchase. This data however, is made available for companies by users and companies only have to respond to the provided information.

According to Barnes (2002), it is possible to distinct two ways in marketing: push and pull. Smutkupt, Krairit & Esichaikul (2010) agree with Barnes and state the following: "In a push strategy, marketers initiate communications by sending information directly to customers without their prior request. And quite the opposite, pull strategies involve delivering messages upon customer request, or placing information on browsed […] content. Push marketing […] has dominated […] marketing for years." Both authors agree on the fact that pull-marketing strategies will become leading in the near future (Barnes, 2002; Smutkupt, Krairit, & Esichaikul, 2010). According to Kiani (1998), communication will become interactive to a high extent (see figure 2) where not only push-marketing but also pull-marketing is used to interact.

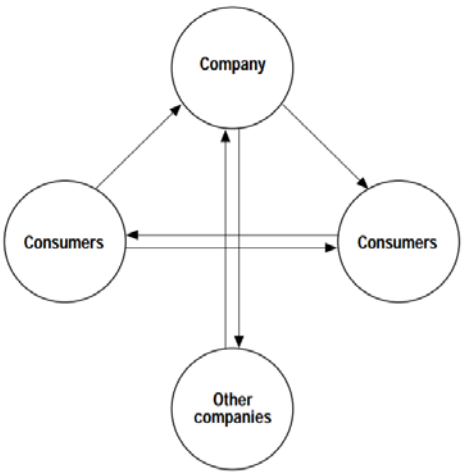

Figure 2: Illustration of different communication patterns in interactive environment (Kiani, 1998)

Kiani (1998) elaborated also on the model of Kierzkowski, et al. (1996). According to this paper, there are five important factors for success in digital marketing: attract users, engage users' interest and participation, retain users and ensure they return to an application, learn about their preferences and relate back to them to provide the sort of customized interactions. Where the model is still quite abstract, the idea behind the last two factors is based on pull-marketing: the customer pulls his own advertisements based on the information he provides, deliberately or not. Both authors agree on the fact that only push-marketing is not sufficient. They indicate that finding individual

information and translate that into a personalized service or product could help marketers better "relate to a customer." (Kiani, 1998).

In general, there is not much specific literature available that describes how and to what extent pull-marketing could be more effective in marketing than push-marketing. Most authors describe the fact that pull-marketing could be effective when information is derived from customer data, but which data is effective and in what way it should be utilized is not clearly defined.

5.3 User implications

The effectiveness of digital marketing can be improved by customer involvement. Constantinides & Fountain (2008) describe that in application development this has three advantages:

1. Continuous, real-time improvement: it is possible to react immediately on actual user feedback.
2. Perpetual beta: all digital content remains under development and improvement as long as it exists.
3. More users, more value through the aggregation of collective intelligence: users are able to add value to the service by writing reviews or adding content to communities.

Not only does this apply for application development, but also for digital marketing: everything that is digital can be improved real-time, is never fixed for a longer period of time and can be improved based on user feedback. However, this customer feedback could be either deliberate or not deliberate: customers contacting companies directly telling them that their ads are not fitting with their personal needs are obviously a minority. Results are mostly found in online characteristics, where it is possible to measure efficiency and effectivity.

To focus on effectiveness: this characteristic is measured by certain KPIs. Ryan & Jones (2009) mention useful generic web-based KPI such as conversion rate, page views, unique visitors, new vs. returning visitors and bounce rate. These KPIs could be measured with the help of cookies. By tracing the customer and seeing what he has been doing before or if he has been to the website of the advertiser before it is possible to present information better adjusted to the situation of the customer.

Yet, these cookies could be a potential threat to the personal information of a customer. Especially third-party cookies are not being controlled by the user nor the corresponding website, and might do harm to the user in a sense of privacy infringement: "In theory, these [third-party] cookies could be used to track visitor behavior across multiple websites on different domains, building up a picture of users' behavior as they surf the web. That's perceived as a bad thing, because large ad-serving and tracking companies can potentially use cookies to build up profiles of user behavior across all the website that they serve without explicit consent from the user." (Ryan & Jones, 2009). Tokmetzis (2016) found also in his research a company called VisualDNA that is creating psychometric profiles of users. Based on combination of browsing, clicking and viewing habits of a user it is possible to find out which personality traits belong to this certain user. According to Olejnik, Minh-Dung and Castelluccia (2014), creating these profiles is not a desirable development: "We highlight that such sophisticated methodologies being used to commoditize users data without their awareness, let alone consent, is a problem that needs due attention." This is a different conclusion than the conclusion drawn by Ryan & Jones (2009), where they state that "in practice, though, cookies tend to be largely harmless". According to Acar, et al. (2014), users should be protected for privacy infringing software by not only browser extensions or add-ons, but beyond that.

It is worth to notice that there is also "a huge gap between users' perception of the value of their personal information and its actual value on the market. […] users evaluate the price of the disclosure of their presence on a website to EUR 7. We show that user's browsing history elements are routinely being sold off for less than $ 0.0005." (Olejnik, Minh-Dung, & Castelluccia, 2014).

It is relevant to state that Olejnik is quite active in exploring the privacy side of digital marketing. He is mentioned as supporting party in the paper of Acar, et al. (2014) and as technical supporting party in the article of Tokmetzis (2016).

To summarize, current privacy research lack the distinctions that are relevant in marketing perspectives. It mostly focuses on the use of cookies and other user data, but it does not analyze in which field of digital marketing privacy infringement is more relevant. Research does suggest that marketing activities based on user information is often related to the use of cookies, which are not fully free from threats as stated by Olejnik, Minh-Dung and Castelluccia (2014) and Tokmetzis (2016).

6. IMPACT

This paper tries to evaluate and clarify the existing relation between digital marketing and user privacy. By extensively assessing the existing scientific literature, it aims on presenting a more complete view of this topic in a business perspective. The current view on digital marketing and pull- vs. push-marketing in relation to the implications for consumer privacy is assessed, to find out where current research gaps exist and to encourage future researchers to dive into this field of digital marketing.

Next to the scientific meaning of this paper, the practical implications could be based on these academic insights: in the end, the mentioned doubtful relation already exists and will grow in the future as the Marketing Science Institute also states that this is one of their research priorities for the next two years, meaning that there is definitely a need for research within the leading research field.

Furthermore, this paper also might encourage users to find out more about their privacy on the Internet. It is stated that users are very valuable for marketers, but the privacy is currently not guaranteed as stated before in this paper. There are definitely possibilities for users to improve their digital security and with that, protecting their privacy (Ryan & Jones, 2009).

7. FUTURE RESEARCH

In the near future, more research should be done on the precise possibilities of digital marketing in a context of advertising. Current research has been focusing on either banner advertisements or real-time bidding events, but there is no scientific method to find out which way of advertising is most relevant in general. To be more precise, it would be wise to find out the relation between different kinds of advertising and customer groups. For example,

there might be a difference in the way that a relatively young user looks at a website compared to an older person. Effectiveness of ads in that sight might relate to personal user information.

Furthermore, more research could be done on the current trend from push-marketing to pull-marketing. There is little known scientific material on how pull-marketing could be more effective than push-marketing, besides the statements that personalized marketing is more successful than impersonalized marketing. To what extent this is functioning well is not clear yet: it is possible that customers are enjoying personalized ads that hold their name or their recent bought items, but what if an ad contain very specific personalized information such as recently bought products at other websites? Or what if an ad is themed based on the political preference of a customer? It is hard to state where exactly the line is between appealing and repellent. Basically, the question that is relevant is: which data is available for marketers to target a potential customer?

Last but not least, it might be relevant to make a step back to offline marketing. The data retrieved online could be used in offline marketing, where customers would receive catalogues or personalized letters from companies based on data they have provided online. It might be worth a research to find out whether customers are willing to bring their online life's back to the offline world, and if said marketing would influence customer behavior (either positively or negatively).

8. CONCLUSION

It is possible to derive from the statements in this paper that the topic is still not fully explored: the practical implications of pull-marketing vs. push-marketing are not clearly stated in existing literature so far and which implications this could have for users is also not extensively analyzed. It is possible though to come up with a few conclusions:

- The current research on push- and pull-marketing in relation to privacy infringement is not covering the complete topic.
- Through time, marketers were provided more and more individual information about users, and there are no signs that this trend will change.

For researchers in a marketing environment, there is still a large field of possibilities to explore in order to eventually find a satisfying balance between digital marketing activities on the one hand and privacy issues for the user on the other.

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Decision-Making Process

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ABSTRACT

In the last decades, research studies investigating consumer behavior and how their decision-making process has advanced rapidly and has become a key topic in the modern marketing literature. To advance this important concern further, this research paper presents an extensive literature review of academic publications in the field of buying decision-making process in marketing and its status. Furthermore, the paper presents latest trends and themes that emerge there. Based on 24 journal articles, reports and marketing books, the core models and theories in this area were evaluated and discussed. Moreover, a framework of "moments that matter" in consumer decision-making process and factors that influence them was elaborated for possibility to influence consumer behavior in favour of company's offers. Furthermore, recommendations for marketers were suggested for deeper understanding the consumer behaviour and their buying strategies to empower marketing campaigns and be success in the market. The paper also suggests several directions for future research related to buying behaviour.

Keywords

decision-making process, consumer behaviour, buying behaviour, model of decision-making

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?

In a fast changing world buying decision-making processes is always a hot topic for marketers. It is important to understand in order to be successful on the market and "catch" more loyal customers. Who doesn't want to be successful?

1. INTRODUCTION

"*All marketing decisions are based on assumptions and knowledge of consumer behaviour*."

(Hawkins, Mothersbaugh & Best, 2007)

The consumer behaviour has been always a hot marketing topic, due to the fact that knowing how and why consumers act in a certain way making their buying decisions helps companies improve their marketing strategies and be more successful on the market. Thus, a challenge faced by all marketers today is how to influence the purchase behaviour of consumers in favour of their products or services. Therefore, the knowledge of buying behaviour sheds the light on the psychology of how consumers think, feel, argument and select among existing alternatives (e.g., brands, products, and retailers), also how the consumer's environment (e.g., culture, family, media) influences him/her, additionally, how consumer motivation and decision strategies distinct between products. That's all lead to understanding - how marketers can improve their marketing campaigns to more effectively reach the consumer.

This research paper focuses on consumer buying behaviour, specifically on factors/moments that influence customers' decision-making process. Research questions are (1) What are the "moments that matter" in consumer decision-making process? (2) What factors are expected to influence the "moments that matter" in this process?

The research paper is a literature review of main trends, theories, and gaps in the field of buyer behaviour. Moreover, a framework of the factors that influence each stage of the decision-making process will be presented and discussed. At the end recommendations for the further research in this area will be suggested.

The subject of buying decision-making was chosen due to the several reasons. First of all, every person is playing a role of a consumer and makes a lot of purchase decisions every day. It is important to understand what is influencing personal buying decisions – is it a problem/need or a well-thought professional marketing campaign. Beside that, from a marketer perspective, it is valuable to know this topic in order to effectively target customers, improve products and services of a company, and understand how customers view products versus competitors' products. That is all result in providing value and customer satisfaction, creating a competitive advantage and enhancing the value of the company.

Back to XX century scholars were thinking and proposing general theories and extended frameworks in the sphere of consumer behaviour. Nowadays, researchers investigate particular determinants and specific relationships; also more complex questions arise involving other sciences as, for example, neuroscience. As the result, new fields of science appear, a good example of this is neuromarketing. Neuromarketing investigates how human's brain works and reacts to marketing stimuli, applying the principles of neuroscience to marketing research.

Trends in consumer behaviour also change over years. In a fast moving word today people are increasingly expecting things to do more that involves interacting with all their senses, offers a range of new touch points and involves entirely in new experiences. There is an increasing desire for multiplicity and experiences are expected to offer more. It is no longer enough to immerse the observer in an experience, and people are rejecting the idea of passive on looking. They desire now active participation.

Multiplicity leads to the need for hyper-efficiency. People are seeking and discovering ever-smarter and more efficient ways to solve old issues. People are using every last piece of space and time, people are seeking smart ways to integrate a range of functions into one property.

Additionally, consumers have tasted super-personalization. Advances in technology mean that products are able to read consumers and give them what they want – sometimes without even being asked ("Six Trends That Will Shape Consumer Behavior This Year", 2014).

Advanced technologies are the part of people lives and being constantly online is a status quo, so happens with buying behavior, people are switching to e-commerce and marketers have to take into account.

What is more, nowadays consumers care about the global resources and community and want to know that the brands they purchase from doing so too. In 2016 and onwards, it is seeing more businesses align with environmental and social causes to appeal to an increasing pressure for brands to authentically stand for something greater than the products they sell (Walsh, 2016).

In addition, today is crucial to take into consideration the characteristics of current generation – Millennials. They are key social media audience that isn't easily influenced by social media as 48 percent claim that social media has never influenced their purchase decisions. Millennials tend to consume content on various platforms through different devices and are typically highly influenced by what their peers think. So for marketers, it is important to understand how this demographic consumes information and second, how to deliver the right marketing message that appeals to them (Johson W., 2014).

Marketing has one goal - to reach consumers at the moments that most influence their decisions when consumers are open to influence, so-called "moments that matter" or "touch points". Marketers are always seeking those moments.

For years, touch points have been understood through the metaphor of a "funnel" (Figure 1).

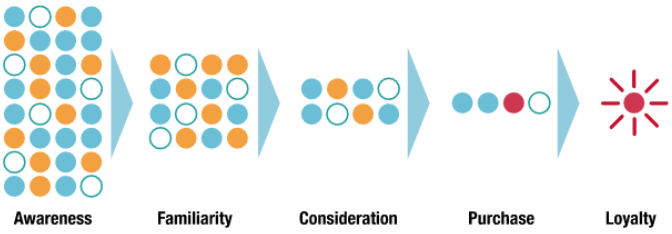

Figure 1. The Traditional Funnel

Consumers start with a number of potential brands in mind (left side of the funnel), then marketing directs them and consumers reduce that number of brands and move through the funnel, and to the end they arrive with the one brand they chose to purchase (right end of the funnel).

But today, the funnel concept fails to capture all the touch points and key buying factors resulting from the explosion of product choices and digital channels, coupled with the evolution of an increasingly well-informed consumer. A more sophisticated approach is required to help marketers guide through this environment, which is more complicated than the funnel suggests. McKinsey found that because of the change from one-way communication (from marketers to consumers)

toward a two-way conversation (from marketers to consumers and from consumers to marketers), marketers need a more systematic way to satisfy customer demands and manage word-of-mouth (Court et al., 2009).

Talking about themes that emerge today, it is important to mention about creating connections with clients. Understanding the shopping experience can help companies identify additional consumer-connection moments before, during, and after the purchase. For instance, when consumers made a decision of purchase, the marketer's work has just begun. A lot of consumers go online to run further research after the purchase. The post sale experience influences their opinion for every subsequent decision, so it is an on going cycle. Besides, understanding the consumer moments (e.g., the underlying values) provides companies the opportunity to make these consumer engagement moments meaningful and memorable.

2. THEORY BACKGROUND

In this chapter of the research paper core theories and models in the field of consumer behaviour and buying decision-making will be discussed and evaluated. Different concepts and points of view will be presented of the scholars of the XX and XXI centuries.

To start with it is necessary to define the term "consumer behaviour". Business Dictionary offers the following definition. "Consumer buying behaviour is the process by which individuals search for, select, purchase, use, and dispose of goods and services, in satisfaction of their needs and wants". Also in many research articles authors use the next definition. "Consumer behaviour is the study of individuals, groups, or organizations and the processes they use to select, secure, use, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the consumer and society."

Consumer behaviour is the process consumers experience when they make purchases and it involves factors that influence their decision. For many products and services, purchase decisions are the result of a long, detailed process that may include a broad information search, brands comparison, and evaluation. Marketers' success in influencing purchase behaviour depends to large extent on how well they understand consumer behaviour. Marketers need to know the specific needs customers try to satisfy and how they turn it into purchase attributes. They need to understand how consumers gather information about different alternatives and use this information to select among competing brands (Belch G. & Belch M., 2009).

2.1. Decision-making models

One of the most active academic research spheres in marketing over the past decades has been behavioural decision theory. Behavioural decision theorists have identified many situations in which consumers make irrational choices. What all these and other studies emphasise is that consumer behaviour is very valuable and the context of decisions is really important. Understanding how these effects manifest in the marketplace can be crucial for marketers. The work of these and other scholars has also challenged predictions from economic theory and assumptions about rationality, leading to the appearance of the field of behavioural economics. In Table 1, the key models are shortly presented starting from 1960 till nowadays.

Name of the Model	Authors, Year	Short description
Simon model	Simon H., 1960	This model conceptualizes the decision-making process in three stages of activities: intelligence activity, design activity, and choice activity. Simon argues that decision-making is a cognitive process that can be separated into simple, sequential steps.
Nicosia model	Nicosia F.M., 1966	This model concentrates on the communication process that occurs between a brand and a consumer. It uses a flow of events through different stages that are identified as fields.
Engel, Kollat & Blackwell model	Engel J.F., Kollat D.T., and Blackwell R.D., 1968	The components of this consumer model's decision process are input, information processing, decision process, and variables influencing the decision process. The third component of this model, the decision process, is made up of five stages: need recognition, search, alternative evaluation, purchase, and outcomes.
Theory of buyer behaviour	Sheth J. & Howard J.A., 1969	The theory explains the buyer behaviour of individuals over a period of time. More specifically – the brand choice behaviour of the buyer. The authors identifies the elements of consumer decision process (a set of motives; several alternative courses of action, and decision mediators by which the motives are matched with the alternatives), observed the changes that occur in them over time as a result of their repetitive nature and showed how a combination of decision elements affects search processes and the incorporation of information from the buyer's commercial and social environment. This model suggests three levels of consumer decision-making: extensive problem solving limited problem solving, and habitual response behaviour.
An alternative conceptualization for consumer behaviour and product performance	Narayana C.L. & Markin R.J., 1975	The authors explains consumer behaviour by describing the term "evoked set" by including and classifying all the brands that may be in the consumer's "awareness set", inert, and inept set. They presented a conceptual framework for probable consumer behaviour when faced with a multiplicity of brands.

Mintzberg model	Mintzberg H., Raisinghani D. & Theoret A., 1976	The key premise of this model is that a basic structure underlies these "unstructured" processes.
Keeney's four-stage decision-making model	Keeney R.L., 1982	This four-stage model takes a staged approach: Structure the decision problem (generation of alternatives and specification of objectives), assess possible impacts of each alternative, determine preferences (values) of decision makers, and evaluate and compare alternatives. This model depicts the anticipated complexities at each stage.
Rassuli & Harrell model	Rassuli K.M. & Harrell G.D., 1990	The perspective proposed here is that choice and purchase can be viewed as inputs into a process, not merely the end of consumer decision-making efforts. In this way, one recognizes the feedback, from choice to other consumer-behaviour variables.
Sheth, Newman & Gross model	Sheth J.N., Newman B.I. & Gross B.L., 1991	This model presents five consumption values influencing consumer choice behaviour: functional, social, conditional, emotional, and epistemic values. Any or all of the five consumption values may influence the decision.
Smith & Rupp's model	Smith A. & Rupp W., 2003	This is an Internet-based model that considers external influences of website marketing efforts and the socio-cultural environment, as well as psychological issues on online consumer tasks which lead to a purchase and post-purchase behaviour.
The Marketing Spiral	Armano D., 2007	Consumer behaviour is like a spiral that begins with an interaction as opposed to a communication. The spiral amplifies as the consumer increases engagement.
McKinsey's dynamic model of the consumer decision journey	Court D., Elzinga D., Mulder S. & Vetnik O.J., 2009	This model is more circular that sequential and has four primary phases: initial consideration; active evaluation, or the process of researching potential purchases; closure, when consumer buy brands; and post-purchase, when consumer experience them.

Table 1. Decision-making models

2.2. Traditional model of decision-making

The traditional model of consumer decision-making process "Five-stage model of the consumer buying process" (Figure 2) involves five steps that consumers move through when buying a product or service. A marketer has to understand these steps in order to properly move the consumer to the buying the product, communicate effectively to consumers and close the sale.

Figure 2. Five-stage model of the consumer buying process

For example Kotler & Keller (2012) in their book describe this model in details and explain additional stage of the model - disposal stage. Also, they discuss Moderating effects on consumer decision-making (like consumer involvement).

Belch G. & Belch M. (2009) went further and discussed relevant internal psychological processes for each stage of the model (Figure 3).

Figure 3. Internal Psychological Processes

Hereafter for each stage of the model the "moments that matter" and factors that influence them will be identified and discussed. Moreover, a self-developed framework about factors and their influences on relevant moments for consumers will be introduced with the aim of making a better understanding of the process and how and when it is a good time to interrupt it with a promotion. Later on, research of other scholars about factors that affect decision-making will be presented for having a broader view of the topic.

The very first stage of the model is need/problem recognition when consumers realize that they have a need for something. Interestingly, marketers want to create intentionally an imbalance between consumers' present status and their preferred status. This imbalance will create a need and make consumers detect and buy a product or service. A need can occur immediately and can be a very basic impulse - this is called an internal stimulus. An external stimulus is when a person is affected by outside influences. Marketers create an imbalance/need by using advertising and sales promotions. When consumers recognize an unfulfilled need and that a product will satisfy it, they have created a want.

On this stage for marketers it is important to determine when their target demographic develops these needs/wants, therefore, it would be an ideal time to advertise to them. Marketers may also help to recognize the consumer's need/problem or circumstances that trigger a need/want. Moreover, marketers may create the circumstance/need by themselves - to make the consumer feel insecure without this product or create a desired status for customers.

Factor that influence these moments are existence/creation of desired (preferred) status, availability of information about new status (new products or versions of the products), related/complementary products for this product may create a need, and motives that drive customer.

After the consumer has developed a need/want, he/she starts an information search about the different alternatives that he/she can purchase to satisfy the need/want. It is the second stage so-called information search. He/she will look both internally and externally for this information to help him/her make a decision. An internal information search consists of

utilizing information from memory, such as past experiences with the product/service. An external information search is asking friends and family about their experiences with acquiring a new product. They can also research public sources, such as reviews, blogs. Another external information source would be marketing-controlled sources, such as banners, television ads, brochures, etc. The buying decision influence by different sources is presented in Figure 4.

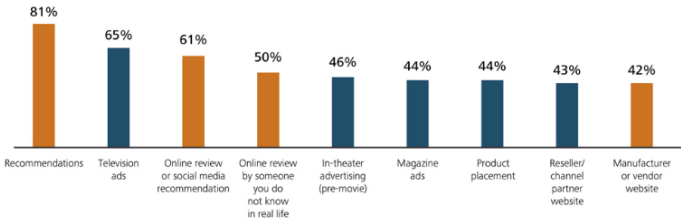

Figure 4. Buying Decision Influence ("Digital Democracy Survey 2015", 2015)

The amount of time dedicated to this step usually depends on the consumer's past experience with buying the product, the risk involved and the level of interest. Once consumer created a set of alternative products to choose from, he/she has created an evoked set. This set consists of the most preferred alternatives. Once the evoked set has been decided upon, the consumer will then conduct final research to further shrink his/her choices[1].

The process of looking for information, in this case, is a moment that matter for consumers. Marketers have to catch it and provide a relevant description of the product, promotions, etc. Also, recommendations from friends and family and reviews from other consumers will be taking into account. Moreover, previous experience of using the product or similar one and personal experiments while searching (testing the samples) will influence the process.

At the third stage of evaluating alternatives, consumer may ask her/himself questions like, if I actually need the product? Are there alternatives out there? Is the original product that bad? Usually, consumer chooses one the most important attribute based on which he/she will make a final decision or using cut-off method (e.g., price, quality, brand, etc.). Here moments that matter could be emotional connections/experiences with products, surrender to advertising/marketing campaigns. For marketers on this step is important that during evaluation process consumer is aware of their brand and offers and ideally to know the attribute based on what the consumer makes his/her buying decision. The process on this stage is individual for a consumer as he/she is looking for the best deal. A meaning of a best deal based on attributes that are more relevant to each consumer, it could be price, quality, brand, product positioning, a place where to buy (location), consequences of using the product, etc.

At some point, consumer stops to evaluate evoked set and switch to buying process – fourth stage: purchase. Once a consumer chooses which brand to buy, he/she must still implement the decision and make the actual purchase. Also at the beginning consumer may make a purchase intention to buy a certain product, but don't close a deal. Additional decisions may be needed – factors that influence, such as when to buy, where to buy, and how much money to spend. Often, there is a time delay between the formation of a purchase decision and the actual purchase, particularly for complex purchases such as automobiles, personal computers, and consumer durables. For nondurable products, which include many low-involvement items such everyday goods; the time between the decision and the actual purchase may be short. At this point, it is critical to hook the consumer in purchase intention and in a delay period.

On the last fifth stage - post purchase (satisfaction or dissatisfaction), consumers evaluate and review the product. Was the product right for the consumer? Did their expectations confirm? If a customer finds that the product has matched or exceeded the promises made and their own expectations they will potentially become a brand ambassador influencing other potential customers in stage two of their customer journey, increasing the chances of the product being purchased again. The same can be said for negative feedback, which, if emerge at the stage two, can restrain a potential customer's journey towards your product[2]. The moments that matter on the last stage is to catch the point if the customer is not satisfied. If the customer is satisfied then to turn him/her into a loyal customer. Such factor as the product matched or exceeded consumer expectations. In addition, follow up activities (after purchase) help to make a customer loyal one.

On the Figure 5 the self-developed framework of moments that matter and factors influence them is presented.

One note to this model should be added. Consumers do not always move in the exact order through the process. The second and the third stage could be repeated a couple of times; also the evaluation stage not in all cases finishes with purchase. It can depend on the type of product, the buying stage of the consumer and even financial status.

Many of the purchase decisions people make as consumers are based on a habitual or routine choice process. For many low-priced, frequently purchased products, the decision process consists of little more than recognizing the problem, engaging in a quick internal search, and making the purchase. The consumer spends little or no effort engaging in external search or alternative evaluation (Belch G. & Belch M., 2009). So not all of the stages apply to repeated products because the person already has preferences and brand loyalty and it considers like automatic process. Therefore, marketers of products characterized by a routine response purchase process need to get and/or keep their brands in the consumer's evoked set and avoid anything that may result in their removal from it. Marketers of these brands want consumers to follow a routine choice process and continue to purchase their products. This means maintaining high levels of brand awareness through reminder advertising, periodic promotions, and prominent shelf positions in stores.

Also, the paper of Hoyer (1984) provides support to statements above and presents a view of decision-making based on the notion that consumers are not motivated to engage in a great deal of in-store decision making at the time of purchase when the product is purchased *repeatedly* and is relatively unimportant. As a result, consumers tend to apply very simple choice rules or tactics that provide a satisfactory choice while allowing a quick and effortless decision.

Marketers of *new brands* or those with a low market share face a different challenge. They must find ways to disrupt consumers' routine choice process and get them to consider different alternatives. High levels of advertising may be used to

[1] http://study.com/academy/lesson/understanding-the-consumer-decision-making-process-a-marketing-must.html

[2] http://www.professionalacademy.com/blogs-and-advice/marketing-theories---explaining-the-consumer-decision-making-process

encourage trial period or brand switching, along with sales promotion efforts in the form of free samples, special price offers, high-value coupons, etc.

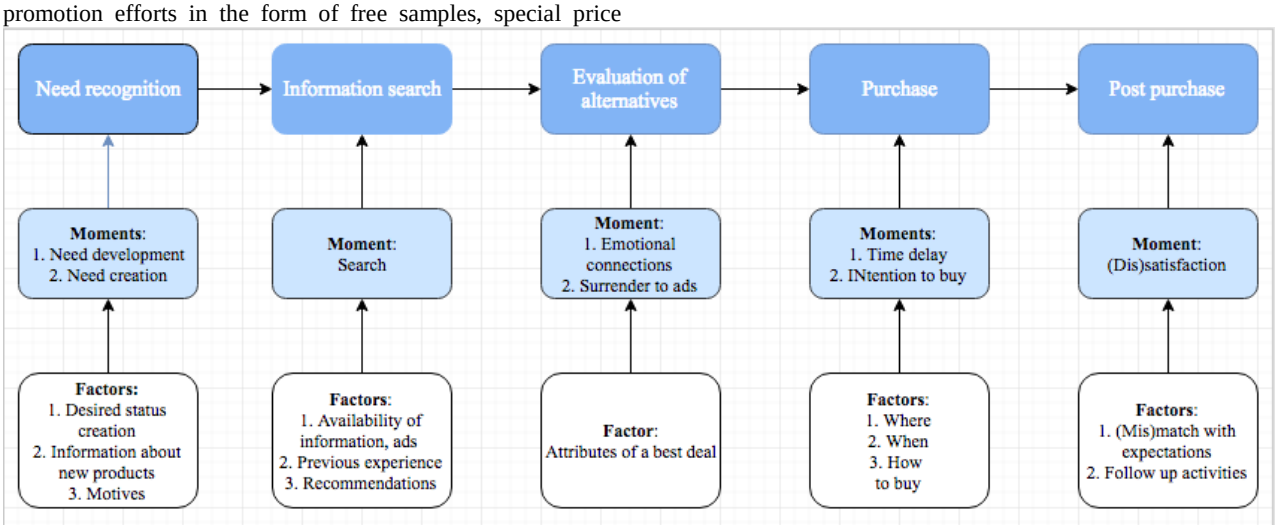

Figure 5. Framework of factors and moments that influence decision-making

Nonetheless, the traditional model was criticized and other scholars add relevant focuses and factors. For example, McAlister (1979) challenged the existing that time assumption that product choices are made independently of each other. The scholar offered a model incorporating dependence among selections of items groups.

Also, Solomon et al. (2006) criticized the traditional model by saying that it is a rational perspective, but people may behave irrationally "such a process is not an accurate portrayal of many of our purchase decisions". Consumers don't go through this sequence every time when they buy something. The authors talk about purchase momentum (impulses that lead to unplanned purchase at the last moment). Also, the authors argue that consumers possess a repertoire of strategies and they choose one according to the situation and to the level of effort required, so-called constructive processing. Moreover, they discuss behavioural influence perspective and experimental perspective.

Dhar, Huber & Khan (2007) also talk about shopping momentum that occurs when an initial purchase provides a psychological impulse that enhances the purchase of a second, unrelated product. The authors propose that the most promising theoretical mechanism for shopping momentum comes from Gollwitzer's (1990) theory of implementation and deliberation mind-sets. Under this theory, shopping momentum occurs because the initial purchase moves the consumer from a deliberative to an implemental mind-set, thus driving subsequent purchases.

2.3 Variations in consumer decision-making

Solomon et al. (2006) characterized the decision-making process as the amount of effort that goes into the decision each time it must be made. They found it convenient to think in terms of a *continuum*, which is started by habitual decision-making and ends with extended problem-solving (Figure 6). Many decisions are in the middle and characterized by limited problem-solving.

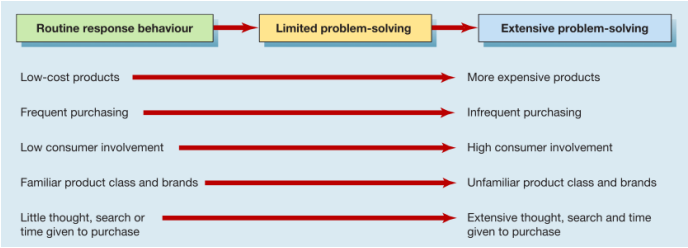

Figure 6. A continuum of buying decision behaviour

Extended problem-solving phase is similar to tradition decision-making process described above. Limited problem-solving is usually more straightforward and simple. People instead use simple decision rules to choose among alternatives. Habitual decision-making refers to decisions that are made with little or no conscious effort – to make choices characterized by automaticity with minimal effort and without conscious control.

Another researcher Armano (2007) has a different non-linear view of the decision process, so called "The Marketing Spiral" (Figure 7). The author explains it that the spiral amplifies the more the consumer engages, from interaction to engagement, to participation, to conversation, to affinity, to a community. The process of the one cycle may repeat itself adding more cycles to the spiral. But this model did not receive a lot of attention from other researchers so far.

McKinsey & Company (2009) supports traditional decision-making model but showing it as a circular process (Figure 8) with four phases: initial consideration; active evaluation, or the process of researching potential purchases; closure, when consumers buy brands; and postpurchase, when consumers experience them.

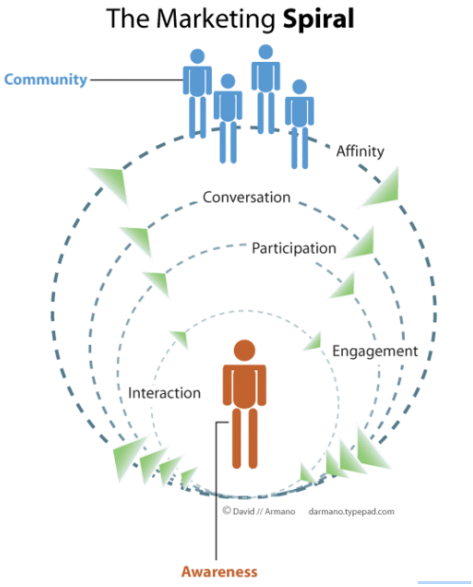

Figure 7. The Marketing Spiral

At the end of this section, a couple of other interesting research will be presented.

A lot of research was done to investigate the how company's brand influences buyer behaviour. One of the papers of Macdonald & Sharp (2000) describes a replication of the study of Hoyer and Brown on "Brand awareness effects on consumer decision making for a common, repeat purchase product". They examined the role of brand awareness in the consumer choice process. The study results supported that brand awareness is a *dominant* choice tactic among awareness group subjects. Subjects choosing from a set of brands with marked awareness differentials showed an overwhelming preference for the high awareness brand, despite quality and price differentials.

Likewise, Heilman, Bowman & Wright (2000) examined how brand preferences and marketing activities evolve for consumers new to a market. They develop a theoretical framework that begins with a consumer first-ever purchase in a product category and describes subsequent purchases as components of sequential purchasing stages. The theory is based on the notion that choices made by consumers new to the market are driven by two competing forces: an information collection stage that focuses initially on low-risk. Big brands names; a stage in which information collection continues but extended to lesser-known brands that provide the greatest utility. The authors use a logit-mixture model with time-varying parameters to capture the choice dynamics of different consumer segments. The results show the importance of accounting for product experience and learning when studying the dynamics choice processes of consumers new to a market.

Back to the traditional model, Belch G. & Belch M. (2009) discussed the difference between *low- and high-involvement* in decision making. Their examination of consumer behaviour has looked at the decision-making process from a cognitive orientation. The five-stage decision process model views the consumer as a problem solver and information processor who engages in a variety of mental processes to evaluate various alternatives and determine the degree to which they might satisfy needs or purchase motives. There are other perspectives regarding how consumers acquire the knowledge and experience they use in making purchase decisions. To

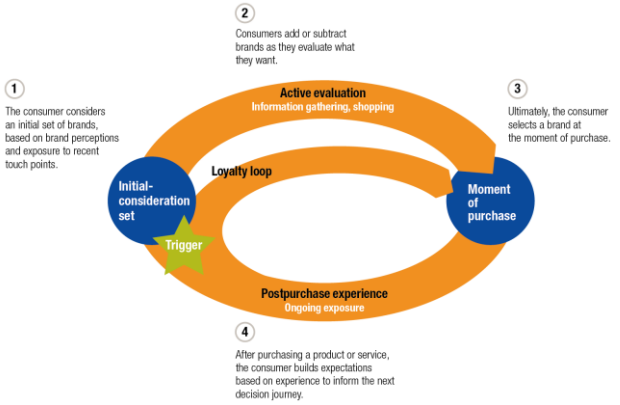

Figure 8. Decision-making process

understand these perspectives, the authors examine various approaches to learning and their implications for advertising and promotion. Consumer learning has been defined as "the process by which individuals acquire the purchase and consumption knowledge and experience they apply to future related behaviour." Two basic approaches to learning are the behavioural approach and cognitive learning theory.

A distinction is frequently made between high and low involvement purchasing, implying that in practice the actual buying activity can be less or more consistent with this five steps model, depending on the buyer's perceived purchasing risks. The *high or low degree of involvement* is also a question of buyer experience; products purchased for the first time, in general, require more involvement than frequently purchased products (Boyd et al., 2002).

Never should forget about relevant *external factors* that influence consumer decision-making, such as culture, social class, reference groups, and situational determinants (Belch G. & Belch M., 2009).

Culture is a one of the complex to study factor. As the world moves toward a global market, there are mixed views on whether there is a convergence in consumption patterns. Lifestyles are converging in the industrialized world and similar demographic changes are taking place in the triad countries. Paper of Yelkur (2002), for example, compares Generation X consumers in the US and France on their buyers behaviour characteristics such as the importance of brand names, propensity to purchase new products, and price consciousness. Analysis of variance results indicates that Generation X in the two countries differ significantly on major buyer behaviour characteristics. The same results may be transmitted to other countries across the world. Thus there are a lot of unknown issues that has to be explored.

3. CONCLUSION

In this research paper, a literature review in the field of consumer decision-making process was presented and the papers were discussed for a deeper understanding of state of the art. For a long time, it was a "black box" for marketer what happening in a stage between information search and postpurchase behaviour in buying process. Till now there is no one right answer, but it is possible to follow the tendencies and shed light on some processes. Current trends in the field of consumer behaviour were investigated and presented in the introduction part for catching the flow of the future changes and challenges.

A lot of academic research was done previously, and various theories and models were elaborated by the scholars.

The traditional model of five-staged decision process serves as a base for modern concepts as for example McKinsey's model (2009). However, it received critics, but nobody can deny it relevance. Using as a foundation the traditional model a framework of influences among "moments that matter" in decision-making and factors was developed and demonstrated. It can help to build further research on or prove/reject these relationships.

As the report was progressing marketer may find relevant tips and recommendations for each stage of the new model to use it for a marketing campaign. That may empower to reach success in the market and gain loyal customers.

Regarding methodology gaps in reviewed articles, it was noticed that there should be more sample in the research because nowadays people demand more and more for personalization and it will help to find out common characteristics and interrelations. Also, the key topic now is a difference between generations. How they react on marketing campaigns. As in this century, at least two generations are presented marketers have a complex task to please needs and wants both of them using different approaches.

Moreover, thanks to globalization culture differences are feeling stronger or less depending on context. But as previous research proved that in different countries consumers behave differently. So it means that not all of the successful marketing instruments in Europe will be so fruitful in Asia.

Less research was done in sense of difference in consumer goods. More often scholars talk only about durable and nondurable products. But there is a difference inside these groups of products. Furthermore, less attention pays to services (not products).

Researchers are also beginning to understand the role that controlling the information flow can have on consumers' decisions, as increased control leads to increased performance. These new insights promise to be particularly important in the new online environments, where controlling the information flow can particularly influence the quality of consumers' decisions, memory, knowledge, and confidence. Research on information structure (the amount of information in a choice set) is also relevant in the new electronic marketplaces, where consumers are regularly faced with information overload when making decisions.

One more interesting direction of future research would be to investigate how the shopping momentum effect is moderated by the nature of the driver item. As a product that considered as "guilty pleasure" (e.g., sweets, cigarettes, alcohol, etc.) would be less cause momentum purchases as standard basket goods, as it is expected.

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Saving the High Street: How retailers can successfully integrate channels to offer consumers a seamless experience throughout the customer journey

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ABSTRACT

Digitization influences shopping behavior throughout the customer journey, impacting the future of the retailing environment. It caused retailers to apply a multi-channel marketing strategy, enabling consumers to use multiple channels in their information research and purchase decision. By consumer need for a holistic experience through seamless integration of channels, retailers were somewhat forced to move up to an Omni-channel strategy. This paper presents a review of literature, investigating how retailers can embrace these digital developments and how these new technologies can contribute to an integrated customer experience in the physical retail environment. First of all, important is to understand consumer channel choice. Consumers channel preference depends on what type of product they plan to purchase, and how that purchase decision depends on interaction with the product, as well as the costs and benefits assigned to convenience, risk, and service preferences. Research indicates that, although digital developments are following each other up rather rapidly, digital channels still cannot deliver optimally on all these factors for every product category. Retailers should, therefore, embrace the asset that their physical store still is: the touchpoint where all channels can be integrated into one synergetic experience. Retailers should make sure to deliver one holistic experience, through the static designs, sensory stimuli, and integration of all touchpoints into one entertaining, exciting, and emotionally engaging experience. Yet, the design of these factors strongly depend on the retailers' brand and consumer needs in regard to the brand. Therefore, it is important to understand customer needs for which companies should benefit from Big Data. Finally, research stresses the importance of embracing and exploiting the opportunities that technology has for the integration of channels and delivering an experience. Although, this requires some financial investments as well as effort, research indicates that the implementation of an Omni-channel strategy is promising.

Keywords

Omni-Channel, Retailing, Consumer Experience, Consumer Behavior, Channel Integration, Bricks and Clicks.

MSI Topic nr. 2: Delivering integrated, real-time, relevant experiences in context

The author's view: Why this topic?

Retailers are struggling with digital developments and the consequences for their business: physical stores are closing and reaching customers challenging issue. for retailers is important to gain more knowledge about creating an integrating synergetic effects, and offer cross-channel consumer experiences. Because of the economic and social importance of retailing, I think it is imperative that retailers learn to poerate in the digital age and keep innovating the retail experience.

1. INTRODUCTION

The past decade digitization caused an immense shift in consumer shopping behavior, as a result of new media and technologies being introduced. The change in shopping behavior because of these digital developments, forced retailers to apply a multi-channel marketing strategy (Lee, 2016; Verhoef, Kannan, & Inman, 2015). Next to traditional marketing communications efforts, such as print- and television advertising, retailers are now expected to also have a website including an online shop, be present on social media, and to advertise digitally.

The impact on marketing has gone even further into not just being present on all channels, but providing a seamless experience across all different touchpoints. Which is also referred to as an Omni-channel strategy, by which organizations try to deliver one unified and complementary experience throughout all digital and physical channels they use (Lee, 2016; Van Cauter, 2016). For example, well-known Dutch warehouse de Bijenkorf is present among several communication channels both traditional as well as digital, and try to integrate the several channels. Consumers can choose to shop the items online or in-store, where they can also experience the products. Yet, in-store consumers are also provided the option to take the product with them immediately or to order the product on in-store iPads and have it delivered at home. In this way, de Bijenkorf tries to offer a complete experience across all channels. On the other hand, successful online brands such as CoolBlue and Leapp are now opening physical stores to also offer a physical experience to their customers.

These examples indicate that it is still important to provide that physical touchpoint, as is confirmed by research (Bell, Gallino, & Moreno, 2013), yet how can retailers optimize the use of a physical store in a time of online shops? (Verhoef et al., 2015). Although, retailers such as de Bijenkorf are making an effort to provide a seamless consumer experience among all touchpoints, it is still not clear for retailers and researchers how a seamless and unified customer experience can be delivered among all these touch points to facilitate the customers' shopping experience (Lee, 2016). Yet, it is very important since consumers move through the different channels in their decision making process (Van Cauter, 2016), and consumers either shop online or in-store, yet they rarely enjoy an integrated experience (Withers and De Judicibus, as cited by Alexander & Alvarado, 2014).

Through extensive review of literature and practice, this research presents the important aspects for an Omni-channel strategy in the retail environment, and what is needed to provide a seamless and integrated customer experience in the physical environment. Therefore, the aim of this study is to examine the role of the physical store within the Omni-channel retail strategy. For the reason that this paper focusses on how these digital channels can contribute to an integrated customer experience in the physical retail environment. This paper, therefore, makes a distinction between the physical touchpoint, and considers all online channels as digital touchpoint as a whole. Altogether, this helps answer the question in what way retailers should work out an Omni-channel strategy with a physical store by integrating their digital touchpoints to positively influence shopping behavior. Research will provide marketers with a framework to create a seamless customer experience among touchpoints, with the physical store as the centre of the strategy. Given the situation nowadays, there is a lot of room for retailers to adapt to digital developments available. Before consumers will walk through the Kalverstraat in Amsterdam or Lijnbaan in Rotterdam, with abandoned, former retail stores.

2. LITERATURE REVIEW

Consumer behaviour nowadays, as mentioned in the introduction, has changed drastically due to digitization. It transformed the customer journey significantly, from searching, browsing and purchasing, every aspect of the journey has changed. Although Zhao (2016) claims that E-commerce caused people to now use multiple channels for purchase decisions, it is the needs of the consumers that forced commerce to change, therefore, shaping the future of commerce into the desired, synergetic experience of bricks and clicks (Fairchild, 2014). Now, it is time for retailers to deliver on these needs.

Consumers have become more digitally empowered, and are connected 24/7 through multiple devices and online platforms. By these means of constantly being online, their shopping journey changed from no longer taking place in the shopping centres, to for instance starting off at school, work, during lunch or dinner, or maybe in bed. Generally, consumers are motivated to research online and offline before they make a purchase decision (Alexander & Alvarado, 2014). They no longer need just one channel for their information search and purchase. The many channels that exist are used by the consumer throughout the customer journey (Kollman, Kuckertz, & Kayser, 2012; Verhoef et al., 2015). They visit company websites, forums, ask peers for advice on social media, which leads to them making more informed and deliberate decisions. For which they use different channels to search for information and shopping (Verhoef et al., 2015). As stated by Montoya-Weiss, Voss, and Grewal (2003), consumers want to benefit from multiple channels since they all fulfil a different need, in that way considering the channels complementary to each other rather than substitutional. This stresses the importance of companies embracing the different channels as a way to deliver more value to the customer (Kollman et al., 2012).

2.1 Omni-Channel

Verhoef et al. (2009) state that the full customer experience involves all retail channels, indicating that the full customer journey is part of the customer experience. From search, to purchase, consumption, and after-sale phases. It is important to deliver an integrated and seamless experience across all channels, since consumers use these channels in different phases of the customer journey (Alexander & Alvarado, 2014). They fluently move from the traditional, physical channel, and the digital channels, and vice versa. In addition, today's consumers want to have their demands satisfied whenever and wherever they like. They want to benefit from the digital, as well as traditional channel experience (Rigby, 2011). Which they expect to be similar across all channels, from physical store, catalogue, to online and mobile channels. Implicating that companies should deliver a seamless shopping experience via all available shopping channels, also referred to as Omni-channel retailing. (Lee, 2016; Pratt, 2012).

Gallino and Moreno (2015), claim the integration of online and offline channels is promising. Omni-channel retailing facilitates customers' flexibility and convenience, through the seamless integration of multiple channels. By providing consistent product information and other information needed by the customer (Lee, 2016). Bell, Gallino and Moreno (2013) even claim that Omni-channel retailers delivering integrated buying experiences are the new norm. Since they enable consumers to interact with them via channel of choice, they can respond and satisfy the individual preferences of their consumers.

Although Omni-channel retailing is claimed to be promising, these developments also have their threats. First of all, research shows that browsing shops without purchasing anything also serves as entertainment and delivers the consumer

emotional satisfaction (Babin, Darden, & Griffin, 1994; Kim & Hong, 2011; Tauber, 1972). This can be a setback for all channels. For instance, if physical stores are too interactive and entertaining, consumers only go in for the experience. Therefore, experience stores should also focus on churning a positive experience into purchase. At the same time, people shop online for pleasure, fill up their digital basket, yet, they leave the page without making the purchase (Alexander & Alvarado, 2014).

Additionally, Omni-channel commerce facilitates cross-channel free riding, causing problems for retailers in the form of cannibalization of sales. Which means that consumers can be reached by competitive channels (Steinfield, 2004). Cannibalization of channels works both ways, some consumers initially plan to purchase the product online yet change their minds due to differences in motivational factors. Vice versa, consumers who initially plan to purchase their product offline might change to the online channel, for instance because it supports better information search (Alba et al., 1997; Kollman et al., 2012). These are referred to as the phenomena of showrooming and webrooming. Showrooming is the principle where customers explore products stores, yet, search for more information online at the same time and eventually buy the products at rivals who have more attractive prices. The opposite is called webrooming, where customers first seek for information online but make the purchae offline (Alba et al., 1997; Herhausen et al., 2015; Kollman et al., 2012; Lee, 2016).

Finally, poor integration of operations can negatively affect brand equity (Saeed, Grover, & Hwang, 2003). Such as inconsistent product information and other information across channels (Lee, 2016) This involves many challenges to overcome, such as the discrepancy between channels, integration of processes, and preserving organizational flexibility (Gulati & Garino, 2002). And, although all individuals have different preferences for the shopping experience, all of them will most likely appreciate the integration of digital and physical channels (Rigby, 2011).

2.1.1 Synergy

Throughout the years, marketing has gone from companies not just trying to sell their products, to them focussing on creating/enhancing customer lifetime value. Through delivering products and services that fulfil customer needs (Kardes, Cline, & Cronley, 2011); and, nowadays by strategically integrating digital and traditional environments to offer the consumer a seamless experience: The Omni-channel strategy. Their driving force is to enhance the relationship with their customers. By creating and exploiting synergy between the channels, companies can improve the service offered to the customer (Saeed, Grover, & Hwang, 2003).

Although implementation of integrated channels to create synergy involves costs, in the long term it can lead to potential cost savings, market extension, differentiation by opportunity of additional value added services, and improved customer loyalty and trust (Steinfield, 2004). In order to optimize their Omni-channel approach, retailers should first ensure to be available where customers are looking for them. Secondly, they should connect all channels. Companies should make sure that all communication channels, the online and traditional brick-and-mortar shopping environment, complement each other and offer a synergetic experience. Since consumers not only expect everything readily available whenever they want, they also expect the brand experience to be similar across all channels (Fairchild, 2014).

Integration of channels to improve customer experience, helps to deliver the advantages of both the physical and digital channels, to the ever in demand consumers who want everything when they want, whenever they want. Yet, research also shows that consumers tend to ignore the instore technological implementations, or labelled them as useless. Therefore, negatively impacting the effectiveness of the technological innovations (Alexander & Alvarado, 2014). In order for the implemented technologies to be effective, they should be time-saving, easy to use, adress a salient need, give the customer greater control and must be accessible all the time. These characteristics will increase the satisfaction of the consumer with the technology (Alexander & Alvarado, 2014). Pantano and Naccarato (2010) recommend to apply the technologies in a way that is supportive to the shopping process, and at the same time makes it more entertaining and enjoyable. In addition, it should be dynamic to adapt to future innovations (Alexander & Alvarado, 2014). It is this integration of the digital and physical world that will make the experience interactive across multiple channels and platforms in real time, in that way enhancing two-way interaction between the consumers and the brand (Alexander & Alvarado, 2014).

In order to optimize synergy, it is important to aggregate gathered data available from the different channels. The role of big data in business decisions, therefore, becomes more and more important. From every store or website visit, or purchase, data is being generated about individual customers. Companies should exploit these date in order to find out the needs of customers and support business decisions (Colombo and Ferrari, 2015; Lee, 2016; Wang et al., 2016). Big data can help firms reveal customer insights, providing a predictive analysis. Predictive analysis is important to play in on consumer needs, before they even make their purchase decision in order to facilitate upfront (Lee, 2016). In addition, big data can serve as input for consumer preferences regarding marketing and promotion strategies. Erevelles, Fukawa, and Swayne (2016) describe big data consumer analytics as “the extraction of hidden insights about consumer behaviour from big data and the exploitation of that insight through useful interpretation”.

2.1.2 Integration through technology

An Omni-channel strategy requires improvements of the organization on the operational level, in marketing, and the infrastructure. Integrating these organizational levels will help the company deliver a seamless holistic experience consistent in every used channel and technology used by the consumer, whether it is the store, website, mobile app or website, or catalogue (Pratt, 2012). Digitization not only influenced peoples’ shopping behaviour, and their need for multiple channels. Yet, it also influenced supply chain management issues for companies, since E-commerce caused people to now use multiple channels for purchase decisions (Zhao et al., 2016). Forcing companies to increase synergy in order for channels sharing consumers, rather than cannibalization by losing customers to another channel. Steinfield (2004) emphasizes this by stating that this synergy between channels also reduces channel conflicts.

Technology enables the integration of the digital and physical environment (Pantano & Naccarato, 2010; Pratt, 2012). Stressing the increased importance of technology in the design of a retailing strategy (Fairchild, 2014). Developments, as such, present retailers with opportunities to push innovations through In-store technologies (Pantano & Laria, 2012). Pantano and Naccarato (2010) claim that through implementation of technological innovations, brands can reinvent the store appearance and influence shopping behaviour at the same time. The benefits of these technological innovations applied for integration are significant, as is confirmed by Gallino and Moreno (2015) who state that the integration of online and offline channels is promising.

Through channel integration, technology helps retailers in delivering customer value through more customized services,

optimized logistics, and in understanding their customers (Bharadwaj et al., 2009, Pantano & Naccarato, 2010; Renko & Ficko, 2010; Saeed et al., 2003). All because, Omni-channel retailing facilitates customers' flexibility and convenience, through the seamless integration of multiple channels (Lee, 2016). They are aimed to make the experience more entertaining and enjoyable, which in its turn is claimed to lead to more purchases (Kim & Kim, 2008).

Nonetheless, implementation of integrated channels requires considerations on organizational level for the strategy, processes, and information systems (Saeed et al., 2003). Since the combination of traditional and online commerce, drives companies to integrate many of their processes throughout the organizational and IT chain (Fairchild, 2014). For which, it is important to match the integration initiatives to the current company strategy and customer demands. Especially, customer demands are important since the decisions regarding strategic decisions about the integration of channels can have strong influence on how they assess your company. Hence, the effectiveness of the strategy strongly depends on how companies know and understand their customers, in that way they can best serve the customer in the channel(s) they prefer to interact with. Thus, as mentioned before, big data is important. This information will help in developing strategies for integration that will improve customer loyalty. Therefore, it is important to assess the necessity and type of integration when it comes to informational and operational decisions, and balance them out to avoid brand and channel conflict (Gulati & Garino, 2002). In that, companies should always pursue flexibility to the customers, which requires adjustments in the organization on an operational level. Through value added services on the level of content integration, informational integration, and logistical integration. Content integration refers to the extent to which consumers have access to product information on the various channels. Informational integration is about sytem to provide customers with the practical, sometimes real-time, information needed for purchase, such as inventory check or where the nearest store is. Finally, logistical integration refers to the processes that are optimimized for flexibility of the distribution system. So implementing a new strategy like this not only requires integration of systems, but also reengineering of the systems to optimize the complementarity of the channels. (Saeed, Grover, & Hwang, 2003)

2.2 Channel

Bell et al. (2013) claim that Omni-channel retailers delivering integrated buying experiences are the new norm. However, not all consumers have the same preference when it comes to channels. One channel is able to deliver certain characteristics better than another. For instance, because products require more information, such as what does the quality feel like? So far, digital channels are unable to deliver all relevant information for some products (Anderson et al. 2009). By offering consumers multiple sales channels that provide a similar experience, a company enables the customer to interact with them via channel of choice. In that way, they can respond to and satisfy the individual preferences of their consumers (Bell et al., 2013).

Since, every consumer makes different considerations involving the channel used for information search, channel planned to purchase the product and the disposition to change purchase channel (Kollman et al, 2012). In the decision making process, consumers make a cost-benefit analysis when choosing the purchase channel (Keeney, 1999; Shih, 2004). Which is commonly motivated by the costs and benefits they assign to convenience, risk, and service preferences (Chiang et al., 2006; Montoya-Weiss et al., 2003). These different motivations influence consumer channel selections, for both information search as well as purchase. However, once people used a specific channel for their information search pre-purchase, this highly influences their choice for the channel to make the purchase (Kollman et al., 2012). The evaluation also depends on the type of product you deliver, and how necessary it is for consumers to interact with it, and the distance consumers have to overcome to the physical store to interact with the product (Saeed et al., 2003).

2.2.1 Physical Shopping Environment

The store is the platform where the traditional and digital worlds come together to offer the consumer one integrated experience (Pratt, 2012). It represents the physical environment of a brand, where companies strive for the consumers to live, breath and feel the brand, hence experience, through interactive and sensory activities (Gobé, 2001). Retailers, from department stores to pop up shops, have been investing to offer consumers a unique and outstanding shopping experience, one that stimulates the senses and has interactive elements (Alexander & Alvarado, 2014; Verhoef et al., 2009). All in order to create an experience that connects with the customer on phyiscal and phsychological levels (Healy et al., 2007; Verhoef et al., 2009).

Consumers are looking for an experience while shopping. An experience is described by Pine and Gilmore (1998) as a memorable act created by balancing out the service environment, and the products, to engage the consumer.. The customer experience can, thus, be described as a holistic concept that represents all company aspects and values (Schmitt, 1999). Pine and Gilmore (1998) claim that meaningful consumer experiences are formed within the shopping environment by engaging the consumer through the static elements, such as interior design, and dynamic factors, customer services. The engagement should take place at different levels, being rational, emotional, sensorial, physical, and spiritual. All these levels together must form a holistic experience (Gentile, Spiller, & Noci, 2007). A positive experience, on its own can make sure to turn just a visit in to a purchase, since consumers who enjoy the experience while shopping are more likely to engage in purchase (Kim & Kim, 2008). Retailers should therefore consider the traditional store an asset, and exploit the benefits the traditional retail environment has over internet retailers. As Rigby (2011, p. 1) emphasizes, retailers "must turn shopping into an entertaining, exciting, and emotionally engaging experience".

For the traditional store, the athmosperics of the physical environment are important. They are described as the conscious design of a shopping environment that emotionally affects the buyer with the goal to increase purchase probability (Kotler, 1973). The design should incorporate multiple sensory stimuli that affect shoppers in an unconcsious way, such as tactile, sensory, gustatory, olfactory visual and social factors (Hultén, 2011; Kotler, 1973), because consumers perceive a store through their senses (Soars, 2009). These sensory experiences are proven to have an immediate and powerful effect, enhancing significant changes in shopping behaviour through emotional engagement (Gobé, 2001). Companies are able to generate customer value, offer them a meaningful experience, enhance two-way interaction, and physically represent the brand through sensory stimuli in the physical environment (Hultén, 2011). Research confirmed that stores that have a consistent and meaningful design, and address more than one sense, are claimed to positively impact the shopping experience (Alexander & Alvarado, 2014, Hultén, 2011; Soars, 2009; Turley & Milliman, 2000).

Retailers face the challenge to turn offline shopping into an entertaining, exciting and emotionally engaging experience (Rigby, 2011). Especially retailers that sell products of hendonic value. Research indicates that shopping behaviour is motivated

by emotional and psychological drivers (Goldsmith et al. 1996; Kang & Park-Poaps, 2010). The emotional drivers are found to be of practical nature, yet, also the hedonic value of consumption is a big motivation, in terms of expected punishment or reward of the purchase (Arnolds & Reynolds, 2003; Childers et al., 2001; Kim & Kim, 2008; Pantano & Naccarato, 2010). The more hedonically motivated people are when shopping, the more attention they pay to attributes of the retail environment (Alexander & Alvarado, 2014). These results indicate that the integration of channels requires more careful attention to be effective. And all these attributes contribute to the overall brand experience.

As mentioned before, the decision for a channel is motivated by the costs and benefits consumers assign to convenience, risk, and service preferences (Chiang, Zhang, & Zhou, 2006; Montoya-Weiss et al., 2003). For traditional distribution channels, e.g. physical stores, research indicates they foremost experience restrictions associated with convenience. Such as opening hours and distances, hence implicitly the purchase requires more effort (Bhatnagar, Misra, & Rao, 2000; Li, Kuo, & Rusell, 1999; Rohm and Swaminathan, 2004). However, convenience in terms of fulfilment indicates that physical stores have the benefit of immediate fulfilment of the customers need, while online channels have to deal with a delayed fulfilment, due to shipping times for instance (Bell et al., 2013). In addition, physical stores or inventory showrooms are advisable for products with an uncertain fit. In that way, a brand enables the customers to experience the product physically and take away the expected risk of the purchase (Bell et al. 2013). For the offline channel, even more important than risk aversion on the preference for the offline channel, is service orientation (Kollman et al., 2012). Especially, when it comes to products that consumers would like to experience offline (Gupta et al., 2004a; 2004b). Concluding, it is stated that service oriented consumers, looking for physical evaluation of the product and face-to-face advice, are more likely to go to offline channels for both information search and purchase (Kollmann et al., 2012). Consumer still value the emotional competence and expert advice in physical stores, over these online assistances. The offline experience is still valued over the online experience (Kollman et al., 2012).

2.2.2 Digital Shopping Environment

Digital channels, on the other hand, make it easier for consumers to shop in the comfort of their home, either via the (mobile) website or an App. Which is already evolving in just a push of a button, with the "Dash Button" introduced by Amazon (Adamczyk, 2016). When it comes to the decision to purchase online, research addresses the importance of price (Bakos, 1997; Brynjolfsson & Smith, 2000), convenience (Balasubramanian, Konana, & Menon, 2003), and product variety (Brynjolfsson, Hu, & Raman, 2009; Ghose, Smith, & Telang. 2006), when it comes to consumer preference for online shopping. Bell et al. (2013) stress the influence of the way online channels enable the consumer to focus their search on a particular product and access information from peers, in the form of reviews. At the same time, accessibility to products also plays an important role. Digital channels allow access to more stores and reduces the distance stores that were normally not up for consideration (Forman, Ghose, & Goldfarb, 2009). Customers who are highly convenience oriented will be more likely to research through the online channel and eventually also make the purchase online (Kollman et al., 2012). Finally, product fulfilment and information delivery are of influence on the decision for online or offline purchase, and the ability of a channel to deliver these factors (Bell et al., 2013).

Kollman et al. states that, the choice for the online channel is mainly positively influenced by convenience, while being negatively influenced by risk aversion and service orientation. Where, surprisingly, service orientation is of more influence than the desire to avoid risk. Their study shows that the more people are looking for convenience, in contrast with the risk aversion and service orientation, the more likely they are to prefer the online channel over the offline channel. If consumers assign high importance on service, offline channels are preferred over online channels, because online channels still have a higher experienced uncertainty (Kollman et al., 2012). Even though research by Holzwarth et al. (2006) states that company websites using avatars to assist the consumers in their choice positively influences their attitude towards the product and their purchase intention. Consumer still value the emotional competence and expert advice in physical stores, over these online assistances. Therefore, the offline experience is still valued over the online experience (Kollman et al., 2012).

Given the fact that multichannel strategies have become so common, this influences the judgement of consumers of the risk of online channels risk (Horrigan and Rainie, 2002). Online channels have become more and more important, and common, in daily life, that the channel decision is likely to take place at a subconscious level (Kollman et al., 2012). In contrast, others state that consumers do consciously evaluate the perceived risks of an online purchase (Featherman & Fuller, 2003). This is of significant influence on purchase decisions, especially when the consumer experiences a discrepancy between what they expected and what is delivered. The experienced negative discrepancy, for instance, increases operational costs for the company due to product returns (Bell et al., 2013). The inability to deliver all characteristics of a product digitally, is still a strong downside for online channels. Therefore, to benefit from the integration of channels in the physical environment they should make sure to be innovative, and offer the consumer original, integrated digital experiences in the physical environment (Rigby, 2011).

3. CONCLUSION

Digital and technological developments in the past decades have influenced consumer shopping behavior. From traditionally shopping in the physical store, to nowadays using multiple channels for information search and purchase (Alexander & Alvarez, 2011). It has affected every step of the customer journey. This has somewhat forced retailers to apply an Omni-channel retailing strategy, which means that they are expected to not only have multiple channels but also to deliver a seamless experience across all touchpoints (Lee, 2016; Pratt, 2012). In order to deliver this synergetic experience, it is important to understand customer needs. Big Data can play a huge role in this, by gathering and interpreting data about individual consumers, retailers can create a strategy that best fits their needs.

By offering the customer a variety of touchpoints, consumers can choose the channel of preference. Channel choice for information search and/or purchase, depends on many motivational factors. These are factors such as the channels ability to deliver information (Anderson et al., 2009), the costs and benefits assigned to convenience, risk, and service preferences (Chiang et al., 2006; Montoya-Weiss et al., 2006), and the necessity for consumers to interact with the product and accessibility to try out the product (Saeed et al. 2003). Additionally, not every consumer has the same preference, in addition, it also depends on the type of purchase. So the integration of channels also depends on the product being offered by the retailer, and is specific to a product category. This evaluation becomes more important, the more hedonically motivated a purchase is. If a product category represents hedonic values, the more attention consumers pay to the attributes of the

integrated, brand experience (Alexander & Alvarado, 2014; Arnolds & Reynolds, 2003; Childers et al., 2001; Kim & Kim, 2008; Pantano & Naccarato, 2010)

Although digital developments are following each other up rather rapidly, digital channels still cannot deliver optimally on all factors for every product category. The online channel is preferred when consumers are convenience driven. Although online shopping is more common nowadays, it still carries some type of uncertainty that consumers prefer to avoid. Therefore, retailers should not label their physical touchpoint as a liability, but should exploit the assets that it can bring (Rigby, 2011). It is the touchpoint where all channels can be integrated into one synergetic experience, and its ability to deliver on many consumer needs. For instance, in service performance, interaction with the product, and offering an entertaining experience (Kollman et al., 2012). Retailers should make sure to deliver one holistic experience (Gentile et al. 2007), through the static designs in line with the brand (Pine & Gilmore, 1998), sensory stimuli in line with the brand (Hultèn, 2011; Kotler, 1973), and integration of all touchpoints into one entertaining, exciting, and emotionally engaging experience (Rigby, 2011).

Furthermore, technology is very important for the execution of this Omni-channel retailing strategy. Technology enables retailers to integrate all channels. This does require flexibility of the organization and improvements on many organizational levels, such as operational, marketing, and the infrastructure. Yet, this will help retailers in delivering customer value through more customized services, and optimized logistics. Moreover, it enables retailers to offer unique in-store experiences using technological innovations. However, research indicates consumers often ignore technological in-store innovations (Alexander & Alvarado, 2014). Therefore, retailers should make sure the in-store technologies are unique and entertaining (Rigby, 2011), time-saving, easy to use, accessible, address a salient need, and give the customer more control (Alexander & Alvarado, 2014).

Limitations & recommendations for future research

This paper focusses on the future of the brick-and-mortar store in the Omni-channel environment. Results, however, are quite general. Therefore, there are no specific implications to give to retailers. Given the fact that the preferences of channel choice depend on many factors, of which many are influenced by the type of product consumers plan to buy. Future research, should therefore focus on specific branches and product categories, to gain more branch specific insights regarding the implementation of the Omni-channel strategy, and the integration of channels.

Furthermore, this paper just presents some general technical implications, and stresses the importance of embracing technologies available to improve performance of retailers. Also when it comes to design of the physical retail environment this is very product and brand dependent. Therefore, this research is limited by the in-depth and practical recommendations.

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Topic 3:

Making sense of changing decision process(es)

Privacy versus personalization in the "Big Brother is watching you era"

What to do to retain and increase the consumers' information disclosure?

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ABSTRACT
In recent years, the development of technologies to collect data from customers for personalization efforts increased, so is the consumer concern for privacy. Customers have become more wary about who has their information and how it is being used. They put limits on what they would like to share. Therefore the so called personalization – privacy paradox has gained increasing popularity in the academic literature as well as in the practical world. Due to the fact that personalization providers are dependent on the information customers share. Therefore the purpose of this paper is to evaluate the state of the art literature about the tradeoff between personalization and privacy in order to see what personalization providers can do to increase the users' willingness to disclose information. The paper uses the approach of a critical literature review and will integrate the effect of trust, privacy policies and customers decision making process on the willingness to disclose information. The results indicate that trust has a strong relationship with information disclosure and effective privacy policies reinforce this relationship.

Keywords
Personalization, Privacy, Trust, Privacy Policy, Information Disclosure, Privacy Decision Making.

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: This topic is chosen because the tradeoff between personalization and privacy will become more and more important due to the fast development in new technologies, data becomes key in the near future. I experience sometimes a big brother is watching you feeling with personalized advertisements on social media. In order to prevent that I am not willing to disclose any information or to stop using particular websites or services, measures should be taken to increase and maintain the users' willingness to disclose information.

1. INTRODUCTION

In recent years, the developments in neuroscience, data mining, internet of things, artificial intelligence and social network analysis has been increased, which results in powerful technologies for digital marketers for their data collection, profiling and targeting of customers (Chester, 2012). These technologies form a major input of customer data which is used to personalize websites in order to increase the conversion rate (Tucker, 2014). The term personalization refers to a process whereby products and services are tailored to match individual preferences utilizing consumer data (Montgomery and Smith, 2009; Adomavicius et al., 2008). Among marketers, personalization is generally assumed to be the most effective tool for achieving business success online (Cao and Li, 2007). In addition, personalization is been considered as a major driver for marketing efficiency (Kalaignamam et al., 2008). Therefore the interest in personalization increased over the years. In order to offer personalized products or services, marketers are dependent on their ability to acquire and process consumer information, and the willingness of customers to share this information (Chellappa and Sin, 2005).While the popularity of personalization increases, so has the concern over privacy. Consumer sensitivity to data privacy has been heightened by recent events in the news. Consumers are more wary about who has their information and how it is being used (SAS, 2015; Culnan, 2000). In addition to that, among consumers grows the perception that big data is another term for "Big Brother" which makes them even more worried about their personal information and how it is being used (SAS, 2015). This perception is reinforced by the shocking truth disclosed by Edward Snowden (former CIA) that a top secret program had been authorized by the US government to conduct national and foreign communications which are recorded and provided by big companies such as Apple, Microsoft, Yahoo and Google (Rispoli, 2013). Data such as phone records, emails, instant messages, online clicks were provided (Rispoli, 2013). Suddenly, ordinary citizens who have never thought about online privacy started to think about which data from them are being collected and used without their consent. Taking this into account, it will be no surprise that recent research shows that the opinion of marketers and customers about personalization are conflicting. Marketers think that personalized online communication make customers feel valued, however customers experience discomfort when they receive personalized advertisements (Tucker, 2012), because it prompts them to realize their information has been collected without their permission. This can be explained by the "personalization-privacy paradox" what entails that there are limits to what consumers are willing to disclose about themselves to personalization providers (Awad and Krishnan, 2006). Many studies are performed on this paradox and have investigated key antecedents of information disclosure in personalization systems such as:

• The perceived value of personalization (Brodie, Karat, & Karat, 2004; Chellappa & Sin, 2005; Ho & Kwok, 2002; Li & Unger, 2012),

• Users' trust in (i.e., the reputation of) the personalization provider (Komiak & Benbasat, 2006; Li, 2014), and

• Antecedents of trust, such as control (Sundar & Marathe, 2010; Taylor, Davis, & Jillapalli, 2009) compensation (Castañeda & Montoro, 2007) and transparency (Awad & Krishnan, 2006; Kobsa & Teltzrow, 2005).

However, as Smith et al. (2011) point out, most of the existing privacy studies cover only small subsections of the field of privacy, and there is a lack of integration.

This study will review the state of the art literature about the tradeoff between personalization and privacy in order to see what a personalization provider can do to increase the users' willingness to disclose information.

In order to do this several critical factors in this personalization-privacy paradox are reviewed. Such as the effect of trust, since trust is proven to be a main antecedent of information disclosure in a positive way (Komiak & Benbasat, 2006; Li, 2014). Next to that, attention will be paid to privacy policies since these policies have a strong relationship with trust and can therefore influence the willingness to disclose information (Aïmeur, Lawani & Dalkir, 2016 ; Ermakova et al., 2014; Wu et al., 2012). Furthermore, attention will be paid to the decision making process of customers in privacy critical situations. Since these insights can be very helpful for personalization providers (Kobsa et al., 2016)

1.1 Academic Relevance

In the present paper, the key focus lies on insights in order to increase users' information disclosure while looking at the governmental initiatives, consumers' decision making process and the effect of trust and privacy policies on the willingness to disclose personal information. There does not exist any literature review incorporating all these aforementioned factors, within one single paper, although these are the key issues concerning the tradeoff between personalization and privacy concern (Aïmeur et al., 2016; Ermakova et al., 2014; Wu et al., 2012; Taylor et al., 2009; Kobsa et al., 2016). Therewith, it is expected that by publishing the paper, a cornerstone in the literature of the marketing field will be provided to societies worldwide.

1.2 Practical Relevance

Looking at the practical impact of the paper, it is expected to give a critical overview of the current state of findings regarding the increased privacy concern which is related to the fast development in technologies to gather consumer data and the tradeoff companies and customers have to make between privacy concern and the benefits of personalization.

From a managerial perspective, this review will give an answer to the question: What can personalization providers do to increase the users' willingness to disclose information?

It will enable companies to organize their personalization efforts in a successful way by looking into the increasing privacy concerns and see what factors positively influence customers information disclosure decision. Next to that, the effect of trust and privacy policies on privacy concerns will be reviewed which lead to interesting insights which can be taken into account by personalization providers.

The paper will be structured as follows: first, in order to create a sufficient foundation for the paper, personalization and the effect on privacy concerns will be explained, whereby governmental initiatives are integrated. Thereafter, privacy concern and the information disclosure decision will be reviewed, whereby the decision making process will be discussed and recent findings related to the Elaboration Likelihood Model will be presented. Furthermore, recent findings about the role of trust and the effect of privacy policies on the willingness to disclose information will be highlighted. In the end a conclusion will be given with recommendations for personalization providers.

2. METHODOLOGY

In order to identify factors that positively influence the willingness to disclose personal information the present paper critically review numerous relevant scientific literature and findings concerning the topic of the tradeoff between personalization, privacy and information disclosure decisions. In regard to this topic a critical literature review is chosen as a method, since in this way, it is possible to assess the literature critically, to state the gaps and weaknesses, contrasting the views of particular authors or raising questions.

The literature has been mainly gathered by making use of electronic search engines like Google Scholar, Scopus and the online library of the University of Twente. The selection of relevant articles is based on a primarily quick scan of the abstract, followed by reviewing the year of publication and the journal in which it is published. Next to that, the introduction and conclusion were inspected ending in an in-depth inspection of the whole article. In total 20 relevant scientific articles were found. In addition, the reference list of the articles considered to be relevant were scanned in order to find additional useful articles.

The main key search terms used in order to find relevant literature were primarily "Personalization", "Online Privacy and Personalization", "Online privacy and Trust", "Online privacy and Information Disclosure", "Trust and Privacy Policies".

3. LITERATURE

3.1 Personalization and the increasing Consumer Concern for Online Privacy

Online personalization is simply defined as matching categorized content to profiled users, based on a company's determination of relevance of the content to the specific user (Fan & Poole, 2006). Due to todays advanced monitoring systems, databases and data mining tools, organizations are able to collect information about individual customers and their preferences, and use that information to create specific customer profiles in order to personalize coming interactions (Moon, 2000; Langenderfer and Cook., 2004). The data is mainly collected in two ways, either explicitly by asking consumers to disclose information about themselves via site registrations, warranty forms or other methods of self-disclosure (Taylor et al., 2009) or implicitly by inferring information about consumers without their awareness or consent (Cranor, 2004). Information will be collected via clickstream data which can be linked to scanner data and loyalty programs in order to target specific customers via cookies and tracking software (Milne & Boza, 1999; Graeff & Harmon, 2002). These new possibilities of data collection enables vendors to target customers on a one-to-one basis which result in higher customer satisfaction, more customer loyalty, more cross-sell possibilities, higher product differentiation and positive word-of-mouth (Peppers and Rogers, 1999; Alba et al., 1997). However, there are limits to what consumers are willing to disclose about themselves to personalization providers, this is called the "personalization-privacy paradox" (Awad & Krishnan, 2006)

Westin (2003) defines privacy as ''the claim of an individual to determine what information about himself or herself should be known to others. This, also, involves when such information will be obtained and what uses will be made of it by others''(p.431). Based on survey data, Westin segments consumers into three types: privacy fundamentalists, privacy pragmatists and privacy unconcerned. He noticed that most of the people are pragmatists about privacy and willing to trade personal information for certain benefits. However, some people think that newborns in a world where technology is almost ubiquitous will create a "post privacy issues era". They will grow up having fewer concerns and expectations about privacy as their digital lives start early. Which is illustrated by the fact that there are pictures of them online since they were babies (Garcia-Rivadulla, 2016). Since this is not believed to happen in the near future, companies should deal with these privacy concerns in an appropriate manner. Since most of the people are considered to be privacy pragmatists and willing to share personal information to a certain extend in return for benefits, still the main concern is about the inappropriate, improper sharing of information (Garcia-Rivadulla, 2016).

Online privacy concerns have driven responses from both government and business industry. One of the governmental initiatives taken to protect consumers online are derived from the OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (OECD, 2013).

The OECD guidelines define seven principles for data regulation (Parlorama, 2010):

- **Notice:** subjects should be given notice when their data are being collected.
- **Purpose:** data should only be used for the purpose stated.
- **Consent:** data should not be disclosed without the data subject's consent.
- **Security:** collected data should be kept secure from any potential abuses.
- **Disclosure:** subjects should be informed as to who is collecting their data.
- **Access:** subjects should be allowed to access their data and make corrections to any inaccurate data.
- **Accountability:** subjects should have a method available to them to hold data collectors accountable for following the above principles

The OECD is not the only governmental institution who is trying to protect consumers via data regulation policies. The European Commission combined in 2014 all data protection regulations in the European Union into one single law called: the General Data Protection Regulation (GDPR) (European Commission, 2014). This regulation is not limited to EU citizens, but also apply to any organization that processes EU citizens data, no matter where the company is located. This regulation is accepted in 2016 and will apply from 2018. Key aspect of this new legislation is the "data protection by design and by default" (Article 23) which require data privacy settings to be set at the highest level by default, leaving the option to "opt-out" instead of having to "opt-in" as before.

Next to that, the European Union came up with a rule which is related to the issue of the storage of your online fingerprints forever. The rule is called: "The right to be forgotten" which is effective since May 2014. The law requires that search engines receive and evaluate requests from people who demand to delete specific search results about them. However, where can we draw the line? What information is legitimate to delete and what is not? Should for example a public figure have the possibility to delete negative information about themself? What about the freedom of speech? (Garcia-Rivadulla, 2016).

These issues complicates nowadays the process of creating data protection laws. However the perfect data protection law is impossible to make since the technology evolves faster than any legislation. Besides, laws cannot undermine other constitutions such as the freedom of expression. Despite of the limitations of laws and legislations, good governance and regulation remain

the starting point of protecting consumers from unethical ways of capturing or sharing data (Garcia-Rivadulla, 2016).

3.2 Privacy Concern and Customer Information Disclosure Decision

Knowing and applying the legislations into practice is one step for companies to gain consumers trust. However, for companies it will be more interesting to know when and how customers decide whether or not to disclose a certain piece of information.

3.2.1 Decision Making

For this privacy decision process two competing views exist, namely: the "privacy calculus view" and the "heuristic shortcuts view". The privacy calculus view entails the idea that when people have to decide whether or not to disclose privacy-sensitive information, they weigh the expected benefits against their perceived privacy risks. According to many researchers, most of the people employ a privacy calculus view when making privacy-related decisions (Dinev & Hart, 2006; Hann, Hui, Lee, & Png, 2007; Li, Sarathy, & Xu, 2010; Min & Kim, 2014; Wilson & Valacich, 2012; Xu, Luo, Carroll, & Rosson, 2011; Xu, Teo, Tan, & Agarwal, 2009). Which is in line with the research of Westin (2003) who argues that most of the people belong to the privacy pragmatists category. However, recent experiments have shown that people's privacy decision making is not an entirely rational process. The decision making process is influenced by several heuristics or mental short cuts, which often rely on superficial but easily accessible cues, such as: The information they have on the willingness of other people's willingness to disclose this specific information, the so called 'social proof' (Acquisti, John, & Loewenstein, 2012), the order of sensitivity in which items are being asked (Acquisti et al., 2012), the available options to choose from (Knijnenburg, Kobsa, & Jin, 2013b), what the default is and how the question is being framed (Knijnenburg & Kobsa, 2014; Lai & Hui, 2006), their current mood or general feelings (Slovic, Finucane, Peters, & MacGregor, 2004), the credibility and attractiveness of the source of the message or famous endorsers (Petty & Cacioppo, 1986). In order to anticipate on the two competing views on information disclosure decision making, it will be interesting to know under what circumstances do people use the privacy calculus or heuristic shortcut view?

3.2.2 Elaboration Likelihood Model

To describe and investigate this relationship, researchers make use of the Elaboration Likelihood Model (ELM) which is developed by Petty and Cacioppo (1986). The model describes a "dual process theory" of attitude formation and decision making processes which are characterized by different degrees of elaboration (Petty & Wegener, 1999). According to the ELM, people use two different processes routes before making a decision. Namely the central route (high elaboration) or the peripheral route (low elaboration). The central route is comparable with the privacy calculus view whereby people form their attitudes about a product based on a more careful assessment of the most relevant information such as: argument quality (Cacioppo, Petty, Kao, & Rodriguez, 1986). The peripheral route is in line with the heuristic view, whereby people make decisions based on superficial information, such as: the website reputation or design quality (Bansal, Zahedi, & Gefen, 2008). However previous findings using the ELM model to describe the circumstances of consumers in a decision making process needs to be carefully interpreted according to Kobsa et al (2016). Due to the fact that many researchers lack to measure the amount of elaboration directly and use instead the two variables: motivation and ability. Next to that previous research tested the privacy attitudes in generic surveys or hypothetical situations and behavior instead of testing actual behavior in an experiment. Which can cause misinterpretations since numerous studies have demonstrated that people may have lower intentions to disclose their personal information due to privacy concerns, but in reality do share their personal information anyway (Berendt, Günther, & Spiekermann, 2005; Norberg, Horne, & Horne, 2007;). So Kosba et al. (2016) tested the actual behavior in an experiment in order to investigate techniques to generate more favorable attitudes towards personalization and increase the information disclosure. Their main findings suggests that privacy concern has the strongest impact on satisfaction for users who use the central route, and managers are recommended to use client-side personalization and privacy-preserving techniques. When approaching an audience with a wide range of privacy preferences, a mixed strategy of reputation management and privacy preserving techniques seems to be the best solution. So people with a high level of general privacy concern and self-efficacy beliefs are more likely to use the central route (deep information processing). On the other hand, people with low level of general privacy concern and self-efficacy use the peripheral route. Whereby people of the peripheral route are convinced by superficial techniques, so are people of the central route by technical solutions.

One of the other findings is that users mainly disclosure their demographics without much privacy concern. When deciding to disclose demographic information, users rather consider how well the application can satisfy their needs. Which can be explained by the fact that context information is often more ambiguous than demographic information. In order to process context information an additional interpretative step is required, therefore users will disclose context information only if they are confident that the system is able to correctly perform the interpretation and provide accurate personalized results.

Lastly the study confirms that trust mediates the effects of privacy concerns and that trust can even compensate for high levels of privacy concern. In addition, trust increase the satisfaction and the willingness to disclose information.

3.3 Trust and Customer Information Disclosure Decision

As confirmed in several studies, trust is a significant factor in order to reduce privacy concerns (Taylor et al. 2009) and to stimulate cooperation (Brodie et al., 2004). Furthermore it decrease the perceived risk, enhances satisfaction, commitment and encourages the willingness to disclose information (Kosba et al., 2016; Ermakova et al., 2014; Wu, Huang, Yen, & Popova et al., 2012)

According to Taylor et al (2009) managers are advised to take steps to build trust with consumers. These steps contain privacy security, good online experience and trustworthy information quality (Ha, 2004). Next to that, the use of implicit data collection to personalize online interactions is risky. According to Taylor et al (2009) trust will not reduce privacy concern when participants perceived that information about them had been collected implicitly. Consequently, managerial actions that aim to build trust will be ineffective for reducing this group's privacy concerns. Furthermore, the perception about implicit data collection significantly increased the negative effect of privacy concern on the willingness to disclose personal information. Besides, these consumers are less likely to engage in desirable behaviors, such as being loyal to the firm and engaging in positive word-of-mouth.

3.3.1 Privacy Policy

Privacy policies are the way in which websites inform their users on how they collect and use their data. Next to that, the privacy policy can be used as an aid to gain the trust of users (Ermakova et al., 2014). This significant relationship between trust and privacy concern via privacy policies is confirmed in the study of Wu et al, (2012) as well as the importance of privacy policies to gain trust which increase the willingness to provide personal information. Meinert et al. (2006) demonstrated that the consumers' willingness to disclose personal information increased as the level of privacy guaranteed by the privacy statements increased. However according to the study of Aïmeur, Lawani & Dalkir (2016) privacy policies do not have significant value to consumers. Which is supported by the fact that privacy policies largely go unread by customers. So, while consumers rate a privacy policy as important, few of them actually take note of the policy when disclosing information. Thus firms must consider the residual benefit of investing in their privacy policy beyond the regulated requirements. Privacy policies are not read due to several factors namely the length of the privacy policies (Ermakova et al., 2014), their non-specific and vague content and their nonstandard formats (Schaub, Breaux, & Sadeh, 2014). Williams, Agarwal, & Wigand, (2015) add that privacy policies mainly serve to protect organizations instead of customers. Besides these factors, do people really understand the content of the privacy policies? Reidenberg et al., (2014) investigated the differences of interpretation among experts and ordinary users. The results show that there were important discrepancies in the interpretation of privacy policies language, mostly with respect to data sharing. This indicates that privacy policies may mislead people's decision making. Besides, customers often lack the expertise to correctly assess the consequences of agreeing to the collection or usage of their personal data (Aïmeur & Lafond, 2013). Looking at above mentioned findings it is worthwhile for managers to improve the design and content of privacy policies in order to increase the trust which has a positive effect on the willingness to disclose personal information.

The study of Capistrano & Chen, (2015) tested three design elements: length, visibility, and specificity in order to measure the perceived importance and relevance of the policy on the decision to share personal information. The results showed that visibility and specificity were significant. Next to that, visibility had the strongest influence on relevance.

Furthermore, several solutions have been proposed to tackle the privacy policy problems. One of the solutions is recommended by W3C, to use the P3P (Platform for Privacy Preferences). P3P is a project which enables websites to demonstrate their privacy policies in a standard format. Next to that, the platform allows users to specify their privacy preferences which will be transformed into automate decision making about privacy related issues according to their preferences (W3C, 2016). However, due to the complexity of the platform, the system is not used often. In addition, users do not have the possibility to negotiate with the service on the terms of the policy.

Another proposed solution is the P2U framework (Purpose-to-Use) which entails the negotiation option to users. This privacy policy specifies the purpose, type of data, retention period and price for user data (Iyilade & Vassileva, 2013). Furthermore, based on the developing technologies a new design of privacy architecture that supports negotiation was proposed build upon the P3 platform (Qwasmi, El-Khatib, Liscano, & Thorpe, 2013). Their model aims to allow users to control what information is collected, how it is used and under what circumstances it is shared. However, the model does not give users many options on each term of the privacy policy, next to that, users can not decide how their data will be processed.

The privacy policy model presented by Aïmeur et al. (2016) is a privacy policy in a friendly format that offers users the possibility to manage the data they want to exchange and can receive in addition various rewards which depends on the data they disclose. The main purpose of this privacy policy model is to allow users to make a decision on each term of the policy. The privacy model is tested by splitting the respondents into two groups, presenting a different format of the same privacy policy to each group. The first group sees the conventional way and the second one sees the policy according to their privacy model. Their findings shows that changing privacy policies with the purpose to allow users to understand the content, to manage the access to each element of their data and to earn from the use of these data, will change user trust and makes websites appearance more trustworthy. Next to that, by giving users more control over their data and provide more flexibility in privacy policies, consumers will be freed from the dilemma of having to choose between two unappealing choices which will increase their trust, loyalty and information disclosure (Aïmeur et al., 2016).

4. CONCLUSION

In the present paper, an overview of what personalization is and the effect on consumers' privacy concern is provided. Next to that insight is given into the decision making process and possible factors that positively influence the decision to disclose personal information. There were several knowledge discoveries made during the development of the paper, from which the most important ones will be summarized again.

In order to protect customers online, good governance and regulation remains the starting point (Garcia-Rivadulla, 2016), despite the fact that a perfect data protection law is impossible to make since technology evolves faster than any legislation can be made.

In a privacy decision process consumers use two competing views. Either the privacy calculus view or the heuristic shortcuts view. Consumers with a high level of privacy concern and self-efficacy beliefs take the central route to a decision which involves deep information processing. These consumers can be convinced by technical solutions. On the other hand consumers with a heuristic shortcut view have lower privacy concerns and self-efficacy and take the peripheral route. These customers can be convinced by superficial techniques such as the website reputation, design quality or famous endorses.

Furthermore, there can be concluded that trust mediates the effects of privacy concerns and that trust can even compensate for high levels of privacy concern. Next to that, trust increase the satisfaction and the willingness to disclose information. However the way data is collected plays an important role in the trust effect. Trust will not reduce privacy concerns when information is collected implicitly. This data collection method will even further increase the negative effect of privacy concern on the willingness to disclose personal information. To avoid this data collection method privacy policies can be used. Since several studies show a significant relationship between trust and privacy concern via privacy policies. And therefore as well the relationship between trust and the willingness to disclose personal information. However, very often privacy policies are not read by customers due to several reasons such as the length, vague and complex content and their nonstandard formats. Findings shows that when changing privacy policies in a friendly easy to read standard format, with the purpose to allow

users to understand the content, to control their data, and to provide more flexibility in the policy, the website appearance will become more trustworthy. Next to that, consumers will be freed from the dilemma of having to choose between two unappealing choices which will increase their trust, loyalty and intention to disclose personal information.

4.1 Managerial Recommendations

When reading the present paper, several recommendations can be given to managers in order to increase their users' willingness to disclose information.

First of all it is important to consider that consumers use two different views when making a privacy decision. When the particular view of the target group is determined, managers can take actions to improve the personalization content, either via heuristic superficial techniques or technical techniques. Such as client-side personalization or reputation management.

Furthermore, managers should think carefully about their data collection method. It is not recommended to use the implicit data collection method since it has a negative effect on trust and the willingness to disclose information. Next to that, managers should think about the position and effect of their current privacy policy. An effective privacy policy will increase the consumers' trust. However a privacy policy will become effective when it is easy to read in a standard friendly format, highlighting the main points and to provide control and flexibility to each item of the policy to agree on. In this way, consumers will be freed from the dilemma of having to choose between two unappealing choices which will increase in the end their trust, loyalty and intention to disclose personal information.

Lastly it is important to highlight that investing in a trust based environment is highly recommended since it will insure the continuity of information sharing. Without sharing of personal data, both parties will receive fewer benefits, which is not likely (Osothongs & Sonehara, 2014).

4.2 Limitations and Future Research

Next to the knowledge contributions in the current paper, there are certain limitations that need to be considered. First of all, the privacy-driven behavior is investigated through multiple theories which address the issue from different perspectives with different emphasizes. However in this paper the focus is on individuals' internal responses to external factors in a tradeoff decision, and does not review all theories. Therefore the paper can have a limited point of view. Second, the time aspect restricted the dimension of the study. Since the available time from the beginning to the presentation of the results was restricted to nine weeks in total. Therefore it was not possible to review all literature written about the privacy – personalization tradeoff and to create a total new piece of scientific literature. Next to that, as a student from the University of Twente, I did not have access to all existing literature about the personalization – privacy tradeoff since there are still some journals where we do not have access to.

In regard to the future research possibilities, it would be interesting to study when consumers are likely to detect the use of implicit collected data? Which factors do raise their awareness? Next to that, all different theories regarding privacy driven behavior can be reviewed in order to get a comprehensive overview.

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The Trade-Off between Consumer Privacy and Web Based Advertisement: a Descriptive Model

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ABSTRACT
Marketers need to get close to their consumers to establish exchange relationships, this level of intimacy has been achieved using database technology and direct marketing communications. However, the potential exists for the use of technology to result in invasions of individual consumer privacy. The trade-off point for web based marketing and consumer privacy is complex and differs for every marketers situation. Nevertheless, ethical norms, social judgement, trust and transparency are factors that need to be taken into account.

Keywords
Consumer Privacy, Internet Marketing, Web Based Advertisement, Privacy Paradox, Privacy Invasion

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view:

The authors own experiences with the balance between internet marketing and privacy are both positive and negative. Sometimes the marketing felt intrusive and sometimes it was helpful for the author and therefore effective for the marketer. This led to an interest of the author in this topic.

1. INTRODUCTION

Marketers need to get close to their consumers to establish exchange relationships, this level of intimacy has been achieved using database technology and direct marketing communications. However, the potential exists for the use of technology to result in invasions of individual consumer privacy (O'Malley, Patterson & Evans, 2010). In 1988, Wang, Lee and Wang published their consumer privacy concerns regarding internet marketing. They stated that junk mail, web based advertisements, malicious programs and the use of programs for transferring private information evoke consumer privacy concerns. Still in 2016, according to the Marketing Science Institute (2016), potential intrusion is a growing issue in marketing. Marketers might be annoying people by invading their privacy and limits might be placed on firms to increase the privacy of the consumers. On the other hand, personalizing, sharing data and customization may be effective marketing tools. The obvious gap between these two factors is the balance between web based advertisement and invading consumer privacy.

This research paper is offering a descriptive model for the trade-off between consumer privacy and web based advertisement. The balance between these two can be hard to distinguish. The topic is derived from the publication of the Marketing Science Institute (2016) where the research priorities for 2016 till 2018 are presented for the field of marketing sciences. This topic is chosen, because balancing ethics with internet marketing is intriguing. The context of this paper relates to behavioural science and decision processes in customer environments.

The research question for this literature review is: *What is a descriptive model for the trade-off between consumer privacy and web based advertisement?* To answer this question the definitions and content of privacy, consumer privacy, consumer privacy awareness and web based advertisement will be discussed. These are followed by a review of the trade-off between these concepts.

2. PRIVACY CONTENT

Authors seem to experience difficulties defining the terms privacy, consumer privacy and consumer privacy awareness. However, when the definitions are researched and placed into context they appear to amplify or complement each other.

2.1 Privacy

Confusion is being experienced by authors defining privacy. The concept appears to be one sided which results in different definitions of the same concept.

2.1.1 Privacy in legal context

Privacy, as defined in the law of the United States, is both personal decision making without unwanted interference and control over information (Soma & Rynerson, 2008). Within the legal context, Morgan (2016) argues that this definition confuses the right to privacy with the right to autonomy. He finds this important since he beliefs that it is possible to invade people's privacy without infringing upon these other rights. The distinction between these two concepts leaves the right to privacy vulnerable to abuse. To remedy this issue, alternative privacy definitions have been proposed in the literature such as the definition of Fried (1970) whom defines privacy as information protection. Or the definition of Gavison (1980) whom defines privacy as restricted access of others. She states that losses of privacy may be identified by reference to the notion of accessibility. In addition, Clarke (1999) defines privacy wider as the right to be let alone. He distinguishes several dimensions: privacy of an individual's body, privacy of personal behavior, privacy of personal communication and privacy of personal data.

2.1.2 Privacy in internet marketing context

Privacy within the context of internet marketing, from which web based advertisement is a section (Wang et al., 1998), appears to fit in to three of the four dimensions mentioned by Clarke (1999): privacy of personal behavior, privacy of personal communication and privacy of personal data since the online behavior of persons includes all of these facets. Milne (2000) adds that privacy within the context of internet marketing is a high-profile public issue that effects both consumers and marketers, which leads to federal commissions and industry groups both concerned with privacy.

2.2 Consumer privacy

Consumer privacy appears to be a broad term for which several models are designed. It stands out that authors' views differ on the subject, but most authors agree that awareness of the consumer is important variable.

Consumer privacy within the context of internet marketing is often referred to as an ethical issue since application of web based marketing technologies commonly invades consumer privacy (Foxman & Kilcoyne, 1993). Foxman and Kilcoyne (1993) classify consumer privacy on the basis of two factors that surface repeatedly in discussion of the concept; control and knowledge. They distinguish privacy states operationally on the basis of whom controls consumer data and whether or not consumers are informed about data collection privacy rights. They designed a table for these states of consumer privacy which is presented in figure 2.1. The figure shows that there are four types of situations where a consumer can find itself in. In the first situation the consumer has total power and is aware of privacy threats or issues while in the last situation the consumer is not aware of its rights and is not able to influence its private content at all.

Maes (1999) also divides two sets of variables for consumer privacy, but in contrary to Foxman and Kilcoyne (1993) he does not take the awareness of the consumer into account. The variables he distinguishes are contextual issues relating to the type of information and the organization collecting the data and issues stemming from individual differences between

	Consumer Controls	Others Control
	I	II
Consumer Informed	Consumers are aware of privacy threats/issues, and can determine whether and how personal data will be used.	Consumers are aware of privacy threats/issues, but may or may not have a say in whether and how personal data will be used.[a]
	III	IV
Consumer Not Informed	Consumers have privacy rights but are not aware of them. Because they assume they must provide personal data, they do not exercise control over its release.[a]	Consumers are not aware that they have privacy rights—and even if they were aware, they may or may not have a say about the collection and use of personal data.[a]

Figure 2.1 Types of Consumer Privacy States

consumers. He names trust as an important factor for the willingness of consumers to release private information. He considers escrow services, which are sites that hold on to the consumers' information until the advertised product is verified by the consumer, as troublemakers for marketers of organizations. The second important factor he mentions is the feeling the marketer needs to provide the consumer with, which is comfortableness and the security that the private information is safe guarded.

Milne and Rohm (2000) designed the consumer privacy states framework which is presented in figure 2.2. This framework examines consumer privacy along two dimensions: awareness of data collection and knowledge of name removal mechanisms. This framework is comparable to the table of Foxman and Kilcoyne (1993) where the factors control and knowledge are important.

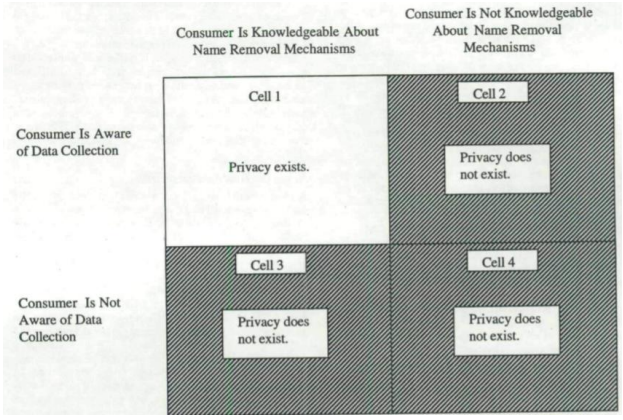

Figure 2.2 Consumer privacy states framework

The figure shows that a total privacy state exists in cell 1 of the framework where the consumer is aware of data collection and knows about the name removal mechanism. In this state consumers are aware that data is being collected about them and that they are able to remove their names from undesirable lists if they want to. Within the other states of privacy, cells 2 and 3, the consumer is either not aware of data collection or is not knowledgeable about the name removal mechanism. In the worst case, cell 4, the consumer is not aware of data collection and is not knowledgeable about the name removal mechanism. However, according to Milne and Rohm (2000) consumer privacy does only exist in cell 1.

2.2.1 Consumer privacy invasion

In relation to internet marketing privacy is commonly invaded by unauthorized collection, disclosure or other use of personal information such as selling it to other e-marketers (Wang et al., 1998). In addition, Morgan (2016) states privacy is invaded when a privacy invader accesses the victim's life, while the victim means to restrict to either the invader or the total society.

In his article, published in 1960, Prosser identifies four types of privacy invasion: 1) appropriation, use of an identity in advertising without permission; 2) false light, portrayal of an individual in a negative or embarrassing way, that does not represent the person described; 3) intrusion into solitude; 4) public disclosure of private information. However, later articles mention that intrusion into solitude and involuntary information disclosure may represent far greater threats than false light or appropriation since they effect nearly everyone (Goodwin, 1991).

Posner (1981) states that informational consumer privacy can be invaded even without entering the home of-, or in any way disturbing a consumer. He derived this from his earlier statement which said that secret watching of others has been considered insulting to human dignity. Goodwin (1991) adds that this type of consumer privacy is less visible but potentially of greater concern to consumers, industry representatives and regulators.

In addition, Haiman (1972) suggests that intrusion is a form of consumer privacy invasion, but that consumer reactions to specific content of interruption may influence individual perceptions of privacy invasion. Types of digital invasion that might come to mind are junk mail, chats or cookies. Later on Haiman adds that this type of intrusion might be tolerable as the consumer is able to refuse future intrusion from the same source.

According to Trepte and Reinecke (2011) the consumer does significantly worry about various online privacy threats. Within a behavior framework such concerns would influence a persons' attitude towards online privacy protection. The bigger the worries of the consumer about privacy violation or invasion , the more likely it is that the consumer would hold a positive attitude regarding the protective strategy as can be seen in figure 2.3.

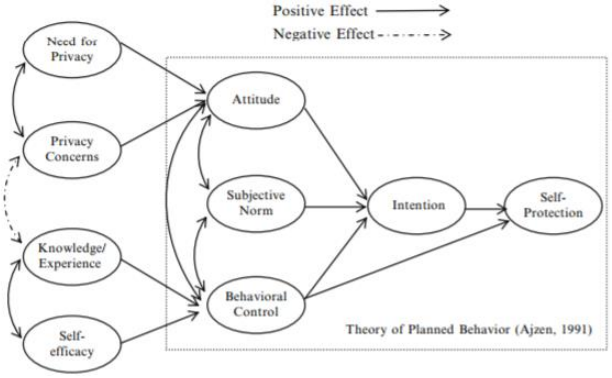

Figure 2.3 Behavior model of online privacy self-protection

Trepte and Reinecke (2011) also name several other factors as predictors of the need to self-protect the online consumer privacy in order for it not to be invaded such as attitude toward direct marketing, desire for information control and perceived creditability of the website.

2.2.2 Consumer privacy awareness

Consumer privacy awareness has been named as one of the most important ethical issues of the internet marketing age (Smith, 1994). Marketers traditionally assumed that the data they collect and base their advertisement on, belongs to their companies. While most consumers want protection against unwarranted uses of personal information with minimal damage to their increased choice and flexibility as consumers (Cespedes & Smith, 1993). Milne and Rohm (2000) add that organizations can only state that they are aware of consumer privacy if they inform the consumer about both, the collection of data and the name removal mechanism and therefore place their consumers in cell 1 of the consumer privacy states framework.

3. WEB BASED ADVERTISEMENT

Web based advertisement appears to be of great importance for marketers since they are able to personalize advertisements. However, consumer privacy is a difficulty to take into account.

Strauss and Frost (2016) state that the internet created many interesting and innovative ways to provide customer value since its interception in 1969. Among others, consumer behavior insights based on offline and online data combinations. These web based insights form the bases of web based advertisement.

Phelps, Nowak and Ferrell (2000) find that reliable personal identification, due to web based customer research, represents a

critical factor for many business activities. With personal information marketers are better able to identify the best prospects, create promotions and reward programs that build customer loyalty, customize advertising and promotion strategies and evaluate the effectiveness and cost efficiency of web based advertising and promotion. The study of Chatterjee, Hoffman and Novak (2003) adds to that statement since it resulted in the conclusion that web based advertisement is most effective when the data for each consumer is modeled separately. In other words, specific information from every consumer is needed to result in the highest effectiveness of web based advertisement.

Sharma and Sheth (2004) name web based advertisement as a form of reverse marketing since the focus of this kind of marketing is the consumers' perspective. The consumer becomes the starting point for marketing activities, through information gathered through the web, for several reasons. The increasing diversity in needs and resources of businesses and households will make consumer behavior less predictable and forecasting less accurate (Sheth, Sisodia & Sharma, 2000). Consumers will drive the exchange process. Consequently, rather than influencing consumers in terms of what to buy, when to buy and how much to buy, marketing will be concerned with accurately responding to consumer demand (Sharma & Sheth, 2004). For example, when the information gathered through the web shows that the consumer is interested in fishing, marketers react to that showing ads for fishhooks and waders.

4. TRADE-OFF CONSUMER PRIVACY AND WEB BASED ADVERTISEMENT

The trade-off point for balancing consumer privacy and web based advertisement appears to be complex and influenced by different factors.

According to Ferrel (2016) ethics are a part of almost every strategic decision in the digital world. Understanding the risk associated with widely used digital systems is important. Since the web can contain divers and sensitive data such as health and medical records as well as credit card and social security numbers. He mentions that organizations variate in the way they address the norms of consumer privacy, because organizational norms will stipulate which consumer is top priority (Maignan & Ferrel, 2004). Ferrel (2016) states that these concepts are helpful but that decision makers, the marketers, have to use their own judgement in reaching conclusion related to consumer privacy. He finds that the balance between consumer privacy and web based advertisement depends on both, concepts and the judgement of the marketers.

The social contract theory confirms this statement, since it states that marketers should view consumers' exchange of personal information as an implied social contract (Phelps et al., 2000). Circumstances, such as firms not informing consumer about information collection or selling consumers' personal information to other parties without explicit permission or consumers not having the chance to restrict the circulation of their personal information, breach this social contract. Nevertheless, according to Goldfarb and Tucker (2013) marketers should not regard the management of consumer information as a burden. Instead, organizations should view the establishment of a framework of consumer privacy controls as an important marketing and strategic variable that conveys considerable benefits.

Malhotra, Kim and Agarwal (2004) offer a theoretical framework which explains dimensions of consumers privacy concerns in relation to web based advertisement, and the consequences of such concerns for their willingness to disclose personal information online. This causal model integrates the social contract theory, the trust-risk framework and the theory of reasoned action. According to this causal model, which is presented in figure 4.1, consumers' privacy concerns are a driving force of consumers reactions to an organizational practice such as selling online. Yet, their findings suggest that trust in a marketer can significantly soften perceived risk and ultimately a customers' aversion in releasing information. As can the situation consumers experience in relation to information privacy threats with respect to the type of industry sector. Thus, according to Malhotra, Kim and Agarwal (2004) it is important for managers to understand how to boost customers trust in their organization handling personal information.

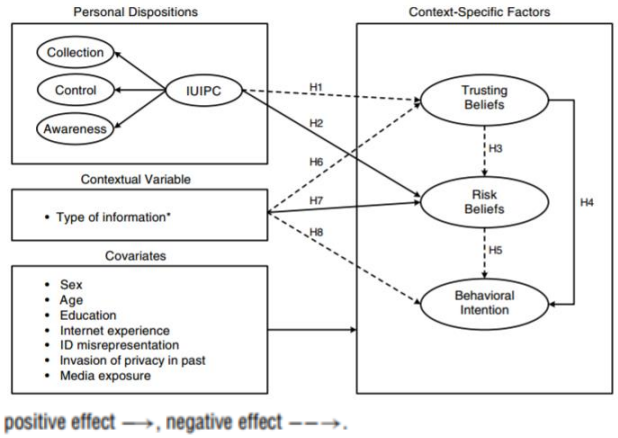

Figure 4.1 Causal Model

Turow, Hennessy and Draper (2015) notice a paradox among consumers in relation to the trade-off between consumer privacy and web based advertisement. This paradox, termed as "the privacy paradox", states that people have inconsistent and contradictory impulses when it comes to safeguarding their own personal information. Awad and Krishnan (2006) elaborated on this privacy paradox in their research and found that consumers with previous privacy invasion experiences have a lower willingness to provide personal information for personalized advertising. They therefore state that effective use of consumer information is a critical success factor for organizations that use web based advertising. The suggestion is made for organizations to focus on consumers that are more willing to provide personal information since that would be most effective. Or, if organizations do not want to minimize their target group. They suggest to offer value-added advertisements to consumers so that they will be able to overlook negative attitudes towards web based advertisements. In addition, it might be important for firms to be transparent toward consumers and communicate the value of web based ads in order to stimulate them to provide personal information.

5. CONCLUSION

The objective of this literature review is to present a descriptive model for the trade-off between consumer privacy and web based advertisement. It can be concluded that the trade-off point is complicated and that several factors need to be taken into account when marketers use web based advertisement.

The right to be let alone is vulnerable to abuse and effects both consumers and marketers. Consumer privacy is considered the awareness of the consumer. That data is being collected and the knowledge of the consumer that it is able to control the data or remove the data from the organizations data collection. Trust in the organization and comfort in the situations are factors that influence the willingness of the consumer to provide personal information.

Consumers do worry about violation of their privacy. These concerns alter their attitude in relation to self-protection against privacy invasion. Privacy is being invaded when the personal space of a consumer is entered either by 'secretly watching' or intruding in its behavior.

Web based advertisement relies on personal information, which is a critical factor for many organizations. This enables these organizations to provide in the specific needs of the consumers.

The trade-off point is an ethical issue where norms are important. The judgement of the marketers should be used. This relates to the social contract theory since the decisions made by marketers are social decisions. It is important for organizations to find the trade-off point since it provides the organizations with considerable benefits. Trust of consumers in marketers gives a boost to the attitude of consumers regarding web based advertisement and is of major importance for the successful trade-off between consumer privacy and web based advertisement. Effective use of personal data contributes to this trust as does transparency of the actions of an organization.

6. DISCUSSION

In the discussion this literature review will be evaluated in terms of the theoretical- and practical implications. Also the limitations and needs for further research will be discussed.

6.1 Theoretical implications

From a theoretical perspective this literature review contributes to both internet marketing and social sciences literature. This article provides a descriptive model of the trade-off between consumer privacy and web based advertisement that enhances current theoretical knowledge. The review provides new insights on how to balance both consumer privacy and the effectiveness of web based advertisements.

6.2 Practical implications

From a practical perspective this literature review and the descriptive model provided contributes to the tools marketers use for their web based advertisement. The balance between both consumer privacy and web based advertisement can be, and has been, complicated for marketers. The provided descriptive model can enable them to find the exact trade-off point for themselves and their consumers.

6.3 Limitations and further research

With regard to the provided descriptive model, there cannot be determined which exact approach is the best for a situation. As described, there are several factors of major importance which differ for every marketers' own situation. A limitation of this research is the amount of recent literature available, this relates to the complexity and changing nature of the situation that was discussed. When reading this literature review, the reader should keep in mind that this model was based only on existing literature and not on normative research, this limits the finding. Therefore, it is recommended to extent the research on this trade-off with not only literature research, but also normative research.

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Using Affect to Affect: The use of emotions in creating digital tourism experience to increase social media sharing

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ABSTRACT
Motivated by the lack of studies of emotions in tourism as well as social media in tourism, this paper attempts to extend prior research in that field. Emotions, as a basic human attribution, have a powerful potential to increase experience, hence influence consumer behavior. It is therefore interesting to know whether emotions, when imbued in digital content in tourism context, could increase experience and create the said effect. By conducting Critical Literature Review, this paper will lay theoretical foundations to create digital tourism content using emotions.

Keywords
Emotions, tourism experience, tourism industry, intention to share, social media, literature review

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: Why this topic?

In this increasingly digital world, the role of emotions is often disregarded in favor of data analysis. People often forget that emotions are something fundamental, which may possess immense power to drive behavior. Therefore, in this paper, I intend to look back at human's innate driving factor and incorporate it in digital marketing experience.

1. INTRODUCTION

The dawn of digital age has brought changes in human's everyday life, re-shaping how we live and communicate (Siemens, 2004). Advances in information and communications technology connect people through internet, and yet it limit interactions through two-dimensional medium. Even so, people has found a way to bypass this limitation by maximizing the features of Web 2.0 to convey meanings. Web 2.0 allows users to create and re-create contents made by others, leading to network participation and richer user experience (O'Reilly, 2005).

Social media, one of web 2.0 many platforms, possesses the same feature. The dynamic characteristic of social media provides users with means of storytelling, encouraging participation and steering the narrative flow as they wish (Alexander and Levine, 2008). Users take a content and make it theirs, personalizing it before diffusing it to their networks. Emotions and experienced moments are central to content creation (Munar & Jacobsen, 2014). Nowadays, affective states permeate and "reverberate in and out of cyberspace, intensified (or muffled) and transformed through the digital circulation and repetition" (Karatzogianni et al., 2011).

Aside from aesthetic and meanings, emotions are also among the elements that constitute product experience. Experience itself is an affective response toward certain thing, and emotions become functional when it draws people toward particular object, idea, or other individual (Desmet & Hekkert, 2007). Combined with the interpersonal interaction, it has rendered more effective to influence others, compared to the traditional way (Senecal & Nantel, 2004). Moreover, this potential could be amplified with the ubiquity nature of social media.

As many industries have done before, tourism industry can also benefit from this emotional sharing phenomenon. In fact, Litvin, Goldsmith, and Pan (2008) suggested that tourism industry should make the most out of it. The aforementioned industry offers intangible goods in form of experience (Mannell & Iso-Ahola, 1987), which is often being considered as high-risk purchase. Furthermore, tourism industry is seasonal (Rao & Singhapakdi, 1997) and highly competitive in nature (Litvin, Goldsmith, & Pan, 2007). On the other hand, the effectiveness of traditional tourism advertising has been declining rapidly. Televisions advertising, radio commercials, billboards, even internet advertising mostly goes unnoticed (Morgan, Pritchard, & Pride, 2012). Apparently, the two-dimensional media could not deliver the whole tourism experience to prospective consumer. Thus, it is time to consider an alternative for influence attempt, such as interpersonal interaction in social media sharing.

Two issues have therefore revealed. First, the need for a design of tourism experience in this digital era that can capture all of necessary elements of experience, from aesthetic, meanings to emotions. Second, the design has to be imbued with the right stimuli to provoke emotional response of users, thus, prompt them to share and influence others in their social media network.

To that end, the main research question is proposed:

Main RQ: In what way emotions can be incorporated into digital content to increase users' intention to share?

Furthermore, three sub-questions will also be posited to deepen the research:

RQ 1: What kind of emotions that can drive user's intention to share?

RQ 2: Can tourism experience be considered as mediator between emotions and users' intention to share?

RQ 3: How can emotions be imbued in each type of digital content?

This research will attempt to answer the question by conducting a critical literature review on the use of emotions in creating digital tourism experience, in order to increase social media sharing. By gaining insight on the most effective combination to drive users' intention to share, this study aims to extend prior research. It is hoped that the findings will contribute to marketing communication field, particularly digital marketing. Albeit the potential and power it possess, social media is still a complex subject that needs to be understand. Specifically, this research also answers the need for knowledge surrounding the right stimulus to encourage users' intention to share.

Marketing in tourism industry is used as a context, to amplify the practical benefit of this paper. Being a highly competitive industry, any tourism product should adapt to new form of marketing to edge in this 7.7 trillion US Dollars industry (Facts, 2015). It is expected that tourism marketeers could take the findings into consideration when designing a content in digital marketing. In a broader context, the discoveries could also be modified and used for general marketing plan in this cyber era.

2. METHODOLOGY

Research will be conducted using Critical Literature Review technique. Scientific articles encompassing emotions, tourism experience in digital world, and social media in tourism industry will be discussed and assessed thoroughly. Research from various scholars are assessed and combined, in order to create a theoretical foundation to design digital content which possibly will increase user's intention to share.

3. THEORETICAL FRAMEWORK

3.1 Research Gap

3.1.1 The study of emotions in digital tourism experience

Scholars from multiple disciplines have been interested with mediated emotions since the rise of digital technology. In the field of political communication, for example, emotions were studied within context of digital media in conflicting countries (Kunstman, 2010) or social struggles of minorities (Cvetkovich, 2003). In the field of marketing, emotions have been extensively explored by building on psychology theories (Huang, 2001). Research is largely theoretical, culminating in modified theory of emotions (e.g. Zeitlin & Westwood, 1986; Donovan & Rositer, 1982; Bagozzi et al., 1999). Study about emotions in a specific and practical context like tourism marketing, is therefore underrepresented.

Furthermore, scholars have agreed that in marketing, a product needs to have certain affect features to create a rich product experience (e.g. Desmet & Hekkert, 2007; Hoch, 2002). Being a function of tourism marketing, tourism marketing would certainly needs the same feature. Studies in the role of emotions in tourism experience has been lacking substantially. A model to assess emotions in tourism experience, exist only to give broad review into research methods in this field (Li, Scott,

& Walter, 2014). Although the use of "experential information in promotional stimuli" (Goosens, 2000, p. 317) is strongly recommended in this area, emotions is never studied thoroughly to design such information.

3.1.2 The study of social media in tourism marketing research

Despite the potential, the role of social media in tourism marketing has not been explored very much. Research about social media in tourism has only started in 2007 and encompassed of merely 279 publications (Zeng & Gerritsen, 2014). Scholars mainly focus more on consequences of social media review (e.g. Dwivedi, Shibu, & Venkatesh, 2007; Gretzel & Yoo, 2008), sharing behavior (e.g. Fotis, Buhalis, & Rossides, 2011), and motivation for sharing about tourism experience (e.g. Munar & Jacobsen, 2014). Litvin, Goldsmith, and Pan (2007) laid the foundation to electronic word-of-mouth research in hospitality and tourism marketing, but only went as far as establishing model. Little is known about the right stimulus to encourage sharing behavior of users, particularly for marketeers' benefit.

Munar and Jacobsen (2014) showed that tourism sharing is mainly driven by altruistic gesture and community. It was found that tourist primarily share to help others in their network and for emotional support. Additionally, they also highlighted that sharing expresses tourist's sociability among their peers. The aforementioned motivations articulates personal and emotional nature of sharing. Thus, it is interesting to know if sharing behavior could be amplified by incorporating personal and emotional features in tourism marketing content.

3.2 The anatomy of emotions

Although it is one of the central theme in customer behavior research, there is no general agreement of what constitutes emotions. Bagozzi, Gopinath, and Nyer (1999) described emotions as mental state provoked by certain phenomenon, and may invoke actions to deal with it. They highlighted that emotions are product of cognitive process, therefore the actions depend on one's understanding of the particular event. Similarly, Friedrickson and Branigan argued that "Emotions are short-lived experiences that produce coordinated changes in people's thoughts, actions, and physiological responses" (2005, p.1). As such, despite its timeliness, emotions are deemed powerful enough to trigger changes in an individual. Certain emotions frequently arise as a result of navigating throughout the internet. Annoyance, for example, is often felt when exposed to inappropriate contents in internet. Envy is provoked when one reads others' Facebook updates, then compare it to themselves. Hope, on the other hand, is elicited from starting a relationship via dating applications (Serrano-Puche, 2015).

Throughout the decades, social scientists have identified and categorized emotions. Renowned psychologist, Paul Ekman (1992) identified six basic emotions that govern human behavior: anger, disgust, enjoyment, fear, sadness, and surprise. The said emotions are fundamental and compatible with each other, therefore could give birth to various emotion families. Enjoyment, for instance, is a general theme for amusement, excitement, satisfaction, and several other related feelings.

Agreeing with Ekman's notions of universal emotions, Robert Plutchik extended the finding and developed new categorization (2001). The psychologist placed similar emotion words in a color wheel. The ones that form similar theme were placed nearby, while the ones that represented contrasting emotions were situated on the opposite. In this fashion, primary emotions were easily identified, as well as their derivative families.

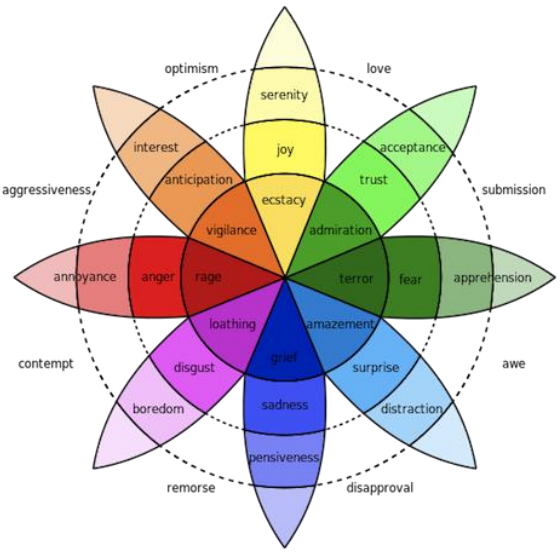

Figure 1. The Wheel of Emotions (Plutchik, 2001, p. 349)

In this model, basic emotions consist of joy, trust, fear, surprise, sadness, disgust, anger, and anticipation. Plutchik positioned the emotions in polarized way, in which positive emotions contrasted the negative ones. In this figure, joy vs. sadness, trust vs. disgust, fear vs. anger, and surprise vs. anticipation. Furthermore, he also extends primary emotions (ecstasy, admiration, terror, amazement, grief, loathing, rage, vigilance) and acknowledge the existence of secondary emotions (serenity, acceptance, apprehension, distraction, pensiveness, boredom, annoyance, interest). Primary and secondary emotions can pair and form a new feeling. For example, love can result from the merge of joy and trust.

It is widely known that a display of emotion can trigger similar affective state and behavior, resulting in phenomenon called emotional contagion. Just like in physical encounter, emotional contagion also present in online interaction (Coviello et al., 2014). By studying data of millions of Facebook users, the aforementioned study found that "online social networks may magnify the intensity of of global emotional synchrony" (p.1). Although negative emotions can easily be transmitted throughout the network, positive emotions is even more contagious. Additionally, situational factors can also amplify the amount and influence the type of emotions being transmitted.

Likewise, it was also found that positive emotions are more common to be found in highly viral content, compared to negative emotions (Libert & Tynski, 2013). Using Plutchik's The Wheel of Emotions, the study revealed that emotions within surprise and anticipation families are overwhelmingly common in highly viral content, especially curiosity, amazement, interest, astonishment, and uncertainty. Admiration is also often present in highly shared content. As highly viral content means that it is frequently shared within one's personal network, thus creating chain reaction of sharing, this shows that the aforementioned emotions might be able to provoke users to share the digital content.

In conclusion, positive emotions are more often shared, compared to negative emotions. Specifically, surprise, anticipation, and admiration are among the most frequently shared emotions around the web.

3.3 Tourism experience

In marketing research, experience refers to the act of participating or discerning an event. The activity produces learning opportunity, in which one acquires knowledge or skill regarding the said event. Product experience engages customers with vividness, therefore lure them into willing participant (Hoch, 2002).

Product experience consists of three elements: aesthetic, meaning, and emotional experience (Desmet & Hekkert, 2007). Aesthetic experience gives pleasantness to one's sensory, ranging from visual to physical interaction. For instance, a visually beautiful product or a merchandise that feels good to touch. An experience of meaning, on the other hand, focuses more on cognitive process that comes with interacting with certain product. Memory recall, product-image association, and semantic interpretation come into play in this level of experience. The last component, emotional experience, involves affective states which are elicited from interaction with a product. Enjoyable experience further draws customer toward the product, while negative experience does the opposite.

As the product of tourism industry, tourism experience shares the same elements. In the era of experience economy in which business strives to sell engaging experience, creating more satisfying tourism experience is pivotal.

Tourism experience arises from the tension between structured everyday life and unstructured condition of travel (Binkhorst & Dekker, 2009). This interchangeability could result in meaningful experience, which act as medium of personal development and transformation. Furthermore, Binkhorst and Dekker also argue that modern customers want "context related, authentic experience concepts" and consequently look for control with self expression activities.

Tourism experience is dynamic, which means it changes throughout the course of travel. In regard to time, it consists of "before", "during", and "after" (Ek et al., 2008). Before the travel, tourists anticipate and plan. During the travel, tourists engage in participation and enactment. Considering the elements of experience, all three components from aesthetic, meaning, and emotional possibly heighten during this stage. Subsequently, after the travel, tourists narrate the experience based on their point of view and memory. Additionally, they will also exhibit memorabilia from the trip. The cycle could also provide subjective insight and information to start a different cycle from another tourist.

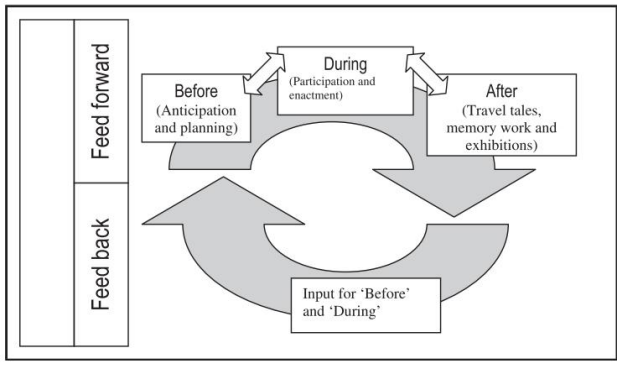

Figure 2. Performance and Experience Cycle (Ek et al., 2008, p. 127)

To conclude, tourism experience is a dynamic process that changes throughout the time spent on traveling. It is multi-faceted and constructed of aesthetic, meaning, and emotional layers. Modern tourists demand that tourism experience is contextual and authentic enough, so they can express themselves narratively to inspire other tourists.

3.4 The use of social media in tourism

Social media can be defined in a lot of ways, alluding to each of its characteristic and use. Xiang and Gretzel (2009, p.179) describes social media as "Internet-based applications that carry consumer-generated content". Often times, the contents are inspired by users' experience, and shared online to influence like-minded consumers (Blackshaw, 2006). While sharing behavior has yet been proven to have direct influence on tourist visit, it might help building destination branding, impact tourists' perceptions, and increase website revisit intention (Xiang & Gretzel, 2010). Moreover, it also encourages tourism knowledge creation and education (Chalkiti & Sigala, 2008).

The ubiquity of social media provides an abundance of information, which is used throughout traveling process. Fotis, Buhalis, and Rossides (2011) found that social media has been used since before travel, during, and after the journey. Before the travel, users rely on Internet for travel planning because they seek out reference from other travelers. The majority uses online reviews to be inspired, lessen alternatives, and finally confirm their choice (Gretzel, Yoo, & Purifoy, 2007). During the trip, social media is used for mostly non-holiday related activities like connecting with friends (Fotis, Buhalis, Rossides, 2011, Germann Molz & Paris, 2013). Online review in social media is mostly used to compare experiences, rather than making decision (Gretzel, Yoo, & Purifoy, 2007). After the travel, tourists who went through the roller-coaster of emotions, seek to share their experiences. Affective states such as satisfaction, pleasure, and sadness lead people to spread their personal story (Litvin, Goldsmith, & Pan, 2008). These activities overlaps with tourism experience cycle, in which the use of social media after the trip could trigger another cycle of different individual.

Sharing behavior has proven highly impactful. Customers who are exposed to recommendations tend to follow the recommendations and select the same choice twice more than those who did not receive recommendations (Senecal and Nantel, 2004). It is because shared contents are perceived as more "credible and authentic" (Kardes, Cline, & Cronley, 2011, p. 317). Naturally, people believe that person in their personal network would not deceive or lead them into bad experience, thus make shared content more believable (Gass & Seiter, 2011).

The arguments are supported by Fotis, Buhalis, and Rossides (2011), who found that one's personal networks such as friends and relatives are seen as the most credible source of information. This findings rebut previous study (e.g. Cox et al., 2009) which said that official source like tourism website is more trustworthy. On the other hand, it confirms similar study (e.g. Bieger & Laesser, 2004) that emphasizes on the important role of friends and relatives to satisfy one's informational needs.

The use of social media in tourism has evolved to the point where it is inseparable. Such activity gives birth to a new generation of "flashpackers" (Paris, 2012), where travelers continuously engage in technological communication during their travels. The new age tourists create *virtual mooring* with their social media platforms, which allow them to maintain connection with their home culture. They also develop a way to interact with the online travelers community through *following* features, sharing certain intimacy with one another. Furthermore, information flows between experienced and new

travelers are encouraged through *collaborating*. However, they also run the risk of being *disconnected* from physical and virtual environment due to various reasons, for example power outage and limited Internet connection (Germann Molz & Paris, 2013).

In conclusion, social media is used throughout the travel process for numerous reasons. Before the travel, it is used for planning. During the travel, it is used to connect. Meanwhile, after the travel, social media is used to share the experience. Friends and relatives are considered the most trustworthy content creator, therefore it is more essential to encourage personal sharing behavior rather than mass sharing throughout the whole social media network. Additionally, tourists in this digital era possess certain quality such as virtually anchored to their home, develop community by following each other at social media platforms, and collaborate. Nevertheless, once they are disconnected, their social media use will be put to halt.

3.5 Users' intention to share

Although there is lack of research of users' intention to share in tourism marketing domain, the notion is already discussed by several Management scholars. Intention to share is mainly explored with regard to knowledge sharing behavior. Previously, it was mentioned that tourism sharing could encourage tourism knowledge creation and education. As one's experience could be another's knowledge, users' intention to share will be defined using knowledge sharing behavior framework.

Intention to share is often described through the frameworks of Theory of Reasoned Action and Theory of Planned Behaviors. Sharing behavior is defined as "a set of behaviors that aid the exchange of acquired knowledge" (Chow & Chan, 2008, p.458). Theory of Reasoned Action argues that behavioral intention is driven by an individual's attitude and subjective norms. The theory was later extended and evolve to Theory of Planned Behavior, adding another driving variable: behavioral control (Ajzen, 2002).

Through the two theories, scholars found several factors that influence sharing behavior. Normative beliefs, including subjective and descriptive norms, is revealed to have a strong impact on one's intention to share in his online community. Furthermore, although one's "significant others" give the strongest influence, the power of online community at large could not be undermined. Descriptive norms or perceived behavior of others, apparently have the power to increase impact of the whole normative beliefs. Perceived behavioral controls, which is constructed of self-efficacy and controllability, also known to drive one's intention to share. Among the two controls, self-efficacy is more prominent, which means that the individual's confidence in his ability strongly influence his sharing intention. On the other hand, controllability, as well as attitude are not able to predict one's intention to share (Alajmi, 2012).

Complementing the research, Chow and Chan (2008) measures three additional social factors that could influence sharing behavior. They highlight the role of social capital, the network of relationships between individuals that encourages interaction between people, corporation, and groups. It is then revealed that social network and shared goals contribute to one's intention to share, while social trust do not. Common interests bond people together, which in turn, increase one's sharing behavior.

Regarding motivation, scholars have highlighted typical driving forces behind one's intention to share. Among other motivations, altruistic and community-related are two of the most prominent reason. Tourists mainly want to help others in their network, and cite that they do not want people to have the same bad experience. Interestingly, only small part of tourists share to gain social recognition. Thus, personal exposure is of little to no importance to most travelers (Munar & Jacobsen, 2014). Similarly, another study found that altruistic behavior is the most prevalent motivation, although it does not necessarily contribute to the quality of content. Quality, on the other hand, might be increased by shared sense of belonging and other common features like same language use. Social-related motivation plays major part in sharing behavior, while individual motivation plays the opposite. Among the motivations, identification and reciprocity both have positive impact toward one's intention to share. This means, individuals tend to share if they see themselves in relation to groups, also if they feel to return others' favors (Chang & Chuang, 2011).

To summarize, users' intention to share could be understood based on their pre-existing beliefs, attitude, and behavioral intention. Normative beliefs are found to be more impactful to influence sharing behavior, proving that users share with regard to their personal networks. Common features within the people in one's network increase their sharing behavior. Furthermore, sharing behavior is mainly driven by community-related motivation. Users still tend to share despite receiving little to no personal gain.

3.6 Digital content in tourism

Digital content can be understood as any informational product in the form of digital data. Some scholars have described it in various ways, like "electronic information products", "information goods" and even "virtual products" (Koiso-Kanttila, 2004). Additionally, Strader and Shaw (1999) highlight the importance of distribution of content through electronic channels. In e-commerce practice, distribution means transfer of digitized products like electronic books, software, and others, through Internet. Likewise, non-commercial products also involve distribution via Internet, in the context of presenting the content to target audience.

Digital information is the main element of digital content. The message is digitally codified in form of web pages and electronic files, allowing audience to stream, download, or enjoy it through their devices. The information in digital content is connected to each other in a network. Thus, the source is not limited to one producer, flexible, and can be distributed separately in small bits (Mulhern, 2009).

Inferring from previous studies, Rowley (2008) derives nine characteristics of digital content:

1. Contextual: The value of digital content depends on how users make sense of the information. It is also fluid, which means the value can change over time.

2. Repoducibility and multiplicability: Digital content can easily be reproduced and multiply through sharing. Therefore, the usefulness is not lost but transformed as information circulates around users' personal network.

3. Interactivity: Information can be exchanged and thus, acquired from different person. It can also be integrated with each other to make plans, advise on actions, or even create other information.

4. Repackageability: Because digital content can be reproduced, it later comes with different packaging. Rowley (2008) gives example of e-newspaper, which is only the different "packaging" of traditional newspaper.

5. Delivery and technology: Contents can be delivered in various ways, for example through desktop sites or mobile sites.

6. Perishability: Digital content lasts even though the medium may not. Because of its repackageability, digital content has prolonged lifecycles.

7. Homogenity: The copy of information can be homogenous to each other, and of course, to the original content.

8. Inseparability: Digital content can be produced, stored, and transported seamlessly.

9. Tangibility: Information is the core product of digital content. As such, digital content is mostly intangible. Only when it is repackaged into tangible medium like DVD or Flash Disk, it turns into tangible product.

Digital content comprises of multiple media, ranging from text, image, audio, video, and other modalities. Drawing from statistics about contents circulating on the Internet, digital content could be categorized as follows:

1. Text: Textual information includes narrating story through articles, blogs, and news content. Information is conveyed through the use of words and sentences. The average words of a textual content on the Internet is 2000 words (Patel, 2012). A content should has at least 500 words with relevant keywords, if it wants to perform well in search engines (Lyons, 2015). However, Patel found that the best content has around 1500 words, because it tend to generate more "likes" and "shares" in social media.

2. Visual: Visual information refer to messages that appeals to one's sight. It comprises of various image-based messages such as still photography, digital poster, infographics, and other related forms. It is believed that visual media is pivotal to convey the right brand story (Mawhinney, 2016). When the image is relevant to the content, it can increase the users' attention. On the other hand, users do not pay much attention to decorative images, even when they are visually attractive. Furthermore, audience generally has preference for images of real people, product details, and large-sized pictures (Nielsen, 2010).

3. Audio: Audio information implies to auditory messages such as podcasts, recorded music, audio interviews, audio commentary, and similar others. In the heyday of radio, auditory media is considered more intimate, personal, and can incite imaginations without relying on eye-sight (Verma, 2012). However, nowadays, audio is not much favored by content marketers and they are not likely to increase the use of auditory information in their content (Gerard, 2016).

4. Audio-visual: Audio-visual information combines two types of media together, creating a whole new media such as videos, movies, and related contents. As the easiness of producing audio-visual media increases, so does the use of video in content marketing. Video is named as the best content with best Return of Investment (ROI) index by marketing professionals worldwide. It is also able to attract more users' attention, and could possibly increase purchase. Some of the examples that generate better ROI index are: *instructional videos, product demonstration videos, explainer videos, interview with expers,* as well as *conference and presentation video* (Lloyd, 2015).

In conclusion, digital content is any information products that is circulating online. Nine features characterize digital contents, and determines whether an online information is considered digital content or not. From the large variety of contents on the Internet, four categories can be derived: textual, visual, audio, and audio-visual.

4. DISCUSSION AND CONCLUSION

This paper was purposely made to see how can emotions be inserted into digital content to raise users's intention to share, in the context of tourism marketing. Furthermore, this research attempts to find which types of emotions to encourage such intention, and how can it be imbued in various digital content. Additonally, it reviews the possibility of tourism experience as mediator between emotions and users' intention to share. By conducting literature review, this paper is aimed to extend prior research and develop a theoretical framework surrounding the use of emotions in digital tourism marketing.

From the review, it was mentioned that positive emotions are typically shared among social media users. It can be inferred that social media users are especially drawn and attracted to these types of emotions. Therefore, it seems that positive emotions have better chance at influencing users' intention to share, compared to negative emotion. Positive emotions involve both primary and secondary emotions, which are serenity, joy, ecstasy, acceptance, trust, admiration, apprehension, surprise, amazement, and interest, and anticipation. Moreover, surprise, anticipation, and admiration possess the highest potential among all the aforementioned emotions.

As the byproduct of tourism industry, tourism experience is comprised of aesthetic, meaning, and emotional layers. Which means, tourism experience and emotions are inextricably related and can possibly influence each other. Furthermore, because tourism experience influences travelers before, during, and after travel, it has the potential to be regarded as mediator variable. As the mediator, tourism experience can be influenced by emotions, and in turns, affect users' sharing intention. Travelers have expressed their desire for a contextual and authentic tourism experience, which they could use as an inspiration to share their travel story. This confirms the subsequent research questions, that tourism experience could possibly mediate the relationship between emotions and users' intention to share.

The use of social media varies throughout the traveling period. From the literature review, it was revealed that different process requires different functionality of social media. Nonetheless, social media must be able to be used for planning, connecting, and sharing their experience. As positive emotions are universal thing that can be felt by anyone, digital marketers can capitalize on people's desire to connect by emphasizing this in their content. Moreover, it was previously mentioned that people have certain sense of belonging to their home and their community. Marketers could use certain positive emotions, such as serenity, joy, trust, and combine them altogether to convey this sense of belonging to users. By capitalizing on users' behavioral pattern when using social media, marketers could influence a particular behavior, such as sharing intention.

When exploring people's intention to share, it was revealed that some factors tend to affect this intent. Although pre-existing beliefs, attitude, and behavioral intention have the possibility to influence users' sharing intention, normative beliefs are found to have the highest possibility. It means, individuals are likely to share due to, or to impact the opinion of people in their personal network. This confirms social validation principle, which says that people are more likely to do certain behavior if they see others are doing the same action (Kardes, Cline, & Cronley, 2011). Marketers could take advantage of this tendency by implying that other users have shared the digital content too. As personal benefit is not really important for most social media users, it is possible that contents which appeal to users' self-concept or self-image, will

not generate as much share as the one with social validation principle.

In this era, digital contents are varied throughout the Internet. Nevertheless, four categories largely comprise all the format that circulates online, which are: textual, visual, audio, and audio-visual. Borrowing characteristics of emotioal framing in messages, emotions could be incorporated in textual contents by using subjective, emotional terms as oppose to objective, straightforward terms filled with facts and figures (Albers-Miller & Royne Stafford, 1999; Claeys & Clauberghe, 2014). Likewise, subjective and emotional terms could also be used to narrate audio content. Additionally, music has proved its ability to stir audience's emotions. In some cases, music that correlates with the content could increase liking and even become memory aid that facilitates recall toward content (Morris & Boone, 1998, Gass & Seiter, 2011). Gass and Seiter highlight the persuasiveness of images that can arouse people's interest and attention. Emotions could be captured in images by using human models, who convey positive emotions such as joy, serenity, trust, and others through facial expression. In audio-visual content, emotions could be emphasized by showing interaction of models in the destination. It could also serve as simulation heuristic (Kardes, Cline, & Cronley, 2011), whereby audience can imagine themselves being in the target destination and experience the same positivity as the models in content. Thus, increase the possibilty of sharing behavior. Moreover, interaction between models in digital content could trigger the sense of belonging in audience.

Research has shown that users prefer visual content, compared to textual content (Munar & Jacobsen, 2014). However, it is best to combine the best features of each type of media to create the best content. That way, one can complement and maximize the potential of each media, and thus, creating a rich content which can attract, engage, and influence audience.

In conclusion, positive emotions could possibly increase users' intention to share. When studying the use of emotion in tourism context, tourism experience must be considered as the mediator to further explain the relationship. Emotions could be incorporated to digital contents through the use of subjective words, human models portraying specific facial expression, music, and combination of it all. At last, when designing a digital content in tourism marketing, digital marketers have to capitalize on users' motivation to share, which is largely due to their normative beliefs. Only by combining all the aforementioned elements, marketers can increase the possibility of sharing behavior.

From the relatively comprehensive review, a theoretical framework can be constructed as follows:

5. LIMITATIONS AND FURTHER RESEARCH

As a literature review, this research's limitation mainly come from its methodology. This paper was not meant to be a detailed, comprehensive review concerning the use of emotions in digital content. Instead, it was designed to address the missing links in the studies of emotions in digital content, tourism experience, and users' intention to share. This study may fail to review all the literature available in this context. Thus, a more extensive review could be conducted to provide a more in-depth knowledge surrounding this field. Additionally, scholars are also encouraged to research the interplay of other stimulus to increase sharing intention and sharing behavior.

Since the focus of this review was to extend prior research, it may not be critical enough to assess the strength and weakness of each literature. Therefore, further researcher who wants to study this area is encouraged to critically examine each literature, and discriminate between the outdated ideas.

Furthermore, this study is also limited on the empirical result. Although this research presents a model, it is limited to a theoretical one. No study was ever conducted on the use of emotions in digital content which can increase tourism experience, and in turn, drive sharing intention. Given the practicality of this topic, an experimental research is much needed to test the model.

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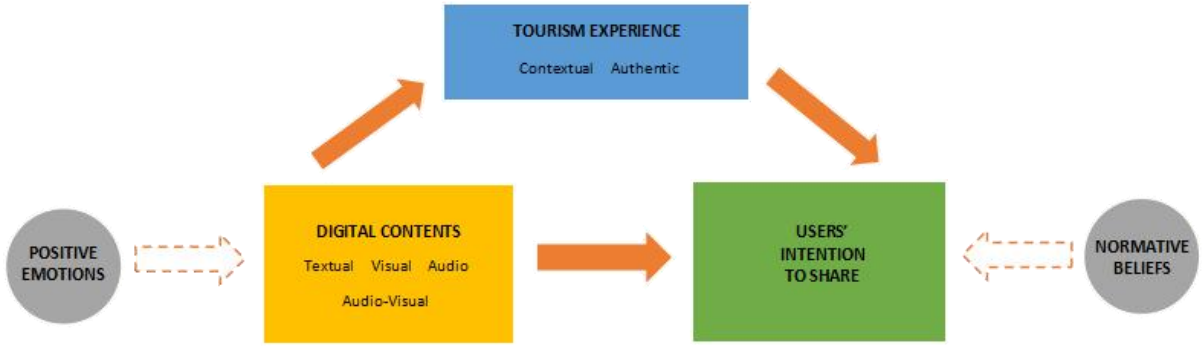

Figure 3. Theoretical model of "The use of emotions in creating digital tourism experience to increase social media sharing"

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The personalization-privacy trade-off: how will it change in the future?

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ABSTRACT
It is hot topic: the trade-off between personalization and privacy. It is even called a paradox: do people prefer the benefits of personalization like convenience or do people value their privacy more? This study will review the current literature on personalization and privacy concerns. People like it to get personalized services and will give some personal information for it, but people start to see the negative consequences of paying with personal information. The Internet of Things will connect people more and more to databases and so people will pay more personal information in the future. On the other hand, services can be more and more tailored to specific individuals. Will there be a moment in time when people realize that they do not want companies to know that much about them? Or do people choose the benefits of personalization no matter how much personal information they have to give in exchange? The rapidly developing environment causes changing perceptions on the personalization-privacy tradeoff.

Keywords
Online Privacy, Personalization, Personalization-Privacy Tradeoff, Internet of Things,

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: Why this topic?

For me, as a future marketer, it is very interesting to know what people think about the tradeoff between privacy and convenience. As a marketer, you want to fulfill the needs of your customers, but you do not want them to feel irritated or annoyed by you. In the future, will people prefer privacy or personalization?

1. INTRODUCTION

1.1 Situation & complication

A few years ago it was world news: the American retailer Target knew earlier about the pregnancy of a teenager than her father. Target used big data to give each customer a 'pregnancy prediction score'. If a customer scored high enough, Target send discount vouchers for baby products. Many people were wondering: how does Target find out when people are pregnant? This is just one of the many examples where the questions raised again: privacy or convenience? Is their demand for on-demand?

For me, as a future marketer, it is very interesting to know what people think about the tradeoff between privacy and convenience. As a marketer you want to fulfill the needs of your customers, but you do not want them to feel irritated or annoyed by you.

"Balancing Privacy and Personalization: The Challenge Of Marketing For Micro-Moments" ("Balancing Privacy and Personalization", 2015) headlined Forbes not even one year ago. This headliner says actually enough. Nowadays, more and more companies start gathering data of their customers. There is more and more data available, because people are more and more connected to the internet, for example with smartphones and smartwatches. This clarifies that the tradeoff between privacy and convenience is not only hot-topic at the customer-side, but also at the marketer-side. This is reinforced by the Marketing Science Institute, which says that this is one of the research priorities for the coming three years. This clarifies that it is a gap in the current literature.

1.2 Definitions

Personalization in this paper will be defined as "the ability to proactively tailor products and product purchasing experiences to tastes of individual consumers based upon their personal and preference information" (Chellappa & Sin, 2005, p. 181).

Privacy, or rather *online* privacy, will be defined as the control over the flow of one's personal information, including the transfer and exchange of that information." (Shin, 2010, p. 430)

1.3 Research problem & research goal

Some researchers found that teenagers are ok with the so called 'data for service agreement', just because they are used to it (Katell, et al., 2016). This might be because they are willing to pay the price of privacy for 'free' online services, or they are not aware of the risks of sharing their private data with companies. This last thought is reinforced by the fact that other researchers said already in 2007 that the concerns about online privacy are rising, as many people realize that their personal data is being collected without their knowledge and agreement (Joinson, 2007). As the concerns about privacy were already rising nine years ago, why are people now ok with the data for service agreement? Are people unlimited ok with this agreement or will there be one point in time where people stop sharing their personal data in exchange for personalized products and services? This paper will be a critical literature review which summarizes the current literature on the tradeoff between privacy concerns and the benefits of personalization. Furthermore, it will try to look in the future and outline how this paradox might develop. In that way, there can be drawn a useful advice for future research around the topic.

The goal of this paper is to describe the personalization-privacy tradeoff and predict how this tradeoff will develop in the future. Additionally, this paper will identify gaps in the current literature and will give issues for further research.

1.4 Research questions

To fulfill the goal of this study, the general research question of the paper is:

What is the personalization-privacy tradeoff nowadays and how will the personalization-privacy tradeoff develop in the future?

To answer this general research question, we need to answer the following sub-questions:

1. What is online personalization?

2. What are the privacy concerns of consumer regarding online personalization?

3. How does the personalization-privacy look like nowadays?

4. How will the personalization-privacy tradeoff develop in the future?

1.5 Relevance

1.5.1 Academic relevance

This paper will be relevant for the academic world, as it will give a clear overview of the knowledge of the tradeoff between privacy concerns and the benefits of personalization. As the topic is rapidly changing, it is important for researchers to know what can be concluded from previous research. Besides that, this study tries to predict how this tradeoff will develop in the future. Furthermore, the gaps in the literature will be identified. The issues for further research can be seen as research topics for new studies.

1.5.2 Practical relevance

This paper will be relevant for marketers, since it is interesting for them to know how customers think about the data-for-service agreement. By reviewing the current literature about this topic, marketers will get an adequate overview. Additionally, authorities can learn about the opinion of the society. Most of the laws were made in a time that privacy had a total different definition. Authorities can see where the laws are contradicting with the opinions of inhabitants. The prediction for the future can be seen as an advice for consumers but also for governments.

1.6 Outline

The rest of this paper is organized as follows:

Related literature is reviewed in the following section. There will be separate sub-sections used for personalization, privacy and the tradeoff between those.

In the third section, we will describe the methodology used and will talk about inclusion and exclusion criteria. Furthermore, it will be described how the literature for this study was collected.

In the fourth section we will answer the sub-questions of this study. Besides that, we will conclude the study by answering the general research question and we will discuss the outcomes of the study. conclude the study and discuss the outcomes. Furthermore, the implications of this study for the academic world and practice will be outlined.

In the final section, we will describe the limitations of the study and give advice for future research in the tradeoff between online privacy concerns and the benefits of personalization.

2. METHODOLOGY

The paper will be a critical literature review according to the guidelines of 'How to Write a Literature Review' as proposed by Emerald Group Publishing. In this study, secondary data is used to in the form of journals and scientific articles. Academic articles and conference reports will be analyzed to get a reliable and complete overview of the existing knowledge regarding the tradeoff between privacy and convenience. To find suitable articles for this critical literature review, well-known online databases like Google Scholar, Web of Science and Scopus are used. To check the relevance of the paper, the number of citations and the year the article or conference report is being published will be taken into account. To find suitable articles, keywords like 'privacy', 'personalization', 'tradeoff', 'internet of things' are used. Besides that, the snowball technique is used to find more appropriate articles. Snowballing can be described as finding more appropriate articles by looking at the references of other appropriate articles.

3. LITERATURE REVIEW

3.1 Personalization

As earlier defined, personalization is about tailoring products or services to individual consumers based on their personal information (Chellappa & Sin, 2005). Personalization should not be confused with customization. Personalization requires mostly work from the marketer to identify and meet needs (Montgomerny & Smith, 2009), while speaking of customization the consumer specifies elements of his preferred marketing mix (Arora et al, 2008)

Personalization is widely researched in the past. Every online consumer is getting personalized search results, advertisements, etc. But those consumers not always know that those are personalized. Nowadays, a computer can be described as a kind of one-way mirror that reflects your own interests while algorithmic observers watch what you click (Pariser, 2011).

Pariser (2011) describes the increasing online personalization as a filter bubble. By using services as Google and Facebook people are getting to see more and more personalized content. As within your personal bubble the information is filtered that much, serendipity disappears. This is seen as a negative social effect, as it decreases making accidental discoveries. As a consequence, innovativeness decreases and people tend to create a worldview that is not realistic. As a solution he suggests that people should know about the created filters and should have the ability to change them (Praiser, 2011).

Personalization is dependent on two factors: (1) business abilities to acquire and process consumer information and (2) consumer willingness to share information and use personalized services (Chellappa & Sin, 2005). Kramer et al. (2007) suggests that personalization consists of (1) measurement of message recipients' preferences and (2) incorporation of these preferences into messages. Furthermore, it was found that there can occur errors when the preferences of the consumers are wrong determined. While Chellappa and Sin (2005) focus as well on the consumer's willingness, while Kramer et al. (2007) focuses only on the company side.

Previous research argued that actual personalization and perceived personalization are two distinct constructs and that they should be treated separately (Li, 2016). It was found that the meant effects of personalization occur when people think that a message is personalized. It does not matter if it was actually personalized or not (Li, 2016).

Furthermore, there is a distinction made between personalized service and personalized advertising. Personalized service is perceived as much more beneficial than personalized advertising (Awad & Krishnan, 2006).

3.2 Privacy concerns

Almost 20 years ago, researchers found already that online privacy concerns have a big impact on e-commerce purchases. If consumers feel totally private online, they would spend much more money (Greene, 1997). Thus, it is in the interest of companies as well that consumers feel private on their websites. This can for example be done through offering consumers individual control over their privacy setting. Prior research found that this reduces the privacy concerns of consumers (Tucker, 2012).

Privacy concerns influences the intention to use personalization services negatively (Chellappa & Sin, 2015). So if consumers are really concerned about their privacy, it is less likely that they are willing to share personal information and use personalization services.

Privacy concerns about sharing personal information can be split-up in three different kinds of personal information. Consumers are not only concerned about their personally identifiable information. Prior research found that consumers are also concerned about their anonymous and personally unidentifiable information (Chellappa & Sin, 2015).

The privacy concerns of consumers are no nonsense. Recent studies showed that by analyzing only a person's 'likes' on Facebook, it is possible to know a lot of information about a person like political views, sexual orientation, location and even the extent to which a person is happy (Kosinski et al., 2013). This does not say anything about Facebook's usage of this information, but the concerns are understandable. Companies like Facebook can alter the advertisements and things like newsfeeds and search results on this and increase 'the filter bubble'. Many people do not realize that such kind of personal information is gathered out of their likes and possibly do not want companies to know that kind of information.

3.3 The tradeoff nowadays

As earlier mentioned, businesses need consumers' willingness to share information. Previous research found that consumers are to a certain extent willing to share personal information for benefits such as discounts and personalized offers (Lee & Rha, 2016; Chellappa & Sin, 2015). But consumers do not want share a lot of personal information. They rather share as less personal information as possible, because of the privacy risks (Sheng et al, 2008; Culnan & Bies, 2003.). It seems like people are accepting their loss of privacy when using online services, as a lot of people are more and more using those services. For example, many people around the world are using the free-service messaging application WhatsApp. The acquisition of WhatsApp by Facebook cost the company 19 billion dollars. Facebook is not paying this huge amount of money for the software, but for the data of the users. This reinforces the idea that the value of data nowadays is huge, as people do not pay for using WhatsApp.

It was found that the privacy paradox is "the dual-calculus model" as is actually consists of two tradeoffs. The first tradeoff of is the 'privacy calculus', which is the trade-off between expected benefits and privacy risks. The second tradeoff is the 'risk calculus', which is the trade-off between privacy risks and efficacy of coping mechanisms (Li, 2012).

3.4 The tradeoff in the future

The emergence of smartphones made it possible for companies to offer more personalized content, as smartphones are capable of gathering personal information more closely (Sutanto et al., 2013). This does not end with smartphones. The internet of things increases those possibilities of easily gathering data more and more. Just as smartphones, watches, cars and houses are increasingly connected to the internet.

The upcoming Internet of Things will increase the privacy concerns of people. Ziegeldorf et al. (2014) developed seven threats of the Internet of Things. Identification, localization & tracking and profiling are the biggest privacy threats of the Internet of Things. On the other hand, those 'threats' also make it easier to personalize services and products even more. The convenience or the benefits of personalization increase with the emerging Internet of Things as well.

Identification is about the threat that companies can associate a identifier like a name or an address with an individual and that specific individual's personal data (Ziegeldorf et al, 2014).

Localization and tracking is "the threat of determining and recording a person's location through time and space. Tracking requires identification of some kind to bind continuos localizations to one individual." (Ziegeldorf et al, 2014, p. 7).

Profiling is the threat of gathering information about individuals and putting those in dossiers in order to infer interests. This is mainly used in e-commerce for optimization, personalization, etc. Negative examples can be price discrimination or selling profiles (Ziegeldorf et al. 2014).

Those three threats are rising more and more. People tend to be more and more online through Internet of Things devices like smartwatches, activity trackers, etc. The Internet of Things is more and more in associated with privacy in research, but also in the daily news (Weber, 2010). When you see the amount of news articles and television shows focused on online privacy, it looks like people more and more understand how many personal information they give away in exchange for convenience or other benefits of personalization.

Furthermore, people that start their lives nowadays start their online lives very early. Some of them are already online before they are born, through material shared by family and friends (Garcia-Rivadulla, 2016). It is assumable that young people are less aware of the online privacy risks and more easily choose for personalization instead of privacy. It highlights also another important point: even if you choose to share as less information for yourself as possible; other people or even organizations can share information of you. On the other hand, it might be that those young people also get more educated about the online privacy.

In the future, privacy will be much more difficult to protect, as the number of 'free' internet services increases, the use of mobile devices increases and the Internet of Things develops (Landau, 2016). Prior research predicts that privacy will always be about economics. As long as the Internet model remains 'free', it will be unlikely that companies will stop gathering our data (Landau, 2016). Regulations are the only way companies can stop using our personal information. But the current regulations are based on the assumption that consumers are expected to negotiate for privacy by reading privacy policies and being selective in choosing services. The laws do not have the time to catch up with the fast changing online developments (Garcia-Rivadulla, 2016).

4. CONCLUSION & DISCUSSION

Online privacy is about tailoring products, services and advertisements to specific consumers based on their personal information. Personalization has positive benefits as convenience, but also has negative effects as the filter bubble. The filter bubble, as the filtered online world of consumers is called by Pariser (2011), has effects people do not realize totally yet.

Privacy concerns influence the intention to use personalized products, services and advertisements. Privacy is one of the fundamental human rights. Privacy in the online world is much less than in the real world, and people began to understand the consequences of losing privacy.

Nowadays, people just begin to understand the tradeoff between personalization and privacy. Because online privacy scandals are more and more in the news, people see more of the bad consequences.

In the future, gathering data will be much easier as we spend more and more online and are connected with more and more devices to the online world. The Internet of Things makes it possible that smart homes are connected to databases, all of our information is saved in the cloud and databases know constantly where we are.

It is in the interest of governments, companies and consumers that all consumers are satisfied with the amount or type of personal information consumers have to exchange for personalization. To give consumers a well-reasoned decision on the trade-off between personalization/convenience and privacy the governments and companies have certain responsibilities. At the moment, many people are not aware of the risks. Governments should help people in understanding the risks of using personalized services and products. Companies should take their responsibility and inform people about the information gathering of consumers. In that way, people can make their own choice: more privacy of more personalization.

The personalization-privacy trade-off will be more difficult for consumers in the future as they have to give away more personal information, but can get on the other hand more personalized products, services and advertisements in return. The trade-off can be made easier by rules and regulations.

5. LIMITATIONS & FURTHER RESEARCH

First of all, due to a time constraint it was not possible to review all relevant literature. This study would be better if there was more time available and more relevant literature could be reviewed. Secondly, the online environment is rapidly changing and thus the trade-off is constantly changing. The used literature is carefully analyzed, but could be partly outdated. Lastly, the perceptions on the trade-off might be influenced by various cultures and this is not analyzed in this study.

For future research, it is interesting to see how the new interest of things devices in the future will change the personalization-privacy trade-off. As people and things get more and more connected, the trade-off changes. Furthermore, it is interesting to follow how rules and regulations around privacy will develop. Those rules and regulations probably change in the coming years and this has an impact on the personalization-privacy trade-off.

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Digital Distraction: A Case Study

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ABSTRACT
This critical literature review builds on the research priorities report (2016-2018) of the Marketing Science Institute. A key theme in the report is to keep making sense of changing decisions process(es). In this topic, digital distraction through digital media usage and its impact on involvement was analyzed for this critical literature review. First two case studies were performed in the domains of students (in-classroom use of digital media) and information workers (digital distraction in the workplace). From the case studies the trends multitasking and interruptions emerged, the impact of these trends on decision making was then analyzed, from which conclusions were drawn. Finally, possible future research into surprising findings was raised.

Keywords
Digital distraction, decision making, information overload, information worker, students, interruptions, multitasking.

MSI Topic nr.3: Making sense of changing decision process(es).

The author's view: Why this topic?

Digital interruption is a constant factor young participants of modern societies have to deal with. In my opinion one needs clear rules cut out for themselves to live a mindful life in the digital age, it was interesting to see what researchers have put forward on the subject.

1. INTRODUCTION

Every two years the Marketing Science Institute (MSI) ask their trustees to provide them with input concerning research priorities in marketing. These research priorities enable the MSI to pursue their most critical mission: moving their scope onto important marketing problems. In their Research Priorities of 2016 the MSI have defined five different major research priorities (Marketing Science Institute, 2016):

1. Quantitative models to understand causality, levers, and influence in a complex world;
2. Delivering integrated, real-time, relevant experiences in context;
3. Making sense of changing decisions process(es);
4. New data, new methods, and new skills – how to bring it all together?
5. Innovation, design, and strategy in an age of disruption.

For this review a subtopic in the third research topic was chosen. The topics asks the question on how fragmentation of attention and digital distraction are influencing motivation, involvement, and decision making? This topic is particularly interesting to me as it pertains to behavioral sciences. Issues arising from digital distraction and/or fragmentation of attention can be examined in different contexts: from business-to-business decision making, consumer decision making, dynamic decision processes in service environments, to simple habitual decisions in consumer/shopper environments. In the fast-changing digital world, it is important for organizations to keep track of where their audiences are, and how they are using media. In the past organizations presented their content through top-down media like newspapers, radio, television. These media provided for the user to concentrate on one medium at a time, now with the advent of the internet and social media people can choose where to consume their content. Therefore, it is important to keep making sense of the decisions processes of different audiences.

The goal of this review is to gain insight in how users of digital technologies lose involvement due to digital distraction. A form of digital distraction is digital overload. Digital overload occurs when the amount of input to a system exceeds its processing capacity (Milford & Perry, 1977). Users of the devices are bombarded with messages and alerts, even if a user wants to focus they are tempted to procrastinate, and the possibilities to do so is only a click away (Rosen & Samuel, 2015). Due to the fact that most scientific inquiries on digital distraction have mostly been performed in the contexts of students and information workers, these two groups will first be presented as cases. As a result, key concepts will appear, which will be applied in a marketing context.

2. DIGITAL DISTRACTION IN DIFFERENT CONTEXTS

The first two subsections of this chapter contain background information to digital distraction in two disciplines: students and information workers. Then key concepts are derived from the cases, leading to an examination on how they affect involvement in a marketing context.

2.1 Digital distraction and students

The lives we live during the Information Age are inherently tied to the use of digital devices, so too are students who are the newest member of our society making use of digital devises, therefore it can be argued they are impacted by digital distraction the most. The Information age is defined as the period after the Industrial Age, which was characterized by the Industrial Revolution. Economies are not based anymore on industrialization, rather they are based on information computerization (Castells, 1999). The Information Age is characterized by the Digital Revolution, which can be defined as the advancement of technology by humanity from analog electronic and mechanical devices to the digital technologies available today. The Information Age started around the 1980's and is still ongoing (Collins & Halverson, 2009). In an article by Reed (2016) she states that College students spend more class time playing with their smartphones and other digital devices than ever. In a recent study, by the University of Nebraska-Lincoln, a survey was performed on 675 students their digital devices usage, in order to find out their in-class usage. They found that students check their phones and other digital devices in class more than eleven times a day on average (McCoy, Bernard, 2016). In the study, students estimated that they spent twenty percent of their time in class using digital devices for activities unrelated to class. The study by McCoy in 2016 is a follow-up study from a similar one performed at the same university 2013. In 2013, eight percent of students responded that they never used their phone in class, this dropped to three percent in 2016. At the end of the survey, the students were asked whether digital devices should be banned from the classroom. The students massively opposed this notion (McCoy, Bernard, 2013). The authors highlighted the last fact as the main point of the studies, and concluded that digital devises in the classroom are here to stay. In a study by Martin-Juchat, Pierre, & Dumas (2015) they examined the emotional experience of students when faced with the dynamic of the economy's marketing techniques and its effect on attention. The study was built on other studies performed on student's groups of the University of Grenoble Alpes. In their analysis, they found that if students express a strong emotional attachment to their digital use, which is a standard and routine part of their day, in terms of social activities and generally in a continuous flow of attachment, this dependency and use could prove to be unsatisfactory, exhausting and empty (Martin-Juchat et al.). In conclusion, they argue that only students who have mastered the time spent on digital technologies can be satisfied.

As of late there are different studies which focus on students and multitasking. Multitasking refers to handling two or more tasks concurrently (Mark, Wang, & Niiya, 2014). One of those studies investigated whether college student's grade point average (GPA) show an impact when they multitasked with information technology services. As a data collection tool, a web survey was used to collect a large sample of college students (N=1839). Of these students, a large amount is using information technology services on a daily basis. Similarly, as the research by McCoy & Bernard, Junco & Cotten (2012) observed that students reported frequently searching for content not related to courses, using Facebook,

emailing, talking on their cell phones, and texting while doing schoolwork. Further hierarchical linear regression analyses revealed that using Facebook and texting while doing schoolwork were negatively associated with overall college GPA. In conclusion, they pointed out that the type and purpose of ICT use matters in terms of the educational impacts of multitasking (Junco & Cotten, 2012). Another study by Mark et al. (2014) focused on multitasking among undergraduate college students (aging 18 to 26) from a university on the west coast of the United States; the students grew up with digital media. The computer activity of the students was logged and biosensors were used to measure stress of 48 students for 7 days for all waking hours, in their in-situ environments. The authors demonstrated that college students multitask at double the frequency compared to studies of information workers. These results can help in future designs for stress management of college students.

Digital distraction in a student context is a hot topic. The amount of time students use their digital devices in class is unprecedented. The general consensus is that digital devices in the classroom are a form of distraction. Students themselves oppose the notion of banning digital devises from classrooms altogether. A French study shows that only students who master the art of using the devices can draw satisfaction from the digital technologies they use. Another study showed that in-class use of digital technologies have a negative impact on GPA's of students. Although these studies put forward negative impacts of digital technologies, there are findings which put a positive spin on things. For example, a study found that college students multitask at double the frequency compared to studies conducted on information workers. This signifies the trend that people who were born into the world with the current technological abilities have a better shot at utilizing them. For the moment, there are more negative voices to the use of digital technologies in class than positive ones, so it can be said that multitasking is lowering involvement that students show in their activities.

2.2 Digital distraction and information workers

Employees of modern organizations are required to use a computer at their job and have to make use of a work phone, often times in the form of a smartphone, these digital technologies are great for productivity, but they are also a form of distraction. When talking about employees, that can be distracted by digital media, the term knowledge worker is meant. Knowledge worker is a term that has first been coined in 1959, it defines the middle salaried class, who became the majority of workers over the machine operators, and still are today (Drucker, 1959). The definition has later been revised to information worker to better fit the modern times of the Digital Age. An Information Worker is an employee who uses information to assist in making decisions or taking actions, or a person who creates information that informs the decisions or actions of others. If we replace knowledge work with the broader definition of information work, organizations must then consider the need to concentrate their productive workforce on areas that contribute value or run the risk of a reduced competitive position (Drucker, 2002). This definition has become increasingly important since many modern organizations offer their services as a product. In his study Wagner (2015) states that the majority of the workforce in the developed world consists of workers who are confronted with computers in between them, the so-called knowledge worker, who are engaged in the production, process, or distribution of information. Wagner theorizes that knowledge workers in modern organizations are deprived (degraded) of what they need to do: producing information. He argues that the problem of digital distraction within organization is still hugely ignored, which he terms 'ignoring attentional commons'. In some organizations, small steps to decreasing digital distraction have been introduced, for example: ban of smartphones in meetings, digital warnings when people should be doing something else, or banning internal email. But these measures are only early approaches in combatting digital distraction for knowledge workers. In conclusion, he states that personal assistants can help in filtering, personalizing, and customizing information to act on. Examples of such personal assistants are Google Now, Siri (Apple), and IBM Watson. These personal assistants are likely to become very relevant for organizations in the future.

Likewise, as with students, a focus on multitasking in research on information workers exists. In their paper, González & Mark, (2004) present empirical results that people organize their work in terms of much larger and thematically connected units of work allowing them to multitask on different responsibilities at once. They tested this hypothesis on three kinds of information workers: analysts, software developers, and managers. As a result, they demonstrated that all of these types of workers experience a high level of discontinuity in the execution of their activities due to multitasking. Because of this discontinuity in the execution of their activities González & Mark (2004) highlight that the design of information technology needs to support people's continual switching between working rhythms.

In addition to research on multitasking, other studies have focused on the field of interruption on tasks performed by information workers. An interruption is an externally generated, randomly occurring, discrete event that breaks continuity of cognitive focus on a primary task (Corragio, 1989). Covey (1989) builds on this by stressing that interruptions require immediate attention and insist on action. As a result, interruptions are external factors and therefore beyond the control of the individual. In an empirical study by Mark, Voida, & Cardello (2012), email usage was cut off for five workdays for thirteen information workers in a scientific research organization on the east coast of the United States. For the experiment, the computers of the test subjects were logged and sensor-based data collection was performed though wearable heart rate monitors. After the experiment, the authors reported that their results show that without email, people multitasked less and had a longer task focus, as measured by a lower frequency of shifting between windows and a longer duration of time spent working in each computer window. Additionally, they highlighted that stress, as measured by heart rate variability, was lower without email. In addition, another similar experiment was performed in 2016. The authors argue that while email provides numerous benefits in the workplace, it is unclear how patterns of email use

might affect key workplace indicators of productivity and stress. In this study Mark, et al. (2016), tracked email usage with computer logging, biosensors and daily surveys for forty information workers in their in-situ workplace environments (research division of a large corporation) for twelve workdays. From the results the authors established that the longer daily time spent on email, the lower was perceived productivity and the higher the measured stress.

Digital distraction in an information worker context is a problem which is well known, but there are still not a lot of techniques available to counter it. It is important to address digital distraction in service environment, since information workers produce new information, they are directly responsible for the productiveness of the company. Some research points out that multitasking is lowering the productivity of information workers, and suggest better design of information technology systems. Other research focuses more on email usage. After cutting of email usage, people multitasked less and had a longer task focus, thus improving their productivity. In addition, without email usage, there was a lower stress level measured. Only when the problem of digital distraction to service companies/departments become more clear more attention will go to combatting it by investing in better information technology solutions.

2.3 Digital distraction and its impact on decision making.

Key themes picked up in the previous chapters revolve around multitasking and interruptions, but how do such factors affect decision making? In their study (Speier, Valacich, & Vessey, 2006), investigated, through two experiments, the influence of interruptions on individual decision making. They did so by an A/B testing subjects. The subject had to perform a task while working on their computer, when they finished their task the experiment was over. One group, however, was interrupted, during the experiment, by a manager requesting information of them. These interruptions were found to improve decision-making performance on simple tasks and lower performance on complex tasks. Increased interruption frequency resulted in both decreased decision accuracy and increased decision time. As a result, the findings lend credibility to the idea that interruptions induce information overload. A study on multitasking by Oulasvirta, Tamminen, Roto, & Kuorelahti (2005), investigated the seriousness and extent of fragmentation of attention due to multitasking. The experiment was conducted in a semi-naturalistic field study, measuring attention during the performance of assigned web search tasks on mobile phone, while moving through nine different but typical urban situations. The authors demonstrated the impulsive and drastically short-term nature of attention. They highlighted two revealing factors: the span of attention and the frequency of shifting. In mobile situations, continuous attention to the mobile device fragmented to bursts of just four to eight seconds from the sixteen seconds measured in the laboratory. In her book 'The Myth of Multitasking' Christine Rosen (2008) challenges the nature of multitasking by going back to the psychological roots of multitasking. She points out that multitasking is really about attention. Consequently, multitasking is more about the art of paying attention, the ability to shift our attention, and, more broadly, to exercise judgement about what objects are worthy of our attention. She argues that great people, like Isaac Newton, could do what they did by using patient attention. She makes clear, through the work of William James, who was a renowned American psychologist, that steady attention is the default condition of a mature mind, an ordinary state undone only by distress.

Now that digital technologies make it possible for consumers to consume it at any online location they like, multitasking becomes an even greater factor, so what impact does modern digital technologies have on the attention of their audiences? In his book 'The long tail, Why the future of business is selling less of more', Anderson (2006) deals with audiences fragmenting over different segments. He claims that digital technologies are leading to an explosion of variety and abundant choice in the content we consume are tending to lead us into several small groups. He highlights that when mass culture breaks apart it doesn't re-form into a different mass. Instead, it turns into millions of microcultures. On the other hand, a study by Webster & Ksiazek (2012) contradict this notion. In their paper they offer a theoretical framework for understanding fragmentation of attention and advocate for more audience-centric studies. One of the most widely observed consequences of the growth in digital media is audience fragmentation. As more offerings are delivered on broadband networks and more choices are available "on-demand," patterns of consumption become more widely distributed (Benkler, 2006). Webster & Ksiazek (2012) demonstrated that previous studies suggest audiences are fragmented in highly segmented markets, with little in common. One problem with the media-centric studies on fragmentation, that support many of these commentaries, is that they provide no direct evidence of the more relevant user- or audience-centric behaviors in question. This leaves analysts free to speculate about the relationship between niche media and audience loyalties. In their study, they examined 236 American media outlets (such as: YouTube, CBS, Facebook, Fox, NBC, etc.) and demonstrated that there are very high levels of audience overlap. The people who use any given television channel or website are disproportionately represented in the audience for most other outlets. Finally, they conclude that: First, there is growing evidence that despite an abundance of choice, media content tends to be replicated across platforms. Second, while no two people will have identical media repertoires, the chances are they will have much in common. Those points of intersection will be the most popular cultural products, assuming, of course, that popular offerings persist.

Research into the effects of multitasking and interruptions on decision making, points to a universal theme: interruptions tend to improve decision making in the short term, while at the same time, lowering performance on complex tasks. Consequently, increased interruptions can lead to decreased decision accuracy and increased decision time. In a service environment, these are factors you want to avoid and can even lead to an information overload. Traditional psychological thought point out that the normal state of mind is giving a steady attention to object(s) that deserve your attention, multitasking is unnatural for our human brains. The attention of consumers using digital technologies are getting increasingly fragmented due to the

abundance of media outlets available. There is a belief that audience groups are being fragmented into small groups, due to digital technologies. This concept probably does not hold true, since there is a lot of overlap between media outlets. Additionally, most media are being replicated between media outlets. As such, consumers might still consume what they always consumed through old-fashioned media outlets, but are now using new digital media outlets to consume them.

3. CONCLUSION

Digital distraction in a student and information worker context is a discussion that have different starting points. From the beginning of the Information Age in the 1980's research into digital distraction and information workers started. Research into in-classroom use of digital media started around the start of the 2010's when smartphones were introduced with ever expanding digital capabilities. The fields of research show comparisons. Students who use digital media in class have a lower GPA, in essence their effective output is lowered because of digital distraction. The same goes for information workers, digital distraction is depriving them of doing their core job: producing information. Here digital distraction comes in the form of their phones, email, internet, etc. In an information worker context, a lot of research has been performed on how multitasking affects factors such as work focus, productivity and stress. Studies show that multitasking leads to a discontinuity of the job to be done, mainly due to email usage. When email was cut off people multitasked less, had a longer work focus, and experienced less stress. On the other hand, studies showed that long daily exposure to email left information workers with a lowered productivity and a higher stress level. A surprising discovery was made in a comparison between students and information workers, where students showed they could multitask at two times the capacity of information workers.

Because of the fact that the media landscape is rapidly changing, there has only been a brief timeframe for scientists to research the impact of new digital technologies on decision making. This means that, at this moment, scientists are only seeing the tip of the iceberg for digital distraction in decision making. However, some exploratory research has already been performed on interruptions and fragmentation of attention. Interruptions in decision making tend to improve decision making in the short term, while at the same time, lowering performance on complex tasks. Consequently, increased interruptions can lead to decreased decision accuracy, increased decision time, and even information overload. Traditional psychological believes point out that the normal state of mind is giving a steady attention to object(s) that deserve your attention, multitasking is considered unnatural for our human brains. In effect, multitasking might not be such a good thing to possess in organizations. There is a belief in analytical environments that audience groups are fragmented into small groups, due to new digital technologies such new media outlets. This is probably not true, since there is a lot of overlap between media outlets and content is being replicated in between media outlets.

4. IMPLICATIONS

This literature review was performed by a single student without specific knowledge on the subject of digital distraction in decision making. Some conclusions might be biased due to scientific articles that were analyzed, which all seem to point in a certain direction. However, this may true for any critical literature review, which should reflect the opinion of the person who wrote it.

5. FURTHER RESEARCH

For organizations to be more effective in new digital environments, they should analyze media outlets per country in order to be more effective in the chosen country. The studies to media outlets in the articles above were all performed in the United States. The United State is not a perfect model country, so more research should be performed on other markets to uncover more trends and deepen scientific knowledge.

In a study, a surprising discovery was made during a comparison between students and information workers. Students showed they could multitask at two times the capacity than that of information workers. This discovery was presented in only one study, not giving much scientific credibility to the discovery. More research should be performed on this subject to better gain insight how students actually multitask better than information workers, if it is true at all.

Only when the problem of digital distraction to service companies/departments become more clear, more attention will go to combatting it, by investing in better information technology solutions. Therefore, behavioral research has to be performed on how information systems can actually improve the effectiveness of information workers.

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Balancing between the use and collection of data and privacy of the people: new technologies and old laws

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ABSTRACT
In the last few years technology is developing fast. More and more people are online and are leaving digital footprints on for instance social media. A new consumer (2.0) is born and agencies have to adapt to this. Not only do they have to adapt to this, they are finding different ways to use this new consumer for their own purposes. Provided and observed data is being collected in this big data and internet of things era and is stored, more often without the knowledge of the consumers. Agencies are even using these data nowadays for for instance marketing without, again, the knowledge of the consumer. Since this is something of the last few years, there are not any laws regarding this data collecting. New technologies, old laws. It has opened up a whole range of debate. The main challenge still remains to find a balanced approach towards the use and collection of data and the privacy from the people from whom this data is collected/used. Researchers are taking this into account, but the government and agencies are not acting upon it. It should all be again reconsidered. What are the pitfalls and how can the laws be changed to benefit the consumers but still keep in mind the good things that can happen from all these data? Further research is necessary, but action must also be undertaken on the 'other side'. New technologies, new laws, new consumers.

Keywords
Digital environment, big data, privacy concerns, social media, privacy laws, predicitive analytics, consumer 2.0

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: Why this topic?
In our daily life the online world is becoming more and more important. But what is happening with all the information that we are leaving behind? Is our privacy still as protected as they say it is? And what about the laws dealing with our privacy online? Out of this curiosity, this paper has been written.

1. INTRODUCTION

With the rise of the technology in the world right now, we are always online and easy to reach. Interactions do not only take place in the 'real world' but more often in the 'online world'. If people want to talk to someone else, they are just one text message away from each other. With the use of Social Media people can follow the daily lives of others without really knowing them or talking to them. The technology and social media are rapidly changing, one month from now people can be using different apps than now. One thing is for sure, a lot of people are using it. According to Statista (2016) the number of worldwide users of social media/social networking is expected to be 2.95 billion in 2020. Right now in 2016 this number is 2.34 billion. This means that more users will be using it in the coming years.

But what are all the users and consumers leaving behind online? Internet of things and big data are emerging. The number of devices connected to the internet is growing and huge amounts of data are being generated worldwide (Meo & Wittevrongel, 2016). Everything people do online is being collected, from their name to what pages they visit. This brings a lot of questions with it. Is this online world still as safe as it sounds? What are the current trends in privacy concerns amongst the consumer who is frequently online? What laws are there to protect the consumers and how is all this data even stored? How can this data be used? Privacy in the online world is becoming a big thing. Sheehan (2002) found that one-fourth of the consumers is highly concerned about their privacy and half of the consumers are pragmatic about it.

In this research paper the current developments in the digital world are being examined. Who are the consumers nowadays and why are these consumers, who spent a lot of time online, important for marketers and organisations etc. Later on the current trends in privacy concerns amongst the consumers who are dealing with these developments are being discussed. What are the concerns the consumers have and what are for instance the laws regarding these developments. In the end it is important to see how the relationship between the consumers and the use of these consumers (knowingly and unknowingly) by different agencies can be balanced. Is it for better or for worse?

2. METHODOLOGY

In order to identify the balance between the digital environment and the privacy concerns/laws, numerous relevant scientific articles/literature concerning the topics that are useful are being used. The method is a literature based research methodology. The literature will be selected and discussed to find the right answers.

3. DIGITAL ENVIRONMENT

"*Technology is only interesting, from a marketing perspective, when it connects people with other people more effectively"* (Ryan, 2014, pp. 4). Digital marketing is all about people and it is not really about technology. It is about the consumers and building relationships which create ultimate drive sales. The number of people on the internet are still growing. In 2016 there are now 3.424.971.237 users but this number is still increasing (Internet live stats, n.d.). This means that the potential audience is growing and so too does the allure of digital marketing.

Although, not only the number of people on the internet is growing but also the number of ways people use the online world and how this online world is connected and used. The internet of things describes this quite good. Whitmore, Agarwal and Da Xu (2015) describes the internet of things as: "a paradigm where everyday objects can be equipped with identifying, sensing, networking and processing capabilities that will allow them to communicate with one another and with other devices and services over the Internet to accomplish some objective".

3.1 Consumer 2.0

With these developments in mind, the online consumer mindset is changing because these consumers have to adapt to it. Consumer 2.0 is born (Ryan, 2014). Today's consumers are more in control. They can choose the content they want, in what way they want that content and when they want that content. The consumers are becoming better connected, better informed and better communicative. For marketers this is an evolution in the marketplace and they have to change the way the products/services are being promoted. But not only the marketplace has to adapt to the consumers, other agencies cannot stay behind.

Since the consumers are in control and have a voice online, eWOM is also becoming more important. This is the electronic version of word-of-mouth, this means that the message is made available through the internet. eWOM are the negative and positive statements made by the consumer about for instance a product or a company (Kulmala, 2011). From a marketing perspective this can be either good or bad. When the message being spread is negative, this can have a bad influence on the brand/company. However, when the message is positive, this can bring great advantages for the brand/company. Ryan (2014) calls this a double-edged sword.

3.2 Influencers

Important consumer 2.0 consumers are the 'influencers'. Influencers are, according to Ryan (2014) early adopters, they are the online opinion leaders. Influencers use the power of the web to praise the virtues of products and brands that they like, but also to denigrate those that they do not like. This means that influencers are strong in the eWOM mentioned before. People listen to what they have to say and value their opinion. Influencers use blogs, forums, social networks, social media, video's etc. to spread their opinions.

For organisations it is important to identify the influencers within the marketing sector they are active in. When analyzing their behaviour and targeting the right influentials, this can have great benefits. A report by DoubleClick (Row, 2006) defined an influencer as a person who agrees to three or more of the following statements: (1) they consider themselves expert in certain areas. (2) People often ask their advice about purchase in areas where they are knowledgeable. (3) When they encounter a new product they like, they tend to recommend it to friends. (4) They have a large social circle and often refer people to one another based on their interests. (5) They are active online, using blogs, social networking sites, e-mail, discussion groups, online community boards etc. to connect with their peers.

As said before, influencers can use different forms to spread their opinions. Most influencers are social media influencers. They shape audience attitudes through social media like blogs, tweets, Facebook etc. (Freberg, Graham, McGaughey & Freberg, 2011). Since social media is even becoming a marketing tool, next to it begin used for social reasons, it is important to know what it is and how it is used.

4. SOCIAL MEDIA

Social media are more and more used nowadays by all sorts of people. Young, old and from all sorts of places. When giving a good definition to the word 'Social Media' it is important, according to Kaplan and Haenlein (2010) to draw the line between two related concepts: Web 2.0 and 'user generated content'. Web 2.0 is a platform where content and applications are not being made for individuals but are continually being

upgraded by the users. Although Web 2.0 does not refer to a specific update on the World Wide Web, there are some basic functionalities needed for its operation (e.g. Adobe Flash, Java). User generated content by contrast can be seen as the sum of all the ways people use social media. It comes from ordinary people who voluntarily contribute data, information or media which then appear for others in a helpful and fun way, usually on the web. This can be reviews of restaurants or just video's (Krumm, Davies & Narayanaswami, 2008).

Based on these definitions of Web 2.0 and user generated content Kaplan and Haenlein (2010), a more detailed definition of Social Media can be given: *"Social Media is a group of internet-based applications that build on the ideological and technological foundations of Web 2.0 and who make it possible to share and create user generated content"* (p.61). In the literature there are more definitions for Social Media. However, these are practically the same. There is for example the definition from Kietzmann, Hermkens, McCarthy and Silvestre (2011): "*Social Media employ mobile and web-based technologies to create highly interactive platforms via which individuals and communities share, co-create, discuss, and modify user-generated content*" (p. 241). Here too, it is about the technologies on the web and on the smartphones that make it possible to create content and exchange those content. Both definitions will be held during this literature search.

4.1 Classification of Social Media

According to Kaplan and Haenlein (2010) and Cornelissen (2014) Social Media can be classified on the basis of social presence/media richness and self-presentation/self-disclosure. Social Media can be high or low on self-presentation/self-disclosure and it can be high, medium or low on social presence/media richness. This classification can be found in Table 1.

		Social presence/Media richness		
		Low	**Medium**	**High**
Self-presentation / Self-disclosure	**High**	Blogs	Social networking sites (e.g., Facebook)	Virtual social worlds (e.g., Second Life)
	Low	Collaborative projects (e.g., Wikipedia)	Content communities (e.g., YouTube)	Virtual game worlds (e.g., World of Warcraft)

Table 1. Classification of Social Media According to Kaplan and Haenlein (2010).

Social Presence is the ability of two people to feel that they are together when communicating through a technological medium (Shin, 2013). Media richness is, according to Draft and Lengel (1986), based on the media differences in the degree of wealth they possess. This refers to the amount of information that is sent in a certain time. When applying these two definitions to Social Media, it means that the first classification is being made based on the richness of the medium and the degree of social presence.

The self-presentation theory says that in any type of social interaction people have the desire to control/manage the impressions of others (Goffman, 2012). Finally there is self-disclosure. This is the conscious or unconscious revealing of personal data consistent with the image that people would like to give (Kaplan & Haenlein, 2010). The Social Media that is being mentioned in this table is first being further explained. Due to the technological developments there are nowadays more social media's. These developments are being discussed in section 3.4.

4.1.1 Blogs

Blogs are one of the most popular types of social media. As defined on the Dutch dictionary (Blog, 2016), a blog (also called weblog) is a personal diary that someone maintains on a website. The author, which is called a blogger, provides a log of information which he/she wants to communicate to the public. Usually this involves text, but more often there are also pictures and videos on these blogs. People can take part in a conversation. This conversation is started with one person who is posting a blogpost, the readers of this blogpost can react on the information that is given.

The term "blog" is increasingly seen as a synonym of the form and word "online magazine" (Gill, Nowson & Oberlander, 2009). When writing a blog, the author has a large degree of freedom for personal expression. The author is free in choosing the topics. Nardi, Schiano, Gumbrecht and Swartz (2004) have discovered that there are five major motivations for blogging, namely: (1) documenting a person's life, (2) providing comments and advice, (3) expressing deep feelings and emotions, (4) articulating ideas through writing and finally (5) forming and maintaining community forums.

A blog can also be used as a marketing tool. It can be used as a word-of-mouth blog marketing tool or as a social influence through the blogosphere. When a brand wants their new product/service to be promoted but with a low cost and a wide sales channel, identifying the right blog with a greater marketing influence capabilities is crucial (Li, Lai & Chen, 2011). Agarwal, Liu, Tang and Yu (2008) presented an influence model to identify influential bloggers. Influencer marketing is what is happening when a brand or organisation is using a blog to promote their product.

4.1.2 Collaborative Projects

In the study of Kaplan and Haenlein (2010) it is being concluded that collaborative projects are a joint and simultaneous of content created by many users. Within the collaborative projects, the users are able to wright, delete and adjust things. An example is Wikipedia. This online encyclopedia exists in more than 230 different languages and everyone can change the text that is being published when an account is being created. The idea behind these collaborative projects is that multiple authors give a better result together than one author can make alone. From a business perspective it is also an increasingly important source of information for many consumers. This while the information written on a site like Wikipedia is assumed for the truth while this is not always true (Kaplan & Haenlein, 2010).

In addition to these external collaborative projects there can also be internal collaborative projects. An example of an internal collaborative project is mentioned in the study of Kaplan and Haenlein (2010). It is about the Finnish phone manufacturer Nokia. Nokia uses an internal collaborative project to keep employees up to date on all sorts of projects. It is also used to share ideas. An internal collaborative project is a sort of platform where all employees have access to and where everyone can share information with each other.

4.1.3 Social Networking Sites

A social networking site is an online place where an user can create a profile and develop a personal network that helps to connect with others (Lenhart & Madden, 2007). According to Ellison and Boyd (2007) the definition of a social networking site is to see them as web-based services that allow individuals to create a public or semi-public profile with a bounded system in order to make a list of other users to whom the content will be shared with and to see the lists of connections of other users within the system. Among social networking sites (SNS) there

are different sites. Examples are Facebook, LinkedIn, MySpace, Twitter (Hampton, Goulet, Rainie & Purcell, 2011). These SNS sites are the most familiar, but Wikipedia has a larger list of social networking sites around the world.

One of the SNS is Facebook. According to Golder, Wilkinson and Huberman (2007) 90,6% of the messages on Facebook is send to friends, most part of it (41,6%) is send to friends outside the local network of the user who is sending the message. This suggests that sending messages on Facebook is mostly used to build and maintain social ties over distances. Relations are therefore the most important aspect of this SNS (Kietzmann et al. 2011). Facebook is the leading social network worldwide as of April 2016. Facebook has 1.590 million users (Chaffey, 2016).

Next to Facebook, Instagram and Snapchat are two SNS that are highly engaging social networks (Chaffey, 2016). Instagram is an application that provides users with tools to take photos, apply different manipulation tools on these photos and then share these photos with friends on the application itself or other social networking sites such as Facebook (Hochman & Schwartz, 2012). Bradley (2015) investigated the purpose of using Instagram. On the first place users are using it to stay in touch with friends and family, on the second place came marketing and advertising. The ultimate goal of Instagram is to allow users to post pictures of events at the time that it is happening so that others can also experience it.

Snapchat is a photo-messaging application with expired data. Users of this application are able to send pictures to friends for a certain period of time, this may be 4 seconds or for example 10 seconds. After this time the photo is automatically deleted and no one can see the photo anymore. This last feature makes it more convenient for users since the pictures are removed after all (Zamudio & Kustesky, 2014).

4.1.4 Content Communities

Content communities are revolving around sharing media content between users. This may be written text, pictures, videos or for example a PowerPoint presentation (Kaplan & Haenlein, 2010). Another feature of content communities is that in most cases the user is not required to create a profile. When the user is required to make a profile, this is mostly basic information. There are advantages and disadvantages with a content communities. There is a risk that copyrighted material can be shared. A positive side is that a lot of people are using it. In the end, content communities are actually online databases of multimedia content where sharing is an important aspect (Kietzmann et al. 2011). Communication is also an important aspect of these databases. Authors can, for example, transfer scientific information by means of images, videos and dialogue. However, this must be done in the right way in order to convey in the right way. Users and the authors themselves can leave reactions to the content. In this way a new form of communication is arising and a new form of information gathering (Content communities, n.d.)

4.1.5 Virtual Social Worlds

Within the social media the virtual social worlds have three important characteristics that makes it stand out from the rest. First, users can create a completely customized self-presentation in the form of avatars. Second, users can talk to each other in real time and thirdly, the users have the opportunity to explore a virtual world with these avatars (this while most content communities are two-dimensional) (Kaplan & Haenlein, 2009). These worlds are often based on realistic environments. Examples are Habbo Hotel, Second Life and The Sims Online (Book, 2004).

4.1.6 Virtual Game Worlds

The difference between a virtual social world and a virtual game world is that the three-dimensional worlds in game worlds are not based on realistic environments. Virtual game worlds often take place in imaginative environments such as medieval or science fiction (Book, 2004). Another important difference is that in virtual game worlds the users are obligated to adhere to strict rules that govern their behavior (Kaplan & Haenlein, 2009). However, these rules limit the extent of self-presentation and self-disclosure. Still there are users who spend so much time in the virtual game worlds that their avatar begins to resemble their real personality. Examples of this virtual game worlds are World of Warcraft and Sony's EverQuest (Kaplan & Haenlein, 2010).

4.2 Digital identity

So we have the rapidly changing developments, the increasingly use of the online world, the new consumer mindset and the use of particular forms online for other reasons to which we were used to (social media as word of mouth). This means that more and more footprints are being left behind and some say that the consumers/people nowadays have a digital identity because we are living in a surveillance culture via a transparent digital environment (Feher, 2016). But how is this digital identity created?

5. BIG DATA

Everything we do and leave behind on the internet is being collected as data. All this data together can be called Big Data. The Big Data movement seeks intelligence from all the data and translates this into business advantage (McAfee, Brynjolfsson, Davenport, Patil & Barton, 2012). Big Data is unique because of three features: volume, variety and velocity. These are aspects of the data. There is more data that crosses the internet every second than the data that was stored in the entire internet just 20 years ago (volume). The speed in which this data is created may be even more important (velocity) and the data can take on different forms (variety). Many of the sources of data are relatively new (McAfee, Brynjolfsson, Davenport, Patil & Barton, 2012).

Big Data can give big benefits, it is transforming different markets. Think about the retail market, traffic management and control, health sector etc. (Tene & Polonetsky, 2012). In this same article Tene and Polonetsky (2012) are giving an example of why Big Data can be useful in the health sector. With the connection of the clinical and cost data of the medicine called Vioxx, a lot of cardiac arrest deaths have been prevented (Rubin, 2004). This also means that Big Data gives a lot of opportunities in a good sense, not only bad. The big concerns about Big Data are discussed later on in section 6.

5.1 Data collection

Back to the consumer 2.0. Because marketing is developing to match the online consumer mindset, different techniques are being used. Marketeers want to know their consumers/target group in order to give them the right advertisements at the right time and next to marketeers other agencies want to use the data for different purposes. Data collection is being used to gather the information needed and to create different consumer profiles, it can be seen as a form of segmentation. For instance, if a person is searching for the cheapest diapers and later on is downloading an app related to pregnancy, this person can be given a profile. An advertisement for diapers is for that profile more relevant than an advertisement for the newest PlayStation 4 game. Data is collected in two ways: data that is provided by the consumer and data that is observed (Schermer, 2016). Both ways to collect data are being discussed.

5.2 Provided and observed data

Social media is one of the most used networks as mentioned before (Statista, 2016). It consists of a lot of different forms that are used by the consumer. When making a profile to use one of the apps or sites, consumers are leaving their name, address, e-mail, phone number, etc. behind. One social media channel asks more information than the other. All this data that the consumer is giving to the channels is called provided data. Schermer (2016) gave a lecture about data on TV in a program called 'Universiteit van Nederland'. Another example are all the posts and tweets a person places on purpose online. Not only social media is collecting this data but also companies and organisations. When a consumer is calling the customer service of a company, the consumers is even then providing the company with data about themselves.

Next to the provided data that the consumers are automatically providing to marketeers and companies/organisations, there is also the observed data (Schermer, 2016). This is data that is observed and most of the time the consumers do not even know that this data is being collected from them. Examples are the number of visits on a particular website, the internet behavior in general (not only on the laptop but also on mobile phones and tablets), cookies, visits to shops (Wi-Fi-tracking, location) etc. The future of observed data can even be eye-tracking and facial recognition in stores to see how many times a customer visits the store and at what items this customer is looking at.

An example of the use of this provided and observed data in the marketing environment, which is also mentioned in the lecture of Schermer (2016), is that Facebook is using all the data to create 98 personal data points to target ads to the users (Dewey, 2016). Facebook is for instance tracking the on-site activity (pages you like and visit etc.), location settings and the brand of phone/laptop you are using. With all this data about the users Facebook has gathered a lot of information which can be divided in targeting options for the Facebook advertisers. 98 target options are now available in the VS (Dewey, 2016). An example of an advertisement can be given by using for instance number 44, the age of the car a user has. When this user has an older car it is more likely that this users will buy a new car faster than a user with a relatively new car (Schermer, 2016). People want to see ads on Facebook that are interesting, useful and relevant. But how about the way these ads are created? And how about the other ways this data can be used?

5.3 Data mining and predicitive analytics

So companies and marketeers collect data, a lot of them, but then? How can this data be used? Data mining and predicitive analytics are strongly associated with this data collection. Data mining is used when all the data is collected. When a company has all the data, it is important to see what can be done with that data. This is when data mining becomes important. Data mining can be defined according to Chauhan and Kaur (2015) as a process to extract, often hidden, interesting patterns from large databases. Predictive analytics is a subset of the data science (Waller & Fawcett, 2013). It is both qualitative and quantitative. It is about the same as data mining but the term predicitive analytics is more used nowadays. Predicitive analytics is according to Eckerson (2007) a set of technologies that uncovers the patterns and relationships within large databases that can be used to predict behaviour and events. Algorithms are used to build predictive models. Algorithms are according to the Oxford Dictionary (Algorithms, 2016): "the process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer".

An example of an algorithm is the Beware software used in the United States by police officials and in court (Jouvenal, 2016). This software is just like an algorithm collecting all sorts of data. With this data it is calculating a threat level. This can be done in life time when someone is calling 911 and the police officers have to know what they are dealing with, or afterwards when someone is arrested to calculate what the odds are that this person makes a big mistake again. So this algorithm uncovers the patterns and relationships within the large database of the police.

6. PRIVACY CONCERNS

Facebook ads may be the least of the concerns people have about companies using their data and invading their privacy. Another example given in the online lecture from Schermer (2016) was the case of Staples. Staples is an office supply store. This company is using location codes in combination with the store numbers to check if there are any competitors near to where a particular person lives. Next, Staples is giving this person a different offer based on this information. When there is no competitor near, Staples is giving the products a higher price because they know this person will not be driving a long way to get to a competitors store to get a cheaper one (Payton & Claypoole, 2014). This means that the data that is collected about these consumers can be used against them for the benefit of the company itself.

It can get even worse. Microsoft has recently been given a patent to develop glasses that can read emotions through voice, facial recognition and attitude/posture (Vleugels, 2015). Microsoft can sell this software to marketers which can use this to offer ads based on the emotions persons have. When someone is feeling happy for instance, ads related to parties or the emotion happy can be given to this person (Schermer, 2016). This data can not only be used for marketing purposes, it reaches further than that. Take a look at Affectiva. Affectiva is an emotion recognition software that brings emotional intelligence to the digital world. It is emotion aware computing (Affectiva, 2016). Together with Portal Entertainment, Affectiva is developing a horror series specifically for the IPad which adapts itself to the emotions of the viewer. When the viewer gets bored during the series, the plot is being accelerated, but when the viewer is finding the series very exciting, the plot is being slowed down (Vleugels, 2015).

So not just the behavior of people online is being monitored but also where this person is going, what this person has done in the past, how this person reacts to certain things etc. Everything we do is being saved for different purposes by different organisations/agencies. This brings a lot of questions with it. This becomes clear when for instance taking a look at the example given before (Jouvenal, 2016) about the software that is used by police officers and in court. According to the article published by the Washington Post, this powerful system becomes a flash point. People are saying that it is representing a troubling intrusion on privacy.

Big Data can give big benefits but also big concerns. Big Data implicates privacy concerns (Tene & Polonetsky, 2012). The tasks for ensuring the data security and protecting the privacy of the people becomes harder because the information is multiplied and shared ever more around the entire world. Some literature is discussing these privacy concerns in relation with Big Data and the internet of things. It has opened up a whole range of debate (Perera, Ranjan, Wang, Khan & Zomaya, 2015). Thuraisingham (2015) is taking into account that even when personally identifiable information is removed from the data, the person can still be identified when the data is combined with other data. Government etc. is trying to make regulations, but

even these regulations can backfire. Thuraisingham (2015) mentioned that data that is collected must be retained for a certain period of time, but as long as that data is being retained, there is a potential of privacy violations. IT architectures will become more integrated and outward facing according to Brown, Chui, and Manyika (2011). These architectures will pose bigger risks to data security and intellectual property. Many companies and organizations are violating the permission. Craig and Ludloff (2011) say that technology has made the snooping easy. For a consumer it is difficult to keep up with what is needed to protect his/herself.

6.1 Old laws

So there are privacy concerns about all the aspects talked about before, but what does the law say about all of this? Is it legal to store all this data and use it for different reasons? Loeffler (2012) has a short but relevant answer for this: "New technologies and old laws" (P. 1). When looking at social media in particular, there has been an explosion in the use of this in the last decade. More people are using it and people are using it more often. While the technological capabilities are growing at an amazing rate, social media is still governed by the same privacy laws that are applicable to the online environment (and certain types of data, collected online or offline) (Loeffler, 2012). According to Rubinstein (2012) big data has a very broad impact on the current data protection laws.

This problem with new technologies and old laws can also be reflected on Big Data. The privacy and protection laws that exist nowadays are premised on the individual control over information and on principles such as data minimization. Yet this large one is not always a practical approach to privacy in the age of Big Data. According to Tene and Polonetsky (2012) the principles of privacy and data protection must be balanced against additional societal values. These values can be national security, public health, law enforcement etc. The collection of all the data can have great benefits for these societal values, think about the system that some police officials and courts are using. The laws should be balanced to get the best of both worlds.

The laws that do exist, for instance 'privacy policy', are however not that clear to all consumers. Maybe this has something to do with Sheehan (2002) who found that one-fourth of the consumers is highly concerned about their privacy and half of the consumers are pragmatic about it, as was discussed in the introduction. Turow, Hoofnagle, Mulligan and Good (2007) found in their research that consumers believe that their personal information will be protected in different ways when they see the term 'privacy policy'. They assume in particular that a website who has such 'privacy policy' will not even share their personal information. In reality this is not always the case. Maybe they are misinformed or the consumers are just too lazy to read the policy thoroughly. There is more literature that says that consumers are underestimating the amount of data that is being allowed access by third parties and the overlooking of privacy terms (Golbeck & Mauriello, 2016, Miorandi, Sicari, De Pellegrini & Chlamtac, 2012). Are these people the half of the consumers that are pragmatic about their privacy?

These policies and laws may be misleading or they are not transparent enough. An example of an intransparant policy may be the one from the 'Hello Barbie'. Schermer (2016) highlighted this case in his lecture given on the Dutch TV. Hello Barbie looks like a normal Barbie but has an additional function. Hello Barbie has a microphone and a speaker, with these additional functions the doll is able to talk to the little girl that has this doll (Mattel, 2016). This is due through the speech recognition of the doll and Wi-Fi connection. The conversations this girl has with the doll are all being recorded and saved. In their privacy policy Mattel (2016) says the following: "we use the recordings (….) to perform our services, to analyse and to optimize. To test the voice recognition technology and artificial intelligence algorithms and other research-, development- and data-analysis purposes" (Schermer, 2016). What is meant by 'other research-, development- and data-analysis purposes'?..

7. CONCLUSION

It remains the question if the consumers are really pragmatic about the concerns regarding to privacy, or if the privacy laws/policies that do exist are misleading and not transparent enough. There is not that much literature about this topic, although this could be a good starting point. Ones more research has been done about the new consumers and their ways of dealing with their privacy, it can become very clear if the problems lays in the misleading privacy policies or in the pragmatic stance of the consumers.

In the meantime the main challenge still remains to find a balanced approach towards the use and collection of data and the privacy from the people from whom this data is collected/used. All these aspects mentioned before should be again reconsidered. What are the pitfalls and how can the laws be changed to benefit the consumers but still keep in mind the good things that can happen from all these data? Researchers are mentioning the privacy concerns and security from this digital era, but no action is taken. If we don't start adjusting to the digital era in every single way possible, it will soon tumble down. Further research about the consumer 2.0 and their thoughts, the laws that exist and the privacy policies that exist is necessary to really come up with the balanced approach. Ones an answer from the scientific side is produced, action has to be taken on the 'other side'. New technologies, new laws, new consumers.

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Methods of assessing emotions in user experience.

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ABSTRACT

Social acceleration and technological change are the themes of today. Emotions have become a field of increasing interest in (digital) marketing and user experience because of the new possibilities. To be able to design for emotion and to be able to use emotion for other purposes, it is necessary to determine what emotions are elicited and how to measure these emotions. It is necessary to review what methods are currently used, how reliable and valid these methods are and so forth. This review specifically focuses on the RQ, the current state of knowledge regarding emotions, user experience and methods for measuring. Looking at existing research, a critical literature review was done concerning the following research question: What is the state of play regarding methods measuring consumer emotions in support of user experience design? The review first explores the fields of emotion and user experience. Then the methods of eye tracking, biometrics, EEG, and FMRI are explained and their usability reviewed. The conclusion of the literature review is that for research, looking at the field of the construct "Emotions" with regard to user experience, needs to be specified further and that additional research needs to be conducted to further evaluate the usability of these methods and improve them where necessary.

Keywords

Emotion, user experience, methods, EEG, fMRI, Biometrics, Heartrate, Skin conductance

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: Why this topic?

I wondered about how we research emotion and how this is measured as it is a field often researched. Questions I asked myself were : How do we define emotions ? How reliable and applicable are the methods we use for measuring emotion?

1. INTRODUCTION

Social acceleration and technological change are the themes of today. The world is moving towards the "always on, always connected age" with the Internet and it's users at the centre. More and more aspects of humans and their lives connect to the internet, for example pacemakers, creating the internet of things. Because of this increase of interaction between humans and technology the field is a growing research area. An area that can be studied from various perspectives. For example Human-technology interaction researchers have now started to put emphasis on the experience of the users of technologies (Hassenzahl, 2008, 2010; Kuniavsky, 2003), for they consider experience is an important aspect of life. Using technologies can elicit feelings and emotions with users. Investigating users as emotionally experiencing beings is done by movements like affective design (Helander & Khalid, 2006; Khalid, 2004), design for pleasure (Jordan, 2000), funology (Monk, Hassenzahl, Blythe, & Reed, 2002) and emotional design(Norman, 2004). Right now objects that inspire, enhance and help with triggering emotions or dreams are upcoming design trends(Jensen 1999, Alessi 2000).

Emotions have also become a field of increasing interest in (digital) marketing because it brings many new possibilities for marketing products and services. The Marketing Science Institute [MSI] provides a "list" with research priorities every two years. In the MSI report of 2016-2018, MSI(2016) proposed five themes filled with research priorities on the most pressing matters influencing scholars and other academics. The third theme revolves around*" the opportunities for firms to (somehow) insert themselves — or their product or service — into the customer decision process at the right time in the right context to have an influence"*(MSI,2016).Here MSI(2016) proposes key questions about the possible changing of decisions, given the always connectedness and the increase in choices of costumers. A few proposed research questions for this section are ; *"What is the science of emotion in the digital, mobile, always on, and always connected age?", "What is the role of emotions in experience?" and "How do we design customer experiences that lead to maximal enjoyment, happiness, and utility?"*(MSI,2016). These questions are all emotion related, looking for the use of user emotions and experiences to marketing. Investigations into how users experience (the use of) technology and the emotions that technology can elicit, could lead to knowledge that can form the basis for designers of technologies aiming at creating specific experiences and emotions. To be able to design for emotion and to be able to use emotion for other purposes, it is necessary to determine what emotions are elicited and measure these emotions. Research into emotions is already being done by some researchers . In the past decade, marketing practitioners increasingly looked to neuroscience methods to better understand consumer behaviour and advertising. The six most commonly used methods (traditional self-reports, implicit measures, eye tracking, biometrics, EEG, and fMRI (Venkatraman, Dimoka, Pavlou, Vo, Hampton, Bollinger et al. ,2015) Are these methods also useable to understand and research emotions in user experience? The question asked before lead to the questions of what methods are currently used, how reliable and valid these methods are and so forth.

If combined with the questions asked before, a new question arises. Looking at existing research, a literature review will be done concerning the following research question[RQ];

RQ :
What is the state of play regarding methods measuring consumer emotions in support of user experience design?

To find answers to the RQ the current state of knowledge regarding emotions, user experience, methods for measuring emotions will be looked at. Based on this conclusions will be drawn and implications of these conclusions for the future will be given. Possible academic or practical impact can be made regarding research methods .

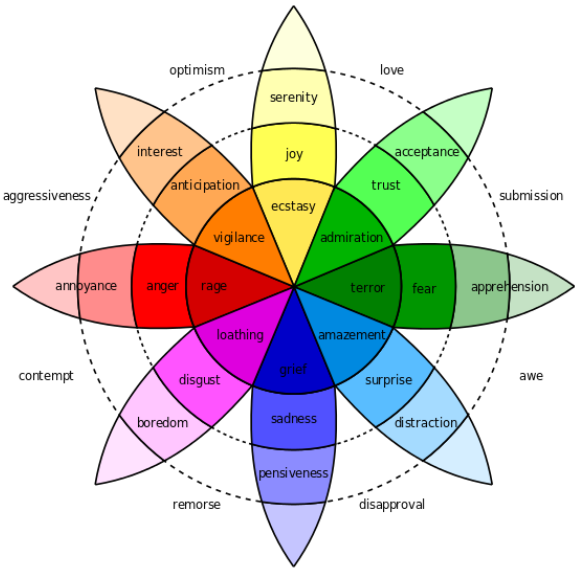
2. USER EXPERIENCE

The first term to define is User experience[UX]. What is UX? According to Albert, & Tullis (2013) many UX professionals have their own ideas about what UX is. Albert, & Tullis (2013) use three main defining characteristics. Firstly a user must be involved. Secondly this user needs to be interacting with a product, system or something else. Thirdly the UX is observable, measurable and of interest. If there is no action of a user, it can be measured by attitudes or preferences. There, at least, needs to be potential behaviour: "Would you click..". Where Albert, & Tullis (2013) distinguish UX and usability, Mandryk et al.(2006) poses that user experience (UX) is shifting from usability analysis because emotions and entertainment are brought into the equation. UX is seen by Mandryk et al.(2006) as a higher comprehension level of what users experience during interactions. As Albert, & Tullis (2013) state almost any system, product or service can be seen from a UX perspective. They regard UX as the entire interaction between a user and the thing. Users are increasingly diverse (Albert, & Tullis,2013).UX has an increasing role in our lives as the complexity of products increase. Technology evolves, matures and changes rapidly meaning its complexity is also likely to increase (Albert, & Tullis,2013). UX is assessed anew every time a new technology emerges (van de Laar et al., 2013). UX can be used to make informed decisions regarding design and other UX questions.

3. EMOTIONS

When people are given photographs of common emotional expressions these people, from all around the world, can reliably name the emotion being expressed (Ekman, Friesen, & Ellsworth, 1982a, 1982b) Even across culture people agree on the emotion that follows a particular set of experiences, think of : insult, loss, and danger (Boucher & Brandt, 1981; Brandt & Boucher, 1984; Ekman, 1984; Roseman, 1984; Sullivan & Boucher, 1984). As emotions play a central role in experience and interpersonal relations, it is no wonder that people are knowledgeable about them. Emotion as a concept is a prickly problem because even though the term is used frequently, the question of what an emotion is tends generate different answers from different people. Individuals, scientists or laymen alike. Scientists have tried to make use of folk concepts: emotions are what people say they are (e.g. Averill, 1980; Frijda et al., 1995). Within science there are two opposing schools of thought: *discrete* versus *dimensional*. The discrete school of thought regards emotions as *discrete* categories; emotions are biologically fixed and universal to all humans (Tomkins 1962; Ekman and Friesen 1971; Ekman et al. 1983; Ekman1992). The second school, dimensional, regards emotions as combinations along the *dimensions* of arousal and valence (Wundt and Pintner 1912; Russell 1980; Russell etal.1989; Watson and Tellegen 1985; Reisenzein 1994; Lang 1995; Feldman Barrett and Russell 1998;Gerber et al. 2008).These are very different looks on the concept of emotion, as follows the definition of emotions varies too. As there is research there are some definitions of emotion. Davidson, Scherer, and Goldsmith (2009) refer to emotion as a episode of

coordinated brain, physiological, and behavioural changes which facilitate a response to an event of significance, external or internal . King & Meiselman(2009) define emotions as brief, intense, and focused on a referent (e.g., ‘‘The received grade made her sad”). A neuroscientists specialised in emotion, Damasio, defined emotion as “a collection of changes in a body state connected to particular mental images that have activated a specific brain system” (Damasio 1994). Broekens(n.d.) poses that "*emotion is comprised of a facial expression, feeling (the conscious experience of the emotion), cognitive processing aimed at evaluating the situation in terms of personal relevance, physiological change and action readiness.*" . Next to that Broekens (n.d.) states that emotions are noticeable and usually powerful experiences that take place in a short but intense episode characterised by the attribution to causal factors. As Broekens (n.d.) puts it emotion is a complex topic and there are many different perspectives regarding emotions. Agreement on one solid definition does not really exist (Broekens, n.d.). Schrerer(2005) says distinguishing and measuring emotion in a comprehensive and meaningful way has been and is a constant challenge for the different disciplines concerning themselves with emotions. Proving a definition seems to be impossible. Defining emotion requires careful consideration as it needs to be useful, guides research and should make research comparable. A definition of emotion is central to developing the right instruments for measurements and communication within the research community. Emotions are a complex, vast field, in which there is a lot of research. There are so many articles that it is hard to direct oneself through the entire field.



Figuur 1 Emotion - Plutchik's wheel of emotions

Huang (2001) establishes in her article that emotions are a "*legitimate area of scientific inquiry*". Past efforts relied heavily on reference disciplines, not looking at the characteristics that are particularly interesting to marketing. (Huang, 2001) Huang(2001) concludes with that a focus on these emotions could facilitate enrichment for marketing accounts and theoretical communications. Revealing the propositions and characteristics of emotions relevant to the area, Huang's study (2001) provides propositions for future development of the theory of emotions in marketing. The conclusion stresses the need for a theory of emotions in marketing. Huang(2001) proposes " *A marketing account for emotions capturing consumer responses can reflect the context-free characteristic of marketing emotions*." combined with "*A marketing account for emotions based on marketing contexts can capture the context-specific characteristic of marketing emotions*.". Next to that Huang(2001) purposes "*A marketing account for emotions that eliminates the boundaries between feelings, moods, and emotions can reflect the relatively mild intensity of marketing emotions*." and " *A marketing account for emotions that allows dual unipolar distinctions of positive and negative emotions can manifest the co-existing positive and negative characteristic of marketing emotions*." So how can emotions be measured? Emotions are expressed through physiological changes within the brain and body (Purves 2012; Bear et al. 2007). On this psychology and neuroscience agree: The physiological components have (measureable) somatic responses due to activation of the autonomic nervous system. They have not found a universally accepted model to yet that describes the nature and physiological characteristics of emotions. Agreeing with Cacioppo et al. (2000), Mauss and Robinson (2009) recommend as “measures of emotional responding appear to be structured along dimensions (e.g., valence, arousal) rather than distinct emotional states (e.g. sadness, fear, anger)” and that “different measures of emotion appear sensitive to different dimensional aspects of state", it should be measures along the valence/arousal model. This model is the most commonly used paradigm to categorize emotions (Picard, 1995). In this two-dimensional representation, valence is related to hedonic tone and varies from “negative” to “positive” (e.g. frustrated vs pleasant); arousal is related to bodily and mental activation and varies from “calm” to “excited” (e.g. satisfied vs happy). This model must be applied with caution with some populations. Children hardly make distinction between different arousal levels (Posner et al., 2005). Concluding all that can be said is that the field of emotion is incredibly vast and multifaceted. As there is not one, solid definition of emotion all researcher agree on and there are many theories regarding emotions, a guide to emotions for specific areas of research seems to be necessary. For emotions in psychological research versus emotions elicited by use of a product are a different scenario's. A handbook specific for an area with relevant emotions could be beneficial. This way researchers within a field use the same definitions for the same constructs. More research into emotions specifically useful for marketing could drive research in this area to make leaps as they will need to understand this specific segment of the field instead of the entire field.

4. METODS OF MEASURING EMOTION

Now emotions and user experience are clear, what are the methods commonly used to asses emotions of users? There are different methods like "traditional "self report" measures and neurophysiologic measures. Several physiological measures are regarded as popular: pupillary response, heart rate, eye movements, voice pitch analysis and neuroimaging (Stewart, 1984). The use of these Neural physiological methods to study marketing, consumer behaviour, and advertising phenomena, exploded in the past decade (Ariely and Berns 2010; Camerer, Loewenstein, and Prelec 2005; Dimoka 2012; Smidts et al. 2014; Venkatraman et al. 2012; Yoon et al. 2012). Technological advances in fMRI, electroencephalography (EEG), eye tracking and other neurophysiological tools combined with a increased accessibility due to decreased administration costs lead to growth in neuromarketing research

(Dimoka, Pavlou, and Davis 2011) Following methods will be discussed: eye tracking, biometrics(electro cardiogram and electro dermal response), and measurements in the brain (fMRI and EEG)

4.1 Eye tracking

Eye tracking is one of the most accessible methods for assessing emotions. As eye tracking can measure pupil dilation which is a physiological response of the sympathetic nervous system. This points to the level of arousal after being expose to an external stimulus (Hess and Polt 1960). Next to that Eye tracking provides insight into temporal processes and has a high temporal resolution (60–120 Hz). Optical cameras that have (near) infrared light cause corneal reflection so that the position of the pupil and cornea can be identified. Gaze tracking captures which information was processed, in what order and the duration of the processes. Combining gaze with arousal can provide insight info what aroused the user. Mele& Federici (2012) propose that "in order to fully benefit from the communicative functions of gaze" the research techniques and methods need to be improved by shifting their focus to the dimensions of UX .

As this technique only indicated arousal , what kind of arousal remains unclear. Therefore this method needs to be combined with a method that provides insight into if it is positive or negative arousal.

4.2 Biometrics.

Biometrics rely on physiological or automatic responses to an external stimulus. According Potter and Bolls(2012) this method can provide insight into unconscious processes and affect. Heart rate and skin conductance are commonly used in biometrics. (Kivikangas, Chanel, Cowley, Ekman, Salminen, Järvelä, and Ravaja, 2011)

4.2.1 Electrocardiograms

Electrocardiograms are commonly used to measure the heart rate, also "pulse". Using external skin electrodes Electrocardiograms measure the electrical activity of the heart. Controlling heart rate are two antagonistic systems: the sympathetic nervous system (SNS) and the parasympathetic nervous system (PNS) (Potter and Bolls 2012). The SNS also known as the “fight-or-flight system”, this is the body’s automatic response to external stimulus. Activating this system leads to an increase of the heart rate know as heart rate acceleration. This reaction is an independent measure of arousal according to Wang, Lang and Busemeyer (2011). The PNS , known as “rest-and-digest system”, is a calm and relaxed state. This state creates a slower heart rate know as heart rate deceleration. Lang et al. (1999) say it implies an increased ability to focus providing an independent measure of attention. Heart rate can be interpreted as valence and arousal but also of attention, cognitive effort, stress and orientation reflex during media viewing(Ravaja 2004) Interpreting the heart rate can be difficult as many bodily processes regulate the heart rate.

4.2.2 Electrodermalrespose

Electro dermal response [EDA}or Skin conductance response

is based on the fact that the skin becomes a better electrical conductor due to increased activity of the sweat glands following exposure to certain stimuli (Potter and Bolls 2012). EDA has been associated with emotional arousal (Dawson et al. 2000; Lang et al. 1993). It measures the tonic activity of the SNS and is also preceded by a small delay of approximately four seconds (Kivikangas, Chanel, Cowley, Ekman, Salminen, Järvelä, and Ravaja, 2011).The EDA amplitude and response provides direct measures of arousal but cannot reliably indicate emotional valence (Potter and Bolls 2012). Supposedly EDA is less sensitive to noise and less ambiguous than heart rate as is it considered a direct measure of sympathetic activity (Kivikangas, Chanel, Cowley, Ekman, Salminen, Järvelä, and Ravaja, 2011)

4.3 Measurements in the brain

Based on theories of Cannon (1931) and Bard (1928) it is theorized that physiological correlates of discrete emotions are found in the brain rather than in peripheral physiological responses (Buck, 1999; Izard, 2007; Panksepp, 2007). Emotions are said to rely on so called "cerebral circuits "instead of solely functioning in one area (Gray 1982; LeDoux 2000; Panksepp 1998).

4.3.1 .Electroencephalography [EEG]

EEG possibly the most used method in research (Wang and Minor 2008). EEG measurements can reveal variations in electrical signals on the scalp (cortical brain regions) in relation to internal or external variables. Variations can be measured at different frequencies; Delta rhythms (<4hz) , Theta rhythms (4–7 Hz), Alpha rhythms (8–12 Hz),and Beta rhythms (15–30 Hz). The variations correspond to different physiological phenomena. There is data linking changes in these frequency bands to motivation and emotional processes (Knyazev ,2007). An asymmetry within frequency bands (e.g. alpha and theta) in the frontal brain could be related to different emotions (valence), such as pleasantness/unpleasantness (Vecchiato et al., 2011). Allen et al. (2001) showed with resting EEG activity , that asymmetrical activation of the anterior cortical regions seems to influence emotional responses. EEG is showing a broader motivational tendency : it shows towards approach-related or withdrawal-related emotions (Allen et al. 2001; Davidson 1998). Chanel et al., (2011) suggest EEG is useable for detecting emotions, with an arousal/valence state measured over a short for now EEG is not yet a reliable sensor to assess emotions. EEG devices are not yet perfectly reliable and practical to use; hardware and software processing are still evolving. An important note is that other cognitive processes also influence the band frequencies , so conclusions should be made carefully (Poldrack 2006). Measuring deep brean areas is difficult with EEG (Telpaz, Webb, & Levy, 2015). As behaviours and mental processes result from complex interactions in the brain only a part can be measured by scalp EEG (Luck 2005; Nunez and Srinivasan 2006). EEG provides high temporal resolution but low spatial resolution , this is due to its restriction of only measuring cortical brain activity. any conclusion about exact locations should be taken cautiously an is not to be used as conclusive evidence that an identified brain area is related to a measured behaviour. EEG measures have similar difficulties regarding their interpretation as heart rate measures.

4.3.2 Functional magnetic resonance imaging [fMRI]

fMRI measurements the localise and track of changes in blood oxygenation and is considered as a non - invasive method (Ogawa et al. 1990). The Methods works because it measures the difference in magnetic properties depending on the oxygenation state of the haemoglobin (Detre & Floyd, 2000). When a brain area is used it utilizes oxygen which causes an increase in the flow of oxygen-rich blood into the region. This leads to a localized increase in blood oxygenation level. The difference is then measured using high-field magnetic resonance scanners (Huettel, Song, and McCarthy 2008). For that reason, fMRI provides indirect and correlative measure of local brain activity at high spatial resolution and good temporal

resolution. Because fMRI is more specific in locating activation of a brain region Pankstepp(1998) proposes that fMRI is better suited than EEG to emotion specificity in the brain (Panksepp, 1998). Also here , Complex reactions like emotions are likely to involve circuits rather than just one activated area (Kagan, 2007; LeDoux, 2000; Storbeck, Robinson, & McCourt, 2006).

4.3.3 EEG versus fMRI

Both methods have their own opportunities and limitations.. EEG has several important advantages over fMRI for commercial purposes: system costs are low, EEG systems are portable, less restrictive and sample rate is high. So EEG promises a good trade-off between cost, time resolution and ease of installation Yet more studies are needed regarding generalisability and using the technique reliably for designing UX

4.4 Summary

How usable are these methods for measuring Emotion in UX.

- Eye tracking: Pupillometry is difficult because light influences the dilation, as changing light is hard to control its makes it difficult to use it outside of controlled conditions
- Electro dermal activity (EDA) measuring skin conductance through sweat is influenced by things like room temperature, humidity, participants activities and the correct attachment of the electrodes has to be carefully considered.
- Heart rate (HR) is correlated with arousal . Measuring HR requires attachment of electrodes in the chest area, raising privacy and intimacy issues.
- Electroencephalography (EEG) measures electrical activity of the brain and requires filtering noise. Because for most UX experiments the user moves causing more noise This would mean that currently EEG is not very suitable for UX research.
- Functional magnetic resonance imaging [*fMRI*] tracks the oxygenation in the blood. It is more expensive than EEG but more specific in localising EEG it is proposed that this measurement is better suited.

As people express themselves with their whole body, interaction with products, tools, and artefacts can be enriched by allowing people to move naturally and unrestrictedly (Partala, Surakka, & Vanhala, 2005; Dawson, 2007). For now this causes noise or alters the signal, think of heart rate and EDM. Electrodes and sensors are also sensitive to movement. Noise needs to be filtered out or even makes it impossible to use these physiological measurements.

5. CONCLUSION

The construct of emotion is complex an multifaceted. As there is no set definition of emotion this poses difficulties for aligning research. A lot of research into emotion has been done but there is no overview of emotions specifically useful for user experiences . Specifying emotion to "user experience emotion" may lead to a definition for this field providing possibilities for the development of specific models. Outcomes from these models can lead to theories and models for designing user experiences. Current research suggest that emotions are structured along dimensions (valance and arousal) . Different measures of emotion appear sensitive to different dimensional aspects. This means that there is no gold standard regarding the measure of emotional responding. Emotion seems to complex to be captured considering one measure alone (Lang, 1988; Mandler, 1975; Rachman, 1978). Every method strengths and weaknesses depending on the context in which it is evaluated. It's important to note that most methods should not be used as the only method, as a multimodal approach is more accurate and offers a broader spectrum of emotions. This means multiple measures obtaining measurements of emotions will lead to better tailored research into the particular area of interest which means it is more likely something will be learned from the study(Larsen, Prizmic &Larsen, 2006). Yet, it also has a disadvantage: the channels have to be combined, analysed and interpreted together. Combining methods might be particularly interesting because it provides possible access to constructs that are hard to asses with exactitude (Ravaja, 2009; Nacke and Lindley, 2009;van Erp et al., 2010; Chanel et al., 2011). Important to note is that Psychophysiology is still in it's infancy especially regarding UX. Next to that current investigations mostly were targeted at basic research. Therefore direct practical recommendations must be derived from the new findings very carefully (Plassmann et al., 2007a)

Specific researches into emotions of user experience are hard to find but all these described methods seem to have potential to be used in UX research. Specific research into what methods are useful for measuring emotions in the specific user experiences need to be done so future research can build onto the theoretical frame and easily. For now studies could combine diverse constructs next to using a comprehensive framework: one evaluation methods advantages preventing the others drawbacks. As design is dependent on specific contexts and situations research need to consider the nature of experiments.

All in all, there are a lot of opportunities into researching emotions in user experience. As the methods are still in their infancy they need to be checked for their usability and possibly improved. Also improvements of methods specifically for measuring emotions in UX could be of interest. Further research is necessary to meet future challenges and to improve these methods

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Two Sides of a Coin: The Benefits of Personalized Marketing versus the Downsides of Privacy Concerns

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ABSTRACT
The volume of information on the Internet is increasing rapidly. This causes the frustrating phenomenon known as an information overload, where users are confronted with situations in which they are exposed to too many options to choose from. Users need help to explore and filter out irrelevant information. This is where personalized marketing, or often called personalization, comes in. Personalized marketing is the ability to provide tailored content to individuals, based on knowledge about their preferences and behaviour. The purpose of the current paper is to find out how marketers can use personalized marketing in their marketing strategies. Based on literature it appears that marketers can use personalization systems or, in other words, recommendation systems to provide relevant recommendations. These personalization systems operate through three procedures: user profiling, content modeling and information filtering. Personalized marketing is useful, because it offers a lot of benefits, such as decision support, special offers and gifts, faster communication and more relevant communication. However, critics emphasize one of the biggest downsides of personalized marketing, namely privacy concerns. Privacy concerns have become strong deterrents for consumer's acceptance of personalized marketing. These concerns are based on invisible and permanent data collection, insufficient information, loss of control and increased unsolicited communication. In short, current research into personalized marketing shows a contrast between two positions towards personalization. One position emphasizes the benefits of personalization, while the other position stresses the downsides, including privacy concerns. The dilemma between the benefits of personalized marketing and the downsides of privacy concerns is called the personalization-privacy paradox.

Keywords
Personalized marketing, personalization, personalization system, recommendation system, user profiling, content modeling, information filtering, privacy concerns

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view
The topic of personalized marketing appeals to me, because I recognize the dilemma in my everyday life. For example, I wanted to buy new sneakers and I consulted the online webshop Zalando. One day later, I scrolled through my Facebook timeline and I ran into different advertisements about sneakers from Zalando. The advertisements were perfectly adapted to my wishes. I liked this, but on the other hand I worried about my privacy. The fact that these advertisements appeared on my Facebook timeline meant that Zalando monitored my browsing behaviour. I was not aware of this, so I felt a little uncomfortable with Zalando monitoring personal data about me. So, there are two sides of the coin and it is interesting to find out the balance between these two sides.

1. INTRODUCTION

The volume of information on the Internet is increasing rapidly. Nowadays, more than three billion web pages are available online. Pierrakos, Paliouras, Papatheodorou and Spyropoulos (2013) notice the emergence of a spiral effect. An increasing number of users causes an increase in the quantity of online information, attracting even more users and so on. This pattern is responsible for the explosion of the Internet, which causes the frustrating phenomenon known as an information overload, where users are confronted with situations in which they are exposed to too many options to choose from (Gao, Liu & Wu, 2010). The search for relevant and useful information is becoming more difficult. Users need help to explore and to filter out irrelevant information, based on their preferences (Montaner, López & De La Rosa, 2003). That is where personalized marketing, or often called personalization, comes in. Personalization is defined as automatic adjustment, re-structuring and the presentation of tailored information content for individuals (Perugini & Ramakrishnan, 2003). It is the ability to provide tailored content and services to individuals, based on knowledge about their preferences and behaviour (Kuo & Chen, 2001). Personalized marketing is often called one-to-one marketing, in other words the process of delivering targeted products and services to a customer based on the customer's profile (Tang, Liao & Sun, 2013). It is about gathering and analyzing user information for delivering the right information at the right time (Gao et al., 2010). The objective of personalized marketing is to identify the needs of a customer and offer products and services that appeal to that particular customer (Tang et al., 2013). Personalized marketing builds customer loyalty by creating meaningful one-to-one relationships and by understanding the needs of users in different contexts (Frias-Martinez, Magoulas, Chen & Macredie, 2006). It is not about trying to reach a public as large as possible anymore, which was the case in mass marketing. Now, the focus is on each individual and unique consumer. "For marketers, it is not how much a company knows about all its customers which is most important, but rather how much it knows about each of those customers" (Peppers & Rogers 1995, p. 18).

Based on the above information it appears that personalized marketing is extremely important for consumers while dealing with an information overload on the Internet. Moreover, personalized marketing is highly effective, because products and services are targeted to relevant consumers. Based on a customer's profile companies target consumers who are in one way or another involved with the product or service they are promoting. Thanks to personalized marketing companies only focus on the relevant consumers (Tang et al., 2013). This definitely saves time and money, because organizations do not pay attention to all consumers, which means also the irrelevant ones, anymore. Moreover, there is some proof that personalized marketing is indeed effective. Boca Java, a gourmet coffee retailer, segmented their customers based on how many bags of coffee they ordered. The company sent emails offering a 17% discount on a three-pack of coffee to three unique segments, namely customers who had previously purchased two bags, three bags and four bags. The company found that customers in the two-bag segment were most likely to take advantage of the discount. This gave Boca Java insights into which customers were most likely to respond to the specific offer and in turn, the company was able to upsell those customers (Pardot, 2015). This is an example of personalized marketing through segmentation by purchase behaviour. Another example is based on lookalike-inspired segmentation. Point Defiance Zoo & Aquarian came up with a smart way to boost zoo membership. They used data to identify their biggest fans, analyzed their membership data and learned which ZIP codes were home to the zoo's most frequent guests. After that, they targeted discounted campaigns to other people from those areas. This resulted in a 13% increase in membership of the zoo (Pardot, 2015). In short, personalized marketing offers many future opportunities in the field of marketing. Mass marketing, focusing on all consumers at the same time, is becoming more and more extinct, while one-to-one marketing, or personalized marketing, is flourishing right now. Personalized marketing is the future in the field of marketing. Therefore it is very interesting to dive deeper into this topic.

On basis of the previous introduction to the topic of personalized marketing, the following research question can be formulated:

How can marketers use personalized marketing in their marketing strategies?

The current paper will be structured as follows. At first, the methodology used while writing the paper will be discussed. After that, personalized marketing will be elaborated, by means of user profiling, content modeling and information filtering. It will become clear how marketers can use personalized marketing in their marketing strategies. The benefits of personalized marketing will also be discussed. Then, a critical evaluation will follow, in which a connected phenomenon, namely privacy, will be introduced. The literature review will end with an overall conclusion by presenting an overview of personalized marketing and a consideration of the benefits of personalized marketing and the downsides of privacy concerns. After that, some issues for future research will be presented.

2. METHODOLOGY

In order to find out how marketers can use personalized marketing in their marketing strategies, the current paper analyzes relevant scientific literature about the topic of personalized marketing or personalization. The paper provides a description of the state-of-art research about personalized marketing. The paper is written in the form of a critical literature review, in which it is possible to combine and compare findings of previous research. Books, peer reviewed journal articles, newspaper articles, websites etc. are used to gather information.

3. PERSONALIZED MARKETING

Personalized marketing is a form of online marketing, also known as Internet marketing, digital marketing or web marketing: a collective term for techniques used to promote products, services or companies through the Internet. Online environments are particularly suitable domains for personalized marketing, because of the rich and large volume of consumer data available (Jamal, Coughlan & Kamal, 2013). Again, personalized marketing is the ability to provide tailored content and services to individuals, based on knowledge about their preferences and behaviour (Kuo & Chen, 2001). For example, companies collect data from the analyses of paths through the site, shopping carts, exit points or search terms (Danna & Gandy, 2002). Personalized marketing can take the form of personalized advertising, such as promotional e-mails, or personalized services, such as product recommendations (Awad & Krishnan, 2006). So, companies deliver targeted products and services to a customer based on the customer's profile (Tang et al., 2013). But how does this process work? How can marketers use personalized marketing in their marketing strategies?

It is all about personalization systems. A personalization system is "a computer-based application that builds user profiles from

past usage behaviour to provide relevant recommendations" (Gao et al., 2010, p. 609). Personalization systems are also called recommendation systems. Their objective is to retrieve information which is of interest to users from a large repository (Liang, Yang, Chen & Ku, 2007). Personalized marketing is about selecting or filtering information for individuals, so personalization systems function as mediators between items and users (Gao et al., 2010). Personalization systems operate through three main procedures (Kim, Cho, Kim, Kim & Suh, 2003): user profiling, content modeling and information filtering.

3.1 User Profiling

The user profile is one key issue when analyzing how a personalization system makes recommendations. It stores individual information, such as basic information (age, gender), information usage behaviour, interests and intentions. The latter is represented by terms of keywords, concepts and features (Gao et al., 2010). A user profile contains many dimensions. Table 1 describes a couple of them.

Table 1: Dimensions of a User Profile (Gao et al., 2010)

Name	*Description*
Personal data	Basic information, such as age language, culture and sex
Cognitive style	The way in which a user processes information
Device information	Hardware and network environment
Context	Physical environment when a user is accessing the system
History	The user's past interaction with the system
Behaviour	The user's behaviour pattern
Interests	Topics the user is interested in
Intention/Goal	The intentions, goals or purposes of users
Interaction experience	The user's knowledge on interacting with the system
Domain knowledge	The user's level of knowledge in a particular topic

User profile generation and maintenance require five design decisions, namely the profile representation technique, the technique used to generate the initial profile, the source of the relevance feedback which represents the user interests, the profile learning technique and the profile adaptation technique (Montaner et al., 2003). The profile representation is the first step, since the other techniques depend on it. Once this step is decided, the other techniques can be defined. The recommendation system needs to know as much as possible about the consumer in order to provide him or her with satisfactory results from the beginning (Montaner et al., 2003). Secondly, therefore, systems need to use a suitable technique in order to generate an accurate initial profile (Montaner et al., 2003). This can be done through questionnaires or by setting default values (Gao et al., 2010). Thirdly, to generate and maintain the user profile, the personalization system needs relevant information about the consumer's interests. When users interact with a computer, they provide a lot of information about themselves. Successful interpretations of this data is necessary for computers to tailor themselves to each individual. The recommendation system can gather relevance feedback to learn the tastes, interests and preferences of the consumer (Montaner et al., 2003). Feedback can be gathered by asking consumers (fill-in-profile, explicit feedback or ratings) and by watching users (interaction with the websites, such as click streams or transactions) (Schubert & Koch, 2002). The feedback, given explicitly or implicitly by the user, has no sense in itself. Therefore, fourthly, a profile learning technique is necessary. It extracts the relevant information and structures this information (Montaner et al., 2003). Users are classified into different types or groups (Gao et al., 2010). Finally, user tastes usually change over time. Therefore, the user profile needs to change to in order to retain the desired accuracy in its exploitation. Hence, the need for a technique to adapt the user profile to new interests and forget the old ones (Montaner et al, 2003).

So, recommendation systems generate and maintain user profiles with a lot of different dimensions. Modeling behaviour, modeling interest and modeling intention of consumers are three profiling methods (Gao et al., 2010).

3.1.1 Behaviour Modeling

Historical data records user behaviour of browsing or transaction on a website, also the user's past interaction with the system (see Table 1). User behaviour modeling involves "the discovery of patterns from one or more web servers" (Gao et al., 2010, p. 614; Frias-Martinez et al., 2006). Analyzing behavioral data is helpful to determine navigation paths and the effectiveness of promotional campaigns (Gao et al., 2010). There are some tactics for behaviour modeling. One of the tactics is using Markov models. These models help with link prediction and path analysis. Markov chains model the URL access patterns that are observed in navigation logs based on the previous state. Future states are only dependent on the current states (Sarukkai, 2000). Secondly, decision tree induction techniques are prediction methods and can be used to predict the next interaction of a consumer. These techniques build decision trees to label or categorize cases into a set of known classes (Kim et al., 2003). Thirdly, association rules are used to model user history and predict next requests (Nanopoulos, Katsaros & Manolopoulos, 2001). For example, "a rule found in sales data indicates that if a customer buys both tomatoes and beef, he is likely to also buy onions" (Gao et al., 2010, p. 620). Such information is used as the basis for marketing decisions.

3.1.2 Interest Modeling

Interests or preferences can be defined as a function which represents how much a consumer likes or dislikes an item by analyzing his or her behaviour history (Jung, Hong & Kim, 2005). According to Schubert and Koch (2002) there are three methods to extract consumer preferences: direct, semi-direct and indirect. The direct approach includes asking consumers to tell explicitly what they like. The semi-direct approach asks consumers to rate all documents they read and gains the preferences through these ratings. The indirect approach obtains user preferences from past browsing data, such as hyperlink clicks or time spent on reading a document (Gao et al., 2010; Schubert & Koch, 2002). The indirect approach is classified into three tactics of interest modeling. The first one is vector similarity, in which TF-IDF and SVM are used as methods. In TF-IDF users and items are represented as term vectors. The method weights the importance of keywords [1] (Joachims, 1996;

[1] TF-IDF is based on a statistical formula, described in detail in these articles (Joachims, 1996; Gao et al., 2010).

Gao et al., 2010). SVM is a generalized linear classifier. It determines whether to recommend an item to a consumer or not [2] (Cheung, Kwok, Law & Tsui, 2003). In the second tactic, preference or interest is represented by the probability of a consumer selecting a given item. This probability is used to predict future selections. A Bayesian network helps with this prediction. This network represents "a set of variables and their probabilistic dependencies" (Gao et al., 2010, p. 622). Bayesian networks are used to capture relationships between the needs of a consumer and the observations about a sequence of actions and words. Through probability distributions over a consumer's goals, a Bayesian network can provide appropriate assistance for tailoring information, products or services (Horvitz, Breese, Heckerman, Hovel & Rommelse, 1998). Finally, the third tactic in the indirect approach of interest modeling are the association rules, in which preference is represented by the strength of association between an item and the consumer's history (Nanopoulos et al., 2001).

3.1.3 Intention Modeling

The intention of consumers is expressed as their purpose, aim and goal. It means what a consumer intends to accomplish or the reason for which that consumer is searching information (Frias-Martinez et al., 2006). The purpose of intention modeling is to identify the goal of a consumer when interacting with a system. According to Chen, Lin, Liu, Liu, Ma and Wenyin (2002) intention can be classified into two levels: action intention and semantic intention. Action intentions are lower level, such as mouse clicks and keyboard typing. Semantic intentions correspond to what the consumer wants to achieve at a higher level. There are a lot of tactics to model consumer intention: SVM, Bayesian networks, decision trees and association rules or the combination of these methods are possible (Gao et al., 2010). Naïve Bayes is also a tactic that can be used to model user intention. It uses joint probabilities of words and categories to estimate probabilities of categories for a document (Gao et al., 2010). Finally, neural networks is a possible tactic. User profiling needs techniques for pattern classification and neural networks are good at this feature (Chen & Norcio, 1997). Each consumer has a unique profile with a set of attribute values. Neural networks represent these attributes of a consumer or a consumer class, characterized by link weights (Shepherd, Watters & Marath, 2002). So, this tactic can be used for classifying consumers.

3.2 Content Modeling

Content modeling is another key issue when analyzing how a recommendation system makes recommendations for a consumer. In this procedure some kinds of indications are needed on the topic of a particular document or content. These indications are mostly presented in the form of keywords (Gao et al., 2010). Keywords can be obtained by using different content modeling tactics. The most used technique is Latent Semantic Analysis (LSA). This technique has the collective term of content analysis. LSA represents contents not by terms, but by underlying concepts. This hidden structure is not about mapping between terms and concepts, but depends on the corpus and term correlations it embodies (Hofmann, 2004). Besides, several tactics for content classification are possible. The goal of content classification is comparing new documents or contents to the reference set (Gao et al., 2010). Tactics that can be used are comparisons between a variety of frequently-used vector representations of documents, such as SVM, TF-IDF and KNN (Gao et al., 2010). KNN classifies objects based on closest training examples in a feature space. The technique finds k nearest neighbors of an object and assigns the object to the most common class among its neighbors (Frias-Martinez et al., 2006). This classification approach compares "a target user's profile with other users' in order to find the top k users who have similar tastes or interests" (Gao et al., 2010, p. 621). Other tactics are based on joint probabilities of the words being in the same document, for example Naïve Bayes, decision trees and neural networks (Gao et al., 2010).

3.3 Information Filtering

Once the user profiles and content models have been obtained, personalization systems can filter information and customize products and services for users (Gao et al., 2010). Information filtering, recommendation methods or recommendation agents are terms that are often used interchangeably. As stated in the introduction, consumers are often confronted with an information overload in online environments. The search for relevant and useful information is becoming more and more difficult (Montaner et al., 2003). Therefore, recommendation methods or recommendation agents are essential. Schubert and Koch (2002) and Montaner et al. (2003) illustrate this with an example. Consumer 1 already has bought a new car, which also pleases consumer 2, because he has a similar taste in cars. For consumer 2 it is easier to just order the same configuration than to run through the whole selection process again, which costs lots of time and effort. So, the second consumer does not make an informed decision, while this is definitely important when buying a car.

There are four filtering methods for making recommendations to the consumes. The first one is rule-based filtering, based on "if this, then that" rules (Choi & Han, 2008). The second one is content-based filtering, based on a comparison between items and consumer profiles (Park & Chang, 2008). The third one is collaborative filtering, which serves "relevant material to customers by comparing their own personal preferences with others" (Gao et al., 2010, p. 615). Finally, the fourth one is hybrid filtering, which combines content-based filtering and collaborative filtering (Gao et al., 2010).

3.3.1 Rule-Based Filtering

Rule-based approaches are based on rules and these rules are based on demographics or static profiles of consumers. These profiles are collected through asking questions to the consumers (Gao et al., 2010). There are also other approaches to collect a user profile, which are discussed in the section about user profiling. When the user profile is developed, pre-specified if-then rules are applied to select relevant information for recommendations (Choi & Han, 2008; Liang et al., 2007). It depends on predefined groups or classes of consumers to determine what content should be displayed or which services or products should be provided (Gao et al., 2010). The idea of rule-based filtering is presented in Figure 1.

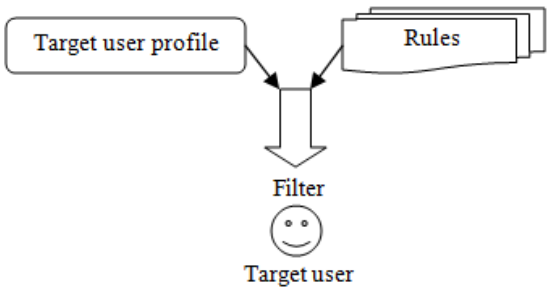

Figure 1: Rule-Based Filtering (Gao et al., 2010)

[2] SVM is based on a statistical formula, described in detail in this article (Cheung et al., 2003).

3.3.2 *Content-Based Filtering*

Content-based approaches compare user profiles with the description of items (Park & Chang, 2008). Profiles of items are compared with profiles of users in order to estimate which items the consumer may be interested in (Min & Han, 2005). For example, a content-based news recommendation system extracts essential items of news using text classification methods and matches these items against the user profile to select news recommendations that are relevant to the user (Gao et al., 2010). This cannot only be applied to news contexts, but also to marketing contexts. For example, a recommendation agent extracts important items of a commercial website and matches these items against the user profile, for example based on previous shopping behaviour on this commercial website. In this way, the consumer receives relevant recommendations. Gao et al. (2010) provide another example about the marketing of books. The recommendation system learns which books a consumer has rated highly in the past. Then, only the books with a high similarity rating are recommended to the consumer. The idea of content-based filtering is presented in Figure 2.

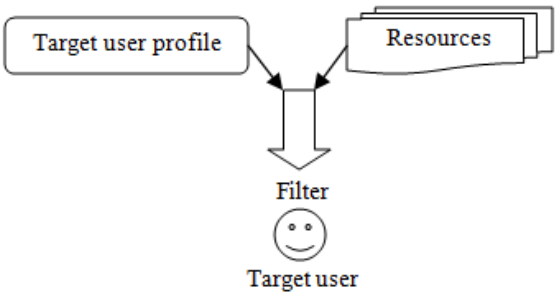

Figure 2: Content-Based Filtering (Gao et al., 2010)

3.3.3 *Collaborative Filtering*

Collaborative filtering complements content-based filtering. It uses preferences of similar users in the same preference group as a basis of making recommendations (Gao et al., 2010). Recommendations are based on correlations among shared likes and dislikes of system users. Collaborative filtering has the capability of finding items of potential interest from previous ratings of other users (Liang et al., 2007). To stay in the example about the marketing of books, the recommendation system finds similar users to the target user and only books that are most liked by similar users are recommended to the target user (Gao et al., 2010). There are two types of collaborative filtering, namely user-based collaborative filtering and item-based collaborative filtering. The first one is based on the users and is applied in the marketing example above. The idea of user-based collaborative filtering is presented in Figure 3.

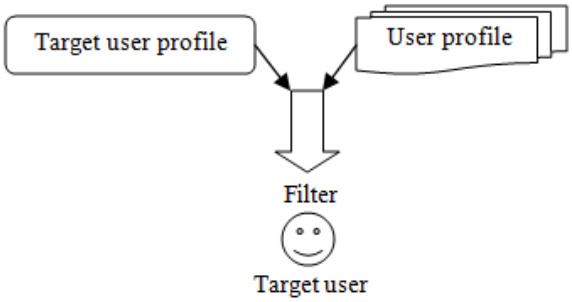

Figure 3: User Collaborative Filtering (Gao et al., 2010)

However, the costs of this type of filtering increase, because the number of users and items also increases (Gao et al., 2010). Item-based collaborative filtering is an extension of user-based collaborative filtering. This type focuses on item-item similarity rather than on user-user similarity. The similarity between two items can be measured by comparing their ratings by the same users (Gao et al., 2010). The concept of item-based collaborative filtering is presented in Figure 4.

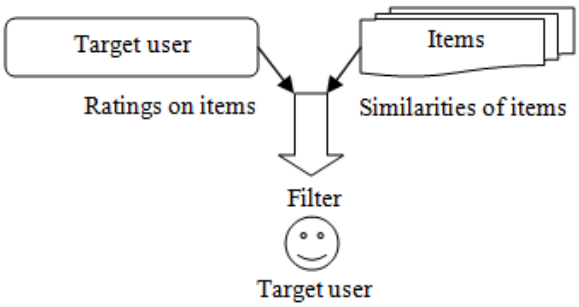

Figure 4: Item Collaborative Filtering (Gao et al., 2010)

3.3.4 *Hybrid Filtering*

As stated earlier, hybrid filtering combines content-based filtering and collaborative filtering. According to Montaner et al. (2003) both approaches of filtering solve each other's shortcomings or limitations. Collaborative filtering solve limitations of content-based agents, such as the lack of subjective data, user ratings and novelty. On the other hand, content-based filtering solve shortcomings of collaborative systems, such as the new items problem, the data sparsity problem and the complex computation problem (Montaner et al., 2003). So, a combination of both approaches, hybrid filtering, seems to be the right approach to information filtering. According to Adomavicius and Tuzhilin (2005) hybrid filtering occurs in different ways. The first one is implementing collaborative and content-based filtering separately and combining their predictions. The second one is incorporating some content-based features into a collaborative system. The third one is incorporating some collaborative features into a content-based system. Finally, the fourth one is constructing a general unifying model that incorporates both content-based and collaborative features.

4. BENEFITS OF PERSONALIZATION

Now that it is clear how marketers can use personalized marketing or personalization in their marketing strategies, namely by using recommendation systems, it is necessary to have a look at the benefits of personalized marketing. Is it useful for marketers to invest in such personalization systems? It is definitely useful to invest in personalized marketing, because there are many benefits. Some of these benefits were already discussed in the introduction. Recommendation systems solve the frustrating phenomenon of an information overload, where users are confronted with situations in which they are exposed to too many options to choose from (Gao et al., 2010). Consumers need help to explore and to filter out irrelevant information (Montaner et al., 2003) and that is where personalized marketing offers a solution. It provides tailored content to individuals, based on knowledge about their preferences and behaviour (Kuo & Chen, 2001). Products and services are targeted to relevant consumers. Today it is widely assumed that getting relevant information at the right time and at the right place is one of the most important factors for consumers in marketing situations. Personalization systems help marketers to drive revenue and loyalty by matching the right goods to the right people at the right time (Zemirli & Alsenan, 2015). Consumers benefit from this, because they are provided with better preference match, better products, better service, better communication and better experience (Jamal et al., 2013).

According to research from Treiblmaier and Pollach (2007) consumers named four important benefits of personalization. The first benefit is decision support, which refers to the assumption that targeted offers should meet consumer's requirements. Consumers said that "communication is more targeted" and that "such tools also ensure that people actually get what they want" in personalized marketing (Treiblmaier & Pollach, 2007). The second benefit are special offers and gifts. Regular consumers are granted better conditions and receive special offers to increase consumer loyalty. Consumers stated that "customers are typically happy about receiving special offers" (Treiblmaier & Pollach, 2007). A third benefit is faster communication, which means that companies preselect offers, which shortens the decision-making process for consumers. Consumers said that "if we can do this over the Web and are satisfied with the result, we can avoid this whole long process" (Treiblmaier & Pollach, 2007). Finally, a fourth benefit is more relevant communication, which was also stated before in the current paper. Companies eliminate irrelevant offers for their consumers. Organizations try to avoid information overload (Treiblmaier & Pollach, 2007). In short, personalized marketing has a lot of benefits and marketers should definitely take advantage of these benefits.

5. PRIVACY CONCERNS

So, there is a lot of literature dedicated to personalized marketing and its benefits. Personalized marketing is indeed effective, because companies approach exactly the relevant target users. However, the literature about personalization is often associated with some downsides. There are some critiques on the positive opinions and findings about personalization. One of the biggest critiques on personalized marketing are privacy concerns of the consumers (Treiblmaier & Pollach, 2007). Consumers do not like the idea that companies possess personal information about themselves. Treiblmaier and Pollach (2011) argue that privacy concerns have become strong deterrents for consumer's acceptance of personalized marketing in an online context. Issues of privacy highlight the boundaries of acceptance and use of data mining for personalization (Jamal et al., 2013). This can be seen in the use of ad avoidance tools. Consumers are increasingly using e-mail filters, advertisement blockers, do-not-track programs, do-not-call programs or do-not-e-mail programs (Beak & Morimoto, 2012).

Privacy can be defined as "the moral right of individuals to be left alone, free from surveillance or interference from other individuals or organizations, including the state" (Sheng, Nah & Siau, 2008, p. 350). Privacy protection is important, because "privacy empowers people to control information about themselves, privacy is the right to be left alone, privacy is related to dignity in the reciprocal obligations of disclosure between parties and privacy can be used as an agent to regulate and control information collection and use" (Sheng et al., 2008, p. 350). These aspects are violated by personalized marketing. Privacy concerns of consumers arise from the feeling that their information is vulnerable and that they are not able to control their personal information (Dinev & Hart, 2004). Privacy concerns are higher in online marketing than in other types of marketing, because of the following reasons. At first, advancements in technologies, such as location awareness technologies, increase the amount of available personal data. Secondly, the introduction of perceptual and biometric interfaces of certain applications allows third parties to identify users. Finally, online marketing requires the tracking of everyday activities of consumers in order to provide personalized information, services or products (Ackerman, 2004; Cas, 2005).

The research from Treiblmaier and Pollach (2007) did not only focus on the benefits of personalization, but also highlighted the downsides of personalization. Consumers also named four important costs of personalized marketing. The first one is invisible and permanent data collection. Users worry about automated data collection. It is often unclear when and what data is collected, for how long it is stored and how it is used (Treiblmaier & Pollach, 2007). The second cost of personalization is insufficient information. Organizations collect detailed information about their consumers, but these consumers feel poorly informed about how their data is used. Consumers said that "the basic idea of equal communication partners is violated by the party that has the technological means to do so" (Treiblmaier & Pollach, 2007). Loss of control is the third cost, which means that consumers are not aware of the value of their data and their rights. Consumers were worried that "they know something about me and can use this in a way that benefits them and there is nothing I can do about it" (Treiblmaier & Pollach, 2007). Finally, increased unsolicited communication is a cost of personalization. Thanks to the access to consumer data it is easier for companies to send promotional messages to consumers. Consumers indicated that "they would not stop sending me that" and "my first e-mail addresses have become impossible to use" (Treiblmaier & Pollach, 2007). So, this is the other side of the coin. Personalized marketing is not always that positive as most of us think. There are certainly some downsides that have to be taken into account. Privacy concerns form a serious critique on personalized marketing. They create a dilemma between the benefits of personalized marketing and the downsides of privacy concerns that come along with it.

To illustrate the effects of privacy concerns Jamal et al. (2013) executed the Beacon case study. In 2007 Facebook launched a new marketing tool called Beacon. The tool was intended to provide an innovative approach to personalized marketing. The idea was to leverage Facebook by enabling third party online businesses, such as eBay, to allow users to share actions with their friends via automatic news feed. When an action is performed on eBay, a Beacon alert occurred informing the consumer that it is going to automatically share the story with Facebook friends. This disclosure of purchase actions by Facebook users offers opportunities for commercial organizations. However, Facebook users were concerned about their privacy, so Beacon received a lot of critique. In the end, the marketing tool was damaged and withdrawn, because Facebook users were extremely worried about their privacy. They did not like the idea how information was combined, used and reused by Beacon. So, what should have been a successful innovation in marketing became a complete failure, because of privacy concerns (Jamal et al., 2013). This example shows again that privacy concerns are a big issue in personalized marketing.

6. CONCLUSIONS

The current paper provided a detailed overview of personalized marketing. Once again, personalization is defined as automatic adjustment, re-structuring and the presentation of tailored information content for individuals (Perugini & Ramakrishnan, 2003). It is the ability to provide tailored content and services to individuals, based on knowledge about their preferences and behaviour (Kuo & Chen, 2001). In personalized marketing it is not about how much a company knows about all its consumers, but rather about how much it knows about each of those consumers (Peppers & Rogers, 1995). The research question of the current paper was:

How can marketers use personalized marketing in their marketing strategies?

Marketers can use personalized marketing in their marketing strategies by using personalization systems or, in other words, recommendation systems: "a computer-based application that builds user profiles from past usage behaviour to provide relevant recommendations" (Gao et al., 2010, p. 609). Marketers can build their marketing strategies around the three procedures in a personalization system: user profiling, content modeling and information filtering. Through a user profile marketers collect individual information, such as basic information (age, gender), information usage behaviour, interests and intentions (Gao et al., 2010). Marketers can create a user profile through three profiling methods, namely modeling behaviour, modeling interest and modeling intention (Gao et al., 2010). Different tactics can be used for this modeling, such as Markov chains, decision trees, association rules, TF-IDF, SVM, Bayesian networks, Naïve Bayes, neural networks, LSA and KNN. After creating a user profile, marketers have to model the content, whereby some kinds of indications, mostly in the form of keywords, are needed on the topic of a particular content (Gao et al., 2010). Once the user profiles and content models have been obtained, marketers have to filter information and customize products and services for users (Gao et al., 2010). Marketers have four option to do this: rule-based filtering, content-based filtering, collaborative filtering and hybrid filtering. Rule-based filtering is based on "if then, then that" rules (Choi & Han, 2008). Content-based filtering is based on comparisons between items and consumer profiles (Park & Chang, 2008). Collaborative filtering serves relevant content to consumers by comparing their own personal preferences with others (Gao et al., 2010). Hybrid filtering combines content-based filtering and collaborative filtering (Gao et al., 2010). In short, marketers can use personalized marketing in their marketing strategies by using recommendation systems with the three procedures described in this paper (user profiling, content modeling and information filtering). In this way marketers can deliver relevant information to relevant consumers.

Further, the advantages and disadvantages of personalized marketing became clear in this paper. Current research into personalized marketing shows two divergent positions towards the topic of personalization. One side emphasizes the benefits of personalized marketing, such as the fact that recommendations systems solve the frustrating phenomenon of an information overload (Gao et al., 2010). Moreover, getting relevant information at the right time is one of the most important factors for consumers in marketing decisions and personalization systems help marketers to drive revenue and loyalty by matching the right goods to the right people at the right time (Zemirli & Alsenan, 2015). Consumers are provided with better preference match, better products, better service, better communication and better experience (Jamal et al., 2013). However, the other position stresses the downsides of personalized marketing, in which privacy concerns are the biggest problem. Privacy concerns have become strong deterrents for consumer's acceptance of personalized marketing in an online context (Treiblmaier & Pollach, 2011). People do not like the idea that organizations possess personal information about them. Privacy concerns arise from the feeling that consumer's information is vulnerable and that consumers cannot control their personal information (Diney & Hart, 2004). In short, there is a contrast between the positions towards personalized marketing. One position emphasizes the benefits and the other position stresses the downsides. An overview of the advantages and disadvantages of personalization is presented in Table 2.

Table 2: Benefits and Downsides of Personalized Marketing (Treiblmaier & Pollach, 2007)

Benefits	*Downsides*
Decision support	Invisible/permanent data collection
Special offers and gifts	Insufficient information
Faster communication	Loss of control
More relevant communication	Increased unsolicited communication

So, the current position in research about personalized marketing and privacy concerns deals with a personalization-privacy paradox. According to Chellappa and Sin (2005) personalization is dependent on two factors, namely the abilities of the company to acquire and process consumer information and the willingness of the consumer to share information and to use personalized services. Organizations want to obtain as much information as possible, so that they can provide personalized products or services. On the other hand, consumers like personalized products or services, but want to reveal as little information as possible (Adomavicius & Tuzhilin, 2005). So, consumers compare the downsides (privacy concerns) and the benefits (better browsing experience etc.) of personalized marketing to make decisions about the acceptance of this concept (Vesanen & Raulas, 2006). In short, despite the benefits that personalized marketing can provide to organizations and consumers, personalization requires consumers to give up some personal information, which raises privacy concerns and creates a personalization-privacy paradox (Sheng et al., 2008).

7. FUTURE RESEARCH

In the current paper the focus was on the functioning of personalized marketing through personalization systems. However, it appears that there are two divergent positions as regards personalized marketing: the so-called personalization-privacy paradox (Sheng et al., 2008). The remaining question is how to deal with this paradox. How can marketers find the right balance between the benefits of personalization and the downsides of privacy concerns? How can marketers use personalized marketing in their marketing strategies, while taken privacy concerns into account? This is an interesting topic for future research.

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How does Engaging in Technology change Consumers?
The Influence on Emotions, Decision Making, and Behavior

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ABSTRACT

Purpose: The purpose of this research was to identify main streams in the existing literature concerning the effects of technology engagement. Focus was put on changes in consumer`s behavior, emotion and decision making associated with various types of technologies and if similarities could be outlined.
Design/methodology/approach: To assess the current state a critical literature review was conducted. For multiple technology domains, the key writers were outlined and their findings put into perspective. Resulting from this assessment, critical areas and gaps in the literature were identified and suggestions for future research developed.
Findings: The acceptance of technology is discussed extensively in the existing literature and well-founded models are constantly adopted and developed. Similarities of mediators were found for technology engagement but the concept lacks specific measures and generalizability, as studies mainly focused on specific application areas and groups. Behavioral changes are a constant subject of study with less focus on long-term effects, while emotional aspects are less covered.
Theoretical implication: Measures and models of technology engagement effects were identified as the major gap in the existing literature.
Practical implication: Marketers, brands and businesses need to be aware of the changing consumer characteristics shaped by technology engagement in the near future. An adoption of the marketing affords can only take place if the general shifts in the consumer base are disclosed.
Originality/value: This paper tried to bridge between the concepts of technology acceptance and engagement, wherefrom second requires more research. Different studies including multiple technologies for varying consumer bases are evaluated to provide a well-founded greater picture of the technology engagement process.

Keywords

Technology Engagement, Consumer Behavior/Emotions, Decision Making Process, Technology Acceptance, Engagement Attribute

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: Why this topic?

Technology is constantly evolving and so is the consumer. In this process all stakeholders need to be aware of the versatile effects that engaging in diverse technologies has on the routines and state of mind of the customer, in order to maximize the benefits for everybody.

1. INTRODUCTION

Technology engagement of consumers is nothing new in the area of marketing but the technology itself has changed a lot over the last decades. As a huge application area, "information and communication technologies (ICT) have become an integral component of everyone, including older adults, to continue education, health information, and online banking/shopping" (Acharya, 2015). For those consumers engagement is sustained when they are able to maintain their attention and interest in the application which is characterized by positive emotions (O'Brien et al., 2008). In general, according to Kappelman (1995), engagement consists of users' activities and attitudes, which need to adapt to constantly changing technology use in the surrounding environment (Venkatesh, 2012). Availability of products and consumption became all-embracing in our natural environment and the topic gained importance due to the new role of the consumer in the digitized world. New obligations, risks, but also opportunities for the businesses, like consumer co-creation (Füller et al. 2009), are involved and changes in behavior are assumed to be closely related to the technology engagement. Emotions when using this new technology influence the routine consumption behavior of consumers and "change the cognitive processes that contribute to learning, such as perception, attention, memory, decision making, and cognitive problem solving" (Pekrun, 2011). The step from technology acceptance to engagement is complex and the general trend of the application of technologies to other usage/consumer areas is present (Chen et al. 2009).

"Existing frameworks are based on research conducted in specific domains and with particular user groups and applications, with little or no attempt to generalize beyond the individual work and without theoretical foundations to support that work" (O'Brien et al., 2008). Technology related studies and models are mostly associated with the technology acceptance, which is more an initial step than the constant process of engagement. An overall question which arises from this gap in the literature is: "Are outcomes of technology engagement for every technology the same or do we need distinctions between them?" In the following sections effects of technology engagement on emotions, decision making and behavior, for different types of technologies and among different consumer bases will be assessed and a possible overall trend will be outlined.

2. RESEARCH PROBLEM AND QUESTION

Technology changes are rapid and marketers need to adapt quickly to align their strategies and practices to the changes in the targeted consumer groups. Associated emotions, patterns in decision making and the changing behavior need to be identified to make use of the positive effects of technology engagement and determine the critical areas. A unified view of this phenomenon is required to increase the reliability of predictive assumptions of the effects as the applicability of technology today is constantly increasing.

Research Question: *How does engaging in technology change consumers?*

Sub-question: *What is the influence on emotions, decision making, and behavior of the consumer?*

3. METHODOLOGY

To assess the various effects of technology engagement on the consumer, data and information will be collected via a critical literature review. Focus will lie on accessing what has been published already in this field, who are the key writers and what do their hypothesis, statements, claims and findings postulate. Additionally in this descriptive review remaining questions will be highlighted together with themes and trends of major importance. By introducing the effects of different types of technologies on the individuals and taking additional consumer characteristics into account, the literature review should provide a more general overview of how technology engagement changes the consumer behavior, emotions and making. Resulting from this assessment the gaps in the existing literature and recommendation for issues for future research will be postulated.

4. RESULTS

4.1 Technology Acceptance and Engagement

Before consumers can engage in a certain technology the acceptance is required. Davis (1989) proposed the technology acceptance model (TAM) including the independent variables perceived usefulness and perceived ease of use influencing the behavioral intention to use. First is defined as, "the degree to which a person believes that using a particular system would enhance his or her job performance." Second, describes the "degree to which a person believes that using a particular system would be free from effort." Those variables are seen as extrinsic motivational drivers (Davis et al. 1992), specified as "the perception that users will want to perform an activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself", influencing the consumer's decision about how and when they will use the technology. Lunceford (2009) criticized that cost and structural factors force users to adopt the technology or not, such aspects are lacking the TAM model. As the TAM mainly emphasizes extrinsic perspective (Lee et al., 2005) more recent studies have included intrinsic motivation constructs, "representing a student's subjective feelings of joy, elation, pleasure, and positive holistic experience, as an important construct that may play a critical role in explaining user acceptance and usage behavior" (Saadé et al., 2009).

One step further is technology engagement which requires the acceptance by the consumer. O'Brien et al. (2008) tried to summarize the streams in the literature and identified the main problem as the limited generalizability of the studies subjects for other technology areas and user groups. The authors introduced engagement attribute, for the four technological areas: video games, educational applications, online shopping and web searching. These attributes are described as the "characteristics of the user-computer interaction that influences or is a component of the engagement." The literature review outlined user experience as a form of engagement and outlined several important engagement attributes (See table 1). The point of engagement (O'Brien et al., 2008) can be seen to be in place shortly after the acceptance by the user, as the mentioned attributes are similar to and directly built on the perceived usefulness and perceived ease of use (Davis, 1989). These proposed attributes of engagement are contrary to the three prior elements: attention focus, curiosity, and intrinsic interest identified by previous research (Jacques et al., 1995; Webster & Ho, 1997; Webster & Ahuja, 2004).

Point of Engagement Attributes	Period of Engagement Attributes
• Aesthetics • Novelty • Interest • Motivation • Specific or experiential goal	• Aesthetic and Sensory Appeal • Attention • Awareness • Control • Interactivity • Novelty • Challenge • Feedback • Interest • Positive Affect

Table 1: Engagement Attributes (O'Brien et al., 2008)

In relation to the research question how technology engagement affects emotions, behavior and decision making. Users are more aware of what the technology is doing and feeling connected to the technology or to other people. This involves the aspects of feedback, interactivity but also social awareness. "The richness of the application generates positive emotions in users" (O'Brien et al., 2008), behavior is changed in the way, that they are relying on the technology provider or other user's opinions more intuitively when they engage. Engagement in certain technologies will be not only "purposeful but pleasurable, and that this emotional component will make people more likely to return to a specific product" (O'Brien et al., 2008).

4.2 Web 2.0 & Social Media

As a major technology application area the internet and social media get a lot of attention in the literature when studying the sociology of the consumers using this technology (Boyd & Ellison, 2007; Valenzuela et al., 2009; Mangold & Faulds, 2009; Kaplan & Haenlein, 2010; O'Keeffe & Clarke-Pearson, 2011). Changes in the way consumers and businesses interact are in place as the access to information and reduced transaction costs has enabled new opportunities for both.

The term Web 2.0 introduced by O'Reilly (2005) and the associated technologies/applications are, in contrast to prior Web 1.0, based on user-generated content. Consumers engage more in the co-creation of value, development process and the interaction possibilities have changed (Harrison and Barthel, 2009). The customer can interact with seller personnel and other customers. Before Web 2.0 these connections were limited by available technology like word-of-mouth, letters, and telephone to narrow circles of family, friends, colleagues, and acquaintances constrained by location (Sashi, 2012).

Consumers could be seen as more rational before Web 2.0, as they needed a proper information search before making a decision or purchase. Berthon (2012) outlines three major shifts of locus enforced by the digital new digital technologies. First activity shifts from desktop to the web. Second, power shifts from the firm to the collective. Third value production shifts from the firm to the consumer. As Berthon (2012) further stated "creative customers have been always existed, Web 2.0 and social media put the phenomenon into hyperdrive", this communication technology enabled the connection between those customers. Overall the existing level of technology depends on the infrastructure, culture, legislation of the consumer's environment (Berthon, 2012). Concluding from this the interactivity between consumers, but also the engagement in businesses is enabled by ICTs, consumer feel more powerful and the can decide for themselves if they engage in a certain technology or product developments of their interest.

Elaborating further on the communication technologies especially the electronic word-of-mouth (eWOM) enabled by web-based technologies has created numerous opportunities for consumer communication and decision making process (Cheung et al., 2008). Same as for traditional word-of-mouth (WOM), it is more effective than traditional marketing tools of personal selling and conventional advertising media (Gilly et al., 1998). Hennig-Thurau et al. (2004) defined eWOM as "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet." eWOM can occur in several different online channels and technologies. De Bruyn and Lilien (2008) have examined the impact of eWOM on product consumers' decision making processes, results show that "close relationships can be effective in capturing recipients' attention and creating awareness", but do less influence the later decision making process. Engagement in such activities is associated with an increased level of trust and a higher the level of opinion-seeking, opinion-giving and opinion-passing behavior. Especially the opinion-passing, also known as forwarding, is an important behavioral possibility of eWOM that facilitates the flow of information (Chu & Kim, 2011, Sun et al., 2006). This "unique characteristics of the Internet can facilitate multidirectional communication" (Chu & Kim, 2011) and changes in the behavior are assumed as they consumers are more easily to adopt the opinion of others.

Associated with that opinion and information sharing behavior, also a possible information overload could be the result if a consumer engages too much in the web. Helsper et al. (2010) found out that in this case, consumers choose to rely more heavily on brand names. More active shoppers search across sites instead of less active online shoppers, which have higher search costs (Johnson et al., 2004). Further consumers engaged in online purchase "perceive significantly lower channel risk, search effort, evaluation effort, and waiting (delivery) time online than offline and express significantly higher price search intentions online than offline" (Gupta et al., 2004). The element of trust is crucial in technology engagement. This is encouraged by social media, as they rely on more personal information and reviews of peers, which in the end significantly affects intention to buy (Hajli, 2014). Overall aesthetics, system and information quality relating to the perceived usefulness of the TAM of social media have a greater influence on intention to buy through social networking sites than trust (Hajli, 2014). As Ioanas and Stoica (2014) conclude, "social networks have a role in influencing the behavior of consumers in the virtual environment, particularly when the degree of exposure of messages and the relation created between the variety of information given and the consumer who is about to make a purchase." Elaborating on behavioral changes, in a study among college students Fogel and Nehmad (2009) investigated attitudes to risk, trust and privacy with regard to social networking websites (SNS). A positive relation was found between those with SNS profiles and risk-taking behavior, whereby it is to say that, men showed less risk aversion than women.

When it comes to creating positive emotions during the searching and shopping engagement, qualities of websites, aesthetics (Lavie & Tractinsky, 2004), as well as interactivity, control and feedback (Huang, 2003) are necessary to archive e.g. enjoyment, satisfaction, and fun. These emotions sustain the usage behavior of the particular technology in the future (O'Brien et al., 2008). As one major negative emotion uncertainty can be decreased with further engagement and when anxiety diminishes. Boyd (2008) investigated the usage of

social networks by teenagers and the influence on their behavior and social development. Her finding showed, "while teenagers are actively learning as a part of engaging with social media, their participation in public social settings—networked or not—is broadly frowned upon as unsafe or dismissed as frivolous compared to those of earlier decades, involves their limited opportunities for unregulated, unstructured social interaction." Overall the engagement in this kind of technology enables some teens to "achieve greater freedoms" as they "do not possess a natural capability that enables them to understand how to navigate social media or the resultant dynamics, but they are learning to do so alongside their broader efforts to understand social life. Unlike adults, who are relearning how to behave in public because of networked technologies, teens are simply learning how to behave in public with networked publics in mind" (Boyd, 2008).

Additional outcomes of behavioral changes due to technology engagement of teens are based on a survey called "Social Media, Social Life: How Teens View Their Digital Lives" (2012). Changes perceived by the teens when engaging in social media were outlined. The findings showed that attitudes like "outgoing", "confident", "popular" or "sympathetic to others" increased while "shy" decreased, even though more than 2/3 felt no difference when engaging in this particular technology. The validity of these results is limited as the survey is based on the perceived effects and the actual effects cannot be estimated. Other behavioral changes are indicated by the favored method to chat, 1/3 prefers "Through texting" as their favorite way to communicate with friends. Decision making in this context is implicitly determined, as they feel disconnected when they do not use this communication technology, even though 43 % "wish they could unplug for a while sometimes". Further elaborating on the emotional aspect technology engagement five emotions associated with new play technologies were named: boredom, challenge, excitement, frustration and fun (Mandryk, 2006). Those emotions were tracked for users interacting with play technologies, but did not differentiate when users further engage in the long-run.

But aside from the communication and gaming aspect of technology engagement, web-based learning management systems are an interesting part of the e-learning trend. Chen et al. (2010) investigated the impact of web-based learning technology on college student engagement. The results show a generally positive relationship between the use of learning technology, student engagement and desirable learning outcomes. Besides positive effects on the traditional student engagement measures like the active and collaborative learning, also more complex approaches like higher order thinking and reflective learning. Practical competence, personal and social development are additionally enhanced by the engagement (Chen et al., 2010). Skinner and Pitzer (2012) support these findings and state: "emotion is likely the fuel for the kind of behavioral and cognitive engagement that leads to high-quality learning."

4.3 Consumer characteristics and their effect on usage behavior

Aside from the online-based technologies, there is the need to get a better understanding of the general technology acceptance and resulting engagement. Consumers buying behavior was identified to be is influenced by four major factors: cultural, social, personal and psychological (Rani, 2014). As a major part of the personal factor "age, gender and experience will moderate the effect of the hedonic motivation of the behavioral intention to use a technology and/or technology use" (Venkatesh, 2012), these characteristics together with voluntariness of use are further outlined in the unified theory of acceptance and use of technology (UTAUT) model by Venkatesh (2003) (See figure 1). The model is based on eight previous models in this research field, including the already mentioned TAM (Davis, 1989).

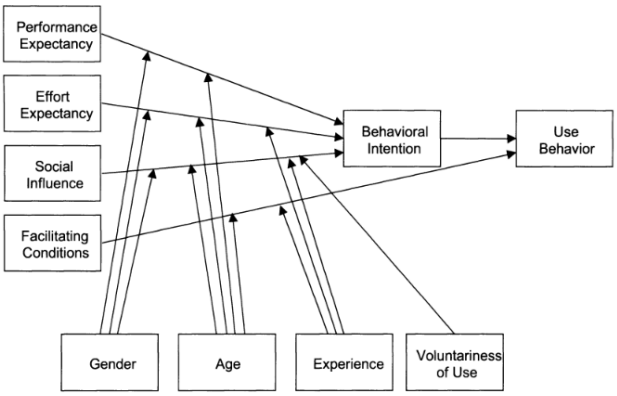

Figure 1: UTAUT model (Venkatesh, 2003)

Whereas, this model is assumed to have a higher predictive power for technology usage, "since UTAUT not only underscores the main individual-level factors, but also identifies the contingencies that moderate the effects of these factors" (Yu, 2012). The model was selected because similarities between usage and engagement are assumed and prior research in the field of technology engagement is mostly limited to one specific technology or consumer base (Chen et al., 2010; Junco et al., 2010; Manuguerra & Petocz, 2011), so a general model for engagement process is missing.

As one key moderator of the UTAUT model gender was expected to have a significant impact on the technology usage. Before introducing the model Venkatesh (2000), study results of workers being introduced to a new software system showed that "men's technology usage decisions were more strongly influenced by their perceptions of usefulness. In contrast, women were more strongly influenced by perceptions of ease of use and subjective norms. "As age increases, gender differences in learning about technologies from experience become more pronounced. Aging leads to a decreasing capability of information processing. Women tend to process information in a more detailed and subtle manner than men do (Darley and Smith 1995), older men tend to rely more on heuristics and schema acquired from usage experiences to determine their behavioral intention, paying little attention to environment cues. Therefore, older men with more usage experience will rely most on their habits (Venkatesh, 2012).

A second moderator of usage behavior age influences the engagement outcomes. A "rapid growth of older adult populations and their technology use for their active civic engagement by staying connected to other people and communities" (Acharya, 2015) is expected and the possibility for elderlies can be derived. Mitzner et al. (2010) tried to look beyond the stereotypes that older adults are unable, unwilling, or afraid to use technology and analyzed the use of and attitudes about technology in the context of their home, work, and healthcare. "Positive attitudes were most frequently related to how the technology supported activities, enhanced convenience, and contained useful features. Negative attitudes were most frequently associated with technology creating inconveniences, unhelpful features, as well as security and reliability concerns" Whereas, the following factors predicted general technology use: age, education, race, fluid and crystallized intelligence, computer self-efficacy, and computer anxiety. Resulting from

engaging in technology and decreasing anxiety, behavioral changes can be derived, as they reshape the daily life of the consumer by facilitating the health controls, but also daily routines. Emotions are assumed to be positive as they are more independent, do not rely on the help of others and quality of life is improved (Pollack, 2005). Acharya (2015) investigated the use of information and communication technology (ICT) among older adults which are assumed to be "unwilling to use ICTs due to bodily and cognitive decline in working memory, attention, and spatial abilities". The engagement in those technologies enables many older adults to overcome the social isolation during late life (Ihm & Hsieh, 2015) and "e-literacy" (Acharya, 2015) is developed "to promote social justice by bridging the widening gap of digital inequality". Those inequalities between users can have crucial implications for users' socio-economic mobility as well as their social well-being (Ihm & Hsieh, 2015). Even though no consistent evidence was found for the impact, either positive or negative, of using computers and the Internet on several aspects of well-being and autonomy of healthy older adults (Slegers et al., 2008). This inconsistency could be related to the number of different demographical characteristics, which make generalization not possible.

Concerning the decision making behavior Venkatesh (2012) stated: "Once older consumers have formed a habit by repeated use of a particular technology, it is difficult for them to override their habit to adapt to a changed environment (…) moreover, gender differences will further moderate the effect of habit." Decisionmaking in this context when they engage in a new technology are hindered by so-called cognitive lock-in, which creates a barrier to behavioral changes (Murray & Haubl, 2007). Thus as consumer become more engaged habits will have a stronger effect on intention and use of technology (Venkatesh, 2012)." These habits take the time to be developed, however, there is constant change the consumer technology market and the related environment, which requires frequent consumer adoptions.

4.4 Lead Users, Early Adopters and Prosumers of New Technology

Aside from the consumer characteristics, which predetermine the engagement level and outcomes, the time when consumers engage in the technology is important. The term "lead users", introduced by Von Hippel (1986), describes "users whose present strong needs will become general in a marketplace months or years in the future." Since lead users are familiar with conditions which lie in the future for most others, they can serve as a need-forecasting laboratory for marketing research. Moreover, "lead users often attempt to fill the need they experience, they can provide new product concept and design data as well" (Von Hippel, 1986). As a modern example consumer engagement in a virtual brand community (Brodie et al., 2013) facilitates consumer to be more actively involved in the design and production of certain products. The similar concept of early adopter describes the consumer base after the innovators in the technology adoption life cycle (Rogers, 1962).

Luo et al. (2010) have identified the major factors context of acceptance of emerging innovative technology in its early adoption stage. Trust, risk, self-efficacy and performance expectancy, driving were found to be the major drivers of the early adoption and engagement in the case of mobile banking service. Most important for engagement in such an early stage of the technology multi-dimensional "perceived credibility" (Luarn & Lin, 2005), including trust and risk. The two aspects play a more crucial role in individual behavior toward adopting than the prior mentioned perceived usefulness and perceived ease-of-use (Davis, 1989). In the case of new smartphones, the behavior of a college student is highly likely to be influenced by her friends and family members (Lee, 2014) due to the associated higher level of trust. Lead users expect additional benefits from this early engagement and solution to their needs and are, therefore "highly motivated to engage in innovative activities" as they have high expected benefit (Hienerth et al., 2013). Recently there is the overall business technology trend for using consumers as innovators. "With the advent of the Internet and online social network applications, the social network perspective enables an effective and efficient identification of lead users" (Kratzer, 2016).

In conclusion, if consumers like the technology they influence the decision making and behavior of their peers. Motives and emotions of early adopters highly depend on the selected technology, but there seems to be a gap in the literature what emotions lead users and early adopters encounter, as current research is mainly based on the criteria to identifying early adopters and their impact on the product development (Lee, 2014; Plötz et al.2014, Schelly,2014).

4.4.1 Smart Grids/Homes and Future Technology

Early adopters can also be found in the application of smart grids technologies. Those electrical grids involve customers who use and produce sustainable/ renewable energy sources or energy efficiency resources (Bigerna, 2016; Geelen, 2013; Park et al. 2014). When referring to smart grid technologies, the term "prosumer" is often used, as it emphasizes a merger of producer and consumer.

Geelen (2013) categorized the behavioral changes of consumers through products in the smart energy system. The main influences were considered on the awareness of electricity production and consumption and willingness to turn on appliances when producing electricity. Bigerna (2016) concluded, "the development of new infrastructures as smart grids has had a significant impact on the entire value chain and subsequently on socio-economic features, such as shifts in consumer behavior, culture and practices and the need for public support". Noticeable for this kind of this technology engagement is, that behavior is not implicitly adjusted to the technology, as it "may theoretically lead to changes in energy consumption, but when the behavior in the household is not aligned, potential energy savings gains may not be realized" (Geelen, 2013). In contrast, Bergman and Eyre (2011) came to the conclusion that "possible behavior after installation may range from misuse, disappointment/ disillusionment and rebound effects, through fit-and-forget (no change), to increased energy awareness, indirect benefits and double dividends".

In this context Park (2014) developed the original TAM (Davis, 1989) and integrated risk as a further dimension. So the perceived usefulness, ease of use and risk together with the general attitude, determine the behavioral change and emotions when consumers engage in such a smart appliance technology. Smart homes, including technological home appliances, are an emerging technology area within the smart grid. Most of the technologies involved do not influence the awareness for energy usage, rather influence the routine behavior or are associated positive emotions, due to a better home networking a better quality of life, especially for elderlies (Lotfi et al., 2011). The main three areas of smart homes deal with comfort healthcare and security. Behavior can be tracked by those applications, but the change of behavior trough the engagement in this technology remains indistinguishable (Alam et al., 2012). Different user interfaces will be used to acquire user feedback,

most of which will be based on auditory, visual, and haptic perceptions, which is associated with positive emotions, as it was discussed for online searching and shopping engagement.

As additional major new technology, virtual reality (VR) is particularly interesting. Areas of usage are versatile ranging from entertainment to medical treatments. Positive emotions are associated with brain stimulation trough the perception of being somewhere else (Deiters, 2016). The technology enables visual social interaction at home without any physical contact. Applicability of this technology, especially for the entertainment sector and educational purposes, is diverse. The unique way VR can deliver information with virtual experience is not comparable to other technologies. Studies in this field are recently emerging, whereby medical possibilities are a major subject of study (Bekele et al. 2013; Wilson & Soranzo, 2015). Aside from the positive effects and possibilities an engagement of the consumer for VR, isolates them from the real world. "Emotional reactions and behavioral responses are dependent on the user's expectations and hence are strongly related to the user's cultural background and lifestyle" (Rebelo et al., 2012). Literature in this field also lacks long-term assessment for behavioral changes and emotional influences for regular consumers of VR. Studies instead examine the possibilities in which areas the technology can be applied and how respondents are affected in this particular moment, so engagement and it implied consequence as a process is not investigated so far.

To critical assess the current state, recent literature in this field focusses solely on the behavioral changes of the consumer when engaging in smart grids/homes, while long-term changes in the behavior and decision when consumer further engage in these smart technologies needs further investigations. Overall the engagement in new technologies the literature in place is limited to specific domains and consumer bases. The consumer can engage as lead users or early adopter when trust and risk perception of the technology are balanced and the benefits are clear. Behavioral influences on the routines can be partially seen and the influence of those consumers on the broad consumer base undeniable. Nevertheless, once the behavior is adopted to make the maximum use of the novel technology and emotional change is assumed to be in place, which needs further investigations in future research, as those technologies mature and availability is for the broader consumer base.

5. THEORETICAL AND PRACTICAL IMPLICATIONS

From a theoretical perspective, technology engagement is built on the acceptance of technologies. Moderators, like age and gender, of technologies acceptance summarized in the UTAUT model (Venkatesh, 2003), were found to influence also the engagement process. In particular, experience enforces habits and routine when using these technologies, which at the end influence the use behavior of the consumer. Highlighting that engagement can be associated with the previous experience of a user, but certain consumers can be engaged without any. Further the effects on their behavior emotions and decision making need to be seen as distinct from the acceptance. Empirical studies are required as new technologies arise and the nature of the handling and imperative changes implied when using or ultimately engaging in this technology need to be identified. One of the major gaps in the literature on engagement is in empirical evidence about how it should be measured (O'Brien, 2008), while technology acceptance models are constantly validated and developed. Characteristics of engagement need to be generalized to make a comparison between the various kinds of technologies possible and to be able to estimate general trends in the changing consumer demographics.

From a practical perspective, to identify trends in the changing consumer behavior, decision making and emotions are crucial for a long-term successful business. For the customization of the marketing strategy, new product development, but also medical-related technologies parties involved need to have a clear understanding of the outcomes associated with certain technology engagements. Even business processes like distribution or marketing channels need to be adapted to the consumer preferred ways to optimize the interaction in B2C communication. As identified trust and risk are crucial when new technologies arise, this needs to be balanced with the benefits the customer perceived when he engages. Age and gender were further significant moderators of technology engagement effects and related behavioral changes. Segmentation of consumer base among the identified factors is essential to respond to the individual needs. An undiscussed area in this literature review are privacy concerns. When technology leads to disclosing all the behavioral attitudes of users, e.g. via the smart home appliances, concerns arise how especially brands can use this big data to customize their offers and where are the limits. The effects how customers emotionally react when they engage are key for future work.

6. CONCLUSION

The literature review emphasized that technology engagement needs to be seen as distinct from technology acceptance, but some similarities in characteristics are present. Technology acceptance, in contrast, has received a lot of attention in the literature and several models examining the factors determining the intention to use if the consumer, which is not the case for technology engagement. The moderating factors trust, age and gender are assumed to have also a major impact on the engagement effects as it deals with the long-term consequences of usage. To predict an overall outcome of technology engagement on emotions, decision making and behavior the technology landscape today is too complex. Most of the recent studies focused on single technologies and how engaging in those e.g. changed the social interaction, learning or daily routines of the consumer. Behavioral changes are studied the most among the three investigated influenced attributes of the consumer. Decision making can be seen as somehow in implied in the behavioral change but is lacking in the empirical ramifications, besides for SNS where an engagement e.g. positively influenced the intention to buy. Emotions get less covered besides for the example medical purposes studies on VR usage were found that assessed the positive emotions associated with the usage of this particular technology. In general, if we relate to the engagement attributes proposed by O'Brien et al. (2008), interactivity and feedback are crucial elements which lead to positive emotion. No further categorization of emotional changes was provided by the literature in place and no clear evidence for prevailing negative emotions, probably subconscious emotions, related to technology engagement could be identified.

After highlighting the gaps in the literature future research has to identify common measures for technology engagement. Especially emotional consequences need to be investigated as the technologies mature and new technologies arise. Future investigations need to involve a greater variety of technology as is constantly developing and long-term results need to predictable. Therefore create a model for technology engagement for possible future alternatives/paths or emotional states and behavioral changes may be useful.

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The trade-off between privacy concerns and the benefits of personalization

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ABSTRACT
Advertising on the internet has become extremely personalized where marketers tailor their content to the individual user. This resulted in positive and negative effects among internet users. On the one hand, the personalized messages are often experienced as useful and relevant. On the other hand, users have become concerned about their privacy online. This paper tries to give a clear overview of prior research on personalized marketing and discuss current areas of interest, possible research gaps and future directions. After an extensive literature review several user-centric aspects emerged as central themes in literature: (1) privacy concerns, (2) consumer satisfaction/involvement, (3) usefulness/relevance of personalized content and (4) contextual factors. Furthermore, an evaluation of the trade-off users face is provided where a majority of internet users are likely to be ambivalent in their trade-off and consider both privacy concerns and personalization benefits. Lastly, two online strategies to cope with privacy issues are examined.

Keywords
Web Personalization, Personalized Marketing, Personal Data, Privacy Concerns and Satisfaction

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: Why this topic?

The developments in digital marketing made it possible to create highly personalized content to the individual user. Over the years, these developments have resulted in many positive and negative effects from the users' perspective. Therefore, digital marketing is a hot topic that is heavily discussed and has attracted my interest.

1. INTRODUCTION

Online marketing is constantly increasing and today many firms use internet technologies to get closer to their customers. Therefore, access to customer information is a critical success factor for a firm to target its personalized content. This user-provided content is a large determinant for the success of online businesses. [1] The personalization refers to the tailoring of products and purchase experience to the tastes of the individual consumers based upon their personal and preference information.[2] Together with the increased use of the internet, the information technologies to store and examine great amounts of personal data increased as well. Furthermore, recent advances in mobile communication technologies have presented location-aware marketing (LAM), which is defined as targeted advertising initiatives delivered to a mobile device from an identified sponsor that is specific to the location of the consumer.[3]

The recent technological advances have made it possible for firms to identify customer needs, develop better products/services and to improve relationships with the customer. However, these same technological advances raise concerns among consumers about the access to their personal data and how this data is being used by firms. Consumers might see the personalized content as more appealing and beneficial, but they also could interpret this as violation of their privacy.[4] Internet users are concerned that without their consent, their personal information will be available to a very large network of information seekers.[5] These two sides of the story resulted in a personalization-privacy paradox, the tension between how the developers and marketers of IT applications exploit users' information to offer them personalized services, and those users' growing concerns about the privacy of that information, which can restrain their use of such applications.[6]

Privacy can be defined in many ways and is often dependent on the context. However, privacy often covers three basic elements: anonymity, confidentiality, fairness and control.[7] Furthermore, the concept of privacy is becoming increasingly important in world of information technologies, since the networked systems are becoming larger and the concept of privacy becoming more complicated.

The aim of this paper is to provide a descriptive model of the trade-off between personalized marketing and the privacy concerns. The paper will try to address the gaps in existing literature in the field of privacy and personalization in the digital world of today. Furthermore, the paper provides a clear overview of the current literature on the personalization-and-privacy paradox. The paper will try to answer the following research question:

RQ: *How do we trade-off privacy concerns versus the benefits of personalized marketing?*

The paper is divided into four chapters. At first, a short introduction and background is provided about the phenomena of personalized marketing and the related privacy concerns. Then, an extensive literature review is conducted about the following topics: personal data, effects of personalized marketing and possible responses to personalized marketing. After this literature review we try to conclude and answer the research question about how consumers trade-off privacy concerns versus the benefits of personalized marketing.

2. PERSONAL DATA

2.1 Types of Personal Data

Today in the online world individuals reveal a tremendous amount of personal information. A lot of individuals are not even aware of the amount of personal information they reveal online. Personal data can include name, phone number, date of birth, photographs, credit card number, etc. Personal data can refer actually to any kind of information that can identify who you are. [8] Furthermore, personal data could also include information like where you got to school or where you work. This personal data can be acquired legally in many different ways. For example, joining social networking sites or other clubs/groups, applying for jobs, applying for insurance, transactions, etc. However, the primary source of privacy concerns revolves around this personal, or individual-specific, data.[9] Therefore, a distinction in defining the types of personal data can be made. Market-level or modeled data are consumer information that reflects the generalized characteristics of a consumer group, market segment, media audience, or geographic region. [10] This type of information, presented in databases, is relied on by old-fashioned marketers in order to analyze consumer groups. Individual-specific information includes data such as names, addresses, demographic characteristics, lifestyle interests, shopping preferences, and purchase histories of identifiable individuals.[11] Since marketing is nowadays more focused on the individual experience, the use of individual-specific data has increased. Due to the expansion of internet technologies this personal data can travel easily around the world, which can indicate great risks of misuse of personal data.[12]

2.2 Personal Data on Social Networking Sites (SNS)

The social networking sites (SNS) are most likely the biggest phenomena of the 21st century. Facebook, Twitter, LinkedIn, Instagram have all increased in popularity tremendously. Within these social networks, individuals have profiles where they disclose personal information, interact with other profiles, and join virtual groups that have common interests. Due to the eagerness to socialize on the platforms, individuals reveal vast amounts of personal information. Therefore, social networking sites have become one of the main sources of personal information today. In addition, the users have a high degree of choice regarding the information they disclose. [13] Individuals share personal information on their profiles, but they also share information of other individuals. Users can also decide on particular applications to share the information on the SNS. With all this SNS users reveal vast amounts of personal information

[1] (Krasnova, Gunther, Spiekermann, & Koroleva, 2009)
[2] (Chellappa & Sin, 2005)
[3] (Unni & Harmon, 2007)
[4] (Tucker, 2014)
[5] (Dinev & Hart, 2006)
[6] (Angst & Agarwal, 2009) (Dhar & Varshney, 2011)
[7] (Brown & Muchira, 2004)
[8] (Commission, Protection of Personal Data, 2016)
[9] (Phelps, Nowak, & Ferrell, 2000)
[10] (Phelps, Nowak, & Ferrell, 2000)
[11] (Phelps, Nowak, & Ferrell, 2000)
[12] (Commission, Protection of Personal Data, 2016)
[13] (Kosta, Kalloniatis, Mitrou, & Gritzalis, 2010)

which eventually is to some extent used for marketing purposes. Currently, social networking sites allow the dissemination of information about other people without their consent.[14] Users are not able to decide how they can protect their data, they are forced to choose from a specific privacy options the social networking site is offering them. Furthermore, some data brokers have entered relationships with Facebook, in order to help them improve the targeting of their advertising offers.[15] Data brokers can be defined as companies that collect information, including personal information about consumers, from a wide variety of sources for the purpose of reselling such information to their customers for various purposes. [16] These partnerships raise suspicions about the use or misuse of personal information, since this data packages eventually will be sold to marketing companies targeting advertisements on you.

2.3 Regulation on the Use of Personal Data

2.3.1 European Union

The protection of privacy rights and personal data is an issue of great importance to the European Union.[17] The EU applies strict rules and regulations on entities that process personal information. The Article 29 Data Protection Working Party was set up by the European Parliament and Council in 1995 to secure the protection of individuals with regard to the processing of personal data and on the free movement of such data.[18] It is the independent EU advisory body on data protection and privacy. The Working Party describes that any entity that collects and manages personal data is called a data controller. Anyone who is a data controller has to respect to EU law when handling this kind of information. Data controller have to inform the individual that they are collecting data; they have to let them know who they are, what the information is being used for and eventually if it will be transferred to other parties.[19] Furthermore, the individual has the right to know how the data is collected and the right of receiving a copy in a comprehensive form.[20] The European Commission lately imposed 'the right to be forgotten' where the individual should have the right to have his or her personal data erased and no longer processed where the personal data are no longer necessary in relation to the purposes for which they are collected.[21] The European Commission considers this new right of high importance since a high level of data protection is essential to foster users' trust in online services.[22] Privacy is the second most important motivation for non-adaption of e-commerce by European Union consumers, just after security concerns.[23] Therefore, the European Commission argues that it is important to increase data protection in order to stimulate economic growth.[24] These new rules will shift more control to the users and increase the trust levels among users.

2.3.2 The Netherlands

The use of cookies is heavily debated by policy makers in the US as well in Europe, because of its potential violation of the privacy of internet users. Policy makers discuss whether users should provide informed consent prior to the installation of cookies ('opt-in').[25] The Netherlands is an interesting case with regard to this 'opt-in' discussion, because legislation has recently changed from an 'opt-out' to an 'opt-in' requirement.[26] As a member of the EU, the Netherlands follow the EU policy in which is stated that data storage by placing cookies is only allowed if the user has provided prior informed consent. The previous 'opt-out' option is no longer sufficient. This new legislation requires that website users have active control over their personal information online when entering the site.

3. PERSONALIZED MARKETING

3.1 4 Steps of Personalization

According to Pepper et al. (1999) there are four steps within the process of personalization.[27]The first step is to identify your customers. To be able to target personalized ads, the company needs to know the customer needs and preferences. This information will be continuously updated and cannot be one-time contact. The customer needs to be observed with all kinds of data, mediums and locations. The second step is to differentiate the customers. There are two different ways to do so; the first is that they represent diverse levels of value and second is that their needs and preferences are different. After identifying the valuable customers, the companies can form appropriate marketing strategies. The third step is interacting with the customers. It is critical to maintain the interactions and to improve the interactions where possible in order to receive more useful data. The final step is customizing the company's behavior. The company needs to adapt their behavior to meet the customers' expressed needs. Therefore, the product/service needs to be personalized to each and every customer. The concept of Pepper et al. (1999) is perhaps a little outdated, but the simple rules of procedure still apply for today's personalized marketing.

3.2 The Rise and Evolution of Personalized Marketing

Overall, the personalization simply refers to the tailoring of products and purchase experience to the tastes of the individual consumers based upon their personal and preference information.[28] Personalization is often treated a distinct concept from customization, which involves users actively inputting information and receiving tailored content in response.[29] In order to suit customer needs companies use previously obtained or real-time personal information about the individual. [30] Traditional ways of personalized marketing include commercial

[14] (Kosta, Kalloniatis, Mitrou, & Gritzalis, 2010)
[15] (Braulin & Valletti, 2016)
[16] (Federal Trade Commission, 2012)
[17] (Kosta, Kalloniatis, Mitrou, & Gritzalis, 2010)
[18] (European Commission, 2015)
[19] (European Commission, 2015)
[20] (European Commission, 2015)
[21] (Commission, General Data Protection Regulation, 2016)
[22] (Amin & Birgisdottir, 2012)
[23] (Fortes & Rita, 2016)
[24] (Commission, Protection of Personal Data, 2016)
[25] (Smit, van Noort, & Voorveld, 2013)
[26] (Smit, van Noort, & Voorveld, 2013)
[27] (Pepper, Rogers, & Dorf, 1999)
[28] (Chellappa & Sin, 2005)
[29] (Sundar & Marathe, Personalization versus customization: the importance of agency, privacy, and power usage, 2010)
[30] (Vesanen, 2007)

e-mail, postal direct mail, telemarketing and text messaging. [31] However, recent interest in this phenomenon of personalized marketing has focused mainly on mobile and web display advertising tailored and served to users based on identity and behavior [32], a practice also described as online behavioral advertising (OBA).[33] We will primarily focus on the OBA, since most of the traditional ways of personalized marketing are outdated. Personalized advertising is no longer a new development. However, the process by which user information is generated to create personalized ad content continues to evolve.[34] Due to the advancements in technology (e.g. digital cookies), marketers are now equipped with the power to tailor ad messages at individual level based on their interests and needs.[35] In addition, the capabilities of online marketers are now bolstered by cross-platform information sharing between various sites and platforms (e.g. Facebook and IBM cooperation).[36]

3.3 The Effects of Personalized Marketing

3.3.1 Positive Effects

Positive aspects of personalized marketing for both consumers and marketers have repeatedly been noted.[37] Several studies have indicated that personalized advertising can increase users' involvement and therefore increase the effectiveness of the advertisements.[38] With online behavioral advertising (OBA), consumers only receive messages that are relevant to them, which are then more likely to generate purchase intentions or other desired responses from the consumers.[39] These desired responses are generated because of its perceived relevance to the consumer's self.[40] For example, Kalyanaraman and Sundar (2006)[41] found out in their study that the level of customization of the website content led to more positive attitudes of the users towards the website by perceived relevance, novelty and involvement. Therefore, the psychological appeal of a personalized advertisement is very important for the user's attitude. Rodgers and Thorson (2000)[42] noted that by simply referring to users' name and mentioning users' specific interests in an advertisement can increase interaction. A similar result was discovered by Howard and Kerin (2004)[43] when an ad contained a viewer's name or some preferences, the viewer was more likely to have a higher purchase intention for the product recommended in the ad. Furthermore, this greater involvement of the consumer in advertisements also results in increased satisfaction with advertising.[44] In other words, when a consumer receives advertisements which are relevant to him/her eventually the consumer will have a more positive attitude to advertisements in general. More studies found a strong positive relationship between personalization and satisfaction.[45] However, Liang et al. (2006)[46] suggests that the effect of personalization on satisfaction could also be indirect and moderated by the individual motivation of the user. Moreover, customer satisfaction was found to be intertwined with consumer loyalty as another construct.[47] Li (2016)[48] argues that the results from their study show that a consumer's level of perceived personalization of a message can be a better predictor of positive attitude effects than whether the message was actually personalized. It is remarkable to see that recent research has shown that there is a distinction between actual personalization and perceived personalization and that these two constructs should be treated separately. Similar results have been found for personalization in advertising.[49] Another important benefit of personalized marketing is the increased interaction between consumers and marketers. With increased interaction of the consumer, marketers will have even more personal data to observe and analyze for marketing purposes.

3.3.2 Negative Effects

While personalized marketing has several benefits to offer for both consumers and marketers, multiple studies noticed the negative effects as well.[50] Most of the negative effects of personalized marketing refer to the users' privacy concerns. The concept of privacy can mean different things and is described in different ways. In general, *privacy concerns* are beliefs about who has access to the information that is revealed when using the internet and how it is being used.[51] Privacy issues pertaining to online consumer data have become a serious issue since the birth of personalized marketing.[52] With the growth and development of technology, large databases emerged to collect the information retrieved online. These vast amounts of personal data have led to the rebuilding of the privacy concept.[53] Especially, with regard to social medias where Dwyer et al. (2007)[54] stated that privacy within social networking is often undefined and these sites record all interactions and keep them for the use of social data mining. Krasnova et al. (2009)[55] identified in their study several categories of privacy concerns encountered by social media users. One of the most frequently mentioned concern was the organizational threats related to the collection and use of their personal data by the SNS and third parties. Here is the relationship between social networking sites and data brokers important, since users indicate to feel threatened by third parties as well. Tsang et al. (2004) found out that consumers generally had negative attitudes personalized advertising unless they had specifically consented to it.[56] Many studies have discussed whether personalized marketing violates consumers' privacy rights.

[31] (Baek & Morimoto, 2012)
[32] (Bang & Wojdynski, 2015)
[33] (Smit, van Noort, & Voorveld, 2013)
[34] (Bang & Wojdynski, 2015)
[35] (Pavlou & Stewart, 2000)
[36] (Finley, 2015)
[37] (Yu & Cude, 2009)
[38] (Stewart & Ward, 1994); (Roehm & Haugtvedt, 1999); (Pavlou & Stewart, 2000); (Yuan & Tsao, 2003); (O'Leary, Rao, & Perry, 2004)
[39] (Pavlou & Stewart, 2000); (Yu & Cude, 2009); (Kreuter & Wray, 2003)
[40] (Lang, 2006) (Yu & Cude, 2009)
[41] (Kalyanaraman & Sundar, 2006)
[42] (Rodgers & Thorson, 2000)
[43] (Howard & Kerin, 2004)
[44] (Howard & Kerin, 2004)
[45] (Devaraj, Fan, & Kohli, 2006); (Ha, Muthaly, & Akamavi, 2010)
[46] (Liang, Lai, & Ku, 2006)
[47] (Salonen & Karjaluoto, 2016)
[48] (Li C. , 2016)
[49] (Howard & Kerin, 2004); (Pavlou & Stewart, 2000)
[50] (Phelps, Nowak, & Ferrell, 2000); (Sacirbey, 2000)
[51] (Dinev & Hart, 2006)
[52] (Zhu & Chang, 2016)
[53] (Mesch & Beker, 2010)
[54] (Dwyer, Hiltz, & Passerini, 2007)
[55] (Krasnova, Gunther, Spiekermann, & Koroleva, 2009)
[56] (Tsang, Ho, & Liang, 2004)

Consumers were found to be reluctant towards personalized advertisements if they were aware of the fact that the personalization was based on behavioral tracking.[57] In addition to this, Baek and Morimoto (2012)[58] found out that individuals with high enduring levels of privacy concerns are likely to avoid personalized marketing, this effect was mediated by skepticism towards the personalized advertising. The study indicated that a lot of online consumers have high levels of skepticism towards personalized advertisements and therefore simply ignore the ads. This skepticism towards personalized marketing could be a result of a too high personalization which then increased the feelings of intrusiveness and eventually harms business performance.[59] Based on the findings of Li & Unger (2012)[60] there is a division between users who are willing and those who are unwilling to be profiled. However, studies have not reached consensus on whether these divisions could be mitigated.[61] Therefore, there are most likely groups who are more willing to be profiled, but it is hard for marketers to draw a line between the groups.

Distrust is also a concept frequently mentioned in literature as a negative effect of personalized marketing. Trust addresses how trustworthy users perceive a web personalization technique or its provider to be.[62] However, in the world of personalized marketing trust and privacy are often intertwined, since they are most likely to be related to one another. Chau et al. (2013)[63] studied distrust towards recommender systems and found out that competence distrust had negative implications towards the use of recommender systems. Trust and privacy are closely linked, however they differ somewhat in the effects on overall personalization effectiveness and success.[64] Privacy appears to be a factor where increased security has a limited effect on boosting firm performance, whereas breaches in security have an impact on performance and trust.

The dilemma of 'personalization vs. privacy' displays this complicated situation regarding the effects of personalized marketing. Gurau et al. (2003)[65] reports that many customers want more personalized attention, one-to-one communication and personalized offers. On the other hand, the potential to abuse individual consumers has increased tremendously as the amount of personal data gathered in marketing databases has grown.[66]

3.3.3 Contextual Factors

The inclusion of contextual factors in measuring the effects of personalized marketing is a new trend.[67] Salonen and Karjaluoto (2016)[68] identified three major subclasses: (1) cultural effects, (2) timing, and (3) personal disposition. Cultural effects on consumer behavior recognize the power of culture as a context of interaction in changing the way consumers react to personalized marketing. Steenkamp and Geyskens (2006)[69] found the effect of personalization on the perceived value of websites to be higher in countries where cultural individuals is higher. Timing refers to the contextual effect of either clock time or situational time in the personalization process and its effect on consumer behavior. An important theme was when to show personalized content to consumers and what type to show.[70] Personal disposition is a composite subclass including topics like personality, attitudes and motivation. Tam and Ho (2005)[71] suggest that users with low motivational levels for cognitive effort are more likely to fall for suggestions created by personalized advertisements. There is some variation in the results from the different specific contextual factors. However, in general the notion that the users' context is an important driver in determining personalization success is supported.

3.4 Responses to Personalized Marketing

Prior research has shown that personalized marketing may cause favorable as well as unfavorable consumer responses.[72] Unfavorable evaluations are often conceptualized with great ambiguity. For example, White et al. (2008) studied under which circumstances personalized emails trigger response to their personalization approach. They found out that ad messages containing personal information threaten consumers' perceived ability to avoid being closely observed.[73] In other words, by sending personalized messages consumers often get the feeling that they are closely observed. This feeling could result in negative attitudes towards personalized marketing if they are not willing to be profiled.[74] However, a major limitation to the study conducted by White et al. (2008) is that they did not capture the concept of privacy concerns in their experiment. Tucker (2014) did take privacy concerns into consideration and argues consumers to experience reactance in response to perceived privacy intrusiveness of personalized marketing.[75] Therefore, response of a consumer to personalized marketing depends on the perceived privacy intrusiveness of a personalized message according to Tucker (2014). This result is in line with van Doorn & Hoekstra (2013)[76] who also found out in their study that highly personalized messages could result in skepticism towards personalized marketing due to the feelings of intrusiveness. Furthermore, in this research van Doorn & Hoekstra (2013) clearly differentiate between reactance and privacy concerns as two distinct negative responses to personalized advertising. This distinction is also recognized by Aguirre et al. (2015).[77] Moreover, a positive response to personalized marketing could be that internet users perceive personalized messages as useful.[78] Consumers often perceive advertising communications as useful for their purchasing decisions.[79] The more relevant a personalized message is the more useful it is often perceived by the consumers. Adapting advertisements to the consumer's preferences and needs enhances their relevance which makes the recipient more inclined to further explore the advertised content.[80] Furthermore, personalization could enhance the value

[57] (Turow, King, Hoofnagle, Bleakley, & Hennessy, 2009)
[58] (Baek & Morimoto, 2012)
[59] (van Doorn & Hoekstra, 2013)
[60] (Li & Unger, 2012)
[61] (Salonen & Karjaluoto, 2016)
[62] (Salonen & Karjaluoto, 2016)
[63] (Chau, Ho, Ho, & Yao, 2013)
[64] (Salonen & Karjaluoto, 2016)
[65] (Gurau, Rachhod, & Gauzente, 2003)
[66] (Caudill & Murphy, 2000)
[67] (Sunikka & Bragge, 2012)
[68] (Salonen & Karjaluoto, 2016)
[69] (Steenkamp & Geyskens, 2006)
[70] (Ho, Bodoff, & Tam, 2011)
[71] (Tam & Ho, 2005)
[72] (Bleier & Eisenbeiss, 2015)
[73] (White, Zahay, Thorbjornson, & Shavitt, 2008)
[74] (Li & Unger, 2012)
[75] (Tucker, 2014)
[76] (van Doorn & Hoekstra, 2013)
[77] (Aguirre, Mahr, Grewal, de Ruyter, & Wetzels, 2015)
[78] (Bleier & Eisenbeiss, 2015)
[79] (Shavitt, Lowrey, & Haefner, 1998)
[80] (Tam & Ho, 2006)

of communications by reducing information overload.[81] This results automatically in high usefulness perceived by the user.

Lee and Rha (2016) [82] empirically investigated the personalization-and-privacy paradox with regard to the use of location-based mobile commerce. They investigated how mobile consumers perceive the personalization-privacy paradox according to four antecedents: consumer involvement, consumer trust, self-efficacy and technology readiness. Eventually, they identified four distinct consumer groups according to their perceived level of the personalization-privacy paradox (*Figure 1*): the ambivalent group, the privacy-oriented group, the personalization-oriented group, and the indifferent group.

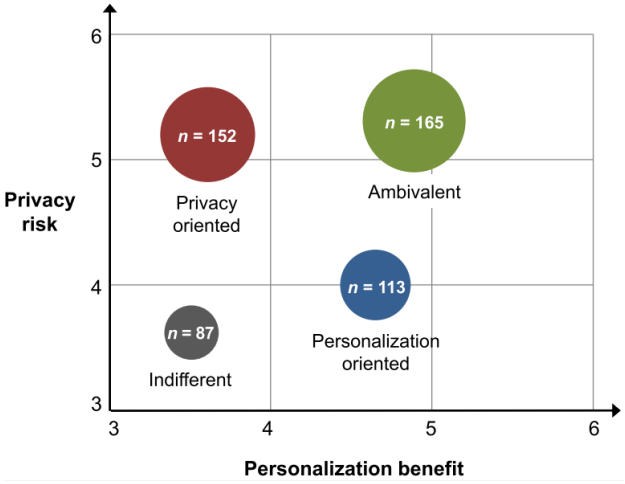

Figure 1. Four clusters of different response patterns *(Lee & Rha, 2016)*

From their research we can conclude that the ambivalent (165) and privacy-oriented (152) groups are the two largest groups. The personalization-oriented group comes third with 113 participants. This study indicates that despite the benefits personalization offers a significant portion of the mobile consumers experienced a dilemma whether or not to use location based mobile commerce. Second, the antecedent consumer involvement was the highest among the ambivalent group, suggesting that deeper involvement may lead consumer to consider both the positive and negative aspects. Lastly, the size of the ambivalent group is noteworthy. This result shows that consumers may not recognize personalization and privacy protection as being in a trade-off relationship as some other previous researchers suggested (Dinev & Hart, 2006; Sundar et al., 2013).[83] It is important to consider multiple factors in their choice of personalization or privacy protection. Therefore, contextual factors as discussed earlier play an increasingly important role in research.[84]

In response to the growing concerns among the internet users, researchers have started measuring the internet users´ online privacy concerns empirically, but they have also begun with measuring the coping behaviors in protecting their privacy.[85] Prior research shows two different types of strategies for coping with privacy threats: coping by approach and coping by avoidance. [86] Coping by approach refers to confrontation strategies[87] that result in mastering the internet, such as reading privacy policies and installing technological software (e.g. firewalls, spam guards).[88] However, for many internet users completely mastering the internet is not achievable and this ends up in consumers not being adequately protected. Coping by avoidance refers to coping strategies that aim to avoid having websites collect data for targeted advertising by rejecting, blocking or accepting only some type of cookies.[89] A large percentage of internet users are minded to avoid doing business on some websites as a strategy for preventing personal data being collected.[90]

4. CONCLUSION

The topic of personalized marketing is actively pursued in literature. Personalized marketing is a topic that is relevant today and will become even more relevant tomorrow. The findings are derived from a different set of journals. Marketing, retailing, advertising, economics, information systems, human behavior, etc. This research needs to provide a descriptive model of the trade-off between privacy concerns and the benefits of personalized marketing central themes from literature will be drawn out in the category of user-centric aspects, since the analysis is about the trade-off users make online. Therefore, within these trade-off users face, the following user-centric themes emerged: (1) privacy concerns, (2) consumer satisfaction/involvement, (3) usefulness/relevance of personalized messages and (4) contextual factors. *Table 1* in the Appendix provides a clear overview of selected literature on the user-centric aspects in the personalization-privacy trade-off.

Privacy issues continue to be an important factor in the world of personalized marketing. The issues will most likely even grow together with the related technologies. In 2015, ninety percent of all the data in the world was created in the two years before.[91] Issues regarding what to do with the data will therefore increase even more. This tremendous increase has led a rebuilding of the privacy concept. The most frequently mentioned privacy concern is the organizational threat of related to the collection and use of their personal data. Many studies identified that internet users have negative attitudes towards personalized advertising due to the methods of collection and use of personal data. Therefore, the discussion on whether privacy rights are violated continues. Internet users indicate that they are reluctant towards personalized messages when they were aware of the online behavioral tracking. This resulted in skepticism due to feelings of intrusiveness. Nevertheless, EU regulation tries to adapt new laws to secure privacy protection among EU internet users.

[81] (Bleier & Eisenbeiss, 2015)
[82] (Lee & Rha, 2016)
[83] (Dinev & Hart, 2006) (Sundar, Kang, Wu, Go, & Zhang, 2013)
[84] (Lee & Rha, 2016)
[85] (Smit, van Noort, & Voorveld, 2013)
[86] (Smit, van Noort, & Voorveld, 2013)
[87] (Raman & Pashupati, 2004)
[88] (Smit, van Noort, & Voorveld, 2013)
[89] (McDonald & Cranor, 2010)
[90] (Milne, Rohm, & Bahl, 2004)
[91] (de Waal-Montgomery, 2015)

Consumer satisfaction and involvement are the more positive effects discussed intensively in literature. Many studies have found a positive relationship between personalization and satisfaction. Satisfaction and involvement to personalized marketing are closely linked of course to the relevance and usefulness of the messages received. The desired response, which is satisfaction/involvement, is a result of the perceived relevance of a message. Due to improved technology marketers have now the power to develop ad messages at individual level based on the individual's interests and preferences. Therefore, the psychological appeal and relevance are extremely important in determining the user's attitude towards personalized content.

A recent development in the literature is the inclusion of contextual factors in measuring the effects of personalized marketing. Cultural effects, timing and personal disposition appear to have significant impact on the effects of personalized marketing. For example, motivational level of individuals is an important factor to consider when measuring the effects of personalized content.

Eventually, this is a trade-off with pros and cons. However, Lee and Rha (2016) identified that most of the internet users are ambivalent in their choice and therefore consider both the benefits and the concerns. This indicates that a majority of internet users evaluate both sides and on the one hand do recognize advantages in the usefulness of personalized content, but on the other hand note that they are closely observed and therefore have raising privacy concerns. Personalized messages do help consumers in their browsing behavior and purchasing decisions as long as they are not perceived as too intrusive. Nevertheless, the collection of personal data continues to grow tremendously together with its related technologies. The use of personal data is often to discussion and raises obviously privacy issues among internet users. However, most consumers choose for the way in the middle and evaluate both positively and negatively.

Furthermore, literature discussed online behaviors coping with personalized marketing. The research shows two strategies for coping with privacy threats: coping by approach and coping by avoidance. By approach refers to confrontation strategies where confronting the personalized ads by firewalls, ad blockers or spam guards. By avoidance refers to coping strategies to avoid having websites collect data for targeted advertising. Consumers who have privacy issues would most likely go for coping by approach in order to continue using the web freely without the annoying content.

4.1 Recommendations for future research

Web personalization will continue to evolve around increasing complexity such as contextual factors. Recent research started to take contextual factors into account, but for future research this should be done more intensively in order to correctly measure the effects of personalized marketing. Therefore, one future direction could be the integration of various approaches on contextual factors. Especially the personal disposition factors are considered to be important, since a lot of psychological elements play a role in determining the relevance and usefulness of a message by the user. Furthermore, as the amounts of data increase tremendously, the concept of privacy will evolve as well. Therefore, a future direction could be look at the influence of the evolving big data concept on users' privacy issues. Do consumers' privacy issues change with the evolving technologies and data collection practices? Lastly, some users are aware of the fact that they receive personalized content others are not. A future direction therefore could be to measure the different responses between users who are aware of the personalized content and users who are not.

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6. APPENDIX

User-centric aspects	Reference
Privacy concerns	(Phelps, Nowak, & Ferrell, 2000), (Sacirbey, 2000), (Dinev & Hart, 2006), (Zhu & Chang, 2016), (Mesch & Beker, 2010), (Dwyer, Hiltz, & Passerini, 2007), (Krasnova, Gunther, Spiekermann, & Koroleva, 2009), (Turow, King, Hoofnagle, Bleakley, & Hennessy, 2009), (Baek & Morimoto, 2012), (van Doorn & Hoekstra, 2013), (Li & Unger, 2012), (Salonen & Karjaluoto, 2016), (Gurau, Rachhod, & Gauzente, 2003), (Caudill & Murphy, 2000), (Tucker, 2014), (Aguirre, Mahr, Grewal, de Ruyter, & Wetzels, 2015), (Kosta, Kalloniatis, Mitrou, & Gritzalis, 2010), (Smit, van Noort, & Voorveld, 2013), (Sundar, Kang, Wu, Go, & Zhang, 2013), (McDonald & Cranor, 2010), (Milne, Rohm, & Bahl, 2004)
Consumer satisfaction/involvement	(Stewart & Ward, 1994), (Roehm & Haugtvedt, 1999), (Pavlou & Stewart, 2000) (Yuan & Tsao, 2003), (O'Leary, Rao, & Perry, 2004), (Kalyanaraman & Sundar, 2006), (Rodgers & Thorson, 2000), (Howard & Kerin, 2004), (Lee & Rha, 2016), (Devaraj, Fan, & Kohli, 2006), (Ha, Muthaly, & Akamavi, 2010), (Liang, Lai, & Ku, 2006), (Salonen & Karjaluoto, 2016)
Usefulness/relevance of personalized messages	(Bleier & Eisenbeiss, 2015), (Shavitt, Lowrey, & Haefner, 1998), (Tam & Ho, 2006), (Pavlou & Stewart, 2000), (Yu & Cude, 2009), (Kreuter & Wray, 2003), (Lang, 2006), (Kalyanaraman & Sundar, 2006), (Rodgers & Thorson, 2000), (Howard & Kerin, 2004)
Contextual factors	(Sunikka & Bragge, 2012), (Salonen & Karjaluoto, 2016), (Steenkamp & Geyskens, 2006), (Ho, Bodoff, & Tam, 2011), (Tam & Ho, 2005), (Lee & Rha, 2016)

Table 1 - Summary of literature on user-centric aspects

The Influence of Wearable Devices on Purchase Uncertainty Reduction in the Consumer Decision Making Process

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Abstract
Wearable devices such as smartwatches and smart glasses are becoming more present in the life of the ordinary consumers. The use of wearable devices opens a world of new opportunities for the appliance of these devices. This paper focused on the effects of wearable devices on the consumer buying behavior and the steps of the consumer decision making process. Through the review of the consumer buying behavior, the influential factors on this buying behavior and lastly, the way wearables can interact with the consumer, certain possible appliances for wearables have been found that can influence the consumer buying behavior. It was found that buying behavior consists of a decision making process that involves a certain degree of uncertainty throughout all the three steps, pre-purchase, purchase and post-purchase. Reducing this uncertainty will positively affect the purchase intention of the consumer. Wearables can reduce this uncertainty by providing peer-related information and brand related information in the pre-purchase phase. Combining this with location based services, augmented reality and bio sensing abilities will create an interesting interactive consumer experience. In the purchase phase, the new payment technology NFC can make the transactions a lot faster and easier. In the post-purchase phase, wearable devices can help reduce cognitive dissonance by showing peer related information about the bought product in a way that this information is easily accessible to the consumer. This paper concludes with proposes to future research regarding the usefulness of wearables in an e-shopping environment, the further research of the accelerometer in bio-sensing, the use of situational recognition in purchase situation and the need for empirical evidence to support the theoretical findings in this paper.

Keywords
Wearables – Consumer Uncertainty – Decision Making – Augmented Reality – Location Based Services – Bio Sensing - NFC

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: Wearables are a new and emerging type of technology that is yet to be explored in a marketing sense. By looking at the way wearables can change consumer buying behavior, we can validate the use of wearables in future marketing.

1. INTRODUCTION

Wearable devices are on the rise and are already used in a variety of services, the health industry being one of sectors that has been using wearable devices to track the progress of revalidating patients. Regarding the commercial use of wearables in consumer buying, is little known. This paper will address the possibilities of wearables devices on influencing consumer buying behavior. In the first section, the concept of buying behavior will be reviewed to have a clear theoretical base on which will guide the rest of this paper. In the second section, the factors that can influence this buying behavior are reviewed and described to get an idea of what wearables can do to influence the consumer buying process. In the third section, the possibilities of wearables and the interaction with the user are described. Putting these sections together, influential factors on buying behavior are combined with the functionalities of wearable devices and show implications of wearable devices to influence consumer buying behavior.

2. THEORY OF CONSUMER BUYING BEHAVOIR

2.1 Buying Behavior

First off, it is essential to know what buying behavior exactly is and whether there are important points to notice when we discuss buying behavior and how wearable devices can influence this behavior. To find out what buying behavior is we can start out by looking at definition of buying behavior. Sharma (2014) defines buying behavior as follows**: "**Buying Behavior is the decision processes and acts of people involved in buying and using products". It seems that buying behavior consists of decision processes and acts that certain individuals would undertake in the process of buying and using products. To further elaborate on this a broader definition is given by Inamdar (2016): "Consumer buying behavior is the sum total of a consumer's attitudes, preferences, intentions, decisions regarding the consumer's behavior in the marketplace when purchasing a product or service. The study of consumer behavior draws upon social science disciplines of anthropology, psychology, sociology, and economics." Both these definitions include the aspect of the customer decision process and acts that may consist of the customers own behavior. The difference is given in the fact that Sharma (2014) includes the use of the products where Inamdar (2016) only talks about the actual buying of the product. The actual use of the product seems to be a relevant aspect in the buying process as well.

2.2 Decision Process

From the definition of buying behavior it becomes clear that there is a certain decision process that defines buying behavior.

Frambach and Krishnan (2007) state that there are three different stages in this decision process, namely, pre-purchase, purchase and post-purchase. Neslin, et al. (2006) noted that these different stages of the decision process require different types of information to serve the customer at best. Customers in the pre-purchase stage want to have a lot of information regarding the product, as where there is different information needed when the customer does the actual buying. In another research Ahuja (2003) explains that customers switch between online and offline sources to find the right information while going through the different phases of the decision process.

These three stages in the decision process seem to cover the whole process. Keating, Quazi and Kriz (2009) though, describe a more detailed customer decision process, namely, need recognition, information search, alternative evaluation, purchase and post-purchase. Their assumption is that is a certain degree of risk perceived by thecustomer can influence the decision process in the first three stages. This degree of uncertainty decreases when customers bought the product. To come back to the decision process described by Frambach and Krishnan (2007), the pre-purchase stage would cause the most uncertainty, were users in the stage of post-purchase would experience the least amount of uncertainty regarding their bought product

2.3 Uncertainty in the Buying Process

There seems to be a certain degree of uncertainty in the buying process of consumers that affects buying behavior. Seth and Venkatesan (1968) state that consumers are always in a certain state of uncertainty when they get involved in the buying process and consumer buying behavior is seen as a form of risk-taking. In a research conducted by Urbany et al. (1989) regarding buyer uncertainty in the pre-purchase phase, uncovered that the so called "choice" uncertainty, had a positive relation to the amount of information that was searched. In this case the uncertainty was caused by having to choose between alternatives of a product. Consumers that were unsure about what product to choose tended to look for more information, to decrease their uncertainty and make a good decision.

2.3.1 Reduction of Uncertainty

A reduction of uncertainty in consumer buying leads to better decisions towards the purchase of a product. Seth and Venkatesan (1968) distinguish three different kind of ways to reduce uncertainty, information seeking in their informal space (such as friends and family), pre-purchase deliberation (structuring information to make a distinguished choice among brands) and reliance on brand image. Also in the consumer service industry, brand image is an important factor to limit the risk that is perceived when choosing between alternatives (Mitchell & M., 1993). In another study by Mitchell (1989) consumers were asked to make decision about what type of wine they would buy. From the results it appeared that the most used strategy to reduce risk in the purchase was that of searching for information about the wine from descriptions and taste codes. Other than reading the information, was getting this information from the informal sources of the user, such as friends and family. The image of the store the wines were coming from, was seen as a factor that was not of great importance. It seems that for certain products or services the possibility to rely on a brand image is of importance to reduce the uncertainty in the consumer buying process, and for some it is of lesser importance. Information gathering, especially form the informal sources of the consumer, are of great influence in the reduction of uncertainty and making better buying decisions. Getting (structured) relevant information, is on the basis of uncertainty reduction.

2.4 Acts of Consumers in the Buying Process

2.4.1 Pre-Purchase

As mentioned in the "Decision process", seeking for information is an important factor of buying behavior. Steenkamp and Baumgartner (1992) suggest that customers seek for information to meet the desire to make better purchases decisions. This research, with the focus on leisure shopping, also suggest that customers might be looking for information not to make a direct purchase, but just for fun and for possible purchases in the future. This leisure shopping can be useful to explore the shopping environment to make possible purchases later on. This process, and all the theory about uncertainty reduction applies to the pre-purchase phase of the decision process.

2.4.2 Purchase

The purchase of the product can be seen as the transactional phase, the consumer has made an (informed) choice between

alternatives and wants to buy the product. In this paper, we limit the purchase phase to the use of a new payments method. Increasingly more consumers are using their mobile phones to do purchases, the rise of sales through smartphones is an indicator of the potential growth in the future society for these new trade and payment methods (Liebana-Cabanillas, Munoz-Leiva, & Sanches-Fernandez, 2014). In this paper it is chosen to elaborate on one specific payment method that is on the rise and could be of use in wearables.

2.4.2.1 NFC

In the same article, they elaborate on the technology of wireless payment through NFC. "Near Field Communication (NFC) is a standards-based short-range wireless connectivity technology that makes life easier and more convenient for consumers around the world by making it simpler to make transactions, exchange digital content, and connect electronic devices with a touch" (NFC Forum, 2016). Advantages of this technique are described by Liebana-Cabanillas et al. (2014) as being the fact that NFC can be integrated into any mobile phone and can therefore bring a whole new set of services and appliances for consumers. Furthermore, the ease of use and the fact that the two devices employing NFC only have to be in short range of each other to work are unique points of this technology. This can lead to, for example, a faster transaction. NFC is also a safe way of payment, requiring the user to be proactive and bring the NFC device close to the receiving device in order to work. Nowadays there are emerging technologies that can enhance the ease of purchasing a consumer experiences. In the public transportation sectors, NFC had helped reduce the cash handling and facilitates the ticket sales to consumers (Juntunen, Luukkainen, & Tuunainen, 2010). We can conclude that the new payment method "NFC" enables for easier transactions in consumer buying.

2.4.3 Post Purchase

Information seeking is an act that is linked to the first step in the decision process, the pre-purchase phase, the transaction will take place in the next step, the purchase phase. It is also important to know what kind of buying behavioral acts can occur in the post-purchase phase. Sharma (2014) describes the term "cognitive dissonance" as a term that is of great importance to the acts of the customer in the post-purchase phase. Cognitive dissonance is the difference between what is expected, in this case the purchase, and what actually is received, the bought product. A negative discrepancy between these two can result in cognitive dissonance and the consumer wanting to return the product. To simplify this, the consumer is not happy with the product that is bought, and might perhaps, want to return the product. In a study by Wilkins et al. (2016) it was found that consumers that experience cognitive dissonance will express negative post-purchase behaviors. This can include, avoiding the specific brand and telling friends to not use the product.

We can summarize the acts of consumers in the buying process as looking for information to distinguish between alternatives in the pre-purchase phase, buying the product in the purchase phase, and lastly showing negative post-purchase behavior if cognitive dissonance is experienced.

3. INFLUENTIAL FACTORS ON BUYING BEHAVIOR

We have discovered that uncertainty is of influence on the buying behavior in the pre-purchase phase of consumer. If there is less uncertainty, consumers can make better choices regarding purchases. The factors that play a role in uncertainty reduction are as found, the informal space of the consumer, information and brand image. In the purchase phase, newer technologies can simply and smoothen the transactional process. In the post-purchase phase, consumers sometimes have to deal with cognitive dissonance after they made a purchase.

3.1 Pre-Purchase

3.1.1 Influential Factors on the Informal Space of Consumers

As we found, the informal space of a consumer (friends and family) is of influence on what buying decisions a consumer makes. Within the subject of wearable technology, a way to stay in contact with the informal contacts is that of using social media.

3.1.1.1 Social Media

In a research conducted by Forbes (2013), it was found that social media has an influence on the buying behavior of consumers. Consumer were influenced by the opinion of other people that were not necessarily "opinion leaders". A recommendation of a product by someone who the consumer follows on social media could influence the behavior and can lead to the purchase of a particular product. In addition to this research Forbes (2013) indicate that there is a shift from the more traditional marketing to quicker forms of social media. The reason for this can be found in the fact that consumers want their information as fast as possible. Information that is even two days old could be not relevant anymore. Consumers make the shift from old sources of information to the quicker social media sources. If a product is recommend by someone in the informal space of the consumers, may lead to the purchase of this product. When consumers are engaged in an online brand community on Facebook, it also has a positive effect on the consumer's product expenditures. In this kind of online communities, consumers react more to user generated informational content than they do to (corporate) marketer generated information in terms of purchasing behavior (Goh, Heng, & Lin, 2013). Consumers can be tempted to a more active purchasing behavior when they are supported by actual user generated information while using social media.

3.1.2 Improving Brand Image

In a study conducted by Chan et al. (2013), celebrity endorsement in advertising was positively linked to the degree of brand awareness and the amount of product trails and purchase confidence of consumers. It this case, it seems that increasing the brand awareness give the consumer more confidence to buy the product. In the case of raising brand image for higher learning institutions it was found that online advertisement plays the biggest role in increasing the brand image. Television and printed advertisement seem to have a lesser role in increasing the brand image, but are not to be left behind because they also contribute to the brand image (Khan, A, & Rahman, 2014). "Advertising is a form of communication intended to convince an audience (viewers, readers or listeners) to purchase or take some action upon products, information or services etc." (Kumar & Venkateswara, 2013). Advertisement can therefore be seen a way of information exchange to the customer and can influence the pre-purchase decision process, with the ultimate goal of initiating a sale. A part of advertisement is the advertising of a brand name. Malik et al. (2013) state that if people are aware of a certain brand and if they have a good brand perception, the loyalty and association towards the brand, the perceived brand image, will become more and stronger in the mind of the consumer and this brand will become part of the buying behavior. According to this study brand advertisement is a big marketing weapon to attract customers and also to stay in the customers mind. In accordance to previous sources, this study suggest that brand image and advertising play a crucial role in peoples buying behavior. It is not all so straight forward, Buil et al. (2013) state that there is a certain degree to which advertisement can influence brand image. Especially through traditional media, advertising

influence can reach a saturation point. Newer media can break through this saturation point and actually be of influence on brand image again, this is also in accordance with previous findings about the big influence of online advertisement. Also, the message that is being send, in this case is on influence on the brand image. Advertisement that includes sales promotion regarding a price reduction might lower the perceived brand quality of the consumer as where a sales promotion that included gifts to the consumers can have a positive effect on perceived brand quality and brand association. In this case, the way advertisement is used is of influence to the brand image.
Online advertisement seems to be the way to influence the brand image with consumers. The way this advertisement is used can either lower of increase the brand image.

3.1.2.1 Electronic Word of Mouth

The sharing of information through the internet is called the electronic word of mouth. This electronic word of mouth is an increasingly important source for consumers to find information prior to their purchases. Electronic word on mouth is one of the most effective factors influencing brand image and purchasing intentions of consumers (Jalivand & Samiei, 2012). Social virtual communities like Facebook become increasingly popular, consumers can openly share their product experiences for their social contacts to read. In this electronic word on mouth context, consumers are particularly interested in both reading and writing positive and negative comments about their experiences with products and services as stated by Jalivand and Samiei (2012). A recent study in the tourist sector revealed that electronic word on mouth has a positive and significant influence on the tourist attitude and their overall image of a specific city. These factors are a foremost determinant of visit intentions of a tourist (Doosti, Reza, Asadi, Pool, & Adl, 2016).
Electronic word on mouth can occur, for example, on social media and can improve the brand image of a product of service. Consumers can read and give comments on certain product and services to contribute to this electronic word of mouth. In this way electronic word of mouth can influence the consumer purchasing behavior in terms of informal environment (word of mouth can occur among friends and family) as well as an increase in overall brand image improvement for the consumer.

3.2 Purchase

The (transactional) purchase phase initiated after the consumer has made its choice. As mentioned in the first section of this paper, the technology of NFC can make for a faster easier and safer purchasing process for the consumer. For this section, NFC is considered to be the influential factor on the purchase phase.

3.3 Post-Purchase

3.3.1 Fighting cognitive dissonance

As found, consumers are interested in positive and negative comments on products they are interested in. The same behavior is relevant to consumers when they experience cognitive dissonance in the post-purchase phase.

3.3.1.1 Peer Reviews

Reducing cognitive dissonance can be achieved through product reviews. Liang (2016) found that the cognitive dissonance can be influenced by reading product reviews about the bought product. The more individuals read congenial reviews, the less dissonance they would experience. If individuals were looking for reviews about the specific product, they would automatically look for the more congenial reviews. Subject from this research are looking for others peoples their positive opinions to reduce their own dissonance. If a product would have more uncongenial reviews, the cognitive dissonance of an individual can increase. The individual would not get the conformation of a good purchase through the reviews of other people. In a study by Tanford and Montgomery (2014) individuals had to choose between a green and a non-green resort to go on vacation. For example, if someone would be green-minded and through pre-found reviews chose the non-green resort, this person might experience cognitive dissonance. When this happened, the individual would go and look for positive reviews about the chosen resort to reduce dissonance.
Apparently, if individuals experience cognitive dissonance through the purchase of a product, this individual will try to find conformation in the reviews of other buyers to reduce cognitive dissonance.

4. INTERACTION OF WEARABLE DEVICES WITH THE CONSUMER?

Knowing how wearables interact with the consumer can lead to insights in how wearables can influence the buying behavior, and more specific, the decision making process. Humans can give certain inputs to wearables that should trigger an “interactive system response”. The type of inputs as described by Nijholt (2014) are position sensing, vision, speech, touch, gestural and situation recognition. In this review, the aforementioned points are examined and possible useful appliances are further described

4.1 Smart Wearables

““Smart wearables” and “Smart Clothing” are both part of “Wearable Computing”, describing the idea of embedding “computers into anything that we normally use to cover or accessorize our bodies”” Kranz et al. (2012). Wearables can therefore be defined as wearable items with computers in them and are so controlled by one. According to Burgy et al. (2005) the implication of wearable computers is to support users with certain activities that require assistance by some kind of information technology. Today’s popular consumer wearables are the smartwatches and fitness trackers and in a lesser way the smart glasses. The input types that are further described in this section, are all applicable on either a smartwatch or smart glasses.

4.2 Interaction by Speech

Burgy et al. (2005) describe the possibility of wearable devices to interact with the user by using speech input. They classify three different categories in which speech support can be used for wearables.

- Audio only: speech input by the user, speech output by device.
- Multimodal output: speech input by user, data collection by reading from a body worm display.
- Multimodal input and output: input by user can occur by manual of speech input. Output from the device occurs both audio as on a body worn display.

They describe this ideal wearable as unobtrusive and perhaps integrated in the clothing, so it won’t be in the way and can help the user at any time. Interaction in these situations, would happen via sound and visual information on the display of the wearable.

4.3 Interaction by Situational Recognition

Smart wearable devices such as smartwatches already have certain sensors that can sense the physical activity of the user. Different manufacturers such as Fitbit and Nike+ can track the physical activity and can persuade the user to a more active lifestyle by giving them a heads up on the wearable display (Rawassizadeh, Prince, & Petre, 2015). In the healthcare industry, wearable technology can track the situation of a patient at home in terms of level of mobility and quality of life (Paolo,

2005). In both aforementioned cases, when the situation is not as it should be, the wearable device can give a signal to the user. This feedback signal can happen through sound and information on the display of the wearable device.

4.4 Interaction by Position Sensing

Wearable devices rely on multiple function to get a sense of the user's location. Foremost there is GPS. Because GPS relies on a power hungry chip, manufacturers often include the possibility to sense a location via Wi-Fi (Rawassizadeh, Prince, & Petre, 2015). As mentioned in the "interaction by Situational recognition". Wearables can track the location of patients revalidating at home. Boissy, et al. (2011) were able to measure the area of mobility of elderly people within their home and in community environments via a wearable GPS device. It seems that wearables with a GPS function can even tell observers where a person has been in their house. There are some limitation to GPS however, other than the power supply. In tunnels and buildings, the GPS signal can have its limitations as having no signal as stated by Woo, et al, (2011). They used a Wi-Fi signal to track the positions of labor and machinery in a construction place. They found that a Wi-Fi based location can be accurate within 5 meters of the actual location. GPS can be useful when there is no Wi-Fi- available.

4.4.1 Location Based Services

An interaction based approach to interaction by position sensing is that of location based services. NFCLab (2013) describe location based services as a use of the user's geographical location to enable an information service. NFC technology in this case, can be used to track the user and experiences can be improved. Depending on the location of the user, information can be communicated to the user about friends nearby, broadcasting advertisement from nearby stores and discovering common landmarks such as a post office. These location based services can provide the user with location based, user tailored information. NFC Lab (2013) also suggests the use of NFC indoors to track the customer through indoor navigation systems to provide more value added services to customers, especially in shopping centers. Li and Du (2012) describe the rise of mobile advertising and the use of location based advertising as well as the nature of mobile devices to save and provide contextual information about the users preferences. Advertisers can create very efficient and effective user targeted service of product promotion using these preferences. Apart from NFC, GPS can, as described, also provide the location of the user and is also helpful with location based services such as providing routing information and pointing users to a nearby hotel (Singhal & Shukla, 2012).

4.5 Interaction by Vision

The use of Vision based services is another way in which wearable devices can interact with the user. In a study conducted by Aletto, et al, (2015) visitors of historical buildings were equipped with a wearable camera to enhance their experience while observing historical buildings. 3D modeling techniques are used to track the user's location and the specific building the wearer is observing. The wearable device would display additional multimedia information about the building that the user would otherwise miss. Vision recognition is this way, can add virtual information to a real life situation. Another example is a study about an Art gallery conducted by Leue, et al, (2015). The visitors were asked to wear a Google Glass, these glasses allowed the visitor to receive augmented information while looking at paintings. Augmented information in this matter, helped the visitors to seen connections and to gain a better understanding of what they see in the painting and add some additional information. What is important to notice from these examples is that wearables can track a location through camera's and sense objects and then add certain information to the specific situation to enhance the information supply towards the user.

4.5.1 Augmented Reality

The technology used in the two mentioned examples is known as "augmented reality". "Bridging virtual and real worlds, augmented reality (AR) creates a reality that is enhanced and augmented" (Wu, Lee, Chang, & Liang, 2013). People that use augmented reality can, experience things that are not present in the real world (Klopfer & Squire, 2008). Stoyanova et al. (2015) conducted tests to see whether shopping platforms that contain AR elements can trigger a favorable attitude or a stronger purchase impulse regarding an advertised product. It was found that shopping platforms with AR functionality tend to trigger these attitude and impulses more than a shopping platform that did not had AR functionality's. Augmented reality can therefore be a tool to influence the shopping behavior of consumers. With augmented reality, marketers can create immersive brand experiences, create a more interactive way of advertising and enables a new way to consumers to experience products and spaces (Scholz & Smith, 2016).

4.6 Interaction by Touch and Gestural Input

Wearables, and specifically smartwatches, allow for a unique gestural input by their unique placing on the body and allow for always-available input and interaction. Using the accelerometer and gyroscope sensors, smartwatches can understand the users arm, hand and possibly finger movements. With these functionality's, Xu et al. (2015) could identify 37 overall arm, hand and finger gestures, as well as characters written with the index finger on a surface, proving that finger writing recognition is possible. Based on these results, Xu et al. suggest that remote control and finger writing can be novel applications of a smartwatch. Laput et al. (2016) Boosted the accelerometer in smartwatches to 4 kHz. This way, the bio-acoustic sensing ability can detect flick, claps, scratched and taps on the smartwatch. More interesting, this bio-acoustic sensing can now detect vibrations of grasped mechanical or motor powered objects, enabling passive recognition of objects that can augment everyday experiences with context aware functionality. This research is at an experimental stage.

5. CONCLUSIONS

Buying behavior of consumers always has a certain kind of uncertainty involved that can influence the decision making process of consumers. The decision making process is evaluated thorough three steps. Firstly the pre-purchase phase, in where information from the informal and brand related sources of the consumer have influence on uncertainty. Secondly, the purchase phase where new techniques can make the actual purchase easier. Lastly, the post-purchase phase where cognitive dissonance can occur when the consumer experiences uncertainty after the purchase. Wearables can have an influence on this uncertainty and therefore can influence the consumer buying behavior. To influence the pre-purchase phase, wearables should connect the user with social media, advertisement and information regarding the product to take away uncertainty. Social media can give the opinion of informal contact of the user, wearables could display the information about opinions of social contact on the display. As well as for social media, advertisement can be made more notable by showing it on the display of the wearable for easy read. This technique can be made more efficient by combining it with location based services. The technology's employed in wearables as GSP and NFC can track the consumer in shopping

environments and also within shopping centers. Advertisement and peer opinions as well as electronic word of mouth about products that the user is nearby can take away uncertainty and can initiate sales, all within the easy to use and directly accessible wearable notified by a sound or indicator light. Gestural and touch interaction also proves to be an important factor in future information supply about products. Instead of location tracking, the consumer can pick up a product and be shown the relevant product information through bio sensing. In this case, product information can be shown by simply picking up the product thanks to the way that, in this case, smartwatches are placed on the human body. In the case of smart glasses, a specific item can be recognized and within the interface of the smart glasses, information can be shown about the product as well as reviews by friends and electronic word of mouth.

Situational recognition in wearable devices can track the user and give recommendation, for example, regarding exercise schedules. A future other implication might be used. When a consumer has not been in a shopping are for a long time, the wearable can remind the consumer about certain items the consumer has looked for on the internet, for today's technology can track internet use and propose product recommendation.

In the purchase stage, NFC technology in wearable devices can make the transactional stage a lot easier and faster by simply putting the pay device in front of the pay receiver, making for a better shopping experience.

In the post-purchase stage, wearables can be a way to see reviews that are written about a product that has been bought by the consumer. Companies can take this opportunity to automatically show reviews about bought products to reduce cognitive dissonance.

6. FUTURE RESEARCH

In this paper, the practical appliances of wearable technology are mostly described in a way that the consumer would go to an actual shopping are. More research about the practical use of wearables in an e-shopping environment needs to be done to also uncover the practical appliances of wearables in an e-shopping environment.

As described, the more experimental study involving the boosted accelerometer in smartwatches is a field of study that has been merely touched. At this point, only objects that would vibrate are described as being recognized by the wearable. Research on recognizing product that stay static can be an interesting point.

From the conclusion, a possible practical appliance of situational recognition combined with positional sensing in shopping areas is proposed. This possible appliance would not apply to any of the decision making steps used in this paper. Instead, the phase prior to pre-purchase, need for recognition, can be influenced through this interaction with the user. Future research on this topic can be conducted to find if a buying impulse can be created through reminding the consumer about certain products using wearable technology.

Overall, research about the proposed practical uses of wearables should be researched with actual consumers. In this paper, different possible ways are proposed in which wearables can reduce consumer uncertainty from a theoretical point of view. Empirical evidence can be conducted to test the proposals in this review.

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The implications of the digital revolution on the young generations and future digital marketing

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ABSTRACT

This critical literature review discusses different perspectives related to the impact of the digital revolution on social norms, involved digital marketing strategies and on young generations' brain development and behavior. The easy access to digital technology involves a shift in societal behavior. People are much more into digital technology, and that results in some form of digital dependency. Businesses act to this trend and try to use consumer knowledge as a strategic element. Cause for concern is that the innovative approaches of businesses may have a severe effect on the balance between consumers' favorability and companies' profitability. Besides this, the increasing media addictiveness among people has high-risk spill-over effects to the younger generations. Adolescents spend, on average, more than one-third of their day with digital devices. Unfortunately, there are reasons to believe that this excessive use of screen-based media may have adverse effects on crucial behavior and social skills of young people. Since the future of our societal well-being is in the hands of the youngest generations, the topic of their development is taken very seriously. The possible related risks are compared to the favorable effects in extensive and critical analyses. Eventually, societal well-being in a world full of digital distraction has to be ensured in the long term.

Keywords

Brain development, social norm, societal well-being, digital media, digital revolution, future marketing, multitasking, young generations

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view: Why this topic?

Getting a better understanding of experiences that lead to maximal enjoyment and satisfaction will be crucial in this fast-evolving digital world. To live our lives less programmed and predictive, we should not forget and neglect essential emotions from the past.

1. PRESENT CIRCUMSTANCES

1.1 The consumer society of today

In the year 2016, it cannot be denied that we are living in a consumer society, especially in the Western world of today. The world where we all, consciously or subconsciously, follow the crowd. Our families, friends, and neighbors have a significant influence on our daily lives. They do not only affect our decisions but also what we want and what we buy. Life could be seen as a continuous process of reflecting yourselves to your (immediate) environment. After all, the saying; *the grass is always greener on the other side*, is not derived from anything.

1.1.1 Influencing customer decision-making

Since we all have a certain '*predictable manual*' that guides our daily life, it is absorbing for businesses to track our actions. However, smart and innovative businesses take it to the next level. When you can already predict what customers are going to do, being a step forward can have significant advantages for the efficiency and sales of your company. It will be much easier to control customers and influence their decision making.

1.1.2 Social media as a strategic element

With the ultra-rapid development of digital technology and social media, it is an enormous challenge to keep track of those developments and to use them advantageously. The power of smartphones in combination with social media is a constant expanding threat to many companies (Felt & Robb, 2016). This dominance is one of the reasons that social media marketing is a very delicate and extremely volatile issue full of risks for businesses. In other words, the ability and knowledge to use social media as a strategic element is a greatly appreciated advantage.

1.2 Marketing strategy

Seeing that the strength of social media will not decrease the upcoming few years, this topic will be crucial to every organization (Giedd & Chief, August 2012). That is why this review will try to identify what emotions drive customer behavior related to the buying process, interaction with products and services, and the influences of word of mouth on a digital level. The role of feelings is essential for designing more pleasant customer experiences (Felt & Robb, 2016). Nevertheless, the search for the maximal level of experiences has also its downside. Companies and the associated brands decide for themselves what information is communicated to their customers and which marketing strategy they are using (Felt & Robb, 2016). As a regular customer, it is hard to figure out what is a sales trick and what is clear information. In other words, new insights in the science of emotion could also result in emerging misleading techniques to persuade customers in in their favor. The bottom line is that the balance between customers favorability and businesses' profitability is worth considering during this review.

1.2.1 Trend of the new generation

The second big point of consideration is related to the continuing trend of children, adolescents, and teenagers using digital and social media more and more excessively (Giedd & Chief, August 2012). Is this tendency something businesses should encourage by adapting their marketing strategy to it, or not?

1.2.2 Digital revolution

The new generation is growing up in a world of the digital revolution. What are the consequences of this concerning brain development, social interaction and sense of emotions? How do we want to expose our next generations to the world of tomorrow? One by one, the points mentioned above are all essential issues to keep in mind when designing the strategy of the future.

1.2.3 Social norm

A common trend in the articles is the extreme increase of time spent online, which is mainly an evolution of the latest generation, but also parents play a significant role (Felt & Robb, 2016). The use of media and technology is becoming a new social norm or parents are underestimating the effect of media and technology in family life. Examples of online actions are; texting on smartphones, checking social media networks, and other notifications. Nevertheless, the most remarkable of all trends is that people perceive the new way of communication as a necessity to their daily life routine. People act like the cannot live without staying up to date.

1.2.4 Impact on behavior and social skills

Furthermore, researchers put a big question mark on the abilities of social interaction and quality of multitasking. What is the impact of the digital world on our social skills? How does the digital distraction affect our behavior and focus? Above all, is there one straightforward answer to the question how we can optimize the positive and minimize the negative aspects today's technology (Giedd & Chief, August 2012)? Several articles bring many pro et contra to light with relation to these issues. However, the common theme is about the behavioral changes due to the digital revolution, brain evolution, possible risks of nonproductive use of time, less in-depth analytical thinking related to multitasking, but also about the enormous educational and social interaction opportunities (Giedd & Chief, August 2012).

1.3 Range of interpretations

The gaps in research between the articles are traceable in some of the experiment results and the interpretation of them. The different approaches, such as field experiments, neurobiology studies, conceptual models, and psychological research are the most likely cause for the range of different interpretations.

1.3.1 Stakeholder ideals

To get a better understanding of future digital marketing strategies, the trends, threats and opportunities in the digital era are fundamental. That is why this critical literature review will both analyze as well as criticize many different articles, that all try to ground their research, experiment results, and vision. Distinctive stakeholders, such as parents, adolescents, and businesses all hold their favorable ideals. These ideals need to be verified by research and experiments. After all, for the greater good of our society, it is less important what every single stakeholder prefers, but rather what direction we all will take and encourage.

2. THE BALANCE OF PERSPECTIVES

2.1 Experience versus possession

It may not be a secret that a majority of the people derive greater happiness from experiential purchases compared to material purchases (Kumar & Gilovich, 2015). However, what is the science of that emotion behind these different kinds of purchases? A lot of research is already conducted to this philosophical area. The first essential difference between experiential and material purchases that needs to be clear is the intention of buying. Unlike material goods, decisions about experiential events are made with the primary intention of acquiring a life experience (Van Boven & Gilovich , 2003). However, what purchase belongs to which category? There are no strict boundaries, and therefore the area in between might be

somewhat fuzzy. Nevertheless, people are well aware what purchases fit one category or the other when more contextual information is present. In fact, when people have to think of the very same item in experiential terms, they tend to draw more satisfaction from it than if they are led to think of it in material terms (Carter & Gilovich, 2010).

2.1.1 Paradox

Despite the fact that both kinds of purchases are very welcome and yield lots of pleasure, the experiential purchases distinguish themselves from the material ones because of the more enduring hedonic benefits (Kumar & Gilovich, 2015). This tendency was tested and confirmed in two different studies, where customers were asked about their initial and current satisfaction (Carter & Gilovich, 2010). The initial satisfaction for both the material purchases as well as for the experiential purchases was at the same level, although the current level of satisfaction weighed for the experiential purchases. This fact can be seen as quite paradoxical since events are coming to an end while material items last longer in most cases. Furthermore, experiences are more likely to be prompt and enriched by conversations.

2.1.2 Promoting of happiness

The social interaction at stake is a vital part of well-being since they encourage social connections; positive social relationships promote happiness (Diener & Seligman, 2004). Moreover, personal experiences are more likely to be shared with other people because they tend to be more rewarding to talk about (Kumar & Gilovich, 2015). This satisfying effect is because people can re-live the moments when sharing the experiences long after they have happened. A pleasant experience becomes even more enjoyable as it is embellished compared to the original story. Even unpleasant experiences can make for fun stories to tell by making fun of them. In this way, experiential purchases are gifts that keep on giving.

2.1.2.1 Rosy view

Particularly considering the '*rosy view*,' which has a significant influence on our storytelling. Rosy retrospection is the finding that events of the past are rated more positively than at the moment of the occurrence (Mitchell, Thompson, Peterson, & Cronk, 1997). This theory can be explained as a result of disliked and minor annoying moments that fade away quicker from memory than positive situations.

2.1.3 Shape identity

Sharing experiences also shape parts of your identity, because our experiences become our memories and therefore are more likely than possessions to become part of ourselves (Kumar & Gilovich, 2015). The more we talk about the time that we cycled to the top of the Alpe d'Huez, the more fully we become 'a skilled cyclist.' As a result, people will tell more about their experiences rather than their possessions when constructing narratives of who they are. These stories provide unity and purpose to people's lives (McAdams, 2001).

2.1.3.1 Happy society

Understanding the hedonic benefits of experiential consumption can be the first step toward a happier society. And a happier society is a healthier society, as research has shown that good feelings are correlated with better physical health (Petit, Kline, Gencoz, & Joiner, 2001). Moreover, happy people tend to be less vulnerable to diseases (Myers & Diener, 1995)

2.1.4 Nudging strategies

Present research even suggests that the society is already encouraged to share stories about their experiences. Think about successful implications of social media applications like Snapchat and Instagram. People are being nudged, most unconsciously, to choose experiences over possessions, both through the digital media as well as through environmental changes such as the provision and maintenance of public parks, bike paths, hiking trails, public art and statues (Kumar & Gilovich, 2015).

2.1.4.1 Autobiographical marketing

In specific, research on the autobiographical marketing field has even huge implications for businesses' marketing. Studies related to autobiographical marketing has shown that campaigns designed to highlight a customer's personal connection to a product can increase the customer's recall of the product and produce strong feelings for it (Braun, Ellis, & Loftus , 2002). By highlighting the experiential elements of a company's product and by giving people the opportunity to create their product narratives, marketers may maximize the enjoyment, favourability, happiness and utility customers derive from their products (Kumar & Gilovich, 2015). Companies already try to establish this by launching special social media challenges where customers can win coupons, limited editions or customized features.

2.1.4.2 Societal well-being

Similar to commercial businesses, also the charitable organizations might effectively recruit volunteers by headlining the experiential elements of their activities. This approach would stimulate and encourage people to invest in others rather than themselves and thereby increase overall societal well-being (Diener & Seligman, 2004).

2.1.5 Persuasive strategies

Several other factors can play a significant role in the case of how to increase customer's favorable feelings about companies' products and services. Media makers thoughtfully leveraged persuasive strategies to '*hook*' media users. There is a definite relation between media addictiveness and the design of media (Felt & Robb, 2016). Take, for instance, the compulsive feature auto-play. This function is the mechanism that automatically plays the video back to back. Another example of compulsive design is an infinite scroll, the mechanism that creates endless news feeds.

2.1.6 Customer behavior

Today, consumers can find a lot of information about products, prices, reviews, and stories through the internet. As a result of consumers' increased awareness, they are likely to become more price sensitive (Grewal, Krishnan , & Baker, 1998). Thus, the role of brand reputation, brand names, merchandise selection and price discounts are likely to become more pronounced in the next decade.

2.1.6.1 Congruity theory

The congruity theory explains the context in which the brand elements play a decisive role. The theory states that consumers try to bring various information together and make sense of it. During the buying process, prior knowledge and experience with the brand or product moderates the effect of price on evaluation and willingness to buy (Grewal, Krishnan , & Baker, 1998).

2.1.6.2 Perceived value

The internal reference price of customers is strongly influenced by three factors; price discounts, brand's perceived quality and the brand name. Nevertheless, if price discounts are managed carefully, they will positively affect perceived value without any adverse effect on brand's perceived quality, thus enabling brands to successfully deliver high value (Grewal, Krishnan , & Baker, 1998). Additionally, the effects of price discounts and brand

name play a fundamental role in 41% of the buying intentions. Moreover, these two cues explain 85% of the variation in perceived value (Grewal, Krishnan , & Baker, 1998). In other words, these factors are essential in maximizing the effectiveness of marketing strategies and in shaping customers' feelings and positive experiences.

2.2 Development of the young generation

Despite the fact that experiential purchases tend to bring us more happiness than material purchases, people are willing to live for the newest smartphone that is about to release. Moreover, are we obsessed with checking phone notifications now and then while having spare time with our children (Felt & Robb, 2016) and is it impossible to have a friends night out without somebody having distracted by their phone? From a gadget for the top layer to an affordable device for everybody. Without a smartphone, it is nearly impossible to participate in the society of today entirely. Take for example the timetables of Nationale Spoorwegen in The Netherlands. The actual arrival and departure time of the trains can only be tracked on the smartphone app of NS. At this moment, the NS assumes that every passenger owns a smartphone to check their timetables accurately. The same goes with the app WhatsApp. The entire society expects that people have WhatsApp for communication purposes. When you do not have the app, it seems as if there is no other way to keep each other up to date. The bottom line is that both businesses, as well as the society, make many assumptions due to the easy access of digital technology.

2.2.1 Frontrunners

However, what are the consequences of the always being online tendency? Adolescents who are old enough to master the technologies and young enough to welcome their novelty are the frontrunners of the digital revolution (Giedd & Chief, August 2012). This age group is rapidly developing their brains, personal identity but also evolve in the social field. Due to the digital revolution, several questions are raised relevant to adolescents' health and development and the impact on the society as a whole.

2.2.2 Screen time

Back in 2010, adolescents already spent an average of 8,5 hours per day interacting with digital devices, such as tablets, computers and most of all cell phones for using WhatsApp, Twitter, Facebook, Instagram and Snapchat. In the most extreme cases, the amount of screen time could reach a surprising 11,5 hours due to multitasking (Giedd & Chief, August 2012). The fact that the access to these kinds of devices has grown fivefold in the last two years makes the development of this tendency even more concerning. It is expected that the total screen time per day is likely to continue increasing as the technology improves and becomes even more widely available (Giedd & Chief, August 2012).

2.2.2.1 Pace of penetration

This statement can be grounded the best with the phenomenon 'pace of penetration'; the amount of time it takes for a new technology to be used by 50 million people. As a comparison, for radio, it took almost 40 years to cross this border; for cell phones, 20 years; for television, 13 years, for the World Wide Web, 4 years; for Facebook, 3.6 years; for Twitter, 3 years; for iPads, 2 years; for Google+, 88 days (Giedd & Chief, August 2012). According to a study in 2013, more than five hundred million photos per day are uploaded and shared on Facebook, Instagram, and Snapchat (Felt & Robb, 2016).

2.2.3 Behavioral changes

If we look to the behavioral changes with adolescents in specific, three topics worth mentioning. At first, there is an increase in risk taking (Giedd & Chief, August 2012). Think of dangerous risk-taking actions that occur in peer groups. The impact of peer pressure on individual risk taking can be larger than expected, especially when you will be left out of the community due to refusing.

2.2.3.1 Sensation seeking

Secondly, there is an increased tendency in sensation seeking (Giedd & Chief, August 2012). The technology enables adolescents to watch moves and actions of real professionals. Despite the standard notification '*do not try this at home*', adolescents are stimulated and challenged to perform on the same level of their role model.

2.2.3.2 Expression of interaction

At last, due to the increasing affiliation towards (online) peer groups, adolescents are moving more and more away from their parents (Giedd & Chief, August 2012). What looks like excessive use and distraction, evidenced by teens immediately responding to texts, social networking posts, and other notifications may be a reflection of new ways of maintaining peer relations and engaging in communities that are relevant to the generation of today. Some research suggests that what appears to be teens' addiction to technology is just an expression of their desire to interact with friends in a society that does not allow children as much freedom as earlier generations (Felt & Robb, 2016).

2.2.4 Quality of face-to-face communication

The increase in accessibility of digital technology seems to be accompanied by the quality of social interaction between young peers. A field experiment that tested if nonverbal communication is affected by the excessive use of screen-based media found out that these two factors are positively related (Uhls, Michikyan, & Morris , October 2014). Since the use of new technology and media exposure takes place in many different environments and contexts, concerns have been raised that children's face-to-face communication skills may be influenced negatively. Among these skills, facial expression, eye contact, and tone of voice, posture and spacial distance are good examples.

2.2.4.1 Daily life benefits

The understanding of these nonverbal skills is particularly important for social interaction because of the need to modify one's behavior in response to the reactions of others. Moreover, children who better interpret emotional cues in a social environment may develop superior social skills and form more positive peer relationships (Blakemore, 2003). In other words, every child would benefit from these advantages, consciously or subconsciously, since they are of great use in daily life.

2.2.4.2 Curtail of social skills

With this in mind, it is not surprising that research found out that bonding and affiliative cues were significantly stronger when peers communicated in person rather than by text (Sherman, Michikyan, & Greenfield, 2013). At this moment, there can be concluded that the extensive use of digital media, often text-based and thus inherently lacking nonverbal emotional cues, may thus curtail the face-to-face experiences necessary to master essential social skills, even though the media are used for social communication (Giedd & Chief, August 2012).

2.2.4.3 Narcissism

While empathic traits have been on the decline, many researchers have noted that narcissism seems to be increasing and have pointed to social media as a driver for that change (Felt & Robb, 2016). Recent research revealed one of the social risks of the digital revolution.

2.2.5 Favorable skills

Nevertheless, the revolution does provide several beneficial aspects. One of them is the ease of information access. Since the start of the digital era, there has been a vast expanse in the availability of information to the number of people (Giedd & Chief, August 2012). One of the most useful skills that can be acquired due to facilitated accessibility is the ability to make use of the universe of information effectively. Referring to critically evaluating data, discerning signal from noise, synthesizing the content and applying the knowledge to real-world problem solving. Another favorable aspect is that the technologies enable adolescents to connect with a much wider of the world and broaden their exposure to ideas and ways of life (Giedd & Chief, August 2012).

2.2.5.1 Peer relations

Behavior characteristics exhibited by teens are expressions of developmental needs that existed long before the Internet. The need to be connected to others and be liked and validated are hallmarks of the adolescent period. The importance of peer relations plays a major role because peers give feedback from an external point of view about individuals and family. Appreciating the commonalities among other young people throughout the world may help to overcome many of the fears and prejudices that underlie global conflicts (Giedd & Chief, August 2012). However, to what extent will this beneficial quality be profitable in contrast to the increasing distraction factor on the World Wide Web? Think about the influential aspect of easy access to social media, games, and pornography.

2.2.6 Multitasking

However, there is also a downside due to the availability of digital devices. A prominent concern is an increasing propensity among teens toward multitasking, may promote '*mile wide, inch deep*' thinking and create resistance to the patience and persistence required for in-depth scholarship (Giedd & Chief, August 2012). Kaiser Foundation did a survey about multitasking behavior among teens back in 2010. This study indicated that in two of the three cases when teens were doing homework on the computer, they were also texting, viewing Facebook pages and surfing the internet.

2.2.6.1 Performance issue

There is a popular opinion from decades of investigation that division of the brain's attention systems has cost both in time and performance (Rohrer & Pashler , 2003). This consensus can be explained in a very short statement. When people are doing multiple things at the same time, the brain is rapidly switching between tasks, and for each switch, people pay a metabolic and time toll (Giedd & Chief, August 2012). Additionally, multitasking may decrease productivity because users take the time to reorient after a transition to a different activity and become cognitively fatigued from the effort, which slows their rate of work. Behavioral studies also indicate that the tendency in multitasking might mean that young people with proper training, until the age of 16, might be able to increase the capacity of rapidly and efficiently switch between tasks (Fernandes & Moscovitch , 2000). Nevertheless, multitasking makes it harder to create memories that can be accurately achieved later and have a harder time filtering out irrelevant information (Ophir, Nass, & Wagner, 2009).

2.2.6.2 A 'Mile wide, inch deep' future

If we continue along this road, the brains of the next generations will indeed be formed like this. Eventually, those generations will know the basics of a wide range of subjects but will fall short when it comes down to the fine details of a subject. Could we see this as a shame and the consequence of our failures in preventing this from happening?

3. DISCUSSION

3.1 Essence of life

The studies, researches, and experiments in the articles all highlighted different as well as similar consequences regarding the balance between customers' favorability and businesses' profitability. The biggest comparison that recurred consistently was the concern about the youngest generations. The digital revolution is changing the standards and values of the society, in particular, the perceived world of the new generation. The generations of today are the first that grow up in a fully digital environment. There is a chance that they are not able to imagine the world without smartphones, without tablets, and applications. No matter how you slice it, the generations to come are our future. And since it is not possible to go back in time, the present generations have to make sure that young people will understand the essence of life apart from digital and social media.

3.1.1.1 Unbalanced relationship

However, as long as this digital revolution persists, the articles show that the future generations will be flooded by the persuasive marketing strategies of businesses. Moreover, the positive relation between media addictiveness and the design of media make it, even more, easier for brands to play on customers' favorable feelings. Besides using compulsive design companies also try to '*hook*' customers by using autobiographical advertisements. This type of marketing creates personal identification to a product and therefore empowers the recall of the brand. Businesses even take advantage of the emotions that drive customer perceived value and willingness to buy; experiential aspects provide more enduring hedonic benefits. In other words, regarding the balance between consumers and companies, businesses continue strengthening their position. This tide results in people being controlled and nudged towards actions and directions that are already mapped out.

3.1.1.2 Shift in social trends

As the technology keeps improving, the use of digital media is getting more widely available, resulting in a change in social trends. The extensive use of media and technology forces a feeling of necessity in daily life routine. The subsequent consequence is that people act like they cannot live without staying up to date. Moreover, mechanisms such as autoplay and infinite scroll create even a higher threshold for users to exit the digital bubble. Therefore, people are kept in an infinite digital loop that possibly implies serious consequences for society. This danger makes this topic pertinent for further research.

3.2 Societal concerns

Nevertheless, the concerns about the youngest generations go beyond the unbalance between companies and customers. Following the majority of the articles, the digital revolution has also impact on teens' social skills. The subjects that come back most frequently are the negative effects of multitasking and the adverse effects of digital devices on social communication and interaction due to social trends.

3.2.1.1 Paradoxical behavior

Adolescents spent an enormous time of over 8,5 hours interacting with digital devices. Despite the fact that this time is mainly used for maintaining peer relations and engaging in communities, the nonverbal communication is affected by the excessive use of screen-based media. This tendency in usage can be seen as quite paradoxical since the understanding of nonverbal skills is

particularly important for social interaction because of the need to modify one's behavior in response to the reactions of others. In other words, all articles agree that the extensive use of digital media may thus curtail the face-to-face experiences necessary to master essential social skills, even though the media are used for social communication.

3.2.1.2 Duality of natures

However, unlike the agreement on the last topic, the opinions about the advantages of the digital revolution are varying. On the one hand, the digital era does entail useful skills due to the facilitated accessibility such as critically evaluating data, discerning signal from noise, synthesizing the content and applying the knowledge to real-world problem solving. Besides this, adolescents can broaden their exposure to ideas and ways of life which may help to overcome many of the fears and prejudices that underlie global conflicts. On the other hand, the easy access to digital and social media is accompanied by extreme levels of multitasking. Decades of the investigation show that the division of the brain's attention systems has a negative effect on both productivity as well in-depth thinking. Continuing the trend of the present generations, the saying '*mile wide, inch deep*' thinking may be applied to the entire society.

3.3 Maximizing and minimizing

Both the positive as well as the negative aspects of the current situation are interrelated. To draw a line that maximizes the positive sides and minimizes the undesirable effects, deepened research on the impact of social norms and brain evolution on society is required. Further research in this field can be the basis of detailed and explicit future scenarios. Moreover, at least as important to point out is that understanding the experiential aspects of consumption and its hedonic benefits could have a big favorable impact on societal well-being and happiness. Investigating deeper in this particular field may contribute to solutions for maximizing the positive elements of the digital revolution and its aftermath. To make clear how the negative points considered could be diminished in a solution-oriented way, extended research into authoritative influences and social disapproval is required.

4. ACKNOWLEDGMENTS

I would like to express my gratitude to the Marketing Science Institute for sharing their vision on future groundbreaking research priorities in the digital marketing field. Similarly, I acknowledge the contribution of Dr. Efthymios Constantinides and Dr. Sjoerd de Vries for sharing their experiences and knowledge, achieving high-quality classes and providing contributions to realize high standards.

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A changing decision making process: understanding the influence of culture, generational- and life stage differences.

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ABSTRACT
The decision making process of consumers is a widely researched subject in the literature. This stresses the importance of understanding how consumer arrives to a decision. According to Figuera, Greco and Ehrgott (2005), decision-making has become a mathematical science over the years. This process is worldwide one of the first theories taught in marketing books and lectures worldwide. The main purpose of this literature review is to understand how culture, life stages and generational differences, influences the path to purchase (consumer decision making process). After conducting this literature review, the conclusion is that a gap exists in the literature concerning the effects the mentioned variables have on the customer decision-making process. The current literature solely focuses on describing; cultural, life-stage and generational differences to consumer behavior, influence is however left aside. So my recommendation for further research is to measure these the influence that the variables have on the customer decision-making process.

Keywords
Decision-making process, path to purchase, culture, life-stages, generational differences

MSI Topic nr. 3: Making sense of changing decision process(es)

The author's view:

Making sense of the decision making process of consumers on itsself, is already a complex and difficult task. However by taking in account the cultural, life stage or generational differences to this matter results in very interesting case, which can be of the importance with many practical implications.

1. INTRODUCTION

The decision making process of consumers is a widely researched subject in the literature. This stresses the importance of understanding how consumer arrives to a decision. According to Figuera, Greco and Ehrgott (2005), decision making has become a mathematical science. This process is worldwide one of the first theories taught in marketing books and lectures worldwide. This process, where customers follow so called stages before, during and after particular purchase. The decision making process, also referred as the path to purchase is defined by Saaty (2008) as the thinking of one in order to make better decision in every aspect. The decision making process subjected to influences from allot of factors.

This literature review focuses at the generational and cultural differences and if they influence the path to purchase. This literature review is structured by first defining the variables, after defining them, the potential influence to the path of purchase are tested and explained. In the conclusion all segments of the literature review is put together in order to answer the main research question.

2. DEFINING CONSTRUCTS

In this paragraph the constructs 'path to purchase', ' culture', 'generations' and 'life stages' are defined by critically comparing and reviewing the available literature, in order to answer the main research question.

2.1 Defining the Path to Purchase

The literature defines the path to purchase as a process where a consumer, customer or individual follows a linear and structured process to solve an occasion specific purchase need. In other words a predetermined decision making process. According to Sprotles & Kendall (1986), there are eight consumer decision-making styles. The styles are defined as follows: 1) price/value consciousness, 2) perfectionism, 3) brand consciousness, 4) novelty/fashion consciousness, 5) habitual/brand-loyal, 6) recreational shopping consciousness, 7) impulsive/careless and 8) confused by overchoice.

Another way of referring to the decision making process is 'the path-to-purchase'. The path to purchase is process where individuals go trough different phases or stages before committing to a purchase (Shankar, 2011; Achrol & Kotler, 2011; Srinivasan, Rutz & Pauwels, 2015). The literature shows that these pre-set phases or stages differ. According to Jones & Runyan (2016), the path to purchase consists of four distinct stages unique to every individual. In their framework they identify the following phases: 1) Occasion-driven need recognition, 2) Perceptual mapping of the occasion, 3) Purchase solution targeting and 4) Purchase solution resolution. In the first phase they identify the start of the path to purchase by the initiation of an occasion and the start of forming the purchase solution, which are acceptable for that particular occasion. In the Perceptual mapping of the occasion phase, individuals use the required product or service and the motivation to buy, to map the perceptions in to so called: 'sets'.

These sets or potential solutions to the occasion are then carried over to the next phase: Purchase solution targeting. In this phase consumers evaluate the sets they defined at the previous phase. The last phase of the Jones & Runyan (2016) framework, consist of all actions both physical and emotional in completing the purchase. Another framework suggested by Srinivasan et al (2015), is based on the series of stages an individual proceeds through in the path to purchase. This framework consists of three basic stages, 1) Learning, 2) Feeling and 3) Behavior. According to Srinivasan et al (2015), the path to purchase, starts with awareness and knowledge (cognitive), liking or disliking a preference (affective) and finally choosing and purchasing (conative). Although the two frameworks differ in size and number of phases/stage, in the essence they are quite similar. The more simplistic view by Srinivasan et al (2015) contains the phases contained in the more in detailed defined framework as proposed by Jones & Runyan (2016).

In this literature review, the framework as defined by Srinivasan et al (2015) will be used in determining the generational and cultural differences, which may influence the path to purchase (or consumer decision process).

2.2 Culture

There are terms, which have been defined hundreds of times; culture is that kind of term. With definitions going back to nineteenth century (Tylor, 1871). When comparing multiple definitions of culture, you can find pieces of each definition incorporated in the definitions. Culture is a collective program of members of a group, with people within distinguishing members and interacting with each other. These people form groups based on common characteristics, behavior, beliefs, knowledge and norms & values (Hofstede, 1980; Harris, 1980; Keesing, 1981; Linton, 1936; Tylor, 1871). Common agreements across the different definitions are that culture consists out of a group of people or members, with phenomena like shared values, norms and behavior.

Although culture is mentioned as a major influence to customer behavior and as segmentation criteria in most marketing books (Constantinides, Lorenzo-Romero & Gómez, 2010), but according to McCort & Malhorta (1993), there is a shortage on empirical research on cross-cultural customer behavior. Constantinides et al (2010) supports this statement; they state that the topic of influence of culture on customer behavior on a global online environment is new undiscovered topic. However culture is acknowledged to be an influencer of consumption and customer motives, choices and behavior (Henry, 1976; Wang, 1999).

Different forms of decision-making process based on cultural specific preferences are translated to decision modes by Yates & Lee (1996). These decision modes are defined by Weber, Tada & Blais (1998), in their framework, they distinguished five forms of decision modes; 1) Analytic (Cost benefit) based decision making, 2) Category based decision making, 3) Reason based decision making, 4) Affect based decision making and 5) Story based decision making. The culture of the decision makers' effects the selection of a decision mode based on cognitive variables, motivations or cultural values (Weber & Hsee, 2000).

2.3 Generations

Generation or generations are defined in the literature as a group of humans that are linked through age boundaries, location, significant development stages and similar social experiences (Kupperschmidt, 2000; Smola & Sutton, 2002; Smola and Sutton, 2002; Zemke et al., 2000). Classifying these generations is not done consistently through out the years and by different researchers. However, behavioral sociologists suggest that each generation last for about two decades (Schaeffer, 2000; Shepard, 2004). The literature recognizes several classifications of generations; Boomers (born 1943-

1961), Generation X (1961-1981), Generation Y (millennials) (1982-1999) and the generation born after 2000 are sometimes labeled as 'Generation Z' or as 'Homelanders' (Twenge, Campbell & Freeman, 2012). Although the majority of the available studies are devoted to difference in generation in a work environment some researchers argue that generational differences are difference at base cultural differences. When members of different generation socialize with different norms, values and behaviors. Other studies suggest difference in between generation is caused to aging, life experience, life- and career stages (Cennamo, & Gardner, 2011; Twenge et al, 2012).

2.4 Life stages

Mintz (1999) identifies the sequential stages of live classifying the following stages: 1) infancy, 2) childhood, 3) adolescence, 4) adulthood, 5) middle age and 6) old age. In his classification each stage is defined by three variables: biological, psychological and social. According to Armstrong (2007), the human life stages consist of twelve stages. Altering stages in comparison with the stages of Mintz (1999) are: pre-birth (questionable), birth, infancy, early, middle and late childhood, adolescence, early adulthood, midlife, mature adulthood, late adulthood and death (also questionable). The stages as proposed by Bogin & Smith (1996) is more in one line with the stages defined by Mintz. The stages according to Bogin & Smith (1996) are infancy, childhood, juvenile, puberty, adolescence, adulthood and old age. For this literature review, the proposed stage of Mintz (1999) will be used in further chapters. Furthermore, Mintz (1999) acknowledged that life stages are historical constructs, the definitions, connotations and experience in each stage may vary by classes, ethnicities, gender and the particular periods. During the course of many years, the number of identified life stages varied. Terms were added and removed during the past centuries (e.g. adolescence for instance was institutionalized in the late nineteenth century). Since Mintz (1999) did not specify ages, within the stages he defined, we look at empirical evidence to determine the age brackets per stage: infancy (0-2 years) [1], childhood (3-11 years) [2], adolescence (12-18)[3], adulthood (18-44) (Levinson, 1986), middle age (45-65)[4] and old age (65+).

3. THE INFLUENCE TO P-T-P

This paragraph describes the influence the variables defined in chapter two ('Definitions') have on the path to purchase or decision making process of consumers.

3.1 Generations

After reviewing the literature, I can conclude that there is no research conducted on studying the effects of generations on the path-to-purchase (or consumers decision making process). The literature available focuses on the characteristics per generation, instead of the effects it has on the path to purchase. For this literature review it is not relevant to describe the generational characteristics of consumer behavior.

[1] http://sciencenetlinks.com/lessons/growth-stages-1-infancy-and-early-childhood/

[2] http://sciencenetlinks.com/lessons/growth-stages-1-infancy-and-early-childhood/

[3] http://sciencenetlinks.com/lessons/growth-stages-1-infancy-and-early-childhood/

[4] https://en.oxforddictionaries.com/definition/us/middle_age

3.2 Culture

Similar to generational influences on the path to purchase, there is no literature available that has studied the cultural influence to the consumer decision-making process. The current literature copes the differences in culture (also scarcely available). Summarizing the differences between cultures in customer behavior is not relevant to understanding the influence it has on the customer decision-making process.

3.3 Life stages

The influence of life stages on the consumer decision-making is luckily a more studied topic in the present literature. However, the available literature per life stage differs. For some stages there is also a scarcity on literature. Below I've tried in the best way to give some influences of these stages on the life stages. The influence of the following life stages: childhood, adolescence, adulthood & middle age, to the consumer decision-making process is threated in this paragraph. Infancy is not relevant. Old age is combined with middle age since there is a scarcity of available research on decision making of older people.

3.5.1 Childhood

According to Garon & Moore (2004), it is difficult to pinpoint a decision making style for children, as we defined children between the ages 3-11 in the previous chapter, Garon & Moore (2004) acknowledge that children's brains are maturing over the course of the years, they expect their decision making 'skills' to develop as well. In their research, Thompson, Barresi & Moore (1997) found that younger children demonstrate significantly less orientation on future in comparison with the older children. Another major finding in their research was the significant improvement of the decision making process from 3- to 4-year olds. In other research Lemmon & Moore (2001), found a relation of age differences between, three important abilities for decision-making: future orientation, delayed self-recognition and episodic memory. The claims that children develop their brains, but also their decision making process over the years is once more confirmed by a study by Garon & Moore (2004). Their research conducted on three groups, 3-year-olds, 4-year-olds and 6+-year-olds, showed a significant main effect of age groups, with the 6+-year-olds outperforming the younger groups.

3.5.2 Adolescence

The literature often describes the behavior of adolescents as risky and emotional. According to Gardner & Steinberg (2005), adolescents' decision making is generally made under emotional arousal (positive or negative). The decision making process of adolescents considered important, since this group are eager to consume and they are considered as potential loyal customers in the future (Sproles & Kendall, 1986; Speer, 1998; Feldman, 1999). Turk & Bell (1972) claim the young members within a family often influence the decision process of their families. In their research, Gardner & Steinberg found a significant difference in the decision making of adolescence and adulthood. They suggest adolescents are more inclined to taking risk as well as the riskiness of these risks, compared to adults. They also found that adolescents are more tentative to be influenced by peers, while making decisions.

3.5.3 Adulthood

Adults who have a stable life after the adolescence phase are more likely to be in a positive mood, this is associated with greater engagement concerning decision-making. The experience gained over the years, make adult more information orientated towards making decision, a more rational state of

mind is obtained. According to Peters, Hess, Västfjäll & Auman (2007), adults focus more on affective information (could be positive or negative) compared to adolescents, before making decision.

3.5.4 Middle- & old-age

According to Yoon, Cole & Lee (2009), individual characteristics such as age, health status and cohort influences the abilities and resources of a consumer in decision making. This also applies to older people; Yoon et al (2009) suggest older adult, with their consumer experience over the years and their expertise, can make them quite competent in decision-making. However they also suggest for older adults to successfully adapt to the changes of the consumer environment, they should be assisted of be trained in order to keep up.

4. CONCLUSION

The main purpose of this literature review was to understand how culture, life stages and generational differences, influences the path to purchase (consumer decision making process). After reviewing the literature, I must conclude that there is a gap in the literature concerning the effects the mentioned variables have on the customer decision making process. The current literature focuses on describing cultural, life-stage and generational differences to consumer behavior, influence is however left aside. So my recommendation for further research is to measure these the influence that the variables have on the customer decision-making process.

5. LIMITATIONS

The biggest limitation of this literature review is the complete reliance on previously published studies and the relevancy of these studies to the subject of this review. The scarcity of available research on cultural differences and life stage differences towards the consumer decision-making process is another limitation. Furthermore, some of the studies used in the review are based on very specific groups, which may not be representative for different groups.

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Topic 4:

New data, new methods, and new skills — how to bring it all together?

Social Media and User Addiction: Facts and Possible Solutions

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ABSTRACT

Several studies have looked to various aspects of Internet addiction; Scholars still argue if we can talk about Social Media addiction as a new phenomenon of this domain. This study reviews the current literature in order to provide the context and definition of Social Media addiction. Furthermore there is little known about the possibilities for handling and treating of Social Media addicts; the article proposes a number of alternatives. This article developed two research questions form the basis of a critical and systematic literature review. Through a review of definitions and viewpoints regarding addiction in general and behavioral addiction in particular we provide a framework of Social Media addiction. This needs to be further evaluated in cooperation between social and clinical scientists. Possible treatments based on previous studies on Internet addiction have been presented as a basis for developing treatment approaches for Social Media addicts. Additionally we present a number of guidelines in order to prevent Social Media Addiction. The Internet, including the Social Media as a form of interactive Internet, is an essential tool in the daily working and social life. This article underlines the fact that not enough research has been done and that our society needs to become aware of a growing social problem. Despite earlier studies still there is no general definition and approach to the Social Media addiction problem.

Keywords

Social Media, Addictions, Internet Addiction

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: Why this topic?

While the digital technologies create new possibilities allowing us to communicate with friends and loved ones all over the world, the negative effects of social media should be also considered. I personally wonder sometimes, if I could live without Social Media. I therefore was interested in the addiction dangers as well as the prevention and treating possibilities of Social Media addiction.

1. INTRODUCTION

1.1 Research topic

It is well known that the Internet has changed our daily lives. Not only do we increasingly purchase goods online instead of in physical shops (Si Liu et al., 2012; NOS, 2016). The Internet has become an essential tool in Western countries (Davis, 2001) and is part of our daily life (Bolton et al., 2013; Kuss and Griffiths, 2011; Vig and Gill, 2015; Wu, Lee, Liao and Chang, 2015; Young, 1996). Although most people say they use Social Network Sides to keep in touch with friends and family (Baz, 2016; Lenhart and Madden, 2007) it seems nowadays everything needs to be shared (Bolton et al., 2013; Santoro, Castelnuovo, Zoppis, Mauri, and Sicurello, 2015). What am I eating, where do I go and who am I with?

The video of (former) Social Media star Essena O'Neill, explaining about why she quit Social Media (Baz, 2016), has been watched more than 1.5 million and commented on almost 4.000 times (O'Neill 2015). This is only counting on YouTube itself. The conversation about the dark side of Social Media has increased and scholars such as Dr. Young have launched studies about Internet Addiction since 1996. Users create a second life that is better than their real life to impress the virtual world (Baz, 2016). They show off their food, makeup, hair or life in general (Brock, 2011) in order to feel comfort within the online community (Young, 1996). Through media messages within their online environment, individuals receive acknowledgment and feel understood (Song, et al., 2004). Those people, including Essena O'Neill, suffer from depression (Bolton et al., 2013; Udorie, 2016; Vig and Gill, 2015; Wang, Lee and Hua, 2014; Young, Pistner, O 'Mara and Buchanan, 2000) in real life and therefore create a world to escape to (Goodman, 1990; Tao et al., 2010; Wu et al., 2015).

Obsessive use of Social Network Sides does exist (Davis, 2001; Lim, Bea and Kim, 2004; Wang et al., 2014). In the Netherlands 17% of the population between 12 and 18 says that they are addicted to Social Media (Kloosterman, and van Beuningen, 2015). A study by the Guardian showed that an increasing number of teenagers feel the pressure to be online permanently, even at night (Udorie, 2016). Pathological Internet use[a] (PIU) has negative effects on academic performance and relationship functioning (Morahan-Martin, 1997; Scherer, 1997). Young adults themselves say that their Social Media Addiction has a negative influence on different parts of their life such as concentration, sleep and school performance (Kloosterman and van Beuningen, 2015; Udorie, 2016). PIU is considered a risk for society (Davis, 2001; Lim et al., 2004; Udorie, 2016; Wang et al., 2014; Wu et al., 2015). It is argued to be a more serious problem than behavioral addictions to other mass media like television (Song, Larose, Eastin and Lin, 2004). This makes one think. Do we need to change or simply accept that when we go for dinner we immediately share pictures of our food with the rest of the world, instead of talking to our real life company?

1.1.1 Research Gap

A great amount of research has been done on the (negative) effects of the Internet, including Internet abundance and addiction (Kuss and Griffiths, 2011; Song, et al., 2004; Young, 1999; Young et al., 2000). However scholars still argue to what extent one can talk about an addiction (LaRose, Lin, and Eastin, 2009; Song et al., 2004, Suler, 1991; Wang et al., 2014). After all, reading the newspaper everyday is considered a habit not an addiction, although some people depend on it. Moreover little is known about possible treatments for Social Media addicts.

The aim of this article is to combine what current literature knows about Social Media Addiction (Kuss and Griffiths, 2011). Moreover existing diagnostic criteria are evaluated as well as possibilities to help Social Media addicts (Kuss and Griffith, 2011; Wu et al., 2015). When one can understand the phenomena Social Media Addiction, then it will be possible to treat *real* addicts and help people to use this medium in a *healthy* way. This, in turn, will help to solve a societal problem.

1.2 Methodology

To achieve this goal two main research questions have been set:

[a] PIU involves overuse and abuse of specific Internet functions (Davis, 2001).

Q1: When is the use of Social Media considered an addiction?

Q2: What are treatment possibilities for Social Media Addiction?

A critical literature review will be done in order to answer these questions. The theoretical framework first defines Social Media, followed by a definition of (behavioral) addiction and *bad* habits. Thereafter a review of the latest research findings regarding Social Media Addiction and criteria to define Social Media Addicts will be done. This will help to answer the first research question. Thereafter addiction a number of treatments for Social Media Addicts will be elaborated, including a discussion about possible preventions in order to answer the second research question. In the final section there will be discussion about the findings including recommendation for future research.

2. LITERATUR REVIEW

2.1 Social Media

First of all it is useful to explain Social Media in order to prevent confusion.

2.1.1 Social Media

Social Media is any type of electronic communication of an online service where a person can share content (Bolton, 2013; SocialMediaToday, 2016). This can include videos, information, ideas and personal messages. Kaplan and Haelein (2010) consider Web 2.0 as the platform for the development of Social Media containing online review/rating sites, virtual game worlds (e.g. World of Warcraft), video sharing sites (e.g. YouTube), virtual social worlds (e.g. Second Life), collaborative project (e.g. Wikiperdia), online communities and blogs (Bolton et al., 2013; Krishnamurthy and Dou, 2008). It also includes Social Network Sides (SNS) such as Facebook, which will be further elaborated below. Within these online communities consumers produce, design, publish or edit content (Krishnamurthy and Dou, 2008). Social Media aims to keep the fans/ followers interested and to create interaction with them in order to increase eCommerce (SocialMediaToday, 2016). Social Media can be categorized into two classifications. The first is 'based on the richness of the medium' and the extent to which of social presence is granted. The second classification is based to what extent self-disclosure is needed and which type of self-presentations is granted (Appendix 6.1). The self-presentation and self-disclosure varies from low to high whereas the presence and Media richness medium various from low to medium to high (Kaplan and Haenlein, 2010).

2.1.2 Social Network Sides

For the reason that some of current articles describe SNS separately it is necessary further elaborate on it. SNS has been defined as 'the creation and maintenance of personal and business relationships especially' (SociaMediaToday, 2016). It is a virtual community where its members have the opportunity to engage with their own Web 2.0 features such as sharing content and having deep and informative conversation with ones network (Kuss and Griffiths, 2011; SocialMediaToday, 2016). Within SNS there is a two-way communication, which includes not only sharing content but also reading and replying on other users content. For the reason that every interaction requires different center of attention, there is no automate way to grow the relationships within the network. It is therefore self-explanatory that keeping SNS up to date is time consuming. The main goal of SNS is to build relationships with fans and followers to create a network (SocialMediaToday, 2016). Boyd and Ellison (2008) state that SNS enables users to '(1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system'.

In general Social Media makes it possible for users to connect with (almost) everyone in the world independent of time (Wang et al., 2014), using different mobile and web-based technologies (Kietzmann, Hermkens, McCarthy and Silvestre, 2011) like smart phones, tablets, and computers (Wu et al., 2015). As SNS are considered as a category of Social Media for the further research the generic term Social Media (for private usage) will be handled.

2.2 Addiction

Within this section first a general definition of addiction will be discussed. Thereafter behavioral addiction and the difference between habit and addiction will be elaborated. According to Goodman

(1990) addiction is not only an equivalent to dependence or compulsion as it 'contains information which neither of these two terms alone provides'. Other scholars however argue in later publications that dependence and addiction are somewhat identical[b] (Wang et al., 2014). As a result, the words are used as synonyms in this article.

2.2.1 Addiction defined

Goodman (1990) states that earlier definitions of addiction had moralistic associations and were either vague or too general and therefore questionable for scientific research. The scholar newly defined addiction as 'a process whereby a behavior, that can function both to produce pleasure and to provide relief from internal discomfort, is employed in a pattern characterized by (1) recurrent failure to control the behavior (powerlessness) and (2) continuation of behavior despite significant negative consequences (unmanageability) that has been accepted by all researchers'. He further argues that when a person has a compulsive dependence on an external action to regulate ones internal state, one can talk about an addictive process. However Goodman also states that not all dependences and compulsions are addictions.

Later on addiction has been defined as a physiological dependence between a person and some stimuli (Davis, 2001), which is in line with Goodmans' elaboration. Marlatt, Bear, Donovan and Kivilahan (as cited in LaRose et al., 2009) state, that addiction is a repetitive habit pattern, which increases diseases and/or personal and social problems. Those effects continue although one wants to abstain or moderate the pattern.

To this point in time addiction has not been listed in the Diagnostic and Statistical Manual of Mental Disorders (Cassin and van Ranson, 2007; Young, 1996). Moreover scholars state that there is no general definition of addiction (Cassin and van Ranson, 2007).

2.2.2 Behavioral Addiction

Nowadays the term addiction is used not only regarding drug consumption but also for behavioral disorders (Young, 1996). Excessive seek for short-term rewards, such as emotion modification, has been found to be crucial for developing addictive behavior (Wang et al., 2014). When suffering from behavioral addiction, individuals lose control of the frequency of their behavior (Tao, et al., 2010). Therefore behavioral addiction is considered an impulse-control disorder. The shifting[c] from rational to irrational behavior is linked to dependence development (LaRose et al., 2009; Wang et al., 2014), which is similar for substance addictions (Tao, et al., 2010). However the change of behavior does not cause a direct addition (Song, et al., 2004; Wang et al., 2014). The development depends on individuals themself (Davis, 2001; Goodman, 1990) and can develop over time (Song et al., 2004). Scholars have interpreted addictive behavior as a point where one loses control of a (bad) habit (Kuss and Griffiths, 2011; LaRose, Mastro and Eastin, 2001; Song et al., 2004; Wang, Lee and Hua, 2014). According to Sang et al. (2004) this can be explained with the Learning Model Theory (Marlatt et al., 1988). First a pleasurable outcome is connected to a behavior, which leads to a condition response that in turn makes the behavior a goal. When this goal becomes an obsession a downward spiral develops where one wants to relive the pleasurable outcome and loses self-control (LaRose et al., 2001; LaRose et al., 2009). This is when addiction arrives, which is in agreement with the first Goodman's definition of addiction. The (repetitive) behavior of an individual has direct influences to future activities through the power of habits (Ouellette and Wood, 1998). Therefore the following section will discuss habits more in depths.

An increasing amount of people suffers from Behavioral Addiction (Tao et al., 2010). These past year's behavioral addiction research focused not only on compulsive gambling, overeating, and exercising but to a greater extent on Internet Addiction as well (Young, 1996). Behavioral addiction has also been implemented within research of technology overuse such as computer dependency (Kuss and Griffiths, 2011), compulsive gambling, video game playing, compulsive sexual behavior, love relationships, and television viewing (Young, 1996). This article will focus on technology overuse in the form of Internet and Social Media Addiction only.

[b] 'Dependence refers to the psychological state, and addiction describes'.
[c] For more detailed information, see also the theory of rational behavior

2.2.3 Bad habits

As mentioned above a habit is considered a problem when one loses the control of the behavior, as this can lead to an addiction (Kuss and Griffiths, 2011; LaRose, Mastro and Eastin, 2001; Song et al., 2004; Wang et al., 2014). Although there can be harmful (long-term) life consequences (Wang et al., 2014) like loss of employment or divorce (Song, et al., 2004), individuals seem to have accepted their (media) habits (LaRose et al., 009; Wang et al., 2014) and do not recognize negative (long-term) consequences for themselves (Bolton et al., 2013; Wang et al., 2014). This phenomenon has been introduced as soft addiction, which results from habits such as over-shopping, overeating, watching too much TV, endlessly surfing through the Internet, and procrastinating that are not considered dangerous but keep individuals from pursuing the life they want. Meanwhile people spend money, time and energy on such habits. Put differently everybody suffers from *bad* habits (Wright, 2006). When doing research on Internet Addiction Song and colleagues (2004) claim somewhat the same. They argue that habitual use (in this case of internet) can be associated with a *mild* (Internet) addiction among the normal population. Finally Larose et al. (2009) argue that the time one needs to become efficient in (Internet) usage, a person patterns have already become a habit. This effect positively connects ones perception about efficacy with habit development.

In conclusion, this article defines behavioral addictions as habits that have negative life consequences (Sang et al., 2004) on psychological, emotional and physical wellbeing and social development (Bolton et al., 2013) of an individual.

2.3 Digital Addiction

This section is divided into four parts, starting with definitions of Internet and Social Media Addiction. Thereafter factors that increase the likeability to develop a Social Media Addiction will be reviewed. Finally criteria to identify Social Media Addicts will be elaborated.

2.3.1 Internet addiction

Young was the first to introduce Internet addiction in 1996, which is characterized as a (common) behavioral addiction (Tao et al., 2010; Young, 1996). It is further defined as an impulse-control disorder, which shares similarities of substance use but does not include them (LaRose et al., 2009; Tao, et al., 2010; Wu, et al., 2015; Young, 1996). Internet Addiction is also known as pathological Internet use or dependence, which includes obsession, lack of (self-) control and/ or nonstop usage (Song et al., 2004; Tao et al., 2010). This pathological pattern negatively influences individuals' school achievements, home situation, work, health and/ or social relations (Morahan-Martin and Schumacher, 2000; Tao et al., 2010; Udorie, 2016) and can lead to depression, loneliness and social anxiety (Bolton et al., 2013; Wang et al., 2014). Five different categories of Internet Addiction have been defined: (1) computer (game) addiction, (2) Information overload (3) net compulsion like shopping or gambling online, (4) cybersexual addiction and (5) cyber relationship (Tao, et al., 2010; Young, 1996). Later, Tao en colleagues (2010) added email and text messaging to the category. Individuals develop addiction towards a certain application (including Social Media platforms such as Facebook, Instagram, YouTube and so forth), which is the trigger for excessive Internet use (Wu et al., 2015; Young, 1996). Kiss and Griffiths (2011) hypothesize that this occurs due to the egocentric construction of the platforms. It is said that individuals can become addicted to the Internet in a way they become addicted to other behavioral addictions such as gambling or substitutes like drugs or alcohol (Kuss and Griffiths, 2011; Tao et al., 2010; Young, 1996). Furthermore it is argued that individuals develop addiction towards a certain application(s) like Social Media Applications such as Facebook, Instagram, YouTube and so forth, which are the trigger for excessive Internet use (Wu et al., 2015; Young, 1996).

Song et al. (2004) however argue, that previous definitions used in studies of Internet Addiction (such as Young, 1996) do not classify Internet addicts/ pathological Internet users but show *normal* users. According to their research, individuals did not experience harmful life consequences like serious personal and social problems (Song et al., 2004), which is an important part of the clinical definition of addiction. LaRose et al. (2009) as well state that there is not a general theory to describe the cause and development of (media) addiction. Nevertheless they base their study on two theories that are, according to them, supplying superior perspectives for Internet Addiction: (1) The addictive personality model and (2) The operate condition model.

As Internet Addiction includes different categories the definitions named above are more general. Therefore the following section will focus on Social Media Addiction exclusively.

2.3.2 Social Media Addiction

According to Wang, Lee and Hua (2014) Social Media addiction is a psychological dependency arising from a habit. Social media serves as a short-term fulfillment (and avoiding bad feelings) without taking the negative long-term effects to account. This can include an obsessive need to control and update ones social network profiles (Bolton et al., 2013; Lewis and West, 2009). Kuss and Griffiths (2011) suggest that Social Media Addiction is a mental health problem, which may even need treatment by professionals. The excessive use can be explained with the human need to compare each other, individuals nowadays use Social Media to fulfill this desire. This occurs in the same way as individuals compared magazines, television and physical interaction in the past. It lies in the human nature that when comparing one another, we eventually want to reach perfection. It is therefore argued that users become addicted to self-presentation rather than to Social Media itself and consequently the medium Social Media in an excessive way (Baz, 2016).

Although scholars discovered that significantly more males than females are addicted to Internet (Wu et al., 2015), this is not the same for Social Media. A study in the Netherland showed that more girls than boys believe that they are addicted to Social Media (Kloosterman, and van Beuningen, 2015).

In summary, when a person is pre-occupied with Social Media to an extent where that person shows symptoms of becoming anxious not being online and lies or tries to hide his/her (excessive) usage then that person can be considered a Social Media Addict. Moreover that individual needs to show behavioral change that has a *negative* influence on their life (e.g. school/ work achievement, health problems or social relations offline), which is caused by the withdrawal from daily routine in order to be online (Davis, 2001; Udorie, 2016; Vig and Gill, 2015, Young, 2000).

2.3.3 Factors increasing the risk for a Social Media Addiction

Cyber-relational addiction has been defined above, as a category of Internet addiction. This also includes Social Network Sides and as such Social Media in general (Bolton, et al., 2013; Kuss and Griffiths, 2011; Song et.al, 2004, Young, 1999). As a result, the definitions of Social Media Addiction and Internet Addiction are somewhat alike. Therefore it is interesting to examine, what factors increase the risk to develop a Social Media Addiction. This will be elaborated in the following section.

Individuals that are new to Social Media (Young, 1996) or who excessively[d] use Social Media have a higher risk to develop a bad habit, which can lead to an addictive behavior (Kuss and Griffiths, 2011; Wang et al., 2014; Wu et al., 2015; Young, 1996). This is mostly not recognized as a problem by the users themselves (Wang et al., 2014; Young, 1996), although heavy use (especially at night) disrupts their resting phase (Udorie, 2016; Young, 1996). LaRose et al. (2009) claim, that although a lack of self-regulation leads to (Social) Media consumption habit, it not automatically shows a pattern of an addiction. A recently conducted study however has proven the opposite. The results showed that problems with self-regulation have a positive influence on (Social Media) addiction (Wang et al., 2014).

Furthermore, studies have shown that users that seek to belonging to someone or something in order to compensate for lack of relations in their real life community, are at risk for developing an addiction (Kuss and Griffiths, 2011). This can be connected to the findings that certain personality types have a higher probability of an abuse or dependency (Goodman, 1990; LaRose et al., 2009) of Social Media. As an example neurotic[e] and extraversion people have been linked to Social Media Addiction (Kuss and Griffiths, 2011; Vig and Gill, 2015; Wu et al., 2015). Relying on the framework for etiology of specific addiction by Sussman and colleagues (2011), Kuss and Griffith (2011) state that the egocentric structure of SNS makes it more likely for narcissists to make use of those platforms. The multiple

[d] Young (1996) described excessive usage as 20-80 hours (Internet) per week, with single periods of up to five hours. Others scholars describe a usage as high when an individual uses SNS four times per day (Kuss and Griffiths, 2011).

[e] Showing one or more of the following symptoms: feeling depressed; restless, guilty; having mood swings; difficulties concentrating/ easy distracted

regression analysis of Wilson, Fornasier and White (2010) in addition showed that scoring high on extraversion and low on conscientiousness are significant predictors for addictive tendencies.

Not only the personality of an individual but also the psych of a person in general has influence on SNS addiction. There has been research on the relation between SNS addiction and self-identity (Kuss and Griffiths, 2011; Wu, et al., 2015). Moreover (internet) users that have difficulties concentrating or paying attention, showing mood swing and/ or having issues with sleeping are more likely to develop Internet addiction (Wu, et al, 2015). As a result, one can argue that those individuals are at higher risk of addicting to Social Media. Next to the person itself also the (social) environment is a factor that determines to what extent an individual is at risk to develop a (Social Media) Addiction (Davis, 2001; Goodman, 1990).

People with a general tendency for addiction (to alcohol for instance e.g.) are more likely to also become addicted to the Social Network Sides (Kuss and Griffiths, 2011). One can argue that this might be the same of a Social Media Addiction development. Finally gender (Wu et al., 2015) and culture (Bolton et al., 2013) have been discovered to influence (the tendency) to develop an Internet addiction. When considering Social Media Addiction as an Internet Addiction, it can be stated that there also will be a difference for those factors.

2.3.4 Social Media Addiction criteria

To this day there has been no study giving criteria specifically on Social Media Addiction. Nevertheless there has been research on criteria on behavioral addiction and Internet addiction, which will be elaborated in this section.

Goodman (1990) first developed general addiction criteria in a format similar to that of DSM-III-R[f] (Appendix 6.2.1). Later studies use Goodman's work as grounding for their study on behavioral addiction. Griffith (2005) argues that all addictions consist oft the following elements: salience, mood modification, tolerance, withdrawal, conflict and relapse.

Dr. Kimberly S. Young (1996) was the first to develop criteria specifically for Internet addiction, which are still used today (Kuss and Griffiths, 2011; LaRose et al., 2009). In her study she modified the criteria for DSM-IV of pathological gambling (Appendix 6.2.2) in order to detect Internet Addicts. Individuals were categorized as addicts when they answered 'yes' to ≥ 5 questions regarding disregard of personal life, mental obsession, escapism, mood modifying experiences, resistance, and cover up the behavior addiction. Other scientist argue that previous studies detected an Internet habit rather then Internet Addiction (LaRose et al., 2009). Therefore they combined the criteria of Young with other findings and developed six criteria themselves (Appendix 6.2.3).

A more recent study by Tao and colleagues (2010) developed eight criteria for Internet addiction, consisting of symptom criteria, clinically significant impairment criterion, course criterion and exclusion criterion. This guideline included a 2 + 1 rule in order to diagnoses individuals. Within this study people were considered Internet addict when the symptom one plus two, in combination with (at least) one of the symptoms (three to seven) were developed (Appendix 6.2.4). When reviewing earlier studies in order to find criteria for Internet Addiction, LaRose et al. (2009) conclude the following symptoms for Internet Addiction: possible preoccupation, tolerance, relapse, withdrawal, loss of control, life consequences, concealment and escapism (Appendix 6.2.5).

Research into Online Social Network Dependency has analyzed 'the competing models built upon the cognitive behavioral model and the biopsychogical framework of addiction' (Thadani and Cheung, 2011). The results suggest that a model with seven first-order factors (i.e. mood alternation, social benefit, negative outcomes, compulsivity, excessive time, withdrawal, and interpersonal control) and two correlated secondary factors (i.e. social components and intrapersonal components) are the best predictors for Online Social Network Dependency (Appendix 6.2.6).

As mentions in the sections above, Social Media Addiction is considered a behavioral addiction including substance use. Therefore other studies that explain criteria for behavioral addictions can be

[f] Diagnostic and Statistical Manual of Mental Disorders (DSM). Published by the American Psychiatric Association (APA) in 1987 under the direction of Spitzer.

used as well. The study of Cassin and von Ranson (2007) about binge eating[g] for example analyzed, to what extent (modified) DSM-IV substance-dependence and the (more conservative) criteria of Goodman's addictive disorder criteria are applicable to binge eating (Appendix 6.2.7). Finally, in a study by Koob's (2006) criteria of substance dependence were developed in, which could be used as a foundation for defining criteria for Social Media Addiction (Appendix 6.2.8).

2.4 Social Media Addicted! What now?

This section will elaborate possible treatments of Social Media Addiction. Furthermore a prevention program will be presented.

2.4.1 Social Media Addiction treatment

Although there is no general definition of Social Media Addiction, possibilities to treat Social Media Addiction can be created. Most of the treatments are based on treatments created for Internet Addiction. According to Goodman (1990) a treatment of a behavioral addiction requires total abstinence from the specific addictive behavior. However it seems impossible to not use the Internet anymore as a result that it enables us anonymity, is convenient and assessable from almost everywhere in the world (Wu et al., 2015). As mentioned earlier the Internet is an essential tool (Davis, 2001) and is part of our daily (work) life (Bolton et al., 2013; Kuss and Griffiths, 2011; Vig and Gill, 2015; Wu et al., 2015; Young, 1996). Although the abstinence of Internet and thus Social Media might be impractical, three inter related process for a treating Social Media Addiction given by Goodman (1990) can be used: '(1) fostering awareness of inner feelings, needs, conflicts and core beliefs, particularly as they arise in the context of interpersonal relationships; (2) encouraging development of more healthy, adaptive means of handling feelings, getting needs met and resolving inner conflicts; and (3) a more directive, cognitive behavioral teaching of effective strategies for promoting abstinence[h] from addictive behavior'. Thus, treatment programs would not exclusively focus on the behavior of addiction but would also address the elements of the addictive process.

Young (1996) proposed seven techniques for treating Internet addiction, based on past research findings: '(a) practice the opposite time in Internet use, (b) use external stoppers, (c) set goals, (d) abstain from a particular application, (e) use reminder cards, (f) develop a personal inventory, (g) enter a support group, and (h) family therapy'. In order to treat pathological Internet use later research findings again suggest to keeping track on the usage. Moreover it is recommended to make use of thought listing exercise and exposure therapy[i]. This helps users to observe cognitive bias regarding their personal using behavior (Davis, 2001). It is questionable to what extent keeping track of Social Media addiction is practical and whether it should be the aim of treating Social Media Addiction (Kuss and Griffith, 2011). However these suggestions show repeatedly that users need to become aware of their usage. Therefore it is stated that the best treatment is to control Social Media use applying cognitive-behavioral therapies (Kuss and Griffith, 2011). Moreover it is helpful to recognize why one is using Social Media. Individuals need to have a real intention like information seeking, leisure or entertainment, socializing (within an online community), and staying in touch (Bolton et al., 2013). If this is not the case, the time spend on Social Media should be reduced.

2.4.2 Social Media Addiction prevention

Individuals that are eager to increase pleasant feelings and at the same time escape unpleasant feelings are triggered to repeat a pleasing experience (Wang et al., 2014). These people therefore have a higher risk of the relapse of their addictive (Social Media) behavior, especially because the Internet is no longer avoidable (Kuss and Griffiths, 2011). First, it is necessary to identify the patterns of an individuals' (Internet) abuse and its causes in order to find origin of the problem and resolve it. Moreover following a planned schedule is beneficial in order to reach control of ones using behavior (Lim et al., 2004). Strengthening ones self-control has been found to be effective for preventing questionable Social Media use (Wang et al., 2014). Besides it is helpful for people to find joy in activities that do not take place

[g] Binge eating has been characterized as a behavioral addiction where 'consumers' themselves say that they overuse (food) and continue their behavior regardless the negative effects, which they are aware of.

[h] What constitutes abstinence for a given person depends on which behaviors are being used addictively, and on how addictive use of behavior may be distinguished from healthy behavior in that individual

[i] Including abstinence of Internet to show the addict that there are no negative consequences of usage.

online, which leads to a decrease of time spend online (Lim et al., 2004). As Social Media Addiction is categorized within Internet Addiction (Kuss and Griffiths, 2011), the prevention method of Lim et al. (2004) for Internet Addiction can be applied in order to prevent Social Media Addiction. It is a five step learning process developed for students:

(1) Recognize the problem: students understand Internet addiction and its influences.

(2) Take addiction as ones own problem: students observe their pattern of Internet use, test Internet addiction, and recognize that Internet addiction can be their own problem.

(3) Look for solutions: students examine methods of preventing and treating Internet addiction and methods of utilizing the Internet in education.

(4) Plan Internet use: students plan time for Internet use, educational utilization of the Internet and various activities alternative to the Internet

(5) Execute plans: students record the results, evaluate them and share them with other students.

3. CONCLUSIONS AND RECOMMENDATIONS

After a critical review of the latest research, a potentials framework of Social Media Addiction can be developed. One can talk about a Social Media Addiction when an individual is pre-occupied with Social Media including withdrawal from their daily routine in order to be online (Davis, 2001; Vig and Gill, 2015, Young, 2000). Those individual moreover need to show symptoms of becoming anxious not being online and they lie or try to hide their (excessive) usage. Finally, Social Media Addicts show change in their behavior with a *negative* influence on their school/ work achievement/ performance, health problems and/ or decrease of social relations offline.

In order to prevent an addiction, one needs to become aware of the causes and patterns of their Social Media usage. Additionally those individuals need to find and solve the initial problem that caused the addiction. Furthermore it is helpful to follow a planned schedule in order to increase self-control of ones Social Media behavior (Wang et al., 2014). In general it is important that people use Social Media in a healthy way. In order to identify to what extent the Social Media behavior is healthy or unhealthy the criteria of Suler (1991) can be used (Appendix 6.3.1). A healthy Social Media usage includes having a specific intention when using Social Media and using it for a moderate amount of time. The usage should neither lead a cognitive nor behavioral irritation. Finally people should be aware that Social Media is a tool not a source for their own identity (Davis, 2001).

Finally it is argued that studies up till today did not describe *real* Social Media addicts, which explains the argument that there are a few rather than many Internet addicts (LaRose et al., 2009). One could assume that this might be the same for Social Media Addicts. Then again this is contrary to the statement that Social Media is an increasing social issue (Song et al., 2004).

4. ISSUES FOR FURTHER RESEARCH

Although this article gives a potential framework for Social Media Addiction, further research is required. The given explanation needs to be tested in order to create a solid definition of Social Media Addiction that scholars can agree on. Additionally the criteria for Social Media Addiction named above should likewise be evaluated. Furthermore it would be useful to combine them to one standardized set of criteria that can be handled for diagnosing Social Media Addiction (Tao et al., 2010, Wu et al., 2015). The development of such set should be accomplished in cooperation between social and clinical scientists. In addiction there should be further investigation to what extent the treatment and preventions named above are applicable for heavy Social Media users.

Past studies where conducted including self-questionnaire. This method however is to be criticized, for reasons that it might suffer from biases like social desirability. This could have influenced the results to an extent that they are not an actual reflection of the reality. Furthermore, scholars have argued that current studies were based on small empirical samples (Kuss and Griffiths, 2011). This again implies that the results are hence not generalizable. A solution to this problem would be if future research makes use of different methodological design(s), including not online a self-questionnaire but also observation and case analysis of individuals who show heavy Social Media usage (Kuss and Griffiths, 2001; Wang et al., 2014; Young, 1996).

Finally it would be interesting to see the causational or correlational relation between Social Media Addiction and other behavioral addictions. According to Kuss and Griffiths (2011) there has not been adequate research on co-occurrence and Social Media addiction.

Social Media is growing exponential, which could lead to an increase of Social Media Addicts (Kuss and Griffiths, 2011). When there is a clear definition of Social Media Addiction, better prevention and treatment possibilities can be proposed. It is up to our society to become aware of this problem and find strategies that help to use Social Media in a healthy way.

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6. APPENDIX

6.1 Appendix 1

6.1.1 Classification of Social Media (Kaplan and Hanlein, 2010)

Table 1. Classification of Social Media by social presence/media richness and self-presentation/self-disclosure

		Social presence/ Media richness		
		Low	Medium	High
Self-presentation/ Self-disclosure	High	Blogs	Social networking sites (e.g., Facebook)	Virtual social worlds (e.g., Second Life)
	Low	Collaborative projects (e.g., Wikipedia)	Content communities (e.g., YouTube)	Virtual game worlds (e.g., World of Warcraft)

6.2 Appendix 2

6.2.1 Set of diagnostic criteria for Addiction Disorder (Goodman, 1990)

(A) Recurrent failure to resist impulses to engage in a specified behavior.
(B) Increasing sense of tension immediately prior to initiating the behavior.
(C) Pleasure or relief at the time of engaging in the behavior.
(D) A feeling of lack of control while engaging in the behavior.
(E) At least five of the following:
(1) frequent preoccupation with the behavior
or with activity that is preparatory to the behavior
(2) frequent engaging in the behavior to a greater extent or over a longer period than intended
(3) repeated efforts to reduce, control or stop the behavior
(4) a great deal of time spent in activities necessary for the behavior, engaging in the behavior or recovering from its effects
(5) frequent engaging in the behavior when expected to fulfill occupational, academic, domestic or social obligations
(6) important social, occupational or recreational activities given up or reduced because of the behavior
(7) continuation of the behavior despite knowledge of having a persistent or recurrent social, financial, psychological or physical problem that is caused or exacerbated by the behavior
(8) tolerance: need to increase the intensity or frequency of the behavior in order to achieve the desired effect or diminished effect with continued behavior of the same intensity
(9) restlessness or irritability if unable to engage in the behavior
(F) Some symptoms of the disturbance have persisted for at least 1 month, or have occurred repeatedly over a longer period of time.

6.2.2 Internet Addiction - Questionnaire (Young, 1996)

1) Do you feel preoccupied with the Internet (think about previous on-line activity or anticipate next online session)?
2) Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?
3) Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?
4) Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?
5) Do you stay on-line longer than originally intended?
6) Have you jeopardized or risked the loss of significant relationship, job, educational or career opportunity because of the Internet?
7) Have you lied to family members, therapist, or others to conceal the extent of involvement with the Internet?

8. Do you uses the Internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)?

6.2.3 Internet Addiction criteria (Tao, et al., 2010)

1) Internet use
2) Deficient Internet self-regulation
3) Habit strength
4) Self-reactive Outcome expectations
5) Depression (CES-D)
6) Internet self-efficacy

6.2.4 Internet Addiction criteria (Tao, et al., 2010)

1) Preoccupation: a strong desire for the Internet. Thinking about previous online activity or anticipation of the next online session. Internet use is the dominant activity in daily life
2) Withdrawal: manifested by a dysphonic mood, anxiety, irritability and boredom after several days without internet activity
3) Tolerance: marked increase in internet use required to achieve satisfaction
4) Difficult to control: persistent desire and/or unsuccessful attempts to control, cut back or discontinue internet use
5) Disregard of harmful consequences: continued excessive use of internet despite knowledge of having a persistent or recurrent physical or psychological problems likely to have been caused or exacerbated by internet use
6) Social communications and interests are lost: loss of interests, previous hobbies, entertainment as a direct result of, and with the exception of, internet use
7) Alleviation of negative emotions: uses the internet to escape or relieve a dysphonic mood (e.g. feelings of helplessness, guilt, anxiety
8) Hiding from friends and relatives: deception of actual costs/time of internet involvement to family members, therapist and others

6.2.5 Internet Addiction (LaRose, Lin and Eastin, 2009)

1) Preoccupation: indicated by excessive levels of use, craving, structuring other activities around media consumption, or feeling tension or arousal while using media.
2) Tolerance: meaning that increasingly large "doses" of the activity are needed to achieve the same effect.
3) Relapse: the user makes repeated attempts to curb the activity but fails.
4) Withdrawal: when the activity is not available the user experiences panic, anxiety, agitation, or other negative affect.
5) Loss of Control: engaging in the activity for longer than intended or sensing that use is out of control or cannot be stopped.
6) Life Consequences: reductions in the time allocated to other activities, loss of interest in them, and disregard for the disruptions in finances, family, or work that result.
7) Concealment: the user tries to hide the extent of his or her involvement in the media activity from others.
8) Escapism: the activity is viewed as a means of escaping or counteracting dysphonic moods such as depression, anxiety, or guilt.

6.2.6 Online Social Network Dependency (Thadani, Cheungand Eastin, 2011)

<u>The first-order factors including:</u>
- mood alternation
- social benefit
- negative outcomes
- compulsivity
- excessive time
- withdrawal and
- interpersonal control

<u>The two second-order factors including:</u>
- social component and
- intrapersonal component

6.2.7 DSM-IV and Goodman (Cassin and von Ranson, 2007)

Table 1
Percentage of participants endorsing modified DSM-IV substance-dependence criteria and Goodman's addictive disorder criteria

DSM-IV substance dependence criteria		Goodman's addictive disorder criteria	
Diagnostic criteria	*N* (%)	*N* (%)	Diagnostic criteria
Binge eating larger amounts than intended	73 (92.4)	79 (100.0)	A feeling of lack of control while binge eating (required)
Continued binge eating despite knowledge of persistent adverse effects	72 (91.1)	72 (91.1)	Continued binge eating despite knowledge of persistent adverse effects
		69 (87.3)	Recurrent failure to resist impulses to binge eat (required)
Persistent desire or unsuccessful efforts to control binge eating	66 (83.5)	66 (83.5)	Repeated efforts to reduce, control, or stop binge eating
		63 (79.7)	Binge eat more frequently or for longer period than intended
		62 (78.5)	Pleasure or relief at the time of binge eating (required)
		55 (69.6)	Increasing sense of tension immediately prior to binge eating (required)
Withdrawal (e.g., restlessness, irritability, headaches)	53 (67.1)	53 (67.1)	Restlessness or irritability if unable to binge eat
Great deal of time spent binge eating or recovering from the effects	47 (59.5)	47 (59.5)	Great deal of time spent binge eating or recovering from the effects
		41 (51.9)	Frequent preoccupation with binge eating
Tolerance: need to consume more food for desired effect	39 (49.4)	39 (49.4)	Tolerance: need to increase frequency/intensity of binge eating
Important activities given up or reduced because of binge eating	38 (48.1)	38 (48.1)	Important activities given up or reduced because of binge eating
		38 (48.1)	Frequently binge eat when expected to fulfill obligations
Meet full criteria for substance dependence	73 (92.4)	32 (40.5)	Meet full criteria for addictive disorder

Note: DSM-IV = Diagnostic and Statistical Manual of Mental Disorders (4th ed.). DSM-IV substance dependence criteria were modified such that the term "binge eating" replaced "substance". Full criteria for DSM-IV substance dependence require the endorsement of three symptoms. Full criteria for Goodman's addictive disorder require the endorsement of all four required symptoms and five additional symptoms.

6.2.8 Substance dependence (Koob, 2006)

1) Compulsion to seek and take the drug
2) Loss of control in limiting intake
3) Emergence of a negative emotional state (e.g. dysphonia, anxiety or irritability) when access to the drug is prevented

6.3 Appendix 3

6.3.1 Factors to identify (un)healthy behavior (Suler, 1991)

1) The number and types of needs being addressed by the activity. Needs can be physiological, intrapersonal, interpersonal, and spiritual. The more needs being addressed by internet endeavors, the more powerful the hold cyberspace has on the person.
2) The underlying degree of deprivation. The more an underlying need has been frustrated, denied, or neglected, the more intense the person's predisposition to seek fulfillment anywhere he or she can. Because cyberspace is such a diversified, compelling, and easily accessed environment, it serves as a ripe target for those thirsts—especially when one's in-person life has been the origin of the deprivation.
3) The type of Internet activity. There are various facets to Internet use. Some activities are non-social, such as games, creating software, and collecting information, literature, and graphics. Some interpersonal settings are designed around games and competition, others are purely social. Environments may involve synchronous versus asynchronous communication (e.g., chat versus E-mail) or text-only versus visual/auditory communication. Different types of Internet activities can vary greatly in how they influence different needs. Environments that combine a variety of features may address a wider spectrum of needs and, consequently, may be more captivating. For example, communities that involve games and socializing, chat and e-mail, or visual and text communication, can be very captivating on many levels.
4) The effect of Internet activity on in-person level of functioning. Health and hygiene; success at work; and fulfilling relationships with peers, friends, and family are all important features of adaptive functioning. How many of these features become disrupted by Internet use—and the extent to which they are disrupted—reveals the depth of pathology.
5) Subjective feelings of distress. Increased feelings of depression, frustration, disillusionment, alienation, guilt, and anger may be warning signs of pathological Internet use. The person may associate those feelings with cyberspace life or in-person life. Often they stem from internet activity that is superficially addressing or aggravating one's needs.
6) Conscious awareness of needs. When people understand their motivations, they are better able to withstand the unconscious "thing" that leads to compulsive Internet use. "Acting out" repressed needs and wishes in cyberspace is only a cathartic activity— a repetition compulsion—that will have to be repeated endlessly. "Working through" underlying needs means that one resolves the conflicts or deprivations related to them, in part, by consciously understanding what those needs entail.2 Whereas blatant denial suggests addictive behavior and a lack of insight into one's underlying needs, acknowledging one's intense preoccupation with cyberspace may be a step toward recovery—and in some cases may simply be a healthy acknowledgment of a productive passion.
7) Experience and the phase of involvement. New users may become enamored with the fascinating opportunities cyberspace offers. The "addictive phase" may eventually taper off as the novelty of the Internet dissipates and the duties of the in-person world call. In some cases, high expectations for online life are dashed. Needs are not fulfilled and the resulting disappointment leads one back to the "real" world. Some seasoned onliners understand the pitfalls that lure users into intensely emotional and hence addictive dramas (e.g., the psychological effects of anonymity). That understanding helps them steer clear.
8) The balance and integration of in-person and cyberspace living. Under ideal conditions, the degree of commitment to online activities sand companions is balanced by the commitment to offline activities, friends, and family. The two worlds also are integrated in that one brings online activities into the "real" world, meets online companions in person, discusses online life with one's in person friends and family, and establishes contact with some in-person companions via the Internet. Pathological Internet use often results in an online life that is complete isolated from one's in-person life and even guarded against perceived

Cognitive computing: Using cognitive systems to gain value out of big data

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ABSTRACT

The newest buzzword raging through executive boardrooms is cognitive computing. It is expected to change the way we work and live. Cognitive systems, that mimic the functionalities of the human brain, can be described as systems that can sense, comprehend, act and learn. Its capabilities for the foreseeable future allow businesses to engage with the system to create valuable insights and make better informed decisions, either automated or assisted. The biggest challenge cognitive computing is expected to solve is allowing businesses to cope with data that is of high volume, variety, velocity, veracity and variability. Cognitive computing will enable better visualization of big datasets and allow the human user to extract greater value at near real-time. Cognitive computing will assist, and is therefore based on a collaboration between the user and the computer, in making marketing decisions based on large amounts of data. Now that the Internet-of-Things is at our doorstep, and more and more data will be generated in the coming decade, it will become increasingly important for businesses to rely on systems that are tireless and encyclopaedic to make better informed, data-driven decisions. The most important aspect of cognitive computing is that, through machine learning, the system will only get better over time and its decision, made through probabilistic reasoning will further improve the more data the system can analyse, comprehend and discover valuable patterns in.

Keywords

Cognitive computing, big data, big data analytics, cognitive systems, Vs of big data, cognitive capabilities, big data challenges

MSI Topic nr: 4: New data, new methods, and new skills — how to bring it all together?

The author's view:

This topic was of interest to me because I believe that cognitive system will have a significant impact on the future of marketing departments, and therefore my future career. Because of the shift to Internet-of-Things more and more data will become available for marketers to work with and I think cognitive computing may be the solution we need.

1. INTRODUCTION

One of the major problems businesses worldwide are facing is the exponential increase in data, both structured and unstructured. It is expected that by 2020 the total size of the digital universe will be around 44 zettabytes, or 44 trillion gigabytes.[1] This has forced organizations to increase their efforts in understanding and embracing technologies that help them make data driven decisions. Nowadays data is not only being generated by scientist and researchers but by everyone around the world through social media and multimedia (Hashem, Yaqoob, Annuar, Mokhtar, Gani & Khan, 2015). The adoption of the Internet-of Things will increase the amount of data even more, now that sensor manufacturing equipment will also start transmitting data.

Big data which consist of datasets whose size is beyond the ability of typical database software tools to capture, store, manage and analyse (Manyika, Chui, Brown, Bughin, Dobbs, Roxburgh & Byers). Although these vast amount of data sets possess great value for companies several challenges are expected to increase over the coming years. One of the major challenges is the shortage of people with deep expertise in statistics and machine learning. Manyika et al. (2011) estimate a shortage of 140.000 to 190.000 positions in the United States alone. Furthermore, they project an additional gap of 1,5 million managers and analysts that can ask the right questions and consume big data results effectively (Manyika et al., 2011).

This rise of big data, and potential shortage of talent, has led to executive's constantly looking out for new technologies that help with capturing and understanding the true value of this data. Since IBM's Watson first won Jeopardy in 2011 cognitive computing has become one of the hottest topics across boardrooms and marketing departments. It is expected to significantly influence the way businesses operate and deal with information in the new era accompanied by the Internet-of-Things. The term cognitive computing, or cognitive computation first arose in research done by Valliant (1995), who defined it as a discipline that links together neurobiology, cognitive psychology and artificial intelligence.

Cognitive computing is expected to be able to assist businesses and marketing departments in collecting, analysing and making sense of the increasing amount of data available to businesses. However, research on cognitive computing is still mainly done from a computer science perspective. This means that its possibilities and capabilities, and therefore benefits, are still widely unknown to business executives. This literature review will therefore aim to close the gap between computer science and business management and provide business executives with an analysis of the potential of cognitive computing in a business environment. To do this, first literature on big data will be analysed. From this the challenges arising with the increase in data will be identified and future potential problems for businesses will be stated. Second, a review on the literature on cognitive computing will aim to identify its core capabilities and what may be expected. This will result in a conclusion on how cognitive computing may be able to solve the problems arising with big data. Therefore, the key-research question in this literature review will be:

What capabilities of cognitive computing are expected to solve big data challenges and, therefore, change the way business marketers work?

[1] http://www.forbes.com/sites/bernardmarr/2015/09/30/big-data-20-mind-boggling-facts-everyone-must-read/#1999e8dd6c1d

As stated there currently is a gap in the knowledge on what challenges of big data can be "solved" by cognitive computing. This paper will therefore aim to close this gap by analysing literature on both domains. This paper will present the state-of-the-art regarding both big data challenges and cognitive computing capabilities and try to close the gap between both research domains (figure 1).

Figure 1: Visualization of the research structure

2. LITERATURE REVIEW

It is expected that cognitive computing will solve at least some of the problems of big data. To identify what capabilities are relevant, first the literature on big data will be reviewed. Second, the same will be done for cognitive computing. From this, the gap between the challenges of big data and the possibilities of cognitive computing will be analysed and, if possible, closed.

2.1 Big data

Big data can be described as a buzzword used by many but understood by few. Several researchers and business executives all use the same term but often with different meaning. To be able to identify what challenges may arise from big data first consensus on what is big data must be reached.

2.1.1 Defining big data

Even though research on big data has been started on far before cognitive computing and is far more extensive, no consensus has been reached on a definition of big data. However, per Ward (2013) all definitions deal with at least one of the following assertions; size, complexity and technologies.

Overall, earlier definitions of big data tend to mostly deal with size rather than complexity. Jacobs (2011) presented the question of when is data big? With new technologies constantly becoming available the ease and cost effectiveness of storing vast amounts of data becomes increasingly able. Therefore, the size of data, although still a factor, only constitutes a small amount of the definition of big data.

From this, a consensus in the literature can be found that big data is characterized by its difficulty to be stored, processed and analysed with the use of traditional database technologies (Hashem et al., 2015; Kaisler, Amour, Espinosa & Money, 2013; Manyika et al., 2011; Chen & Zang, 2014). Boyd and Crawford (2012) state that big data is less about data that is big than it is about a capacity to search, aggregate and cross-reference large data sets. They define big data as resting on the interplay of; technology, analysis and mythology.

Although big data is still a loosely defined term, the foundation for its most accepted, and most cited, definition, was made by Laney from, what is now, Gartner in 2001. He stated that data management deals with the characteristics of data, which he describes as being of high volume, velocity and variety (Laney, 2001) This original model of 3Vs was later adopted by several researchers. (Zaslavsky, Perera & Georgakopoulos, 2013). IBM later contributed to this research by adding another V with veracity. This led to the four main characteristics of big data (figure 2).

Figure 2: The four V's of big data

Since the development of the original 3V's and the adding of veracity even more V's have been proposed. Variability, Visualization and Value are all mentioned in several leading internet blogs on big data.[2],[3] Most importantly, some researcher then identified that the definition of big data should be about the user being able to obtain value from the data sets (Hashem et al., 2015; Kraska, 2013; IBM, 2015a). Most definitions are at least in part based on Laney's (2001) mentioning of data volume, velocity and variety.

2.1.2 Characteristics of big data

When trying to fully understand what big data is and what challenges it may pose for marketers one must truly understand the different characteristics that define big data. These have been described as the V's of big data and consist of volume, variety velocity, veracity, variability, visualization and value.

The **volume** of big data refers to the scale of data generated from different sources and that it is now outstripping traditional store and analysis techniques (Chen, Mao & Liu, 2014; Sagirogly & Sinanc, 2013). The biggest issues with volume is that it brings challenges in the requirements of hardware and software to deal with data (Yin & Kaynak, 2015). They however expect that large-scale data processing frameworks like Hadoop will make it possible to be used in big data-based projects. One of the biggest issues with the increase in volume, is that not only the size of the data increases, but also the underlying complexity and relationships in the data (Wu, Zhu, Wu & Ding, 2014).

The **variety** of big data, which will only increase with the rise of the Internet-of-Things, consists of the differentiation in the types of data collected. Nowadays data is collected in structured, unstructured, semi-structured and mixed form (Demchenko, Grosso, de Laat & Membrey, 2013). Katal, Wazid and Goudar (2013) state that the data being produced comes from various resources like web Pages, web log files, social media sites, e-mail, documents and sensor devices. It is estimated that 90% of data is unstructured (Ishwarappa & Anuradha, 2015).

The **velocity** of data deals with the speed of data is being created. (Katal et al, 2013; Ishwarappa & Anuradha, 2015). It also deals with speed in which the data needs to be handled, meaning that for time limited processes it should be managed as soon as it flows into the organization (Sagirogly & Sinanc, 2013). The timely processing of data is becoming increasingly difficult.

The **veracity** of data, which is a result of the volume, variety, and velocity of data, deals with the possible unreliability of data. In most cases data is being filtered before it is used in real world applications. The large size (volume) of data, combined with the speed it is coming in (velocity), makes it more and more difficult to filter out irrelevant data (Yin & Kaynak, 2015). Demchenko et al. (2013) state that the veracity characteristic comes in two forms; data consistency, which is defined by statistical reliability and data trustworthiness, which is defined by data origin, collection and processing methods. Overall data veracity defines whether the one working with the data can trust, and therefore can use, the data collected.

The **variability** of big data deals with different possible intrinsic meanings of data.[4] This is especially apparent when dealing with natural language, as one word can have several meanings in different contexts. Fan and Bifet (2013) described variability as changes in the structure of the data and how users want to interpret it.

The **visualization** of big data typically follows three steps in a visual analytics system. First, heterogenous data needs to be processed and integrated, second analysis techniques are applied to generate models, and third the model is visualized (Zhang, Stoffel, Behrisch, Mittelstadt, Schreck, Pompl, Weber, Last & Keim, 2012). Such a system is an effective method, that helps the user to more easily understand what the data means and provide support for decision making (Gorodov & Gubarev, 2013). There are however several challenges that can make it difficult to visualize big data. Gorodov and Gubarev (2013) define the main problems of big data visualization as visual noise, large image perception, information loss and high performance requirements. It can be concluded that the previous Vs of big data make visualization challenging.

The **value** of big data is, by many, considered the most important V of big data. It is dependent on how we can solve the problems arising from the other V's to deliver actionable, and meaningful data. The main problems in extracting value from the data are described as creating systems that can handle these amounts of data effectively and the capability to filter out the most unimportant data (Katal et al., 2013).

2.1.3 Big data challenges

The different characteristics of big data are expected to have several challenges for marketers who want to make use of this data. Therefore, to understand the technical challenges, one must first understand how the process from data acquisition till value extraction works. The data analysis process in (figure 3) shows the five different phases. (Agrawal, Bernstein, Bertino, Davidson & Dayal, 2011; Jagadish, Gehrke, Labrinides, Papakonstantinou, Patel, Ramakrishnan & Shababi, 2014).(figure 3).

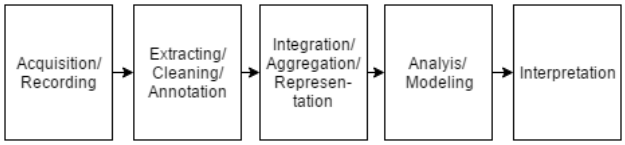

Figure 3: Data analysis pipeline (Agrawal et al., 2011; Jagadish et al., 2014)

During this process, there are several challenges making one or more of the phases difficult. Agrawal et al. (2011) identified heterogeneity, scale, timeliness, privacy and human collaboration as the main challenges during the data analysis pipeline. This is in line with Jagadish, et al. (2014) who added inconsistency and incompleteness as another challenge.

Heterogeneity describes the challenge that deals with the traditional analytics systems being unable to analyse data that is not homogenous, or structured (Agrawal et al, 2011; Jagadish et al, 2014). This relates to key-characteristic of variety of big data. The biggest challenge arises when trying to enable data aggregation by combining data from all sources (Wu et al. 2014).

Inconsistency and **incompleteness** of data is a result of the increase of data sources that have varying reliability (Jagadish et al. 2014). This challenges is best categorized by the veracity

[2] https://www.impactradius.com/blog/7-vs-big-data/
[3] http://dataconomy.com/2014/05/seven-vs-big-data/
[4] http://dataconomy.com/2014/05/seven-vs-big-data/

characteristic of big data. The biggest challenge is that with traditional analytic systems, it will be a challenging task to perform trustworthy analysis on this data.

The challenging **scale** of data, which of course is correlated with the increase in volume, used to be solved by making processers faster. However, the exponential increase in data, has led to data volume increasing faster than CPU speeds and other computer resources (Jagadish et al. 2014).

The **visualization** and **collaboration** paradigm of big data challenges describe the challenge for big data to fully reach its potential. Jagadish et al. (2015) state that it is increasingly difficult for humans not to get lost in a 'sea of data'. It is stated that many interesting discoveries in data come from detecting and explaining outliers in the past. This means that analysts must make sure be caught in what they call a "filter bubble", and therefore look at the same data repeatedly. Strong visualization of data is becoming increasingly important to assist users in interpreting the data and support user collaboration.

As stated, a big challenge when dealing with big data is **privacy** and **data ownership**. One of the big ethical concerns of big data is that it rarely benefits the individual (Teme & Polonetsky, 2013). Furthermore, doubts continuously arise how private this data is. A highly-cited paper from Narayanan and Schmatikov (2008) showed the methodology to de-anonymize Netflix movie viewing records released in the Netflix Prize dataset. However, the focus of this paper lies on extracting value out of big data through cognitive computing and will therefore ignore privacy concerns for the rest of this paper.

2.2 Cognitive computing

The research domain on cognitive computing is still relatively new as can be seen by the number of articles in the web of science database. The search phrase "cognitive computing" nets only 175 results and only 5 of those results are in the business economics research area. For this reason, most literature used in this review consists of papers by leading organizations in cognitive computing.

2.2.1 Defining cognitive computing

Due to research on cognitive computing only recently having taken off, it is important to identify the key-issues that are relevant from a business management perspective. Most research has been done into the technical and mathematical development of cognitive computing. This research however, will purely focus on the perceived benefits that are to be gained for business executives. To be able to focus on perceived benefits a definition on the abilities of cognitive computing is needed.

Most definitions of cognitive computing still only define the field of research it contributes to and the purpose it aims to serve. One of the leading researchers on cognitive computing, or what he calls cognitive informatics, Wang (2011) first defined cognitive informatics as *"a transdisciplinary enquiry of computer science, information science, cognitive science, and intelligence science that investigates into the internal information processing mechanisms and processes of the brain and natural intelligence, as well as their engineering applications in cognitive computing"*. This definition is predominantly based on the research fields it operates in. Furthermore, he described in another definition what cognitive computing consists of. The definition for cognitive computing is stated as: "*A cognitive computer (cC) is an intelligent computer for knowledge processing that perceive, think, learn, and reason"* (Wang, 2011) This aim, that is also apparent in the definition *"to develop a coherent, unified, universal mechanism inspired by the mind's capabilities."* (Modha, Ananthanarayanan, Esser, Ndirango, Sherbondy & Singh, 2011) Since then definitions have arisen that focus more on the problem cognitive computing can solve. Nahamoo (2014) defined cognitive computing as *"as a fundamentally new computing paradigm for tackling real world problems, exploiting enormous amounts of information using massive parallel machines that interact with humans and other cognitive systems."* In the same context, it was stated that cognitive computing focusses on representing, processing and transforming information (Evans, Pappas & Xhafa, 2013).

The lack of consensus on a definition of cognitive computing is apparent and to be expected due to the novelty of this research domain. From the definitions, it is however evident that a focus on the capabilities of the human mind is predominantly important. These functions have been described as the ability for a computer system to know, think and feel (Gutierrez-Garcia & López-Neri, 2015). Accenture (2015) described these functions as the ability to sense, comprehend, act and learn (figure 4).

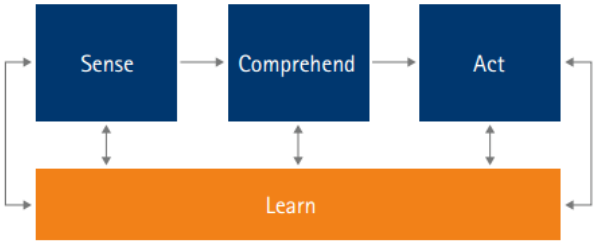

Figure 4: Accenture's model of key characteristics of cognitive computing

Therefore, when assessing how cognitive systems work, one must first understand how these functions work in a computer environment or cognitive system.

2.2.2 Cognitive systems

The technological basis of cognitive computing is not about programming, processing or storage paradigms, or about data flows and stream handling (Reynolds, 2015). He describes the technological foundation as being a broad range of data analysis technologies that address discovery, disambiguation, contextual understanding, inference, recommendation, probabilistic reasoning and human/machine communications. Cognitive systems can mimic the functionalities of the human brain of sensing, comprehending, acting and learning (Accenture, 2015). From the literature provided it is hard to differentiate the different constructs and explain them based on theoretical approaches by different researchers. Modha et al. (2011) emphasize this by stating that cognitive computing is not about assembling a collection of piecemeal solutions, but to implement a unified computational theory of the mind. He defines the mind as a collection of processes of sensation, perception, action, emotion and cognition.

Overall the sensing dimension of cognitive computing envisions that a computer technology can 'detect' data. Most current cognitive computing systems can work with natural language text and therefore require natural language processing capabilities to analyse a particular language (IBM, 2015b). It is expected that through advancements in various disciplines of computer science, cognitive systems will be able to analyse a wider variety of media beyond text (IBM, 2015b). Technologies like computer vision, audio processing and sensor processing are already functioning today.

Cognitive computing sets itself apart in that it cannot only detect the data but also comprehend what it means. This happens on the basis that cognitive computing integrates all data into a single model (Ojala, 2016). Through natural language processing it can understand the natural language of human beings and respond to

the user, at least partially, in a natural way. The comprehension of cognitive systems goes further in that it is not only able to understand what unstructured data means but also what is the relationship between different data. This means that cognitive systems will be able to represent all data or knowledge in a way that facilitates the user's decision making (Accenture, 2015).

When a cognitive system can act, it means that it can, either automated or assisted, formulate responses to data as it is coming in. This automated process, which is not limited by human flaws like fatigue or data ambiguity, and through techniques like inference engines, can act independently. This will mean that decisions made from cognitive computing systems can happen almost in real time.

Most importantly, through machine learning, cognitive systems are not only able to detect and comprehend data but also learns from itself and the data what is the optimum response. Cognitive systems, like IBM's Watson, function on a probabilistic reasoning to come up with the best, and most probable, solution (Ferucci, Brown, Chu-Carroll, Fan, Gondek, Kalyanpur, Lally, Murdock, Nyberg, Prager, Schlaefer & Welty, 2010). The biggest differences, when considering the learning dimension, is that cognitive systems adapt over time as more data flows in, whereas programmed solutions do not.

2.2.3 Cognitive computing capabilities

Being able to sense, comprehend, act and learn may be of interest to some businesses, but ultimately the main concern for them will be what capabilities it possesses to improve and develop new (marketing) strategies. IBM has listed it the main cognitive computing capabilities as being; discovery, decision and engagement (figure 5).

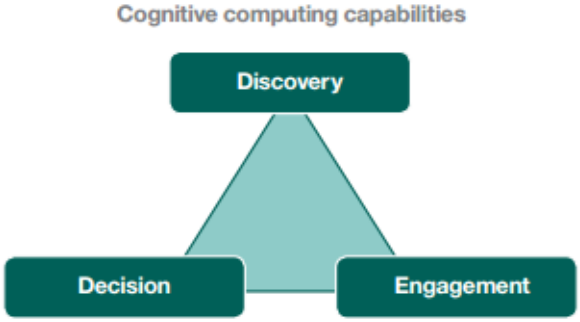

Figure 5: IBM's capabilities of cognitive computing

The **engagement** of cognitive computing capabilities describes the way systems and humans interact to expand the capabilities of humans (IBM, 2015b). In this case the cognitive computing system can best be described as an assistant to humans. Through dialogue, effectively able due to natural language processing, humans and system can cooperatively come up with solutions to complex data questions. For the future, this means that cognitive systems are a tireless assistant, able to consume and digest big data, both structured and unstructured and communicate it to the human user (Yucel, 2016). Humans will be able to ask 'simple questions' about the data and the system will come up with the most probable solution. The expectation is, that in the era of cognitive systems, the collaboration between the system and its human user, will produce better results. (Kelly III & Hamm, 2013).

This is further constituted in the **decision** capability of cognitive systems. These systems have the capability to form decisions, which are unbiased, based on evidence gathered by the continuous adding of more information or data (IBM, 2015b). As described by Kelly III & Hamm (2013) who stated that the system will operate more rational and analytic, in collaboration with the creativeness, intuition and judgement of the user. Over time, as more data is added into the model, due to probabilistic reasoning, which means that they base their answer not on knowing but on evaluating the most likely answer and coming up with a confidence level of it being correct (IBM, 2015c) With the adding of more data into the system, confidence in its decision-making process will increase, improving the cognitive system over time, or as it learns.

Furthermore, cognitive computing can **discover** insight beyond the capability of humans. This is because computed systems can analyse vast amounts of data more effectively and faster than humans. The ever-increasing amount of data generated only further increases the need for technologies that can go through, and make cognitive decisions, faster than humans can. Kelly III and Hamm (2013) described this as the encyclopaedic memory and immense computational abilities of the future cognitive systems. Using cognitive technologies within vast amounts of data, leaders can uncover patterns, opportunities and actionable hypotheses that would be virtually impossible to discover using traditional research or programmable systems.

2.3 Closing the gap

As described the most important 'characteristic' of big data is value, and the difficulty in extracting it from the vast amount of heterogenous, often inconsistent and incomplete data. However, as expected the (possible) capabilities of cognitive computing will assist marketers in creating value out of big data.

2.3.1 Creating value through cognitive computing

Since the original proposed model of Laney (2001) of 3 V's several more have been added. For businesses, the main challenge now is how to extract value out of all the data available to them. It is therefore necessary to evaluate if the challenges of big data, as stated in section 2.1, can be overcome by the capabilities of cognitive computing, as stated in section 2.2.

The main capabilities of cognitive computing, defined by IBM (2015b) as engagement, decision and discovery describe how the cognitive system works as an assistant to the human user. It exploits the computational quickness and encyclopaedic capabilities of the system to help the user discover and evaluate meaningful value out of the data. It is therefore always a collaboration between the system and the user. Within several of the phases of the big data pipeline the cognitive system is expected to overcome difficulties that arise during each phase. Cognitive computing is expected to have the biggest effect on the cleaning, representation and analysis phase. Interpretation will, at least for now, mostly still depend on the human user.

As described, all challenges of big data arise from the characteristics big data has. The main 'problematic' characteristics are volume, variety, velocity, veracity and variability. Visualization, although difficult for big data sets, is more a difficulty of inadequate systems so far than a difficulty of the core characteristic of the data itself. Because cognitive computing is expected to be better at discovering meaningful patterns in the data it will also be more effective at visualizing what data is relevant and which can be filtered out. From this it will than greatly improve the value business can extract out of the data. Based on these characteristics the following framework is proposed that visualizes the place of cognitive computing in the big data environment (figure 6).

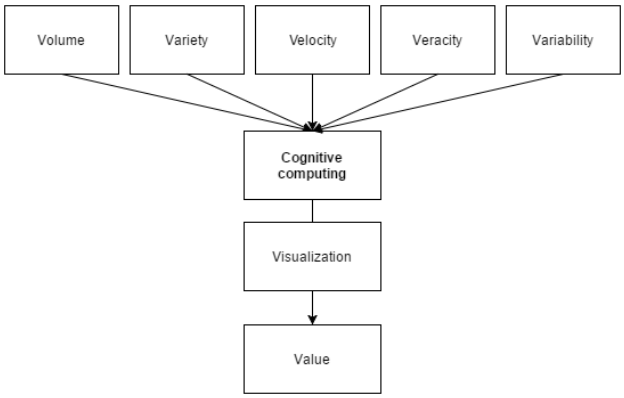

Figure 6: Conceptual framework on creating value from big data through cognitive computing

It must be noted that although cognitive computing is expected to assist marketers in making better data-driven decisions, the systems most important characteristic, learning, means that it will only get better as time passes and the system has access to larger volumes of data.

3. CONCLUSION

This literature review has strived to create a comprehensive overview of the state-of-the-art of two research topics, big data and cognitive computing, and close the gap between them. Therefore, besides giving this overview, the most important aim was to identify how cognitive computing can assist businesses in dealing with big data.

Although there is no general agreement on the total number of possible characteristics of big data, for this literature review seven where analysed. The main characteristics of big data, called the V's, have been defined as Volume, Velocity, Variety, Veracity, Variability, Visualization and, most importantly, Value.

These V's, but mainly the first five, possess several challenges along the data analysis pipeline. The variety of data, and its accompanying challenge heterogeneity, for example can result in incorrect cleaning of the data, therefore resulting in valuable data missed or lost.

Cognitive computing was expected to have capabilities that could overcome, or assist in dealing, with these challenges. A cognitive system is based on the principles of the human brain and can sense, comprehend, act and most importantly learn like their human counterparts. Specifically, its ability to learn from itself as new data flows in sets it apart from previous data analysis solutions that were pre-programmed. Even though most of the technologies that encompass the overall cognitive system have been researched quite extensively and are already developed, businesses are still waiting for a system that can truly do it all. The cognitive systems of the future will use these technologies, like for example natural language processing, computer vision and speech recognition, in symphony to truly find and combine all data that is flowing into the organization. This will become increasingly important now that the Internet-of-Things is approaching vast and even more devices will start transmitting possible valuable data.

The ability to sense, comprehend, act and learn are at the foundation of the key-capabilities of cognitive computing, which IBM (2015b) stated as engagement, discovery and decision. In the future cognitive computing systems, will act as a tireless assistant that can scan through, analyse, comprehend and visualize data at near real-time. This will allow businesses to extract the most amount of value out of data as soon as it is coming in. Due to probabilistic reasoning in cognitive systems it will make a recommendation to the user based on the most likely solution. This means that the more data it has access to the more 'sure' the system will be that it is giving the best possible visualization of relevant data.

As can be seen in the proposed framework, that gives cognitive computing its place in the big data environment, and closes the gap between both research topics, it will be able to overcome the challenges of volume, variety, velocity, veracity and variability to give the best visualization of relevant data to the user so that he can extract the most amount of value.

3.1 Academic implications

This literature review will add to the existing literature on both cognitive computing and big data by examining it from a business management perspective. It gives an overview of the state-of-the-art of research done on both research topics. For academia, it gives a comprehensive overview of the characteristics and challenges of big data and the capabilities of cognitive systems. For academia conducting research on cognitive computing from a business or management perspective it can serve as a starting point by giving an overview of the, still relatively small, literature available and giving insight into what cognitive systems are and what they may be capable of.

3.2 Managerial implications

Even though true cognitive systems may not yet be fully developed and ready to be adopted by businesses to base important decisions on, this literature review will make it clear for executives what may be expected. Because the focus from the start was to identify the value of cognitive computing for businesses this literature review can serve as a guide for executives on whether to further invest in big data acquisition and cognitive computing. The business and management focus of this review also means that it is comprehendible for managers without a background in computer science.

4. LIMITATIONS AND FUTURE RESEARCH

There are some limitations in this research that need to be stated. Due to research on cognitive computing still being in an early phase there was only a small amount of literature available. Furthermore, most literature was in the field of computer science and dealt with the technical background of cognitive systems. Research from a business perspective was very limited and therefore this research also included papers from leading organizations in the field of cognitive computing like IBM.

Furthermore, this literature review focussed purely on the possible capabilities of cognitive computing for marketing departments and business executives. This means that no limitations where considered and possible restrictions of cognitive computing may have been overlooked. Further research on this may prove that some capabilities will not be useful to all businesses. Further limitations of cognitive computing may arise when looking from a technical perspective. This may result in some businesses not being able to truly adopt cognitive computing and requires further research.

The proposed framework was developed based on the literature available and the intuition of the researcher. This means that no empirical research has been conducted and the framework runs the risk of being dismissed when this is done.

Finally, because cognitive computing is still in an early phase, possible benefits may have been missed because development of this system has not fully matured yet. But with learning, being one of the core dimensions of cognitive computing, it remains to be seen if development will ever fully mature.

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How can firms use big data analytics (BDA) to make better decisions in the future, and what are their challenges?

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ABSTRACT
This critical literature review will examine different frameworks and models proposed by researchers, which will explain how firms can use big data analytics (BDA) in the future. Empirical results from European and American firms will show that big data analytics can help firms reach their goals and have a positive effect on market performance as well as operational performance. Big Data Analytics is not only used within the marketing analytics field, but also on different levels, such as operations and purchasing Firms can derive different kinds of value from big data, as well regarding consumer insights as on business processes. Different challenges occur, which makes it more complex for firms to start with big data analytics. In the future, research has to find out if the proposed models work in practice. Big Data is a relatively new subject, so a lot still has to be explored.

Keywords
Big Data Analytics, firm performance, marketing (consumer) analytics, value creation, data management, consumer insights

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: Why this topic?

Big data is a very popular subject nowadays and is located at the highest level within the marketing process. It becomes increasingly important for firms to understand how they have to use this data. Because I have an analytical mind and I want to use this skills in my future job, I find Big Data an interesting subject to read and write about.

1. INTRODUCTION

Big data is located at the highest level within the marketing process today. It becomes increasingly important for firms to understand how they have to use this data. The marketing field changes really fast at the moment. Not only in the marketing field, but also in other fields like HRM, information management and production new analytical approaches are becoming increasingly important. I chose this subject because I have an analytical mind and I want to work in an analytics field after my studies. That is why I find this an interesting subject, also because Big Data is a very popular subject nowadays.

From corporate leaders to municipal planners and academics, big data are the subject of attention, and to some extent, fear. The sudden rise of big data has left many unprepared. In the past, new technological developments first appeared in technical and academic publications. Later, this knowledge slowly seeped into other educational sources, like books. In this case, the fast evolution of big data technologies and the ready acceptance of the concept by public and private sectors left little time for this concept to develop and mature in the academic domain. There are several books on big data, but published academic publications are limited (Gandomi & Haider, 2015).

As stated, there are new developments and new analytical approaches, especially on the front of big data. Business intelligence and analytics (BI&A) and related fields of big data analytics have become increasingly important in both the academic and the business communities over the past two decades. BI&A is often referred to as the techniques, technologies, practices, systems, methodologies and applications that analyze critical business data to help a firm/organization better understand its market and business and make timely decisions. BI&A can be applied to various high-impact applications such as e-commerce, market intelligence, healthcare, e-government and security.

Based on a survey of over 4000 IT professionals from 93 countries and 25 industries, the IBM Tech Trends Report (2011) identified business analytics as one of the four major technology trends in the 2010s. A survey conducted by Bloomberg Businessweek (2011) found that 97 percent of companies with revenues over $100 million are using some form of business analytics. (Chen, Chiang & Storey, 2012). Big data analytics (BDA) is considered a game changer nowadays which enables improved business efficiency and effectiveness, because of its high operational and strategic potential. The emerging literature on BDA has identified a positive relationship between the deployment of customer analytics and firm performance (Wamba et al., 2016).

Consumer analytics (or marketing analytics) is at the epicenter of a Big Data revolution, especially within the marketing field off course. Technology helps capture rich and plentiful data on consumer phenomena in real time. The joint effort of analyst (consultants) and the organization often aims to help the organization to understand its customer needs, behaviors and future demands for new products or marketing strategies (Assunção, Calheiros, Bianchi, Netto & Buyya, 2015). Recent technological revolutions such as social media enable us to generate data much faster than ever before (Fan, Lau and Zhao, 2015). Germann, Lilien and Rangaswamy (2012) define marketing analytics as a 'technology-enabled and model-supported approach to harness customer and market data to enhance marketing decision making. It can have two types of applications, namely those that involve their users in a decision support framework and those that do not (automated marketing analytics). Benefits of marketing analytics are improved decision consistency, explorations of broader decision options and the ability to assess the relative impact of decision variables (Germann et al., 2012).

Rapid technological and environmental changes like the exploding volumes of data, more sophisticated customers, high powered IT systems and a global, hypercompetitive business environment have transformed the structure and content of marketing managers' jobs (Germann et al., 2012).

A critical literature review will examine what is written about this subject, what research has been done and what results were found by researchers. It will focus on different approaches for big data analytics in general, as well as approaches within the marketing field (marketing analytics). The purpose of the paper is to give firms insight in which theories there exist about data collection and synthesizing data nowadays, and what conclusions can be drawn on how they can use it within their companies. In the end a few challenges of big data analytics will be discussed.

2. BIG DATA ANALYTICS

Big Data is a related field to business intelligence and analytics (BI&A). The terms 'big data' and 'big data analytics' have been used to describe the data sets and analytical techniques in applications that are so large (from terabytes to exabytes) and complex (from sensor to social media data) that they require advanced and unique data storage, management, analysis and visualization technologies. Figure 1 gives an overview of the evolution, applications and emerging research topics regarding BI&A (Chen et al., 2012).

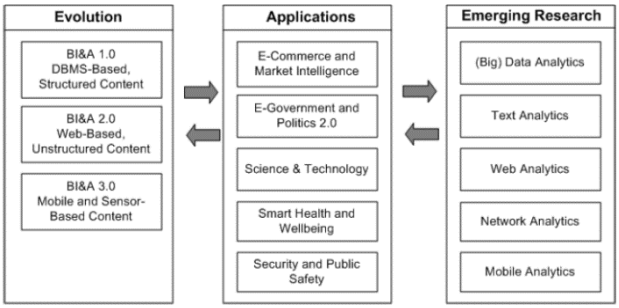

Figure 1

Furthermore, figure 2 depicts the common phases of a traditional analytics workflow for Big Data, according to Assunção et al. (2015).

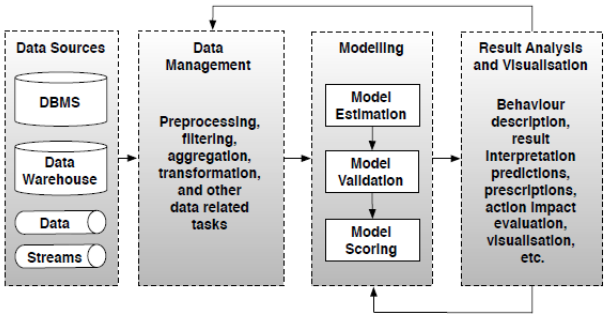

Figure 2

Data from various sources, including databases, streams, marts, and data warehouses, are used to build models. The large volume and different types of the data can demand pre-processing tasks for integrating the data, cleaning it, and filtering it. The prepared data is used to estimate the parameters of a model and to validate the model. After validating the model, the model is consumed

and applied to data as it arrives. This phase, called model scoring, is used to generate predictions, prescriptions, and recommendations. The results are interpreted and evaluated, used to generate new models or calibrate existing ones, or are integrated to pre-processed data (Assunção et al., 2015).

To facilitate evidence based decision making, organizations need efficient methods to process large volumes of assorted data into meaningful comprehensions. The potential of using big data are endless but restricted by the availability of technologies, tools and skills available for big data analytics. Big data analytics refers to methods used to examine and attain intellect from large datasets, using the correct tools and approaches. The different types of big data analytical methods are displayed in figure 3 (Sivarajah, Kamal, Irani and Weerakkody, 2016).

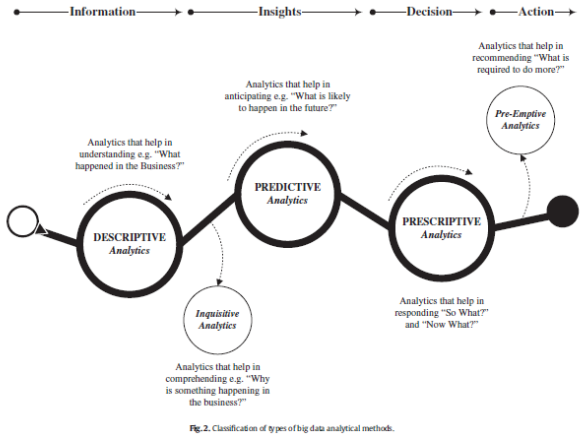

Fig. 2. Classification of types of big data analytical methods.

Figure 3

Different research studies have demonstrated that substantial value and competitive advantage can be attained by businesses from taking effective decisions based on data (Davenport & Harris, 2007).

But, BDA is more complex than merely tracing, classifying, comprehending and quoting data (Sivarajah et al., 2016).

Côrte-Real, Oliveira & Ruivo (2016) performed a study to investigate the effect of Big Data analytics on performance within European firms. Their proposed model was grounded on the knowledge-based view (KBV) and dynamic capabilities (DC), as can be seen in figure 4 (appendix). In this figure the knowledge assets are the antecedents. The impacts on process-level performance and the competitive advantage of BDA are measured.

The study performed a multi-country survey of European organizations from several industries. A total of 175 executives of European firms responded. The results of the study show that the model significantly explains all dependent variables (61.8% of agility variation, 57.8% of process-level performance variation, and 77.8% of competitive advantage variation). Major conclusions are (Côrte-Real et al., 2016):

- Big Data Analytics (BDA) can be a strategic investment for European firms to enhance organization agility
- To create agility, European firms tend to believe that the external knowledge deriving from BDA applications can be more effective in the creation of agility than internal knowledge
- Regarding the impacts of agility, this capability leads directly to a better performance (process-level and competitive advantage) but can mediate effects from knowledge assets on performance. This means that BDA initiatives can lead to better operational efficiency, but several paths can lead to competitive advantage.

Thus, a crucial need exists for firms to have an integrated view of the BDA chain in order to be able to fully leverage the innovative power of BDA capabilities to achieve competitive advantage (Côrte-Real et al., 2016).

Gupta & George (2016) go further on this. They propose seven resources (see figure 5) that will allow firms to create a BDA capability. Tangible resources include data, technology, and other basic resources (e.g., time and investments), while human resources consist of managerial and technical big data skills. Data-driven culture and the intensity of organizational learning are suggested as two critical intangible resources needed to build a BDA capability.

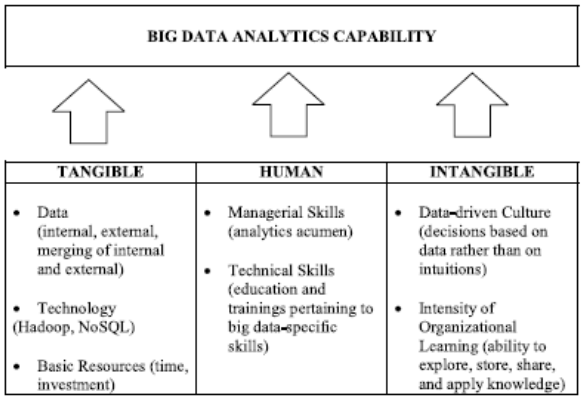

Figure 5

After having studies 340 American firms, Gupta & George (2016) came to the same conclusions as Côrte-Real et al. (2016). They found a significant, positive effect of BDA capability on both market performance and operational performance (see figure 6). They also included firm size and industry as control variables; however, their relationships with market performance and operational performance were nonsignificant.

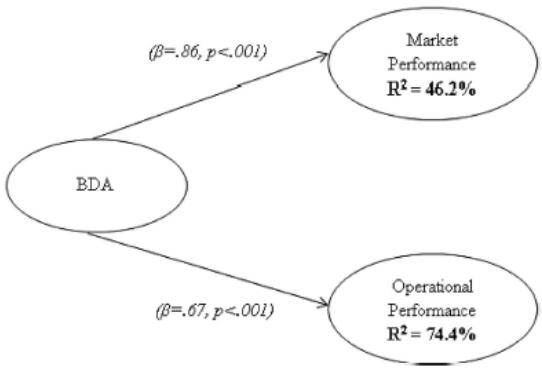

Figure 6

The problem with all studies regarding this subject is they are not without limitations. Models presented in different papers should not be considered a universal model. Researchers are still in the early stages of understanding the big data phenomenon, and thus constructing an exhaustive list of organizational-level resources

that, in turn, will lead to the creation of BDA capability is not easy (Gupta & George, 2016).

3. BIG DATA ANALYTICS WITHIN THE MARKETING FIELD

As stated in the introduction, consumer analytics is at the epicenter of a Big Data revolution. Technology helps capture rich and plentiful data on consumer phenomena in real time. Thus, unprecedented volume, velocity, and variety of primary data, Big Data, are available from individual consumers (Erevelles, Fukawa & Swayne, 2015).

Erevelles et al. (2015) propose a conceptual framework called 'a resource based view of the impact of big data on competitive advantage' (see figure 7 in the appendix), where physical, human and organizational capital moderate the following: (1) the process of collecting and storing evidence of consumer activity as Big Data, (2) the process of extracting consumer insight from Big Data, and (3) the process of utilizing consumer insight to enhance dynamic / adaptive capabilities. In this framework you can see that information gathered from consumer activities, can lead to consumer insights and in the end (after value creation by filling in the 4 P's of Marketing based on the data) to a sustainable competitive advantage.

Regarding the resource characteristics, Erevelles et al. (2016) propose that firms with a greater awareness of information needs arising from partial ignorance (incompleteness from omission, vagueness or ambiguity of information) will uncover more hidden consumer insights from Big Data that facilitate adaptive capabilities than firms with little awareness of information needs. Firms sometimes rely too much on existing knowledge/past experiences hindering changes to organizational structure needed to adapt to rapid market changes. Partial ignorance reduces reliance on existing knowledge, encourages openness to new ideas, and enables a firm to use hidden consumer insights to alter existing organizational structure and improve adaptive capability. Also, Erevelles et al. (2016) propose that firms with a greater creative intensity in human and organizational capital resources will extract more hidden insights from Big Data than firms with little creative intensity.

New product success requires a great deal of information from many stakeholders. As the speed of markets, technology, regulation, competition and inputs increases and as more of these elements become critical to a particular product, the complexity and speed with which a firm acquires and analyzes information must also increase (Xu, Frankwick & Ramirez, 2016). So, it is depending on the market a firm is in which information they need to acquire. Some markets may require information from social media, while others may require less traditional information and a higher amount of digital information. Xu et al. (2016) propose a framework to initiate research into this phenomenon (see figure 8 in the appendix).

Fan et al. (2015) investigated different perspectives of marketing intelligence and came up with a framework to manage big data in this context (see figure 9 in the appendix).

The P's of the marketing mix are coupled with the method of analysis, followed by the applications of the different types of information gathered with these analyses. For example 'people analytics' can be used to make customer profiling and segmentation easier, while analysis of transactional data can lead to a different pricing strategy. Another important tool for digital marketing is web analytics, which offers companies a metrics system to measure digital marketing performance.

There is a difference in using big data analytics to create value within a firm, and value creation for customers. Value creation for the customer, called value to the customer (V2C), is the process of understanding customer needs and offering them products while considering the competitive advantage over rival enterprises. Value creation for firms, otherwise called value to firm(V2F), is the process of searching for pitfalls inside enterprise operations and optimizing business process models accordingly. For V2C, the Internet of Things (IoT's) can aid in optimizing business processes and offering efficient services. For V2F, it can help in optimizing enterprise operations, such as manufacturing processes, supply chain management and retail operations. The adoption of different tools like the Internet of Things (IoTs), big data, and cloud-computing technologies by enterprises has led to better value creation at the customer and firm ends (Rehman, Chang, Batool & Wah, 2016).

4. BIG DATA CHALLENGES

At the moment, not every knows how to analyze and deal with big data. The traditional qualitative methods are slow, and firms are looking for faster and more agile alternatives. According to Sivarajah et al. (2016), the Big Data challenges nowadays can be divided into three main categories. These categories consist of data challenges, process and management challenges. This is based on a Big Data life cycle they propose (see figure 10 in the appendix, Sivarajah et al., 2016)

Data challenges relate to the characteristics (volume, variety, velocity, veracity, volatility, quality, discovery and dogmatism) of the data itself. Challenges per characteristic are:

- *Volume:* the scale and volume of data is a big challenge. The enormous scale of data makes determining, retrieving, processing, integrating and inferring the physical world a challenging task (Barnaghi, Sheth & Henson, 2013).
- *Variety:* multiple data formats with structured and unstructured text/image/multimedia content/audio/video/sensor data/noise will cause problems (Sivarajah et al., 2016).
- *Veracity:* IBM came up with this characteristic of data (Sivarajah et al., 2016). Inconsistency in large data-sets leads to problems like biases, doubts, imprecision, fabrications, messiness and misplaced evidence in the data. This problem occurs often when analyzing social media networks or other platforms which involve human interaction (Sivarajah, Irani & Weerakkody, 2015).
- *Velocity:* Velocity refers to the rate at which data are generated and the speed at which it should be analyzed and acted upon (Gandomi & Haider, 2015). The challenge here comes with the requisite to manage the high influx rate of non-homogenous data, which results in either creating new data or updating existing data (Chen et al., 2013).
- *Variability:* data whose meaning is constantly changing. For example data from Facebook of Twitter. In almost the same tweets a word can have a totally different meaning. The challenge is that algorithms not always understand the context, or the

exact meaning of a word within this context (Sivarajah et al., 2016).

- *Value:* extracting knowledge from vast amounts of structured and unstructured data without loss for end users. Regardless of the number of dimension used to describe Big Data, organizations are still faced with challenges of storing, managing and predominantly extracting value form the data in a cost effective manner (Sivarajah et al., 2016).

Process challenges are related to series of how techniques: how to capture data, how to integrate data, how to transform data, how to select the right model for analysis and how to provide the results. Management challenges cover for example privacy, security, governance and ethical aspects (Sivarajah et al., 2016).

Building a viable solution for large and multifaceted data is a challenge that businesses are constantly learning. To do this, they have to implement new approaches on a regular basis. One of the biggest problems regarding big data is the high costs of the infrastructure, due to the high costs of hardware equipment (Sivarajah et al., 2016). An organization using analytics technology frequently acquires expensive software licenses, employs a large computing infrastructure and pays for consulting hours of analysts who work with the organization to better understand its business, organize its data and integrate it for analytics. Such effort, however, is generally costly and often lacks flexibility (Assunção et al., 2015).

Furthermore, human analysis is required to sort through data. While the computing technologies required to facilitate this process are keeping pace, the human expertise and talents business leaders require to leverage big data are lagging behind (Sivarajah et al., 2016). This proves to be another big challenge regarding big data. Crawford (2013) states that objective truth is not always what is reflected by data analytics. Data and data sets are not objective, they are creations of human design. This leads to hidden biases in both the collection as analysis stages and present considerable risks. Business can learn from social science methodologies in this, because they bring context-awareness to their research. Then they can move from the focus on merely 'big data' towards something more three-dimensional: data with depth (Crawford, 2013).

Furthermore, because large data sets can be modeled, data are often reduced to what can fit into a mathematical model. Taken out of context, data lose meaning and value. Finally, ethical concerns pursue Big Data, raising questions about truth, control and power (Boyd & Crawford, 2012).

5. CONCLUSION

A lot has been written about Big Data Analytics (BDA) already. Researchers proposed different models and frameworks that will help firms to understand the problems around implementing big data analytics within their companies. It can help them to examine and attain intellect from large datasets. But because researchers are still in the early stages of understanding the big data phenomenon, these models cannot always be considered universal models. So, future research has to find out what the effects of the proposed models in practice are. For the future, more research is needed on different frameworks, for example on resource based theory (RBT) in relation to analytics (Davcik & Sharma, 2016)

What is investigated already by researchers, is the effect of big data analytics capability on firm performance. Côrte-Real et al. (2016) as well as Gupta & George found significant effect of BDA capability on firm performance (both market performance and operational performance.

Firms are facing different implementing big data analytics. These challenges consist of data challenges (related to the characteristics of data), process challenges (related to how to capture data, how to integrate data, how to select the right model for analysis and how to provide results) and management challenges like privacy, security, governance and ethical aspects.

Not all firms will benefit from the use of both traditional marketing techniques and big data analytics. Not all situations justify the cost of collecting and analyzing both types of data. Firms have to look closely to for example budget and strategy and big data capabilities before deciding whether or not to dive into big data for decision making. The financial burden on firms may lead to the failure of small and medium-sized firms (Verhoef et al., 2016).

6. ACKNOWLEDGMENTS

My thanks to Mr. Constantinides for making this course possible. I think it was a very valuable course in general, and writing this critical literature review has learned me a lot about big data and it's applications.

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Appendix

Figure 4

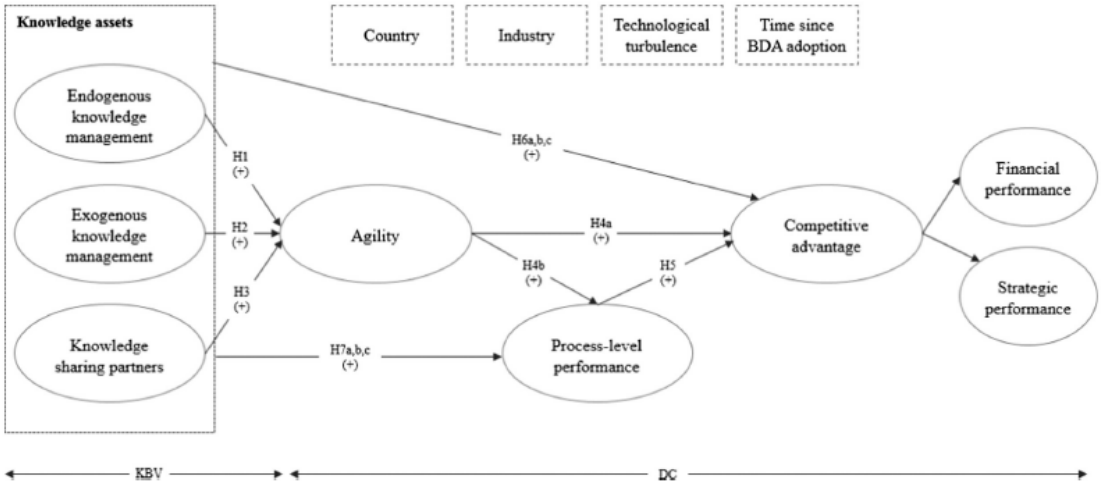

Figure 7

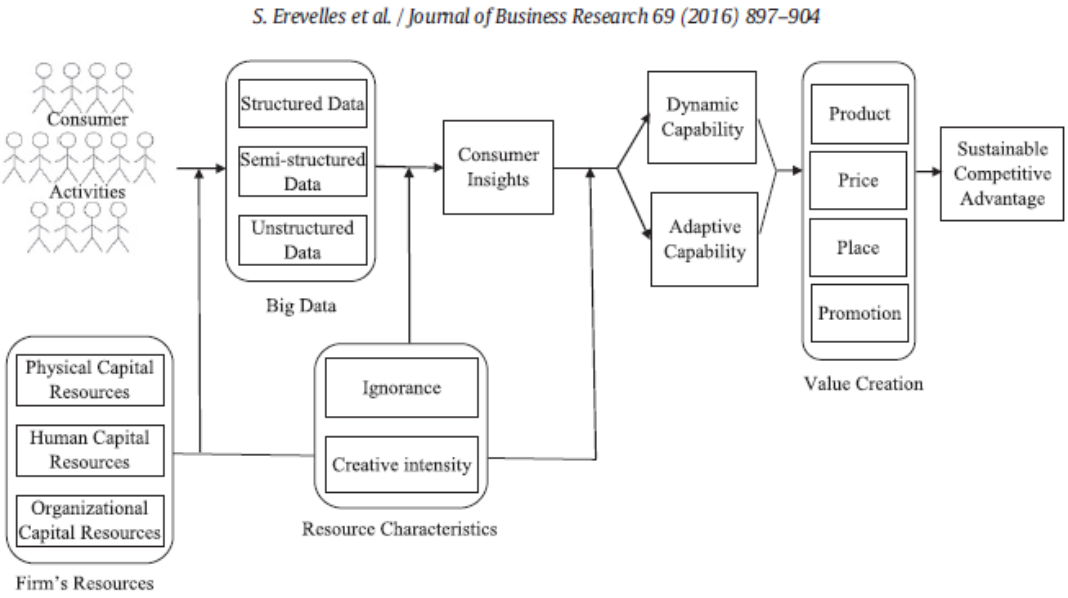

Figure 8

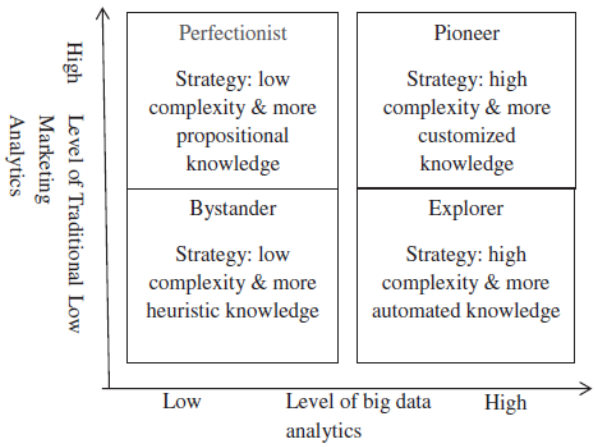

Figure 9

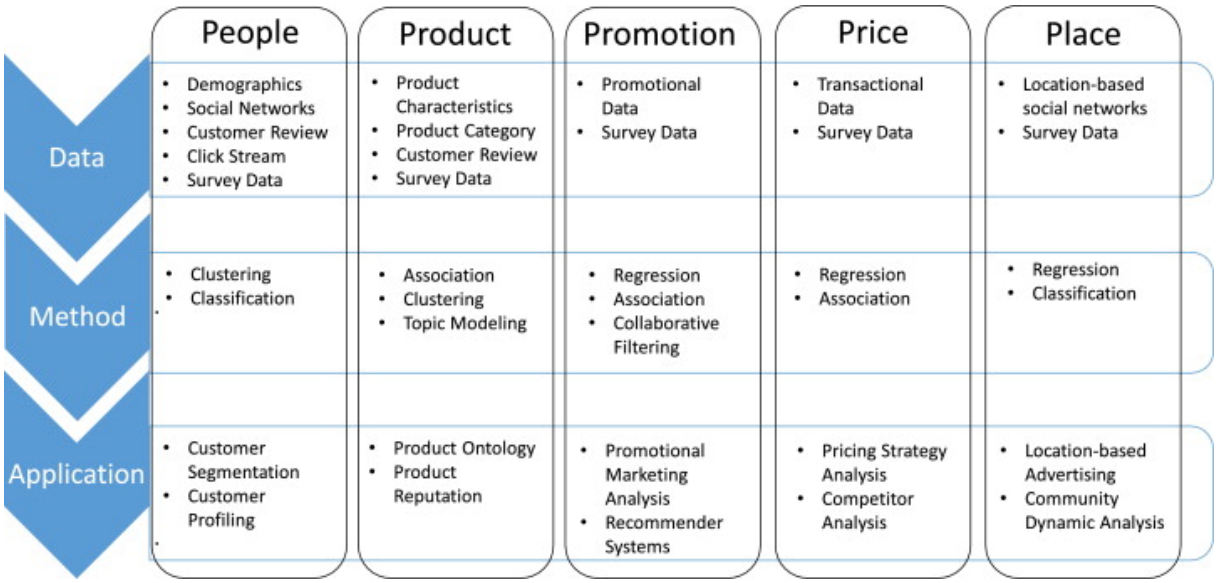

Figure 10

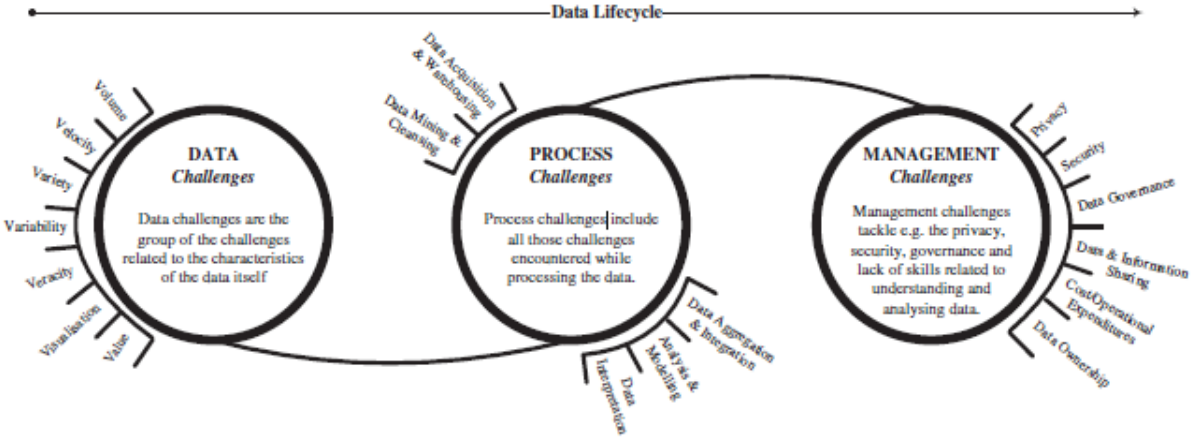

Fig. 1. Conceptual classification of BD challenges.

At the junction between Marketing and Neuroscience: combine or part?

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ABSTRACT - Over the past years the understanding of human brain processes has significantly evolved. As a result, research into marketing applications of neurological data has sparked. This resulted in the establishing of consumer neuroscience. Due to this rapid change in techniques and possibilities, there is a sense that older methods are not working as well as these new ones. This research aims to determine whether or not consumer neuroscience is more effective than old methods as well as to establish whether or not the use of consumer neuroscience will come to replace old marketing methods. In doing so it tries to give an accessible overview of current techniques and their applications. Through a literature review it was derived that consumer neuroscience techniques are not more effective and therefore will not replace established marketing methods. Before consumer neuroscience techniques will be broadly applied there are many barriers to overcome, the least of which are the ethical implications of these techniques.

Keywords
Marketing, Neuroscience, Consumer Neuroscience, Neuromarketing, Implications

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: After conducting research with help of i.a. emotional recognition software for a university project, and saw the possibilities this brings, my interest in neuroscience was piqued. Priority four of the MSI research priorities 2016-2016 focusses on new methods, new skills sets necessary and these methods' integration with more established marketing practices. When I read the voices from the field on this topic (e.g. "the end of marketing research as we know it" p.13) supporting the MSI suggestion that new indicators and metrics might be more effective then old ones, I knew I wanted to dive deeper into consumer neuroscience and its implications for the field of marketing.

1. INTRODUCTION

1.1 What is Consumer Neuroscience?

Over the past years the understanding of how brain processes produce human behaviour has significantly evolved (Hubert & Kenning, 2008; Camerer & Yoon, 2015). This evolvement sparked neurological research into consumer behaviour and marketing both for theory and practice: researchers and practitioners became excited to apply the new insights to the psychology of brands (Plassmann, Ramsoy & Milosavljevic 2012; Camerer & Yoon, 2015). This resulted in the establishing of a sub-field of neuroscience and neuroeconomics: consumer neuroscience (Hubert & Kenning, 2008).

Consumer neuroscience "addresses marketing relevant problems with methods and insights from brain research" (Hubert & Kenning, 2008 p.272). It studies neural conditions and processes underlying not only consumption, but also the psychology and behaviour around this (Solnais, Anreu-Perez, Sanchez-Fernandez & Andreu-Abela, 2013). This implies that consumer neuroscience can also aim to e.g. improve customer experiences instead of merely drive sales. "In neuromarketing neuroscientific data is used to address marketing relevant topics" (Kolar, 2014 p.1). Neuromarketing was defined as "the practical implementation of the knowledge brought by consumer neuroscience for managerial purposes" (Solnais, Anreu-Perez, Sanchez-Fernandez & Andreu-Abela 2013 p.69). Lee, Broderick and Chamberlain (2007) add to this that it is not merely about selling (commercial) and the customer, but also about organisations.

However, due to the negative inferences people derived from the term 'neuromarketing', assuming that it is the latest sales trick, Hubert (2012) found the term consumer neuroscience to be more appropriate of the field. This is a valid concern, Perrachione and Perrachione (2008) report that there is a great misperceptions threshold for neuroscientists saying "Scholars of marketing and consumer behaviour should be aware that many neuroscientists are unlikely to realize the marketing field is much broader than just developing advertisements" (p.308). However, consumer neuroscience can also alter the manner in which companies aim to satisfy needs, demands and solve problems of the customer (Hubert & Kenning, 2008).

1.2 Research Relevance and Aim

The Marketing Science Institute's (MSI) fourth research priority of 2016-2018 focusses on new methods, new skills sets necessary and the methods' integration with more established marketing practices because of the rapid change in techniques and possibilities. They state there is "a sense that the old methods aren't working as well, and that some of the traditional indicators and metrics are less effective" (p.12) and specifically call for exploration of the role of neuroscience.

Because of this, the aim of this literature review is to explore the role of neuroscience within the field of marketing. More specifically this research aims to determine whether or not consumer neuroscience is more effective than old methods as well as to establish whether or not the use of consumer neuroscience will come to replace old marketing methods.

1.3 Methodology

In order to answer these research questions a literature review is done within peer-reviewed journal and conference articles published in the last decade. The open coding principles as outlined by Wolfswinkel, Furtmueller and Wilderom (2013) were very loosely applied.

2. LITERATURE REVIEW

2.1 How does Consumer Neuroscience benefit Marketing?

According to Milosavljevic and Cerf (2008) the field of consumer neuroscience holds great potential for advertising research due to the mismatch existent between the manners in which consumers experience and perceive their environment and the manner in which marketers collect data around this. Marketers as a result rely heavily upon assumptions (Fugate, 2007) and on information the consumer gives them through e.g. surveys. In much marketing research to date what goes on within consumers' minds is ignored but merely stimuli and their buying responses are investigated. Consumers' minds are compared to a black box as marketers are not able to objectively learn what is inside.

If science, consumer neuroscience, is able to establish clarity of the inside of the 'consumer's black box', assumptions will no longer be necessary (Fugate, 2007). Many researchers agree that consumer neuroscience will give insight into the, then no longer, black box (Hubert & Kenning, 2008; Marci, 2008; Linzmajer, 2011; Pop & Igora, 2012; Venkatraman, Clithero, Fitzsimons & Hüttel, 2012; Khushaba, Wise, Kodagoda, Louviere, Kahn & Townsend, 2013; Plassman, Venkatraman, Hüttel & Yoon, 2015). Why would a marketer not ask what goes on inside this black box instead of employing neurology to find out? The answer is simple: one cannot be sure that consumers give unbiased, accurate and/or truthful information, e.g. some thoughts and decisions are subconscious (Fugate, 2007; Lee & Broderick, 2007; Khushaba, Wise, Kodagoda, Louviere, Kahn & Townsend, 2013). In fact, the unconscious percentage of decision making is much bigger than conscious decision making is. Unconscious decision making accounts for 80-95% of decision making (Häusel, 2014 in Kolar, 2014).

Additionally, Venkatraman, Clithero, Fitzsimons and Hüttel (2012) found that even within the same behavioural segment, cognitive processes may differ. In other words, two customers that appear to be similar and portray equal behaviour might have very different motives (figure 1 below). The additional neural and behavioural data that consumer neuroscience gives allows marketers to segment seemingly similar groups into further segments, facilitating better strategizing.

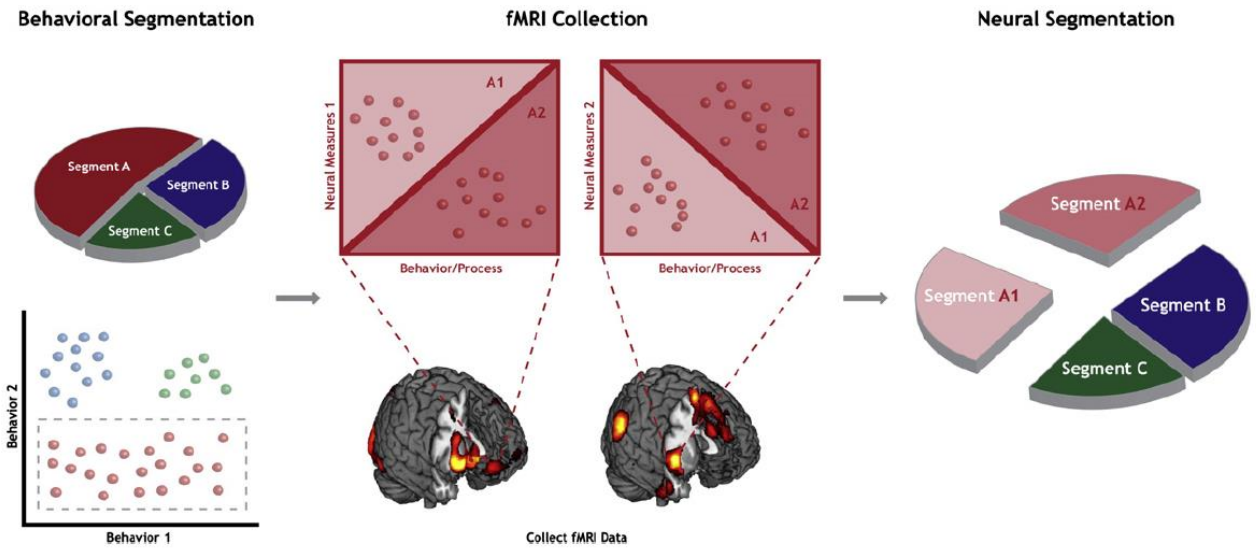

Figure 1 – A framework for neural market segmentation (Venkatraman, Clithero, Fitzsimons & Hüttel, 2012)

Next to the objectivity perspective of the elimination of the black box and the advantages this brings, there are more advantages. Kenning and Linzmajer (2011) add that these new techniques enable the testing of existing theories and that they may detect new mechanisms associated with consumer behaviour. Additionally, they capture information about the brain simultaneous to the moment of perception and might add a new, biological, perspective to the theories of consumer research.

According to Plassmann, Ramsoy and Milosaulvic (2012) "the goal of consumer neuroscience is to adapt methods and theories from neuroscience—combined with behavioural theories, models, and tested experimental designs from consumer psychology and related disciplines such as behavioural decision sciences—to develop a neuro-psychologically sound theory to understand consumer behaviour" (p.18).

2.2 How does Consumer Neuroscience work?

"Through thousands of painstaking studies, it is now clear that different types of information (e.g., visual, auditory, tactile, pain, body states, etc.) are initially processed by discrete modules in the brain, each dedicated to one type of information, much like a TV channel" (Page & Raymond, 2006 p.5). There are ~80 billion of these modules, i.e. neurons (Akil, Martone & Van Essen, 2011). Neurons rely on "neurochemical and electrophysiological mechanisms to integrate complicated inputs and communicate information to other neurons" (Akil, Martone & Van Essen, 2011).

In turn, these modules are grouped into higher order modules, i.e. synapses, of which an adult brain has ~150 (Akil, Martone & Van Essen, 2011). These are regrouped again, and so on, ending with three main modules: knowledge, motoric and feelings which are connected through the so called 'mental workspace' (Page & Raymond, 2006). This mental workspace is very limited, and information has to compete to access it (Page & Raymond, 2006). Consumer neuroscience attempts to get insight into how this competition works.

There are many ways in which consumer neuroscience can get its insights. As the brain relies partly on electrophysiological mechanisms to function, many techniques rely on electrical or magnetic fluctuations. Plassmann, Ambler, Braeutigam and Kenning (2007) and Kenning and Linzmajer (2011) give insights in the techniques employed within this field (Table 1 below). They also note that Electroencephalography (EEG), Magnetoencephalography (MEG), Positron Emission Tomography (PET) and Functional Magnetic Resonance Imaging (fMRI) are "all fairly complex techniques, which require specific expertise and a longer time period for data acquisition as compared to traditional methods used in advertising research" (Plassmann, Ambler, Braeutigam & Kenning, 2007 p.156). Kenning and Linzmajer (2011) add Transcranial Magnetic Stimulation (TMS) to this list of complex techniques. The logic behind using these imaging techniques is simple; consumer neuroscience studies compare the images under two conditions: one where the consumer is performing the experiment and one control condition. The differential activation indicates the brain areas that are involved with performing the task (Kenning & Linzmajer, 2011). "Each individual neuroscience tool has its strengths and weaknesses, combining two or even more methods may improve the validity of research findings" (Kenning & Linzmajer, 2011 p.115).

Table 1 – Overview of the advantages and disadvantages of different neurological techniques

Technique	EEG	MEG	PET	fMRI	TMS
What is measured	Electric fluctuations	Magnetic fluctuations	Changes in metabolism	Changes in metabolism	Magnetic fluctuations
How does it work?	Measuring fluctuations on the scalp through the application of electrodes.	Similar to EEG, but able to depict activity in deeper brain structures.	A nuclear medicine imaging technique using the decay (gamma quants emission) of the radio-nuclides to generate 3D images.	Tracks blood oxygenation in the brain and uses the magnetic properties of this to correlate regions and brain function.	Placing an electromagnetic coil directly over a specified location of the head and putting a current through this.
Advantages and Disadvantages					
1. Potential risks for participants	++ non-invasive	++ non-invasive	- invasive - claustrophobic anxiety	++ non-invasive - claustrophobic anxiety - no ferromagnetic implants	++ non-invasive -- possible longer lasting effects on neural tissue
2. Temporal resolution	++ very good	++ very good	- limited	- limited	++ very good
3. Spatial resolution	- limited	- limited	+ good	++ very good	++ very good, dependent upon the coil
4. Costs of data collection	++ very cost-efficient	- expensive	- expensive	- expensive	- expensive
5. Complexity of data analysis	- moderate to high complexity	- moderate to high complexity	- relative high complexity	- relative high complexity	- moderate to high complexity

However, Page and Raymond (2006) note that the images the techniques produce distract from what needs to be focussed on. Namely, the theories they help produce or verify.

In addition to these new neurological techniques, consumer neuroscience uses psychophysiological indicators that measure neurophysiological states (Kenning & Linzmajer, 2011). Examples of this are: measuring heart rate, eye tracking, facial electromyography (EMG) and skin conductance response (SCR). Advantages of these techniques are that they are accessible, cheap, fast and non-invasive yet still able to give a lot of insight. Unfortunately, these psychophysiological indicators are ignored by many papers exploring consumer neuroscience within marketing.

When discussing the relationship between marketing and neuroscience it is virtually impossible to not acknowledge new shifts in the advertising climate. Marci (2008) finds that the marketing field is changing due to the above described neurological techniques. However, Lee, Broderick and Chamberlain (2007) found marketing science slow to adapt and use the benefits of imaging research.

2.3 Limitations of Consumer Neuroscience

Consumer neuroscience "can only reveal what is occurring in the brain, not why it occurs" (Flores, Baruca & Saldivar, 2014 p.81; Braeutigam, 2012). This causes significant reverse inference problems (Plassmann, Ramsoy and Milosavljevic, 2012; Braeutigam, 2012). When using neurological techniques for marketing purposes often a one-to-one relationship is proposed between the brains activity, as portrayed by the images, and the mental process of interest, as tested within the experiment. This reversed inference is problematic as "one brain area is usually involved in more than one mental process" (Plassmann, Ramsoy and Milosavljevic, 2012 p.22). For example, the striatum area is associated with brand associations and brand loyalty and the paracingulate cortex deals with brand associations, brand memory and knowledge as well as favourability of brand associations (Plassmann, Ramsoy and Milosavljevic, 2012). These might be difficult to dissociate as the images themselves do not reveal this and most research designs do not facilitate this.

Secondly, next to reverse inference problems, consumer neuroscience results may be biased due to the research setting and simple research designs used to date (Plassmann, Ambler, Braeutigam & Kenning, 2007). Thirdly, the complexity of neuroscience and neurological techniques necessitates a deep understanding to complete excellent research (Plassmann, Ambler, Braeutigam & Kenning, 2007). Teaming up with neuroscientists may be the answer, but "this cooperation is not as simple as it may seem at first glance because the two groups of researchers have different interests and target different objectives" (Pop & Iorga, 2012 p.634). Fourth and lastly, results from consumer neuroscience have to be carefully discussed for its neurobiological and technical restrictions to avoid possible misuse of neurological techniques in advertising research (Plassmann, Ambler, Braeutigam & Kenning, 2007).

This leads us to the purpose of this research: are consumer neuroscience techniques more effective than established marketing methods, and will they come to replace these old marketing methods.

2.4 Implications of Consumer Neuroscience for the field of Marketing

As Venkatraman, Clithero, Fitzsimons and Hüttel (2012) put it, "neuroscience cannot replace, either now or in the future, traditional approaches to understanding consumer needs" (p.146). It can, however, provide complementary information which may lead to better approaches for market segmentation as well as more effective marketing practices (Venkatraman, Clithero, Fitzsimons & Hüttel, 2012). Consumer neuroscience can attain this by assisting the following six practices, giving insights to them:

i. Testing prototypic ideas and concepts (i.e. non-conscious processes)
ii. Developing the physical product (e.g. responses to packaging)
iii. Communicating product information (e.g. reactions social media strategies)
iv. Understanding user experience (i.e. post-purchase consumption)
v. Segmenting consumers for effective marketing (as explained previously)
vi. Building models to predict consumer behaviour (e.g. emotions)

Plassman, Venkatraman, Hüttel and Yoon (2015) agree that "it is unrealistic to expect that neuroscience will ever replace the traditional methods used in marketing" (p.428) and find that neuroimaging tools can help existing marketing theories and practice. Solnais, Anreu-Perez, Sanchez-Fernandez and Andreu-Abela (2013) agree that traditional methods will stay in place, but are not sure that neuroimaging data will be able to provide valuable findings for marketing in general.

Many scholars envision the use of consumer neuroscience alongside traditional marketing practices such as quantitative surveys because each has their different merits (Lee & Broderick, 2007; Solnais, et al., 2013 in Kolar, 2014). In contrast to this, Marci (2008) stated that "studies making use of biologically based techniques often produce findings similar to those obtained via self-report instruments" and therewith calls into question the entire field of consumer neuroscience.

The majority of researchers, however, are positive about consumer neuroscience and the addition of its techniques to the marketing field. Lee and Broderick (2007) find that brain imaging has the potential to broaden the entire field of marketing by opening up new insights. They state that "the ability to directly observe the neural activity which occurs in correlation with various behaviours and decisions seems likely to lead eventually to a revolution in our understanding of why and how individuals make decisions regarding marketing activities" (p.125). Even if it does not open up an entire area of new insights, it can help to bridge the existing lack of theory within communication policies (Hubert & Kenning, 2008). As well as help advertising research by undoing the mismatch "between the way consumers experience and think about their world and the methods marketers use to collect this information" (Milosavljevic and Cerf, 2008 p.381).

However, to reach this point we need many improvements to the current neurological techniques. The techniques used, e.g. EEG, MEG and fMRI, are all complex techniques. These require expertise and a longer time period for data acquisition as compared to traditional methods used in advertising research (Plassmann, Ambler, Braeutigam & Kenning, 2007). And, although costs are decreasing, they are still significantly higher than with other marketing activities such as surveys.

Additionally, "to meet the grand challenge of elucidating neural choreography, we need increasingly powerful scientific tools to study brain activity in space and in time, to extract the key features associated with particular events, and to do so, on a scale that reveals commonalities and differences between individual brains. This requires an informatics infrastructure that has built-in flexibility to incorporate new types of data and navigate across tiers and domains of knowledge" (Akil, Martone & Van Essen, 2011 p.711).

In addition to improvements to neurological techniques and a new informatics infrastructure, there is still a big ethical discussion that stands in the way between consumer neuroscience and all the benefits for marketing it can bring. To very shortly summarise the discussion, there are two main negative aspects which will here be highlighted to offset the positive traits mentioned throughout this paper. These are:

1) Consumers are worried these new techniques will enable companies to find the "buy button" in their brain and invade their privacy; this makes them apprehensive and scared of consumer neuroscience (Lee, Broderick & Chamberlain, 2007; Flores, Baruca & Saldivar, 2014).
2) Researchers are worried that neuroscience applications in marketing will imply modifying consumer behaviour, which they deem as unethical (e.g. Fugate, 2007; Lee, Broderick & Chamberlain, 2007; Pop & Iorga, 2012; Vashista & Balaji, 2012; Flores, Baruca & Saldivar, 2014).

As a solution to this, Vashishta and Balaji (2012) concluded that policies should be implemented wherein neuromarketers should also look into safeguarding the privacy of the customers. This would provide a more healthy, profitable and long-term relationship between companies and their customers.

Flores, Baruca and Saldivar (2014) did research into the ethicalness of consumer neuroscience and found that consumers find it both unethical and ethical. The use of neuromarketing by a for-profit organisation was perceived to be unethical whereas the decision to forgo its use for marketing purposes was perceived as an ethical action. Interestingly, respondents were somewhat unclear about the ethicalness of an non-profit organisation deciding to use or not use neuromarketing, but the results indicate an inclination to consider the use or non-use of neuromarketing by non-profit organisations as ethical (Flores, Baruca & Saldivar, 2014). This illustrates that there is still much left to be discussed when it comes to the ethical implications of consumer neuroscience before it can flourish as a field.

3. DISCUSSION AND CONCLUSION

From the literature review above it can be derived that consumer neuroscience techniques are not more effective and therefore will not replace established marketing methods. Before consumer neuroscience techniques will be broadly applied there are many barriers of which the greatest may be the ethical implications they bring.

Additionally, the creation of new equipment such as the EMOTIV Epoc+, a simplified EEG device for consumer neuroscience applications, already makes consumer neuroscience techniques more accessible through a lower price

point (https://www.emotiv.com/). It also helps in facilitating a new and improved informatics infrastructure as mentioned by Akil, Martone and Van Essen (2011) but much more improvement needs to be made in this area.

This implies the ethical implications should be dealt with as soon as possible in order for consumer neuroscience to impact and support research practices around the six steps outlined by Venkatraman, Clithero, Fitzsimons and Hüttel (2012) above. In addition to this it would greatly facilitate scholars and companies alike if the barriers to entry of doing this research (e.g. cost) would be lowered.

4. LIMITATIONS AND FUTURE RESEARCH

Limitations of this literature review should be noted. Due to the timeframe in which this research was conducted it is possible the review does not encompass all available literature at the time of writing. Additionally, as the techniques behind consumer neuroscience are complex, it is possible the author misinterpreted explanation around these techniques.

These limitations could easily be amended through future research. However, it appears to be more important that research effort is put into the full understanding of the ethical implications and other barriers to ensure the field of consumer neuroscience does not come to a halt or is merely used for advertising research.

Future research could also focus on a scope broader than consumer neuroscience applications for advertising; especially the six points determined by Venkatraman, Clithero, Fitzsimons and Hüttel (2012) deserve more attention. Additionally consumer neuroscience can be used more towards aiming to improve e.g. customer experiences as highlighted by Solnais, Anreu-Perez, Sanchez-Fernandez and Andreu-Abela (2013). This would help in lowering the threshold defined by Perrachione and Perrachione (2008) for neuroscientists to help marketing researchers as well as the knowledge/expertise threshold for marketing researches (Plassmann, Ambler, Braeutigam & Kenning, 2007).

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Influence of Social Media use on individuals' stress and efficiency

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ABSTRACT

Usage motivations for social networking sites range from maintaining relationships to expanding social networks. Nevertheless, the increasing Social Media use has also brought disadvantages. It leads to negative psychological effects by the fear of missing out, and fulfilling needs as gossiping and self-presentation. Social Media users suffer from social competition and pressure to engage actively. Furthermore, increasing technostress influences their cognitive ability which leads to concentration problems, affects multitasking abilities, and produces cognitive overload. Additionally, addictive behavior has an impact on efficiency, productivity and task performance.

This paper provides an overview of Social Media studies about usage intentions and psychological effects on individuals' stress and efficiency in form of a critical literature review. It can be followed up with research on Social Media marketing considering the private Social Media behavior of customers during working time.

Keywords

Social Media. Usage intentions. Smartphone use. Psychological stress. Work efficiency. Customer behavior.

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: Why this topic?

I chose this subject because the use of Social Media and smartphones influences behavior in daily routines. Thereby, users experience increasing stress and are less efficient. This is why I thought it is important to have a deeper look into individual's stress resulting from Social Media for appropriate Social Media marketing.

1. INTRODUCTION

Social Media is an increasing phenomenon in people's everyday life. Online networking websites such as Social Media enable users to share content and communicate online. That brought many advantages in daily routines with regard to productivity, efficiency, and effectiveness. Nevertheless, the same development has brought disadvantages. Psychological effects of Social media use are a frequent study purpose of researchers whereby negative aspects have been often left out (Fox & Moreland, 2015; Lee, Lee, & Suh, 2016).

Regarding the literature, the dark side of Social Media is broadly unexplored. Therefore, the purpose of this literature review is to provide a critical approach on the psychological impact of private Social Media use on individual's stress and efficiency to apply for Social Media marketing. According to Zhang, Wang, and Xia (2010), discovering social networks and personalities of key users maximize marketing effects. Bi, Shokouhi, Kosinski, and Graepel (2013) also suggest further research on "personality, intelligence, happiness, or interests" (p.139) of users to extend models for personalizing online content. To control a target group and reach customers in the most effective way, Social Media targeting should for instance consider users' daily activities, employment experience, psychological traits, characteristics and people's context of search (Bi et al., 2013; Xia, Guha, & Muthukrishnan, 2016). According to Ashley and Tuten (2015), getting consumer engaged in Social Media depends highly on their "needs, motives, goals" (p.24) which is why they suggest future research on consumer engagement. Furthermore, Brooks (2015) suggest further research on task performance in offices under the influence of Social Media use.

With this review, the gap of peoples' behavior using private Social Media during working time should be filled to enhance marketing strategies. Regarding the literature on target marketing and applying appropriate Social Media campaigns, the literature review sustain research on how to reach people effectively on their private social media. It provides insights in peoples' behavioral intentions and psychological states during working time.

The critical research is based in particular on the study by Bucher, Fieseler, and Suphan (2013) on corporate Social Media use and Brooks' (2015) study on the effects of personal Social Media use on task performance. To the best of my knowledge existing literature pays little attention to the relation between private Social Media use and employees' work efficiency. Therefore, this review focuses on the following research question: What is the influence of private Social Media use on employees' work efficiency?

This review uses the methodology of a critical literature review and shows the major similarities and differences of previously conducted research. It presents the results by organizing the content thematically. Firstly, it begins with a psychological view on usage intention of Social Media, followed by occurring psychological effects. Subsequently the findings are applied to Social Media influence on work efficiency. The following discussion provides a critical overview of the findings and recommendations for further approaches in consumer behavior research regarding Social Media marketing.

2. SOCIAL MEDIA USE

Social Media has an increasing importance in people's life. All over the world the user counts of social networking sites are expected to nearly triple up to three billion, in just ten years until 2020 (Statista, 2016). Thereby, the smartphone is one of the most common devices to check Social Media besides the several other functions as writing e-mails, taking pictures and accessing the internet (Sapacz & Clark, 2015). Lee et al. (2016) title this as the "smartphone era" (p.776).

Research about usage intentions of Social Media users vary in their focus but worked out several main motivations. The intention to use social websites is socially as well as personally driven. An important factor is the easy accessibility that makes it effortless to use. The communication and information are easily reachable from several devices. Moreover, people can have contact in real time (Fox & Moreland, 2014; Wang, Shu, & Tu, 2008). Another reason to actively participate in Social Media is the need for social engagement. Users maintain relationships and are consistently informed (Fox & Moreland, 2014; Mäntymäki & Islam, 2015; Wilson, Gosling, & Graham, 2012). Therefore, the smartphone is of great importance for many. According to Sapacz and Clark (2015), the constant use of phones gives people a feeling of being connected. A further motivation besides maintaining existing contacts is to expand the social network (Lin & Lu, 2011).

On the other hand, Mäntymäki and Islam (2015) discuss the negative sides of social networking whereby they state desirable as well as undesirable factors. According to their study, the two main concepts of Social Media use are self-presentation and the need to belong. People create online identities and have to maintain this image by engaging actively and regularly (Ku, Chen, & Zhang, 2013). Another reason for a continuing use of Social Media is the fear of missing out (Fox & Moreland, 2014). The online life continues also without active participation which makes it necessary for users to engage regularly to keep belonging to their network (Mäntymäki & Islam, 2015).

However, the study of Lin and Lu (2011) investigated enjoyment as the most important reason for a lasting use which was found to depend highly on the user's online friends. But, the other network users could also have negative impact on user's motivation. Darker usage intentions are named by Garcia and Sikström (2014) who define facebook as a "platform for social competition in which some users express their darkest traits" (p. 95). Besides interaction, Social Media is an observation platform for gossiping and monitoring friends. Additional to this, Wilson et al. (2012) report the fulfillment of these social-grooming needs as one influencing factor of Social Media use, especially referring to facebook.

3. PSYCHOLOGICAL EFFECTS OF SOCIAL MEDIA USE

The use of Social Media can affect positive emotions but usage consequences depend on the extent of usage and intentions. Social Media use leads to different kind of stress which can be observed in the users' behavior. In general, stress appears when a person is overstrained or feels unable to perform a task. As a result, physical discomfort or psychological effects, such as fatigue, and can create difficulties in work efficiency (Tarafdar, Ragu-Nathan, & Ragu-Nathan, 2007). The following analysis concentrates on the negative effects of an extended Social Media use which can even lead to addictive behavior.

3.1 Social Stress

Social pressure, which is caused by expectations to stay in contact and to be involved in the online world, makes people feel guilty and dissatisfied. Other psychological stressors that come along with the pressure to check social networking sites frequently are the fear of missing out and the need to belong to the online community (Fox & Moreland, 2014). The general accessibility could lead to the pressure to fulfill friends'

expectations to be reachable all the time. Further social pressure can result from rejecting or ending connections with persons (Fox & Moreland, 2014; Wang et al., 2008).

Moreover, researchers found out that the social stress and use of Social Media has an impact on a peoples' well-being. In Social Media users share information for themselves as well as for others, while consuming produced content of peers (Mäntymäki & Islam, 2015). Thereby, the observation and estimation of other user's happiness can result in one's own discomfort (Garcia & Sikström, 2014). Increasing use further leads to lower happiness because it makes people feel dissatisfied with themselves (Brooks, 2015). To conclude, monitoring other network users leads to stress by social comparison (Fox & Moreland, 2014).

3.2 Technostress

The discourse about technostress defines negative psychophysical effects that are caused by the use and constant changes of technology and the requirement to renew technological skills constantly. Additionally, technostress evolves from the high amount of technological communication (Bucher et al., 2013; Lee et al., 2016; Tarafdar et al., 2007; Wang et al., 2008). Brook's (2015) study counts Social Media officially as a technology that increases technostress. The accessibility to network websites and smartphones has even deeper psychological influences (Garcia & Sikström 2014).

Studies have presented several influences of technostress on users' psychological condition that can be transferred to the influences of Social Media. First of all, the parallel use of technology leads to role stress that occurs from the individual's role perception and need to fulfill parallel conflicting social expectations (Tarafdar et al., 2007). Secondly, Bannister and Remenyi (2009) see a relation between the technology and multitasking. Their study shows that multitasking determines employees' workplace behavior by doing tasks simultaneously because the mind does them subconsciously and in an experienced manner (Bannister & Remenyi, 2009). Thirdly, technostress can result in cognitive overload. The human cognitive process can only process few items at a time. Processing many elements simultaneously makes it difficult to process meaningfully because increasing content becomes more difficult to filter and to set priorities (Bucher et al., 2013; Miller, 1955; Sweller, 1998). The study of Bucher et al. (2013) shows frequent changes in perceptions are leading to uncertainty.

3.3 Addiction

The following overview of different studies shows that Social Media addiction is highly related to internet addiction and smartphone addiction in general. Researchers agree that their extended use can lead to health related problems. Several studies have been conducted to research the origin and forms of addictive Social Media use (e.g. Van Deursen et al., 2015; Samaha & Hawi, 2015; Sapacz & Clark, 2015). Addictive behavior contains for instance symptoms as salience, tolerance, conflict, and mood modification (Griffiths, 2005).

The habitual, persistent use of smartphones leads to this new form of behavioral addiction (Sapacz & Clark, 2015; Van Deursen at al., 2015). The addiction is behavioral dependent and results from social stress as well as from the desire to escape from reality (Van Deursen et al., 2015). Therefore, addiction is the final negative psychological consequence of an extended Social Media use, and results from the aforementioned forms of stress. Basically, the risk of getting addicted raises with perceived stress; but the risk of addiction is not correlated with satisfaction with life (Samaha and Hawi, 2015; Hawi and Samaha; 2016).

To finalize, the probability of getting addicted depends further on individual aspects. Li and Chung (2006) state that the usage intention influences the risk of becoming addicted. Hence, people that use Social Media for information search develop less addictive behavior than people who use it for social reasons. According to the study, the social intention affects avoidance of emotions, problems with time management and increases impulsive actions.

4. PRIVATE SOCIAL MEDIA USE AND WORK EFFICIENCY

The following analysis illustrates that the performance of employees at work is influenced by Social Media. That provides insights on behavioral and psychological traits of potential customers for Social Media marketing strategies.

Brook (2015) found out that students task performance in a classroom are influenced negatively by the parallel use of Social Media. An effect on the performance can also derive from the device smartphone itself. Samaha and Hawi (2015) state that smartphone addiction leads to lower academic performance of students. As discussed before, technostress has a high impact on employees' performance at work. The amount of organizational communication affects stress and lowers productivity (Lee et al., 2016). Furthermore, an increasing use of Social Media and the accompanying stress leads to lower happiness and even less job satisfaction (Brooks, 2015). To conclude, researchers agree that technostress and in particular Social Media lead to lower work productivity (Brooks, 2015; Tarafdar et al., 2007).

Another factor that influences a person's efficiency is being interrupted by switching attention while handling tasks simultaneously. These additional disturbances lower the work efficiency by losing time during the interruption period and further the recovery time that is needed to go back to the work task (Brooks, 2015; Bannister & Remenyi, 2009). Likewise, there is less capacity to make good decisions (Bucher et al., 2013). Nevertheless, the content of the message impacts the level of distraction. Disruptions are more likely to occur by unimportant interruptions than relevant ones which are in context to the performed task (Czerwinski, Cutrell, and Horvitz, 2000).

One form of distraction occurs from mental stress by separating business and private life (Brooks, 2015). Social Media is used for both purposes, sometimes parallel if people use for instance their smartphones in meetings during work (Bannister & Remenyi, 2009). The accessibility on corporate smartphones has an impact on workers stress level and efficiency by fusing work and private content (Bucher et al., 2013). Thus, the boundaries between work-related and private content are really thin.

The impact of Social Media on employees' efficiency depends also on several individual factors. First of all, the level of technostress differs within different organizational settings due to already existing technostress (Wang et al., 2008). Furthermore, personality traits affect efficiency. Persons with a low self-esteem do depend more on Social Media (Hawi & Samaha, 2016). Two studies found gender differences in Social Media effects. According to Van Deursen et al. (2015), men perceive less social stress than women by using smartphones less for social reasons wherefore their addiction probability is lower. Lin and Lu (2011) report a similar connection, that for women enjoyment and continued intention to use Social Media

depend higher on the number of other users than for men. Additionally, younger people seem to be more likely to get addicted (Van Deursen et al., 2015).

5. CONCLUSION AND RECOMMENDATIONS

The presented studies offer an inside view of the usage intention of Social Media and the risk that occur by an extended use of smartphones, internet and Social Media. Moreover, the analysis shows that employees' usage intentions for private Social Media use during their work time differ as well as psychological effects.

Overall, social components are an important usage motivation as for instance maintaining relationships, expanding social networks, and fulfilling the need to belong. Furthermore, several studies highlight the enjoyment of the online world. But on the contrary, there are increasing negative intentions that drive and pressure people to actively engage in Social Media. The fear of missing out and fulfilling the expectations of friends leads to social pressure and causes mental discomfort. Moreover, Social Media provides a platform to realize negative personal traits as gossiping and monitoring other users. Social stress, social competition, and the additional use of private Social Media at the workplace lead to an increase in technostress at work.

One threat to consider by addressing workers with Social Media campaigns is that people feel stressed from checking Social Media which lowers their productivity (Lee et al., 2016). These demanding influences could lead to a cognitive overload that affects employees' performance. Social Media strategies should be perceived as relevant for the user to not be rejected. Furthermore, perception of importance would make the switched attention less disruptive (Czerwinski et al., 2000). As recommended by Zhang et al. (2010), Bi et al. (2013), and Xia et al. (2016), individual Social Media behavior and emotional reactions need to be considered to personalize Social Media content to this target group. Thereby, it could be ensured that people feel less disrupted or annoyed by receiving marketing content but enjoy a short distracting experience during work.

As Brooks (2015) suggests, further research should deal with the negative effects of Social Media. Especially, the addictive behavior caused by Social Media will be a growing issue (Hawi & Samaha, 2016). Therefore, the influences of Social Media addiction in a work environment require further in-depth research. Furthermore, Samaha and Hawi (2015) call for intervention on the addictive behavior with smartphones in general. These developments affect the efficiency of Social Media marketing which is why content should be personalized as most as possible. The approaches of this review should be considered for effective reaching customers during their working hours. It provides basic information that can be considered for Social Media marketing strategies to bind firms and their consumers.

This review compares similar researched scenarios but does not supersede an extensive research. Therefore, another methodology as for instance an experiment in a natural setting would help to find detailed recommendations for Social Media marketing. It can therefore be followed up with research on how to reach customers appropriately with Social Media strategies during working time by taking individuals online behavior into account. Furthermore, findings can be expanded on exploring the influence of private Social Media use on customers shopping experience.

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Big Data – Being data rich, but insight poor?
Opportunities and challenges of Big Data.

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ABSTRACT
This critical literature review analyzes the trend of Big Data by leading from the origin, the hype, the drivers, the various definitions which developed over time, basic mechanics of Big Data towards potential use cases, benefits and challenges for the implementation. Big Data research can be classified into the areas information, technology, methods and impact. Focus on impact and implementation, potential benefits of cost reduction, improvement in computer task performance, development of new products and service offerings, support for internal business decisions and purposes in Marketing have been identified. Challenges concerning Big Data were found on the technical side in the heterogeneity, scale, timeliness, privacy and human collaboration aspects. On the management side, it revealed a necessity of culture change and building up the needed capabilities in the companies. The findings put an emphasis on more academic research needed on the Big Data, the necessity of an updated solid data-oriented research on the 4Vs of Big Data and a company decision culture change towards data-driven decision making, the necessary training of analytics capabilities and a clear strategy needed to make full use of Big Data.

Keywords
Big Data, Business Intelligence, Innovation, Customer-Oriented, Decision-making, Data-driven, Analytics

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: Why this topic?

Google, Amazon, eBay and Facebook are considered as pioneers of Big Data value creation by building a business model around data or implementing product recommendation and pricing systems, exploiting the potential value of data. Insights derived from data are highly valuable in the fast-moving and competitive world we live today. I'm interested in what kind of untapped potential Big Data can serve for businesses in future to shape new business models, new products, services, using data as competitive advantage and which challenges are faced in the implementation.

1. INTRODUCTION

"Information is the oil of the 21st century and analytics is the combustion engine[1]" (Peter Sondergaard, Senior Vice President, Gartner).

"Without Big Data analytics, companies are blind and deaf, wandering out onto the web like deer on a freeway[2]" (Geoffrey Moore, author and consultant).

Such statements are characteristic for the hype about the new trend of Big Data. Data has gained increased importance over the last decades. To sustain competitive advantages, companies are forced to be innovative, to understand their customers, to develop new product in this fast-paced environment.

Companies like Google are eager to collect as much data as possible but also for other companies data is a big asset for evaluating new products, services and features customers want and are willing to pay for, underlining the importance of the selected topic.

A lot of blogs and business magazines around the world have written articles about Big Data. According to the media coverage, Big Data has the potential to profoundly affect the way we do business today (Hagen et al., 2013). The application areas have a broad range from changing Business Models, Innovation processes, Logistics, Marketing, Pricing in all kind of different areas of business across different industries. This new tools to do more analytics promise new insights, which can be used to provide better services to customers and to overall improve the performance of the business (Davenport and Dyché, 2013). But it seems not to be as easy to get insights from Big Data (Agrawal et al., 2012).

The statement "the reality is that most businesses are already data rich, but insight poor" (Marr, 2015) contributed to the title of this report, analyzing critically the opportunities and challenges of Big Data.

2. RESEARCH

2.1 Research context

On the one hand, Big Data belongs to the research done in computing science like Business Intelligence and analytics on how data gets gathered, aggregated, analyzed and stored. On the other hand, the various areas to implement insights gained from Big Data analysis is immense. Business research areas like Innovation, Marketing, Logistics, Management, etc. can be thought of in connection with Big Data.

2.2 Research gap

Big data is a new phenomenon still under development which hasn't been investigated profoundly yet in academia. Online Blogs, Management Magazines, advisor companies like McKinsey have written various articles about the topic and created a hype around the Big Data topic. Nevertheless, there is a lack of in-depth analysis of its potential, challenges and managerial implications by profound academic research.

2.3 Research problems

The concept of Big Data is still quite new and difficult to figure out the substance, full potential and usage of Big Data, having a lack of a solid data-oriented research in the field of Big Data. What defines Big Data, what are the current issues? What are the obstacles and challenges for companies making full use of Big Data?

2.4 Research questions

- How does Big Data change the way we do business today and which areas could profit from those insights?

- Why are we so poor at gaining insights from Big Data? What are the challenges to overcome?

3. METHODOLOGY

To answer those questions, a critical literature review will be conducted to reveal the current state-of-the-art of Big Data and the usage in the business world. It's the goal to point out the overall trend, opportunities, challenges and to provide some examples found in literature with companies already using Big Data to illustrate the broad range of applications.

In order to achieve this goal, the ground theory suggested by Wolfswinkel et al. (2013) will be applied. Different sources like scientific papers, books, website, blogs will be analyzed to first get an understanding of the broad topic, key ideas and themes in Big Data using the keywords Big Data, Business Intelligence, Analytics in combination with Business, Innovation, Value Creation, Marketing, Challenges and Opportunities. In a second step the focus will be narrowed down from Big Data definitions, development, data storage, analytics toward potential use cases and challenges in the business context.

4. DEFINITION AND ORIGIN OF BIG DATA

The term Big Data has become a buzzword (Lee et al., 2014; Buhl et al., 2013) and has developed a highly discussed topic in practice and in different disciplines of research. Nevertheless, Big Data lacks a common formal definition due to its rapid evolution and diffusion resulting in a lot of different definitions due to its potential for impact in different disciplines (Boyd and Crawford, 2012; Ganomi and Haider, 2015; Hashem et al., 2015). Starting in the year of 2011 the term Big Data started its fast diffusion (Ganomi, Haider, 2015) probably boosted by promotion activities of IBM, Oracle, Microsoft to sell their new analytics services (Chen et al., 2012; Ganomi and Haider, 2015). But also, influencers like Jeremy Waite, Bernard Marr writing post articles, publishing books about Big Data in combination with articles of The Economist (Cukier, 2010) and other magazines contributed to the hype.

The high speed of diffusion of Big Data technologies and acceptance in business left academic discourse behind in its task to define "Big Data" or develop a mature research topic in the academic domain (Ganomi and Haider, 2015). Mauro et al. (2014) identified in their comprehensive literature review the following 4 research topics connected to Big Data (see figure 1).

[1] http://www.gartner.com/newsroom/id/1824919

[2] https://www.brandcrap.com/2016/04/20/without-big-data-analytics-companies-are-blind-and-deaf-wandering-out-onto-the-web-like-deer-on/

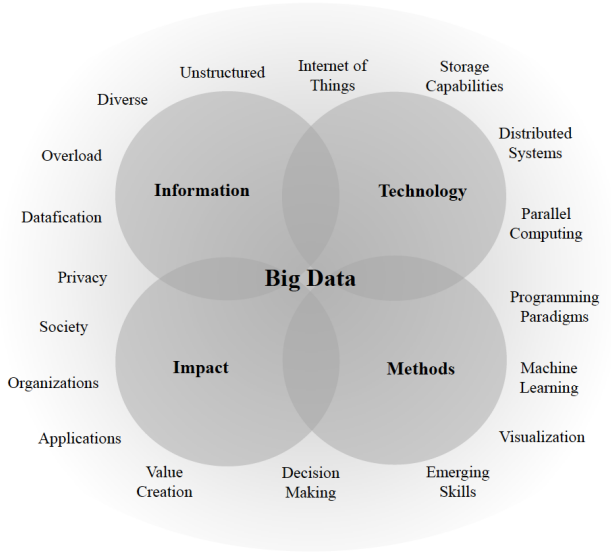

Figure 1: Big Data in Research (Mauro et al., 2014)

(1) Information: The fuel of big data is information which is available in so far unknown quantities (Cukier, 2010) described in phenomena like the mass digitization and datafication, enabled by the diffusion of digital sensors in connected devices which can be summed up in the trend of Internet of Things (Mauro et al., 2014). The hype around Big Data is influenced by promotion activities of large players with focus on predictive analytics and structured data leaving out the major part of data (Ganomi and Haider, 2015). Structured data makes only around 5% of the available data, the rest is unstructured data like text, video, audio, images which lack the necessary structure needs required by analysis (Cukier, 2010). Not all Big Data has to be newly created data. Companies have stored a lot of information over the last decades, ready to use more efficiently (Hagen et al., 2013).

(2) Technology: In order to make use of the available data, suitable technologies with enough memory storage and computational performance are needed. The most prominent is the "Hadoop" open source framework based on an evolution of concepts developed by Google enabling the processing of large data amounts with the necessary "coordination, analysis, performance management and workflow design" (Mauro et al., 2014). Latest technological developments of cloud based servers enable and enlarge the power of Big Data (Hashem et al., 2014).

(3) Methods: To transform Big Data into valuable insights more sophisticated processing methods are needed (Mauro et al., 2014), for example cluster analysis, machine learning, Natural Language Processing, Neural networks and much more to reveal correlation links between events (Chen et al., 2012).

(4) Impact: Different beneficial use cases can be thought of using the potential of Big Data, starting with a new culture of decision making and having data as competitive advantage (McAfee and Brynjolfsson, 2012) but also privacy concerns, ethical issues are worth mentioning. For organizations, it's crucial to be aware of the limitations of Big Data and potential methodological issues and to avoid "see patterns where none actually exist simply because enormous quantities of data can offer connections that radiate in all directions" (Boyd & Crawford 2012).

The focus of this report will be on the impact of Big Data in the next section. Nevertheless, a few more definitions and concepts of Big Data will shortly be explained in the following part to illustrate the different aspects on the term Big Data. The classification of Big Data proposed by Hashem et al. (2015) shows the different aspects of data with data sources, content format, data stores, data staging and data processing (see figure 2).

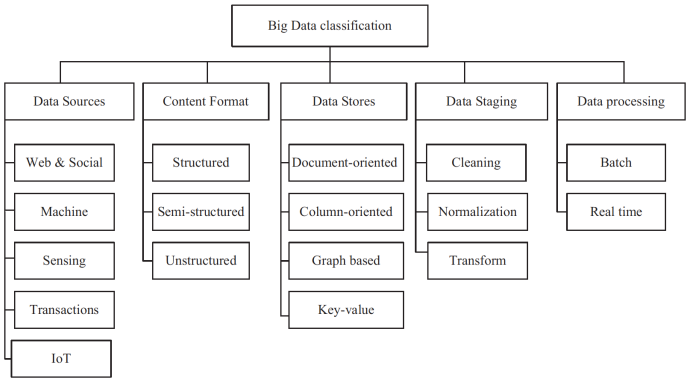

Figure 2: The Classification of Big Data (Hashem et al., 2015)

Based on the research on different variations of Big Data definitions (Ganomi and Haider, 2015; Mauro et al., 2014) with focus on enlisting characteristics, on technological needs of large data processing, on impact on society, this work will be based on the definition of Big Data provided by Mauro et al. (2014): "Big Data represents the Information assets characterized by such a High Volume, Velocity and Variety to require specific Technology and Analytical Methods for its transformation into Value."

A similar definition was found by Hashem et al. (2012) "Big Data is a set of techniques and technologies that requires new forms of integration to uncover large hidden values from large datasets that are diverse, complex and of massive scale." The focus of this definition lays in the elementary characteristic of Big Data, the information involved and the value creation using it. The elements Volume, Velocity and Variety were coined originally by Doug Laney (2001) as challenges in data management. Later on they developed as explaining terms for Big Data (Chen et al., 2012) by characterizing it with (1) Volume, defined by the huge data size of Big Data measured in multiple terabytes and petabytes, (2) Velocity underlines the speed at which data gets created and needs to be analyzed in order to provide for example real-time insights, (3) Variety described by the heterogeneity of elements in the data set, being structured, semi-structured and unstructured data. Finally, over time IBM also added the fourth element (4) Veracity to the characteristics of Big Data in the unreliable origin of data being imprecise and uncertain (Ganomi, Haider, 2015). Combined with the requirements of technology to handle such a big amount of data to transform it to valuable insights and creating economic value.

In order to get the valuable insights a lot of steps are necessary as explained by Ganomi and Haider (2015). The value creation process (see figure 3) involves parts of data management as well as analytics. In data management, the acquisition and recording of data plays an important role. E.g. sensors create a big amount of data which gets recorded. The metadata description helps to identify what and how something got recorded and the attribution to the source. Not all the data is relevant, leading to the definition of a filter of relevance resulting in the data of interest. Now the data is most probably not in the right format for further

processing and gets the necessary modifications for the analysis in the phase extraction, cleaning and annotation. Last but not least the integration, aggregation and representation of data. Moving a step further to the analytics side involve the two steps of modelling and analysis followed by the interpretation (Labrinidis and Jagadish, 2012).

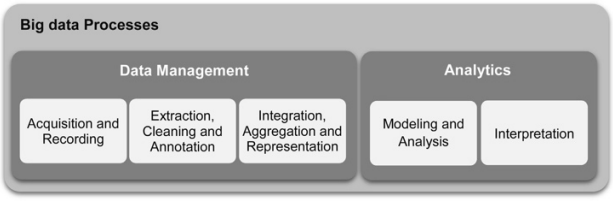

Figure 3: From processes to insights (Ganomi and Haider, 2015)

The innovative aspect of Big Data lays in the capabilities of analyzing large amount of data and followed by value creation (Marr, 2015). This report will put focus on the benefits and challenges on the Big Data Analytics rather than defining more aspects of Big Data which can be done by reading further literature on the topic provided in Business Intelligence and Analytics Research.

5. IMPACT ON DOING BUSINESS & CHALLENGES

As mentioned in the introduction a lot of magazines and newspapers praise Big Data as the next big thing. This section should shed light on the use cases of Big Data and potential benefits. According to Agrawal et al., (2012) Big Data analysis "now drives nearly every aspect of our modern society, including mobile services, retail, manufacturing, financial services, life sciences, and physical sciences" and has the potential to revolutionize science, education, health care, urban planning, security and more areas. On the company level, it means that every company will get to a point where traditional data management systems are unable to deal with the processing of a large amount of data or the necessity to deliver it real-time and consider an investment in Big Data technologies (Ganomi and Haider, 2015).

Our daily lives get influenced by the increased datafication of things, increased memory storage capacity and increased processing power (Schönberger and Cukier, 2013) and companies like Google, eBay, Amazon and Facebook, considered as pioneers of Big Data value creation, introduced product recommendation systems and pricing algorithms. Impact of Big Data can be observed in e-commerce & market intelligence, e-government & politics 2.0, science & technology, smart health & wellbeing and security & public safety (Chen et al., 2012).

Big Data can be seen in the business context from two sides. On the one hand, the "supplier side" with companies specialized in analytics providing and selling Big Data systems and on the other side from "demand side" the companies using those systems with expectations of improved performance and operations.

The rise of Big Data opens up new market segments according to Hagen et al. (2013) with (1) vertical applications or product suites, the open source framework Hadoop belongs in this category, as system for data processing combined with the creation of reports and visualization. (2) Decision support systems with Business Intelligence elements with dashboards and visualization needed to support decision making. (3) Reporting and visualization tools to illustrate the results in an understandable way. (4) Storage, processing and applications needed for analytics purposes as predictive modeling, forecasting and simulation. Providers of such solutions are initiating a "push" marketing approach to promote their solutions as state-of-the-art technologies and must haves for companies in today's highly competitive environment (Ganomi and Haider, 2015). Supported by media attention and influencers leads the companies to invest in such Big Data analytics systems. The value proposition can be seen in a higher Return on Investment, automating existing processes, delivering new products and services by derived customer insights (Davenport and Dyché, 2013). Hagen et al. (2013) underlines the relevance of the Big Data topic for companies by mentioning that "more than 45 percent of companies have implemented a business-intelligence or Big Data initiative in the past two years. Further studies estimate more than 90 percent of Fortune 500 companies will have at least one Big Data initiative underway within a year."

Hagen et al. (2013) analyzed the "demand side" with the different industries using Big Data to reach an improvement of performance and transformed business models in retail, financial services, advertising and public relations, governments, manufacturing, media and telecommunications, energy, healthcare and life sciences (Appendix 1). Big Data benefits can be seen on the one hand creating strategic value by enabling faster, better and proactive decisions and on the other hand an improvement on efficiency by improved capabilities, increased automation, elimination of redundant tools and streamlined processes (Appendix 2).

In the Big Data survey of 20 large companies conducted by Davenport and Dyché (2013), the managers found the following potential benefits of Big Data in achieving a competitive advantage by making use of the analytics 3.0 technologies. Advantages were seen in analyzing diverse data sources and data types in order to get more insights on customers and business operations. The major expectations were (1) cost reduction, (2) improvements in computer task performance, (3) development of new products and service offerings, (4) support internal business decisions and (5) marketing purposes. Those findings will be illustrated and supported with findings from other authors found in the literature.

1) Cost reduction: The Hadoop cluster is able to provide a cheaper storage for terabytes of data than traditional relational databases, although traditional systems may be more reliable and easier to manage and have fully developed data security systems. The company Macy's realized with the Hadoop cluster 70% hardware cost reductions. (Davenport and Dyché, 2013). Apart from these technical and economic criteria of data storage also cost reduction applications can be found. E.g. the company UPS tracks its over 46,000 vehicles with telematics sensors and the data is used for the analysis of the daily performance but as well to redesign routing and realizing substantial savings. Moreover, Hagen et al. (2013) see potential in Big Data for models to reduce energy usage and carbon emissions, stock management (Marr, 2015) and in general an optimization of global sourcing, highly relevant with nowadays global business activities with different locations and business units spread all over the globe.

2) Improvements in computer task performance: Big Data technologies in combination with high performance computing allow a substantial reduction in the processing time needed. Enabling a reaction with the customer or also pricing optimization in real-time and automated means for spotting service issues (Davenport and Dyché, 2013; Hagen et al., 2013).

According to IBM (2015) their analytics tools provide a paradigm shift because the Big Data input doesn't need an upfront cleaning and the analysis is possible real-time as the results get generated. Advantages can be seen in analyzing all information and the identification of correlations without defining a hypothesis and data selection like in traditional approaches.

3) Development of new products and service offerings: Examples can be seen in recommendation algorithms with product offerings or additional features as seen in LinkedIn's "People You May Know", Google's refinement search and ad-serving algorithms, GE's optimization of service contracts and maintenance intervals for industrial products, Netflix's creation of proprietary content e.g. "House of Cards" series or Caesars Entertainment's real time customer marketing and services. (Davenport and Dyché, 2013). Big Data shows also the potential of text analytics in financial news to predict stock market changes (Chung, 2014) and the analysis of huge amounts of market data created new business models in financial services (Hagen et al., 2013), audio analytics support diagnosis and medicine treatments (Hirschberg et al., 2010), real time data feedback allowing to find unseen opportunities for the creation of products and services (Manyika et al., 2013) and "some data, once capture, can enable long-established companies to generate revenue and improve their products in new ways" (Hagen et al., 2013).

4) Support internal business decisions: Insights on customer satisfaction, understanding multi-channel customer relationships, supply chains, risk management, pricing show potential for improvement and show high benefits of data-based decision making (Davenport and Dyché, 2013). Retailers own a lot of data which can be used to improve their performance, new offerings, discovery of customer preference changes and that it "ensures a view of the entire business and a predictive, rather than reactive, view of opportunities for the company to pursue" supporting the management in their decision making (Hagen et al., 2013).

5) Marketing: Big Data enables to measure product promotion, collecting data on competitor's promotions, catch customer satisfaction in real time and provide suitable recommendations. Big Data is also claimed to predict customers' buying behaviors and allows strategies for tailored pricing, assortment, placement choices and leverage price elasticities (Hagen et al., 2013). Companies like Tesco derive valuable business opportunities upon analysis of their loyalty card information, improved pricing, promotions and shelf allocation or brands like PepsiCo analyze FB and Twitter sentiments for branding purposes and evaluation of promotion activities and people's opinions (Bughin et al., 2010; Ganomi and Haider, 2015; Hagen et al., 2013). Recommendation systems as YouTube's "Recommended for You", Facebook's "People you May Know" or Amazon's "People also bought" allow efficient cross/up-selling and higher sales turnover based on the user's present and past interactions (Ganomi, Haider, 2015).

All this benefits are highly appreciated by the executives. Hagen et al. (2013) sees "the crucial success factors (…) to first think of data as an asset—as the foundation upon which to build propositions and business models—and then to diligently build out the capabilities necessary to capitalize on Big Data's potential" and realizing growth in customer intimacy, product innovation and operations.

Having showed the characteristics of Big Data and the potential benefits this section aims to look at the critics and challenges in dealing with Big Data and the question why there is still a long way to grab the full potential of this new trend (Agrawal et al., 2012). Matt le May said once "Big Data is not magic", meaning a huge amount of data has no value without an ability for interpretation (Lin, 2013). During the literature research two main problem areas were identified. (1) Challenges with Big Data technology in general and (2) the necessity of a culture change and building up the needed capabilities in the companies.

(1) Challenges with Big Data technology in general:
Big Data analysis is not trivial and involves different challenges. From defining the right metadata, transforming the content in a suitable structured form for the analysis, data organization, lack of scalability of the underlying algorithms, complexity of the data by being noisy and heterogeneous and other technical challenges need to be solved first in order to realize the full potential (Agrawal et al., 2012). Structured data, which constitutes only 5% of all existing data (Cukier, 2010), refers to the tabular data found in spreadsheets or relational databases. Text, images, audio, and video are examples of unstructured data, which lack the structural organization required by machines for analysis. In the Big Data analysis pipeline (see figure 4) each step has challenges to solve. Data filtering, unsuitable data formats, wrong results due to bugs, wrong data or false model assumptions, lack of coordination between database systems and analytics tools, lack of understanding by decision makers illustrate this variety of challenges (Labrinidis and Jagadish, 2012).

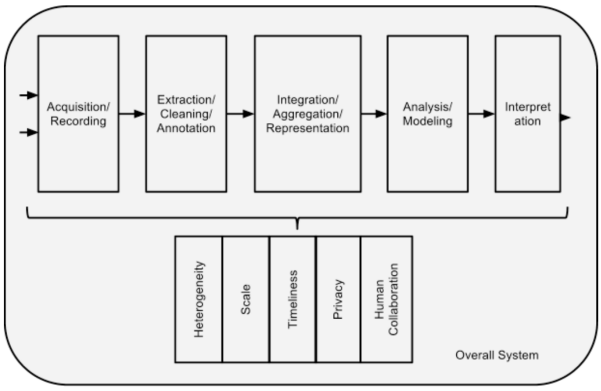

Figure 4: Big Data Analysis Pipeline (Agrawal et al., 2012)

Those challenges can be summed up by heterogeneity, scale, timeliness, privacy and human collaboration (Agrawal et al., 2012).

Heterogeneity: Need for homogeneous and well-structured data with identical size and structure. A cleaning and error correction of incomplete data is a necessity (Agrawal et al., 2012).

Scale: The fact that data volume is growing faster than computing power and data storage capabilities (Agrawal et al., 2012).

Timeliness: Analysis results are needed immediately in real-time this needs a development of new processing structures in regard to handle the growing data volume and immediate time response of queries (Agrawal et al., 2012).

Privacy: Legal privacy restrictions are a big threat for Big Data approaches as they constrain potential benefits and require a rethinking of security for information shared in Big Data use cases or fine-grained sharing control for the users (Agrawal et al., 2012; Buhl et al., 2013).

Human collaboration: Experts assessments are needed to understand the data and exploit its potential which requires the collaboration between machine and human being (Agrawal et al., 2012).

(2) Necessity of culture change and building up the needed capabilities in the companies: More data doesn't mean directly better performance and nearly every second Big Data project gets cancelled before completion (Buhl et al., 2013). It seems that the potential of data-driven decision making is broadly accepted but there is still a long way to go to derive the necessary insights and value creation (Agrawal et al., 2012). This insight leads to the focus on the decision culture applied in companies. In order to make full use of the potential provided by Big Data analytic technologies a cultural change is needed to move from a decision making based on gut feeling and experiences towards a hypothesis-based and data driven approach supported by a strong Business Intelligence department (Hagen et al., 2013; Buhl et al., 2013). Moreover, in addition to a change in business culture the development of the necessary analytics capabilities is needed with decisions based on experimentation and rigorous analysis rather than instincts and experience (Bughin et al., 2010). This gets supported by McAfee and Brynjolfsson (2012) by "exploiting vast flows of information can radically improve your company's performance. But first you'll have to change your decision-making culture." Another issue is the shortage of people with the necessary analytical skills to make sense of the data needed for the value creation (Manyika et al., 2011), without the necessary skills data is claimed to be useless (Harris, 2012). Cloud and data skills were announced by LinkedIn the top skills to have in 2016 (Kennedy, 2016), "data scientists are a hot commodity", the companies initiating a Big Data initiative lack a clear vision and see it as an experiment instead of building up the necessary capabilities to grasp the full potential of Big Data (Hagen et al., 2013). It's therefore important to align the Big Data projects with the company's existing IT structure and processes, ensure an access to existing warehouses, necessity to define high data quality standards and the creation of a data governance to build the basis for data driven business decisions (Buhl et al., 2013).

6. POSSIBLE ACADEMIC & PRACTICAL IMPLICATIONS

Big Data is a new phenomenon which must be analyzed in the academia as well as in the business world. Big Data will become part of the broader analytics ecosystem and being relevant for the future of companies' capability to survive in "the creative destruction of today's business models" (Hagen et al., 2013). Academia has to investigate more into the phenomenon of Big Data to understand the full potential, the challenges and how to overcome them. A solid data-oriented research agenda should be introduced to handle the challenges connected to volume, veracity, variety and velocity (Buhl et al., 2013) and the challenges identified by Labrinidis and Jagadish (2012) and Agrawal et al., (2012) in the previous section. It is crucial to understand what Big Data is in order to use it and to develop the necessary capabilities and technologies.

On the business side, the necessary capabilities and a change of the decision-making culture should be aimed for with guidelines and best practices how to best make use of Big Data. It's expected for companies to be challenging to handle Big Data efficiently and to derive the necessary insights to improve their business activities. This underlines the need for a clear vision to transform the organization and capabilities (Hagen et al., 2013). Privacy issues require innovative approaches for value creation and the other challenges require a close collaboration with researchers and following a multidisciplinary approach in order to get the full potential of the opportunities offered by Big Data (Buhl et al., 2013).

7. CONCLUSION

This critical literature review analyzed the trend of Big Data in different aspects and revealed that it gets nurtured from the big media coverage and promotions of the supplier side with companies specialized in analytics, providing and selling Big Data systems. There is also interest from the demand side, the companies using those systems with expectations of improved performance and operations. On the one hand, companies are collecting data in unseen quantities generated by their customers, users and operations, being "data rich". On the other hand, companies are not ready to fully make use of Big Data, being "insight poor". The topic Big Data is trending in medias and magazines but hasn't reached yet the needed level of implementation in companies to make full use of it. Challenges are faced on the technical side with transforming huge amounts of content in a suitable structured form for the analysis, dealing with the noisy and heterogeneous character of data and on each step of the analysis pipeline having challenges to overcome. On the management side, a clear vision and the needed cultural change towards data-driven decision making is a primary condition for the success of any Big Data project. In addition, the creation of a data governance with high data quality standards, the building up of necessary analytical skills and dealing with data privacy restrictions need to be considered.

Big Data has a big potential to profoundly affect the way we do business and companies shouldn't neglect the value of data and start own projects in the field of Big Data, collecting the necessary experiences and building up capabilities considered as a competitive advantage for the future.

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9. APPENDIX

Appendix 1:

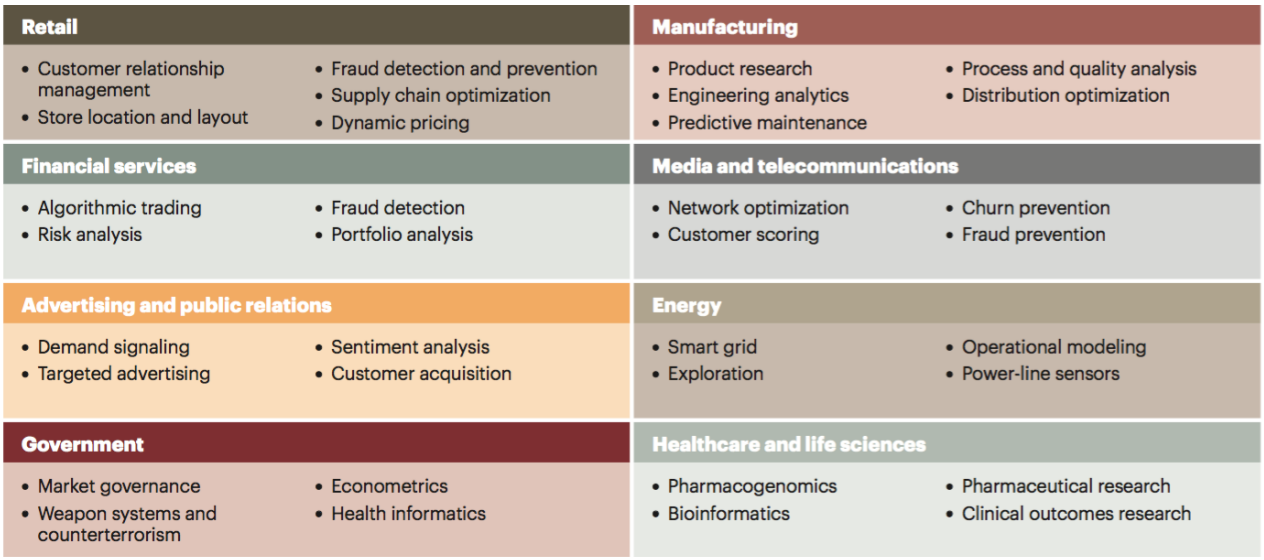

Figure 5: Use Cases of Big Data (Hagen et al., 2013)

Appendix 2:

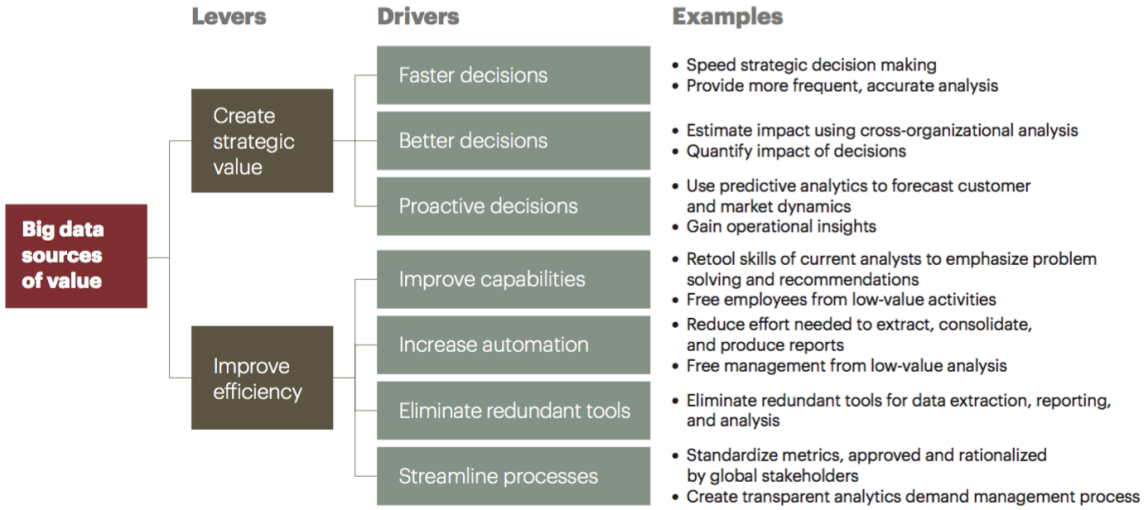

Figure 6: Benefits of Big Data (Hagen et al., 2013)

‘The Dark Side of Social Media’: What is the addiction to Social Media and how does Social Media on smart phones and the Fear of Missing Out influence the addiction to Social Media?

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ABSTRACT

This is a critical literature review of the already existing literature on the topic of the addiction to Social Media. The evolution of the Internet has greatly change the way we spend our days: we now use the Internet to connect with others. Therefore, using Social Media networks is one of the most popular activities among teenagers and young adults. Although the available research on Social Media typically focus on the benefits of Social Media channels, there is significantly less known about the ‘dark side’ of Social Media. More and more cases of addiction to Social Media are emerging these days, and the addiction to Social Media is occurring in more extreme forms. Unfortunately, there is not one specific definition for Social Media addiction. Social Media addiction is said to be ‘the problem of internet dependence’ and research claims that that when a person is addicted to Social Media, he or she cannot control their use of Social Media channels, causing emotional, relations, health and performance related problems. Until today, therapist don’t have enough knowledge and experience to be able to detect the symptoms of Social Media addiction. Furthermore, it is also still questionable which treatment or interventions help to diminish or treat the addiction to Social Media. Multiple researchers have proposed treatments and interventions, but they are not all proven to be effective and it cannot be clearly decided which treatment is best suitable for treating Social Media addiction specifically. The most common and according to research the most effective treatment is the Cognitive Behavioral Therapy, which is a therapy for other behavioral addictions. In the future, it is of great importance that the definition and the acknowledgement of Social Media addiction will be clarified, the symptoms detected, and the research to find a suitable treatment further developed.

Keywords
Social Media, channels, Facebook, addiction, smart phones, treatment.

MSI Topic nr: 4: New data, new methods, and new skills — how to bring it all together?

The author’s view: Why this topic?

The choice to write about the ‘Dark Side of Social Media’ was made, because there has not been much research done about the negative consequences of Social Media and its risk for addiction. Furthermore, the use of Social Media is extremely popular in today’s society.

1. INTRODUCTION

The evolution of the internet has greatly changed the way we perform daily activities (Correa, Hinsley, & De Zuniga, 2010). We use the Internet for information search, to buy and sell products, to search for friends and participate in chat rooms: we use the Internet to connect with others. Two of the main applications that allow people to find the desired connections they search for, are Social Media channels and instant messaging (Correa et al., 2010). At this moment, using Social Media websites is one of the most popular activities of today's children and teenagers. Specifically, our generation is engaged in using all different types of Social Media channels throughout the day. Therefore, the currently existing Social Media channels have grown significantly over the past couple of years.

The available research on Social Media typically focus on the benefits of Social Media channels. On the contrary, significantly less is known about the 'Dark side of Social Media channels' (Fox & Moreland, 2015). With the seemingly never-ending benefits of Social Media, it is easy to forget about the accompanying disadvantages (Krasnova et al., 2015; Yang et al., 2016) of Social Media, while these are of great importance as Social Media platforms continue to grow even further in the future. Furthermore, Alt (2015) has stated that the so called 'Fear of Missing Out' leads to Social Media engagement and addiction.

The aim of this paper is to present the existing literature on the topic of Social Media and Social Media addiction in particular. The paper will touch on several subtopics within the main topic of the addiction to Social Media. Firstly, the paper will describe and explain what Social Media is thought to be. Secondly, the paper discusses what is considered to be an addiction to Social Media, by explaining the most common consequences addicts might experience. Furthermore, this paper discusses the emergence of Social Media addiction on smart phones, and a look will be taken into the effect of the Fear of Missing Out on Social Media use and addiction. Finally, the topic of prevention of Social Media will be elaborated on.

2. WHAT IS SOCIAL MEDIA?

Traditionally, consumers have used the Internet to examine content: we read information, we evaluate information, we use it to buy products online and many more. Currently, consumers are using different channels and platforms to create their own content, share content and discuss content their retrieved through the Internet, which is a more social way of using the increasing applications of the internet: these social applications can be considered to be Social Media networks. Social Media networks employ both web-based and mobile technologies (Kietzmann, Hermkens, McCarthy & Silvestre, 2011). These online Social Media channels have become an essential medium for communicating with networks and other relationships (Fox & Moreland, 2015). It would seem that we are in the middle of slowly creating a new communication landscape, because we are now increasingly communicating online (Kietzmann et al., 2011). Nowadays, there is a broad variety of Social Media channels, which vary in their scope and functionality. There are Social Media channels for the general mass population, like Facebook. Other Social Media channels such as LinkedIn are more focused on professional networks. There are also media sharing sites which focus on sharing photos and videos. Examples of such media sharing sites are Youtube, Flickr and Pinterest.

2.1 The functions of Social Media

Kietzmann et al. (2011) have established a framework which clearly shows the distinct functions of Social Media channels.

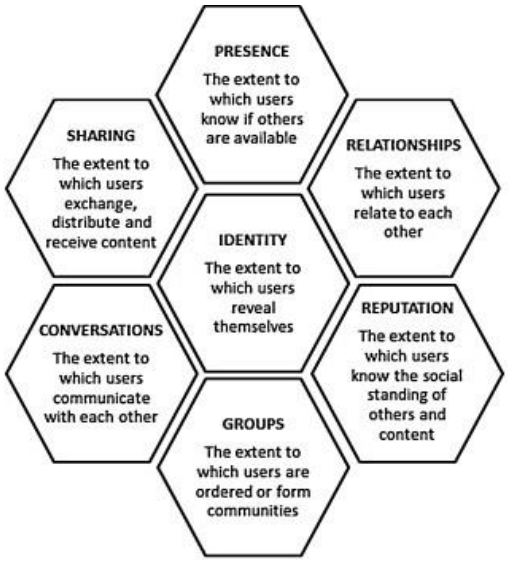

Figure 1: The honeycomb of Social Media functionality - (Kietzmann et al., 2011, p 243)

As identified in the figure above, there are seven functionalities of Social Media channels: identity, presence, relationships, reputation, groups, conversations and sharing.

The identity function of Social Media channels entails the extent to which Social Media users reveal their identities online. This can mean for example whether users use their name, gender, age, nationality, location and other personal information online, or they want to stay anonymous. The sharing block in the honeycomb of the functionalities of Social Media represents the amount to which Social Media users communicate and connect with other users online, and how much information they share with their network. Furthermore, the sharing function includes the online content that users create. The following functionality of Social Media is defined as presence. The presence of Social Media users is defined by the extent to which other users are accessible or available. The relationship function of Social Media is self-explanatory: it is the extent to which users are related to each other online. The word 'related' is used in a way to describe whether two or more users have the same associations which lead them to start conversations or share information. The next functionality depicted in the honeycomb is reputation. Reputation explains the extent to which Social Media users can hold their online identity in a reasonable manner. Online reputation has different meanings, but the most common meaning is that Social Media users trust each other. The functionality of groups is the degree to which Social Media users can engage in communities and groups online. Finally, the conversation function in the field of Social Media explains the

amount to which users communicate and connect online. A lot of Social Media channels have been established solely for the purpose of facilitating conversations between Social Media users, while according to Kietzmann et al. (2011), Social Media has more functions other than facilitating conversations.

2.2 Who are most likely to use Social Media?

According to Duggan & Brenner (2013), teens and young adults are more likely to use Social Media compared to older adults. As can be seen from the Figure below, 93% of the teens between 12 and 17 year old are nowadays online, this is the same percentage for young adults between 18 and 29 years old. When looking at the rest of the figure, it can be seen that adults form the age of 30 are a lot less online, and the number of Social Media users decreases even more as adults get older. Over the past decade, teens and young adults have remained the age group that is most likely to go online even though the Internet population has grown, and is still growing (Lenhart, Purcell, Smith & Zickuhr, 2015).

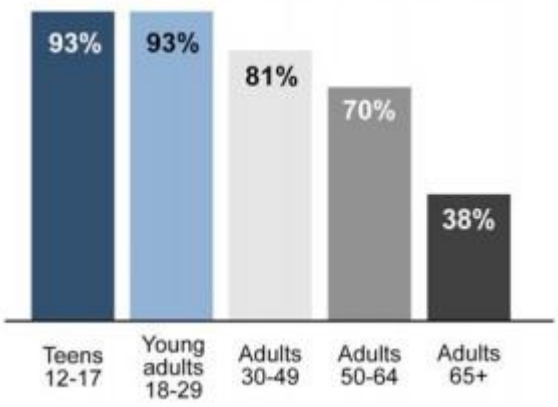

Figure 2: Who is online? The internet by age groups – (Lenhart et al., 2015, p 5)

2.3 Which Social Media channel is the most popular?

In the last decade, the use of Social Media channels has grown enormously (Ryan, Chester, Reece & Xenos, 2014). According to Duggan et al. (2015), the five most popular Social Media channels in 2014 have been Facebook, LinkedIn, Pinterest, Instagram and Twitter, but the most popular Social Media channel was, and still is, by far Facebook. Statistics which were provided by Facebook (2016) exposes that as of June 2016 there were 1.13 billion active users on Facebook, and a minimum of 1.03 billion of these active users log onto Facebook every day. When looking at these statistics, it is not shocking that Facebook is the largest Social Media channel worldwide.

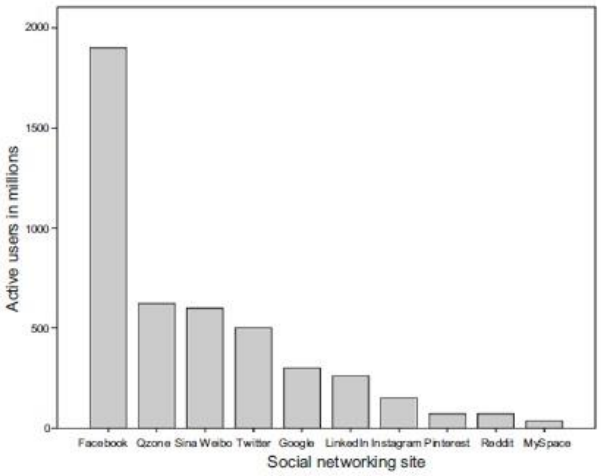

Figure 3: Active users of ten popular Social Media channels – (Ryan et al., 2014, p 133)

3. WHAT IS ADDICTION TO SOCIAL MEDIA?

Due to the current growing popularity of the Internet, the concerns over its excessive use are increasing as well. Internet addiction, more formally known as pathological Internet use, is claimed to be a form of impulse control disorder (Song, Larose, Eastin & Lin., 2004). Wu, Lee, Liao and Chang (2015) have also described Internet addiction as the problem of 'internet dependence', which is the compulsive use of the Internet, or the problematic use of the Internet, which leads to the abuse of the Internet. The theory of Internet addiction must according to Beard (2005) be seen as an explanation for a person's uncontrollable and damaging use of the Internet. Wu et al. (2015) also claim that when a person is addicted to the Internet, he or she cannot control their use of the Internet. Technological addictions and computer addiction were previously studied in England, by Griffiths (1996) and Shotton (1991). However, the concept of Internet addiction was introduced by a study of Young (1996). Griffiths, Shotton and Young had controversial ideas about the addiction to technology. Griffiths (1996) and Shotton (1991) claimed that addiction can only occur when physical substances are ingested into the body, while Young (1996) argues that there can be other form of addiction as well. Young (1998) suggests that teenagers and adolescents may not be addicted to the Internet application itself, but are alternatively addicted to their Internet activity. Young (1998) found that teenagers with Internet addiction are mostly by the social support features of the Internet. Additionally, Young (1999) argues that there are five distinct types of internet addiction: computer addiction, web surfing addiction which leads to information overload, net compulsion such as online shopping or gambling, cyber-sexual addiction and cyber-relational addiction. The addiction to Social Media can be placed in the last category, since the main purpose of Social Media channels is to establish and maintain online and offline relationships with network members (Kuss & Griffiths, 2011). Pathological Internet use changes your personal life, but also your family life and other relationships. Research has suggested that Uses and Gratification Theory (Katz, 1959) might as well be useful to study the addictive factors

of Social Media. The Uses and Gratification Theory illustrates how different people use the same Social Media channels for diverse reasons to mainly satisfy their psychological and social needs. According to Uses and Gratifications Theory, Social Media users might differ in the satisfactions they seek by using Social Media. What needs and fulfillments people are looking for can be roughly divided into several categories: diversion, building personal relationships finding and creating personal identity and observation of the behavior of others (Sheldon, 2008 ; Kuss & Griffiths, 2011). The addiction to Social Media platforms expands in phases and it develops over time. According to Song et al., 2004, there is a possibility to be a lightly addicted, since addiction develops in phases. At this moment, you show minor symptoms and you are still able to lead a normal life, but your Internet usage is starting to rise to problematic levels. Furthermore, Song et al. (2004), argue that to be actually additive, you must experience major life consequences as a result of your pathological Internet use. These consequences could be the loss of employment or the loss of intimate relationships. Furthermore, Song et al. (2004) claim that chat applications and instant messaging are among the most addictive behaviors online. These addictive behaviors may lead to obsessive thoughts, dependence and potentially the inability to withdraw from the Internet.

A factor that has clearly been linked to Internet addiction is egocentrism. The structure of Social Media channels may facilitate of addictive behavior and may therefore serve as a factor that attracts people to using it in a possibly excessive way. Due to the egocentric structure of Social Media channels, these channels allow people to present themselves favorably and that leads to the enhancement of their mood because people perceive it to be enjoyable. This in turn may lead to positive experiences with Social Media channels and this can lead to Social Media addiction in the future. Just like substance-related addiction, Social Media addicts experience the same kind of addiction symptoms, such as mood changes, withdrawal symptoms, social conflicts and deterioration (Kuss & Griffiths, 2011).

3.1.1 Facebook addiction

This section will elaborated on Facebook addiction, a new phenomenon in our current society. As seen in the previous section and figures, Facebook is currently the most favored and most used Social Media platform globally. As of June 30th this year, Facebook has 1.71 billion monthly active users (Facebook, 2014). One reason why Facebook is the most favoured Social Media channel is because Facebook provides its users with a lot of practical functions. The ability to communicate and connect with their offline network and make new connections online, as seen in Figure 1, makes it easy for Facebook users to enlarge network members. As a result of Facebook's posting and sharing function it has become easy to distribute social information among network members. Furthermore, Facebook has their own mobile application to ensure that their users have access to Facebook from all their technological devices and form anywhere they are (Fox & Moreland, 2015). Due to its fast growing popularity and expanding user database, the use of Facebook has, according to O'Keeffe and Clarke-Pearson (2011), shown to cause signs of depression. From a clinical psychologist's perception, it may be reasonable to speak specifically of 'Facebook Addiction Disorder' (or more generally 'Social Media Addiction Disorder') because addiction criteria, such as neglect of personal life, mood changing experiences and covering the addictive behavior, appear to be existing in a lot of people who use Social Media channels excessively (Kuss & Griffiths, 2011).

Researchers have acknowledged a new phenomenon called 'Facebook addiction', which is defined as the addiction that develops when people spend a great deal of their time on Social Media sites, in this referring to Facebook, and then begin to exhibit classic symptoms of depression (O'Keeffe & Clarke-Pearson, 2011 ; Ryan et al., 2014). Acceptance by and contact with others online has become an important element in our lives. The intensity of the online world is thought to be a factor that might trigger addiction to these kinds of Social Media channels (O'Keeffe & Clarke-Pearson, 2011).

3.2 The consequences of Social Media addiction

Currently, the Internet is a highly used network with a lot of different functions and Social Media applications, which therefore makes detecting any possible symptoms and the diagnosis of addiction relatively difficult (Young, 1999). It is an essential skill that the therapists examining the addiction to Social Media understand the features which separate normal Internet use from pathological Internet use. Since there is currently no accepted set of criteria for addiction to Social Media, it is often difficult to diagnose a person with being addicted to Social Media (Young, 1999). Social Media addiction can have serious consequences. There are numerous instantly satisfying effects related to Social Media use, however the long-term excessive use of Social Media are hardly ever positive and are claimed to be unhealthy. Research has identified that Social Media addicts suffer from emotional, relational, health related and performance related complications (Andreassen, 2015). Furthermore, Young (1999) suggests that the time spent on Social Media platforms is not a strong factor in determining the symptoms of Internet addiction, but commonly, users which are addicted to the Internet are online between forty to eighty hours each week, with sessions that could be around twenty hours at once. Furthermore, addicted users' sleep patterns are usually disturbed by log-ins late at night or even during the night, which also disrupt their daily life.

3.2.1 Emotional problems

Social Media addiction can cause serious emotional problems. Just as with other forms of addictions, a person mostly becomes addicted to the excessive use of Social Media as a form of relief form negative feelings or situations (Balakrishnan & Shamim, (2013). Social Media addicts engage in this behavior to take over control of the situation, and to make sure they are disconnected form their own emotions and feelings. Moreover, Social Media addicts have troubles to disconnect from Social Media because it makes them feel better about themselves: they might even feel anxiety when they stop networking. They often feel a positive energy when they get away from their problems by using Social

Media, and therefore Social Media becomes associated with feeling good. Because of this, Social Media addicts find it difficult to feel good without using Social Media (Andreassen, 2015). These emotional motives are very common for behavioral addictions (Young, 2007).

3.2.2 Relational problems

Next to the motivational consequences of addictive Social Media use, addictive use of Social Media can also lead to relational problems and the neglection of offline relationships. The relationships of a Social Media addict suffers, because the addict spends most of his or her time networking online and they forget about the offline physical relationships around them (Elphinston & Noller, 2011). Addicts become socially reserved and they are left with less or troublesome relationships. Furthermore, Social Media addicts may sense significant anxiety, stress and other major symptoms of a depression. Depression might also have a negative effect on relationships with family or friends (Koc & Gulyagci, 2013 ; Andreassen, 2015).

3.2.3 Health-related problems

Addictive use of Social Media also causes health problems. First, excessive online Social Media networking may lead to serious sleep difficulties. There have been studies which suggest that Social Media addicts have more sleep problems and a weaker sleep quality compared to the non-addicts (Brunborg, Mentzoni, Molde, Myrseth, Skouverøe, Bjorvatn & Pallesen, 2011). Additionally, because Social Media addicts stay online on social networking sites even when they know they shouldn't, these addicts are also prone to having too little exercise and do not rest sufficiently to recover their bodies. Therefore, research has reported that there is an association with Social Media addiction and insomnia. Overall, studies have shown that there is a great chance that Social Media addiction is very much related to health-problems in the short run, but also in the long run (Andreassen, 2015).

3.2.4 Performance related problems

Due to the fact that Social Media addicts spend more time and effort on their social online networks, it is expected that they engage less in other social activities, other that Social Media (Elphinston & Noller, 2011). Not surprisingly, this behavior might also influence their own and other's or work performances in a negative way. In a case study executed by Karaiskos (2010), it is described how a Social Media addict lost his job due to the excessive use of Social Media. Lately, research has also thoroughly examined the associations between excessive Social Media use and academic achievement of addicts. These studies indicate that addicts score lower grades and have weaker performances due to digital interruptions (Koc & Gulyagci, 2013 ; Kirschner, & Karpinski, 2010).

The emotional, relational, health-related and performance related problems are in relation to Social Media addictions are severe problems. However, because we use Social Media throughout the whole day, it cannot be separated from our work or academic environments. For most of us, intervention against Social Media addiction must pay attention to controlling our Social Media use, instead of total restriction from Social Media (Andreassen, 2015).

4. SOCIAL MEDIA ADDICTION ON SMART PHONES

4.1 Habit or addiction?

Mobile phones are habit-forming. Habits are automatic behaviors which are activated by situational cues. The type of habit which is concerned with mobile phones is the so called 'checking habit: the short, repetitive review of Social Media channels which are quickly accessible on your smart phone (Oulasvirta, Rattenbury, Ma & Raita, 2012). Smart phones have the potential to create new habits associated to Social Media use, since smart phones are connected to a network and therefore are able to install all kinds of Social Media applications. These checking habits motivate people to use the device for other purposes the Social Media as well, and this in turn may lead to an increase in overall usage of the mobile device.

Unfortunately, it is still unknown what triggers overuse of smart phones and when we speak about smart phone addiction. Although, research has stated that a high-level of Social Media use is reached when a person uses Social Media anywhere between forty to eighty hours each week, with sessions that could be around twenty hours at once (Young, 1999).

4.2 Social Media addiction on smart phones

Currently, using Social Media on smart phones is becoming increasingly popular. Therefore, in accessing these Social Media channels on smart phones, the use of smart phones can develop addiction as well. Nowadays, 75% percent of all teenagers own cell phones. Of these teenagers, 54% use their smartphones for texting, 24% use their smartphone for instant messaging, and 25% of the teenagers use their smartphone for Social Media purposes only. Consequently, a significant part of this generation's social and emotional growth is going on while they are connected to the internet and being on their cell phones at the same time (O'Keeffe & Clarke-Pearson, 2011). 24% of the teenagers in our generation have said to go online almost constantly. Because Social Media is so easily assessable on mobile phones, 92% of the teenagers are online daily. (Al-Barashdi, Bouazza & Jabur, 2015). As a result of the increasing diffusion of mobile phones in our society, there is an enormous growth in the use of mobile phones, specifically among teenagers, and it can be argued that these youngsters are most likely to form an addiction to Social Media (Bianchi & Phillips, 2005). Approximately three-quarters of teenagers have a smartphone (Al-Barashdi, Bouazza & Jabur, 2015). This tendency is followed by the fast growing use of online Social Media channels on smart phones as well (Salehan & Negahban, 2013). This leads to the activity that individuals are captivated by their smart phone use to the extent that they neglect others aspects of life. Several terms for this are 'smart phone addiction', 'mobile phone addiction', problematic phone use', mobile phone dependence, 'compulsive mobile phone use' and 'mobile phone overuse' (Al-Barashdi, Bouazza & Jabur, 2015).

Because teenagers and students are the largest group of smart phone users, they have the biggest change of becoming addicted to their smartphones. The use of smartphones among students has become popular because students do not only use their smart phones for its primary purpose, but also to discover new applications which provide new functions for their smartphones. These new functions and applications are now only allowing these students to communicate with others in a face-to-face way or personally, but also via online channels. This is a good invention for shy students to interact with their fellow students. Furthermore, students now use their smart phones to enjoy different kind of entertainment purposes, such as games and other social applications. As a result of these applications, it appears that numerous students tend to depend too heavily on their phones, which will unavoidably lead them to use their smart phones even more. (Al-Barashdi, Bouazza & Jabur, 2015).

On the other hand, Hong et al. (2015) claim that students use their smart phones so intensely because they increase their social communications with others and they say that by the use of their smartphone they expand their opportunities to establish more social relationships.

5. THE FEAR OF MISSING OUT

5.1 What is the Fear of Missing Out?

The phenomenon FoMO – the 'Fear of Missing Out' - is getting more and more visible nowadays, since we are constantly connected to each other. We are so immensely connected with one another that we are starting to find it hard be alone and disconnected from others. The 'Fear of Missing Out' is the feeling that you get when you have the feeling that you don't know about something which could potentially be more interesting or exciting than the activity you are currently enjoying (Grohol, 2011). According to Przybylski, Murayama, DeHaan & Gladwell (2013), FoMO is defined as the desire to stay constantly connected in order to know what others around you are doing.

The 'Fear of Missing Out' is so severe, that even when we have decided to disconnect, we still connect time and time again, just to make sure we did not miss out on anything while we have disconnected (Grohol, 2011).

5.2 How does the Fear of Missing Out lead to increased Social Media use?

According to a study of Przybylski et al. (2013) and Alt (2015), the Fear of Missing Out is said to be linked to increasing levels of Social Media engagement. Social Media networks have provided a lot of advantages for its users. On the contrary, social Media networks are offering so many options and applications, that there are offering more options than a person is able to use, which can cause anxiety. These advantages and disadvantages of Social Media has driven widespread awareness in the concept of Fear of Missing Out – also known as FoMO (Przybylski et al., 2013).

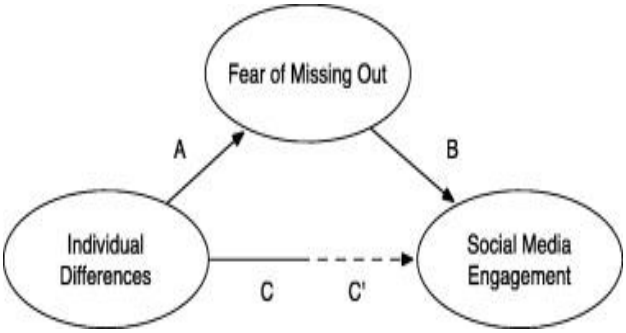

Figure 4: The mediation model - (Przybylski et al., 2013, p 1846).

Przybylski et al. (2013) have developed a model which explains the concept of FoMO. The model describes how individual differences (e.g. what one is doing, and what the others are doing) lead to the Fear of Missing Out, which eventually leads to the increase in Social Media engagement.

The people who fear that they are missing out, participation in Social Media may be particularly attractive. Services like Facebook, Twitter, and Foursquare are ways of seeking social connection and provide the potential of higher levels of social involvement (Przybylski et al., 2013). This might also develop an addiction to Social Media networks.

6. TREATMENTS OF SOCIAL MEDIA ADDICTION'

The addictive use of the Internet is a new problem which currently many Social Media users are unaware of and are therefore unprepared to treat their addictive behavior. Unfortunately, the addiction to Social Media is a topic which is not taken seriously by our society, and therefore, people who are addicted to Social Media are reluctant to search for help or treatments. There is a lot of literature which explores the social and physiological factors fundamental to Internet addiction. However, there is not much evidence that there are specific treatments to deal with this new form of addiction. Some researchers have claimed that the best theory to use to potentially treat Internet addiction is the Cognitive Behavioral Theory. Addictive behavior often act as a way to deal with unfulfilled needs. These unfulfilled needs lead to unpleasant events or situations. The addictive behavior helps to momentarily forget the problems of these unfulfilled needs in the short term. However, in the long run it is claimed to be a bad alternative to escape your problems since this addictive behavior will probably make the problems even worse. That way, the unpleasant situation or event becomes the trigger to use the Internet in an excessive way (Young, 1999).

Mostly, the symptoms of Social Media addiction are may not always be revealed in an clinical interview. Therefore, it is if great importance that therapists have the knowledge on how to assess the presence of the symptoms or consequences of addictive Social Media use (Young, 1999). When Social Media addiction is not recognized, Social Media addiction will on the long term have unfortunate consequences, described in the previous section.

Researchers have argued about the possibilities to establish a treatment or way of prevention the addictive Social Media use for many years. Researchers have agreed on the fact that the focus of the treatment of a Social Media addiction should be the moderation and controlled use of Social Media. There have been a few interventions which have been thought to be effective in the treatment of a Social Media addiction. These are self-help strategies, as well as therapies and interventions proposed by therapists (Andreassen, 2015).

6.1 Self-help interventions

Clinicians have generally agreed that moderation and controlled use of Social Media is most appropriate to treat the addiction to Social Media (Young, 2007). The first intervention proposed by Andreassen (2015) is the use of self-help interventions. An example of a self-help interventions is the use of helpful smart phone applications. Several apps, such as ColdTurkey, SelfControl and Freedom, have been established to block the access to certain sites which the addict uses excessively, help cut down on the time spend on Social Media and to eliminate all kinds of digital distractions. Another very practical self-help intervention, according to Andreassen (2015) can succeed with a lot of self-control. This intervention means that the addict is no longer allowed to login on Social Media sites at work or school or leaving their smarty phones at home while they are away in order not to get tempted to use Social Media. Furthermore, incorporating more moments of relaxation throughout the day may learn addicts to better control their emotional discomfort while they are no longer able to use Social Media. Apps such as Mindfulness can be used to relax, meditate and feel more comfortable in general.

Even though these apps might be helpful, they are requiring a smart phone, and is could thus be very tempting to use your smart phone for Social Media, instead of the 'prevention' of you excessive Social Media use. Therefore, this might not be the best option to treat extreme Social Media use.

6.2 Therapeutic interventions

The interventions explained in the previous section are mostly interventions in order to keep away from addictive Social Media channels. In certain cases, the abstinence of Social Media is not practical since computers have developed to be a salient part of our daily lives. In more extreme cases of addiction, these proposed self-interventions might not help to diminish the use of Social Media, but more severe interventions might be the solution to their Social Media addiction. The second intervention, which was proposed by Young (2007) and Andreassen (2015) are therapeutic interventions. A number of studies concerning the treatment of behavioral addictions have been based on the Cognitive Behavioral Therapy (Andreassen, 2015 ; Young, 2007).

6.2.1 The Cognitive Behavioral Therapy

Young (2007) argues that the Cognitive Behavioral Therapy is an effective treatment for obsessive behavior disorders, such as Internet addiction and other behavioral disorders. In addition to the treatment of Internet addiction, the Cognitive Behavioral Therapy has also been used to treat eating disorders, pathological gambling and anger control (Young, 2007).

The Cognitive Behavioral Theory involves exploring the behavior management of the addict: the cognitive behavioral therapy is based on the assumption that thoughts determine feelings (Young, 2007. This Cognitive Behavioral Therapy is to help the addict to realize what the negative sides of his excessive Social Media use are. Addicts are trained to cope with addictive feeling and they learn how to control these feelings to prevent a setback (Young, 2007). By doing so, the internal motivation to change his or her behavior is more likely to increase and they are more open to changing their online behavior (Andreassen, 2015).

7. DISCUSSION

Until today, there are a lot of opposite opinions and perceptions of 'What exactly is the addiction to Social Media?' A lot of researchers have proposed different definitions of Social Media addiction, but there is not one universal definition of Social Media addiction. Therefore, it is also difficult to be able to detect the symptoms of Social Media addictions, since therapists do not have enough knowledge about the topic to be able to know what they should be paying attention to when examining a Social Media addict. Furthermore, researchers are not in agreement about the question when a person can be called a Social Media addict. All researchers quoted in this paper have diverse ideas about which symptoms a person has to show before one is called an addict. When the symptoms are acknowledged, a suitable and personalized treatment can be applied. Unfortunately, there is very little research done about which treatment is the most effective. Also, a lot of researchers propose different treatments, from self-help interventions to therapeutic interventions. Young (2007) argues that the Cognitive Behavior Therapy is the most useful to treat Social Media addictions, since it has proven to work with other behavioral addictions. Because there are so many contradictory opinions, more research should be done to clear up these different ideas about Social Media addiction and its treatment.

To conclude, it can be said that the topic of Social Media addiction should be explored more, in order to spread knowledge about this new addiction. In addition, the symptoms of Social Media addiction should be universal, so therapists can diagnose Social Media addicts more precisely, and adjust their treatment to the individual needs of the addict. Most favorably, therapists and other people in the field of Social Media addiction should develop a preventative program, in order to hopefully decrease the chance of becoming addicted in the future.

8. IMPLICATIONS OF THIS RESEARCH

The 'Dark side of Social Media', and in this paper the addiction to Social Media has not been discussed thoroughly in current education, while it is a phenomenon we should be all familiar with in our current society. Especially nowadays, when we are constantly connected to each other it is important to not forget the possible downside of Social Media. Therefore, this paper could provide academics with more information regarding the downside of the addiction to Social Media and its consequences.

This research has evaluated the current understanding of negative aspects of Social Media, especially the addiction to Social Media in order to better understand its undesirable consequences. For users of Social Media, knowledge about the negative consequences of using Social Media could be helpful in order not to get addicted to Social Media and use it responsibly.

9. SUGGESTIONS FOR FURTHER RESEARCH

Unfortunately, until today, the topic of Social Media and especially the addiction to Social Media has not been extensively reached yet. There has been almost no research on the connection between Social Media addiction with other types of addictive behavior, mainly because there have been so few studies examining Social Media addiction (Kuss & Griffiths, 2011).

Therefore, future studies have great potential in addressing the emergent phenomenon of addiction to using social networks on the Internet by means of applying better methodological designs, including more representative samples, and using more reliable and valid addiction scales so that current gaps in empirical knowledge can be filled. In addition to that, research must address the presence of specific addiction symptoms beyond negative consequences. Future researchers are therefore advised to not only investigate SNS addiction in a quantitative way, but to further our understanding of this new mental health problem by analyzing cases of individuals who suffer from excessive SNS usage and establish remedies or preventions in order to prevent more Social Media addicts in the future.

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The Dark Side of Social Media A study of Cyber Violence: An Asian Perspective

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ABSTRACT
The purpose of this study is to give a comprehensive explanation of cyber violence phenomenon based on critical literature review. The study takes in a different perspective on bystander to the cyber violence research. The findings suggest that anonymity and freedom of speech are the main reasons inciting cyber violence, especially related to new digital technologies and social media. Without knowing the boundaries between, and the consequences of freedom of speech and cyber violence and during the use of internet, every online user could possibly become a victim or perpetrator. These boundaries between cyber violence and free of speech could be drawn based on the legal restrain and self-governance. Failing in differentiating the two concepts could consequent in different levels of damage to cyber victims or to the society. Coping strategies on the perspective of victim and bystander were referred.

Keywords
Cyber violence, Cyberbullying, anonymity, freedom of speech, social media, boundaries, consequences

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: Why this topic?

Cyber violence is a new phenomenon of combining date, methods and skills but in a wrongly used. The study of social media should not only focus on the bright side, but also the dark side of the social media should be taken into account.

1. BACKGROUND

At the end of 2007, a 31 years old lady Jiang, jumped off the building from her 24th floor apartment, to denounce her unfaithful husband Wang with life. Jiang disclosed her despair on her blog, and placed blamed her act on the husband's cheating. Her death drawn a great attention in China about the dark sides of the internet. Later, a website, Orionchris.cn, created by a friend of Jiang, started posting relevant information about the suicide. One whom claimed himself the coworker of Wang and "the lover", posted online saying that Wang's life seems not affected by his wife's death, and still (inter)acting normally with "the lover". This post went viral, for this reason people even started the "ren rou sou suo" (human fresh search engine) siege against Wang, his family, and "the lover" who counted for the broken marriage, including reveals of personal information and publishing internet violence language. After four months of harassment, Wang finally filed a lawsuit against the website Oriochris.cn, along with Daqi.com and Tianya.com, for publishing articles of defamation and insulting, which greatly affect his and his family's life. On 17th April, 2008, the court in Chaoyang District, Beijing, held the trial for this cybercrime case, for the first time in China.

(Sina News, 2008)

In 30 November 2015, a 19 years old boy Zeng, took his own life after a day of live updating in his blog about the suicidal acts. The live quickly spread over the internet, each of his in total 38 posts was commented and forwarded more than a thousand times,. Especially the last update, was commented 31895 times, and forwarded 6117 times. During the day of live posting, Zeng had few times considering give up the suicide because of the help from most of the people whom concern about him. Nevertheless, there is also people provoking his action or even speak evilly to him. The violent language at the end gave him a hand to end his life. Over 20 thousands of people were following his updates, among this people, some were trying to help, some were satirizing, even pushing him to kill himself, and some just remain unconcerned of his suicide or unaware of the violence against him.

(people.cn, 2014)

Just like the old Chinese saying - "Fortune and misfortune are two buckets in a well", the technology provides benefits to life, but also make it vulnerable. Unfortunately, the two above examples outline a negative side. Such situations are not unique, similar incidents take place on daily basis around the world.

2. INTRODUCTION

The revolution of information technology resulted in the bursting of users in cyberspace. According to internet live stats[1], up to the moment of the reference, more than three billion people, around 40% of the world population, were able to access to the internet up to date. The internet user population was developed from less than 1% in 1995 to nowadays 40% of the world population in only took two decades. The term of "cyberspace" emerged and is explained as "the notional environment in which communication over computer networks occurs" in Oxford English Dictionary[2]. Within this space, people from all over the world are enabled to share information with others freely, regardless of gender or age, or the familiarity with each other. The cyberspace gives people opportunities to participate anonymously and communicates limitlessly, including feelings or thoughts exchange, positive or negative interaction (Sari & Camadan, 2016).

Technology use is no doubt benefiting our life. However, challenges ought not to be neglected, as the lack of geographical boundaries and time constraints in the cyberspace (Sari & Camadan, 2016), make the potential harm from misuse even more flexible and hard if not impossible to trace. Not all who use the internet users have the ability or willingness to understand every ongoing story, people tend to overlook the facts, and blindly react to things as others do.

People often lament at the government's surveillance but do not realize that themselves are likewise exercising the power of watching over (Cheung, 2009). People criticize injustices, yet they are unaware of the fact that they are actually participating in such injustices.

Cyber danger lurks everywhere. It is the transformation of criminal or harmful behavior by networked technology that involved manipulation of information for gain (Wall, 2007), known as cybercrime. Cybercrime costs millions of dollars' loss to society. A report from McAfee in 2014, reveals a tremendous cost of estimated $375 billion to $575 billion in losses to the global economy from cybercrime in 2014, indicating the quick growth of risk of cybercrime. Apart from the economic point of view, cybercrime also threatens the well-being of individual, physically, psychologically, and emotionally (Yar, 2005). Scholars are particularly concerned about such wellbeing among young people, for example, the teenagers in UK (Alim, 2016), adolescent in the Netherlands (Jacobs et al., 2015), High school student in Turkey (Sari & Camadan, 2015) and Japan (Udris,2015), and University students (Turan et al., 2011), and etc.

Although cyber violence is wildly recognized, there is yet no universal definition and approach to it. Nevertheless, all criminal behaviors by networked technology that do harm to, or incite harm against people, are categorized as cyber violence (Yar, 2005). In general, the terms "cyber violence" is used interchangeably with "cyberbullying". However, it is not necessary that people who misconduct online is with the purpose to harm others. Though the consequences are alike, the motives might differ. Therefore, in this study we prefer the term "cyber violence" over "cyberbullying" in this study as it includes a wider range of the violence forms under unaware behavior that leads to cyber bullying.

2.1 Research gap and Research Question

Cyber violence is an established social media phenomenon that has been attracting attention globally. It challenges the moral and legal bottom line, threatens the safety and security of individuals and society. Scholars from various disciplines, ranging from legal industry to social behavioral, have been interested in studying the phenomenon.

A considerable amount of studies has been conducted across the world. Research encompasses different concepts, underlined the causes and effects (Chen, 2007), and proposed solutions (Machackova et al., 2015). A great deal of these studies focused attention on the victims and perpetrators, however, few researches have looked to the online conduct of bystanders in cyber violence incidents. The importance of bystander should not be neglected, as they can either become a bully (Shultz et al.,

[1] Elaboration of data by International Communication Union World Bank, and United Nation, www.InternetLiveStats.com

[2] https://en.oxforddictionaries.com/definition/cyberspace

2014), or intervene to stop a cyberbullying and offer support to victim (Brody & Vangelisti, 2015).

Levi (2001) deems there is an absence of normal disciplines for people to evaluate the plausibility of threat level, such as the risk assessment of non-traditional crime. Threat and risk could show in the information content that implied violence, and such violence can be expressed easily through social media (Wall, 2007). The anonymity and the freedom of speech particularly encourages cyber violence. Unlike the physical world with laws and rules, cyberspace is borderless. The absent discipline makes boundaries blurred and the consequences hard to be estimated. Right of free speech is fundamental but boundaries must be drawn.

Theses boundaries could occur in every daily online conversation and commenting, for example, a word in the discussion, or a comment to "hot" post in social media. No written rules have been designed to define the "can and cannot" do's, nor there exists an online conduct code. As a result, people are not fully aware if online positing is constituting free expression or misbehavior. The insignificant participation of a bystander can possibly be the incitation of cyber violence, which leads to series of issues - insult, defamation and bullying, and results in severe consequences.

Technology and human consciousness are the core components of cyber violence, therefore, putting effort on educating the bystanders/participants in online discussion is important for reducing cyber violence rate. People are aware of their right of free speech and being anonymous, yet less clear to them are the boundaries and the consequences of this right. Once the bystanders understand what cyber violence is, and what violence inciting behaviors are, they could monitor themselves or one another's conducts, be empathic instead of showing apathy. For such purpose, the research question is addressed:

RQ: To what extend the freedom of speech in social media incites cyber violence?

In order to answer the research question, the following sub-questions are asked:

a. *What are the boundaries between freedom of speech and cyber violence, in environments allowing anonymity?*
b. *What are the consequences of freedom of speech in inciting cyber violence, in environments allowing anonymity?*

2.2 Methodology

In this study, a literature review will be conducted. Literatures review is often used in knowledge-based and explorative studies. The advantage of using this method is its specification to a certain field of study and dedication from various scholars (Machi & McEvoy, 2016). The approach of resources used come from online and offline channels. In this one, cyber violence related literature is reviewed, in order to assess the body of knowledge on this topic and extract relevant conclusions addressing the earlier mentioned research issues.

3 CYBER VIOLENCE

3.1 Cyberspace and cybercrime

The term "Cyberspace" was first coined by William Gibson (1982, 1984) and later became popular on describing the space and environment that online activities take place. This realm of cyberspaces seems to provide a huge scope of new opportunities for criminal and deviant activities (Yar, 2013), involving abuse and misuse of the computer system, that result in direct and/or concomitant losses (Britz, 2009). The cyberspace users are exposed to motivated offenders with a potential risk of being victimized (Ilievski, 2016). The term "Cybercrime" describes these criminal activities that take place in cyberspace, explained by Wall (2007), who uses "metaphorically and emotively rather than scientifically or legally, usually to signify the occurrence of a harmful behavior that is somehow related to the misuse of a networked computer system" (p.10). Wall (2007) argues that cybercrime is the transformation of criminal or harmful behavior, not simply the behavior itself. Chawki et al. (2015) explicit that any criminal activities that related to computer use as a tool, target or both, are within the ambit of cybercrime. Mittal and Singh (2014) specified the harmful behaviors and criminal activities into acts that maybe financially driven, computer content related, or confidentiality, integrity, and accessibility of computer system violated.

The traits of being metaphorical and emotive make cybercrime difficult to be categorized into criminal law, this also explains why the existing law is likely to be unenforceable against such crime in most of the country (Shkëmbi & Sina, 2013). Likewise, despites the large and increasing number of computer offenses and violations on the internet, the knowledge of cybercrime is still low and most of the people might still not aware of the different aspects of it (Ismailova & Muhametjanova, 2016).

Wall (2007) proposed that the online offenses fall into three groups: computer integrity crime, computer-assisted (or related) crime, and computer content crime. He also sub-divided cybercrime into four established legal categories, which are cyber-trespass, cyber-deceptions and thefts, cyber-pornography/obscenity, and cyber-violence (Wall, 2001). Cyber violence has aroused a series of problems and trigger conflicts in the society. Thus, more effort is needed to raise awareness of this form of violence among the public.

3.2 Cyber Violence

Cyber Violence is one of the many forms of cybercrime. In Wall's (2001) legal categories he related cyber violence to psychological harm or incitation to physical harm against others. In fact, the concept of cyber violence is still unsettled, studies around it were based on the point of view from the researchers. Some conceptualize the act of violence. Slaninova et al. (2011) posit cyber violence is a set of acts that is done via the ICT (Information and Communication Technology) to manipulate and exploiting or harass deliberately. So does Park (2012), described cyber violence is the act that violates other's honor or rights, is the type of violence that in the format of verbal abuse in cyberspace.

Others authors address emotions and opinion in their works. Huang et al. (2016) attributed the public opinion to cyber violence, they metaphorize the public opinion to "a butterfly flapping its wings in South American can affect the weather in Central Park" (p.400), namely, public opinion reversal, that a slight change of an individual's thought is likely to suddenly reverse the public opinion in general. The more negative the atmosphere is, the more likely to reverse public opinion and change the individual's choice behavior. This thought was aligned with Sari & Camadan (2016), that internet interaction including positive and negative ones. Liu and Chen (2007) gave an explanation of how public opinion acts on cyberspace by explicating that individual tends to overlook the fact, and use

words that beyond reason to criticize the "guilty party", which forms the public opinion pressure to the victim.

Cyber violence occurs particularly frequently in Asian countries fueled by the high level of technology development and adoption and increasing access to the internet, especially among adolescents. A report of "Korea Internet White Paper 2015" by KISA (Korea Internet & Security Agency) revealed, in the year of 2014, that among 5000 respondents, 14% of the students (from elementary school to high school) had committed cyber violence acts and 19% of them had been victimized. In China, "human fresh search engine" (idea of search combine with multiple channels to dig out personal information) as one typical phenomenon of cyber violence, have caused serious public concerns. In a survey conducted by CYOL NET[3] with 1839 respondents through the internet, 6.3% of the participants admitted they had involved in a such search, 15.7% indicated they might have been involved, and 3% of them could not be sure. The majority of the respondents concern about their security in the cyberspace.

Based on above fact, this study aiming at study what put people in this insecure and uncertain situation?

3.3 The characteristics of cyber violence

The characteristics of cyber violence are emotional, psychological, and physical related (Gianesini & Brighi, 2015). In general, people feel more secured in the physical world, but in cyberspace such feeling is weakened, due to the sense of freedom, anonymity and impunity on the cyberspace maximize the chances of victimization (Pereira & Matos, 2014). When cyber violence takes place, most of the time it is difficult to identify the perpetrator (Marzano & Lubkina, 2013), something leaving victims very little resources to protect themselves.

Park (2012) gave a comprehensive description of the characteristics of cyber violence. In his work he elaborated six characteristics attached to cyber violence, which are: 1) non face to face; 2) anonymity; 3) unconstrained of temporal and spatial; 4) synchronicity and immediacy; 5) benefit and protection of the law of cyber-person and property, and 6) the difficulty of securing evidence of the crime. Among these characteristics, anonymity has been an area of concern.

Huang and Chou (2010) argued that anonymity is a unique feature and a good cover in cyberspace. With the anonymity, people tends to perceive their irresponsible behavior not particularly harmful to others because it is not "real" (Gianesini & Brighi, 2015), it gives the opportunity for one to hide or escape from the possible punishments (Marzano & Lubkina, 2013). Moreover, the anonymity encourages aggressive persona than what people may express in real life (Erdur-Baker, 2009; Herring, 2002). These arguments were supported by Mishna, Sanini and Solomon (2009), as well as Huang and Chou (2010), which their research 43.1% of the bystander whom witness the cyber incident do no aware of the given bully identify.

3.4 The causes of Cyber Violence

3.4.1 Self-governance

Anonymity undoubtedly plays an important role in the cyber violence incidents, there are however more reasons provoking cyber violence. Chen (2007) suggested that net user's online behavior is strongly personal, they are their own supervisor and executor of the behavior, violence emerged when the self-control diminished. Through the study of Chinese online user, Liu and Chen (2007) discovered that most of the violence participants perceive the online incidents entertainingly due to the nature of the internet, it is difficult to determine the veracity of the sources. The "Korea Internet White paper" supported Chen's (2007) suggestion of own supervisor and Liu and Chen's (2007) entertaining perception with the result of cyber violence execution, revealed that 22.8% of the respondents "think it interesting and help to release stress", 16.5% thinks other's thought is opposite with theirs, and 6.3% of the violent act was because "other people do so". The lack of self-governance makes people behave mindless or irritating, collectively it creates negative effects.

3.4.2 Freedom of Speech

Another reason of cyber violence incitation is freedom of speech. Though there is not yet exist a society where speech has not been limited to some extends (van Mill, 2002), this fundamental human right of free expression still being misunderstood by many of the population.

The right of free speech offers people a fair chance to participate in information sharing on the internet. Balkin (2004) emphasize "interactive and appropriative" of freedom of speech (or, free expression) in his study, stating that in the cyber world every communication is interacting and influencing, and people are free to criticize others. Indeed, communication is bilateral or even multipartite, but giving an opinion is unilateral and one should be responsible for what he or she says and be aware of the appropriateness on the saying. Balkin (2004) further stressed that even it is a repeat of other's comment, the context of the message already carries an alter meaning subjected to the speech giver. This once again illustrates the "interactive" not limited to communicating but understanding, which make the expression a crucial behavior on exercising the right.

Especially with the raise of social media increase channels of communication and interaction between people. The amount of personal data during the interaction between users provided a platform for cyber violence (Alim, 2016). Messages could spread faster and wilder through social media, particularly the negative ones, yet social media sites have sufficient action to address the violence on the site (Tian, 2016).

3.5 Forms of Cyber Violence

Cyber violence can be shown in the form of cyber insult, cyber defamation, and cyber stalking (Park, 2012), often involves privacy divulgation (Cheung, 2009), causes anxiety, depression and suicide ideation (Marzano & Lubikina, 2015). The concept is supplemented by Slaninová and Havigerová (2011) with forms of cyberbullying, online harassments, and online distribution of harmful materials. Among these forms, cyberbullying is one have been most studied. The complexity of cyber violence increases the difficulties for investigation, and decrease the resources for cyber victims to seek for protection of their rights. Many of the victim either have little money to wage the legal battle, or they do not even know whom to sue, especially such violence often happens collectively with numerous of participation (Cheung, 2009).

3.5.1 Cyberbullying

[3] China Youth Daily, official newspaper of Communist Youth League of China, http://zqb.cyol.com/

"Cyberbullying" and "cyber violence" are used interchangeably by some researchers, the terms of "cyberbullying" has been used for studying the phenomenon of cyber violence in most studies, if not all (Willard, 2006). Cyberbullying was defended as "willful and repeated harm inflicted through the medium of electronic text" (p.152) by Hinduja & Patchin (2008). Likewise, Belsey (2004) interpreted cyberbullying an act that involves the use of information and communication technologies to do "deliberate, repeated, and hostile behavior" harm to others by an individual or group. Moreover, multiple studies (Sourander et at., 2010; Gillespie 2006; cited Lowry et al., 2016) agreed cyberbullying involved not only aggressive behavior, but typically an imbalance of power and this imbalance power even cause more psychological and emotional damages than traditional bullying does.

Based on that, it can be seen the core characteristics of cyberbullying - aggressiveness, intention, repetitiveness, and the power imbalance. These core characteristics were also accepted by various scholars (Li, Cross & Smith, 2012; Dooley, Pyzalski, & Cross, 2009). In addition to this, Sari and Camadan (2016) identified violence tendency, which significantly predicts and defines the characteristic of cyberbullying occur verbally or emotionally, as it involves aggression behavior.

In terms of the forms how cyberbullying could occur, there is a general agreement on that the cyberbullying can range in scope from flaming, to harassment, to stalking (Li, Cross & Smith, 2012). One comprehensive categorization provided by Willard (2006) includes 7 types of cyberbullying activities as present below:

Flaming – sending aggressive message;
Harassment – iteratively sending offensive message;
Cyberstalking – repeating to send threats of harm or highly intimidating message;
Denigration (put-downs) – posting false or brutal statements;
Impersonation – pretending to be someone else to behave negative or place the person in danger;
Outing and Trickery – posting or forwarding message that contains sensitive, private information about another person. Engage in tricks to collect embarrassing information and make it public.
Exclusion – deliberately delete a person from online group (Willard, 2006).

The above forms show a clear trace of verbal violence (sending or posting messages, or publish information) in an important execution role of the cyberbullying. This fact is supported by KISA[4] for their report that reveals verbal violence accounted for 16% (the most) among the several types of cyber violence in Korean in 2015. Verbal violence should not be neglect when studying cyberbullying, as Willard (2006) explained, a harmful behavior could be done through sending or posting text or image. However, people often warrant official intervention only if the physical injury is evident, otherwise tolerant the abusive behavior, for example, verbal violence (Berns, 2004). This behavior might not have an immediate effect or direct physical manifestation, nevertheless, the victim can still suffer from long-term psychological harm as a consequence (Wall, 2007).

3.6 The role of social media in cyber violence

Social media had been proved to be a platform for cyberbullying. This term includes different types of classic social media platforms, for instance, web logs, content communities, social networks, forums/bulletin boards and content aggregators (Constantinides, 2014), and new variants especially developed for cyber violence purposes. This varies from blogs, to webpages and chat room (Li, Cross & Smith, 2012) to hate sites, video games and happy slapping, which people recording the attack on the victim (Alim, 2016). Of which Facebook and Twitter (Bellmore, Calvin, Xu, & Zhu, 2015; Kwan & Skoric, 2013; Pieschl, Porsch, Kahl, & Klockenbusch, 2013, cited by Sari & Camandan 2016), as well as Weibo in China (Ma et al., 2016), have became the new media trend of cyberbullying.

A better explanation of use of social media as tool for cyber violence can refer to "human flesh search engine", a bizarre phenomenon in China. This is not one simple search site but an idea of combining classic and new variants of social media platforms, to aggregate contents (Constantinides, 2014), and mobilize thousands of individuals for one single aim, "to dig out facts and expose them to the baleful glare of publicity" (Bai & Ji, 2008). The "human fresh search engine" purposed on tearing apart the lives of individuals, disclosing privacy (Cheung, 2009) and even passing moral judgment (Liu & Chen, 2007). The process of "human flesh search engine" is complex that involves collecting information from different sources, from victim's own social network or others channels, and exposing the information in a common platform that allows intensive and concrete viewing. Such action usually results in information invasion (Cheung, 2009) and false information, leads to cyber disorder and incites harassment or cyberstalking against targeted victim in a vicious circle. Not surprisingly, this phenomenon of "Human flesh search" has fellen into cyberbullying categorization with harassment, cyberstalking, denigration, and outing that in response to Willard (2006).

3.7 Boundaries and Consequences of cyber violence

The boundaries between freedom of speech and cyber violence will be focusing on moral and legal aspects in this section, while the consequences will be concentrated on the psychologically and physically harm to victims and society.

3.7.1 Boundaries between free speech and cyber violence

With the understanding of the definition of each concept that relevant to this subject, the boundary between freedom of speech and cyber violence for online conduct thus able to be established. To answer the first question (*What are the boundaries between freedom of speech and cyber violence, in environments allowing anonymity?*), we observe that under the premise of anonymity, the boundary between free expression and violence incitation should be set based on legal restraints and self-governance.

According to article 19 of "Universal Declaration of Human Rights", "everyone has the right to freedom of opinion and expression; the right includes freedom to hold opinion without interference and to seek, receive and impart information and idea through any media and regardless of frontiers" (United Nation,1948). Though it is clear by law that people have the right of free expression, it nevertheless restrains. Article 19 of "International Covenant on Civil and Political Right" supplements this right "carries with it special duties and

4 "Korea Internet White Paper 2015" by Korea Internet & Security Agency (South Korea), as shown above.

responsibilities...shall only be such as are provided by law and are necessary: a) for respect of the right or reputation of others; b) for the protection of national security of public order, or of public health or morals." (United Nation, 1976). Up to now, it should no more be ambiguous that the cyber world is not an absolute free space, expression should strictly follow the law and social morality.

The legislation of freedom of speech from United Nation is implementing in other conventions in the world, for instance, article 10 in European Convention on Human Rights, article 13 in American Convention on Human Right, and article 9 in African Charter on Human and People's Rights. Thus it can be seen that the basic principles of freedom of speech to be no violation of other's right or reputation, and no disturb to public order, are generally agreed. Individuals should be liable for any conducts contrary to the basic principle freedom of speech, including insulting or defamatory remarks against others (Chueng, 2009).

However, the nature of the internet makes it resistant to control or monitor, regulations on freedom of speech on the internet can also be circumvented easily (Milland, 2001). Anonymity promotes freedom of expression and allows people speak out their thoughts without physically harming others (Chawki, Darwish, Khan, & Yagi, 2015), but should always remain within the law. An experiment conducted by Dillon et al. (2016) found "threats of physical violence, person ridicule/harassment, and profanity/derogatory terms" on a repeated basis determine cyberbullying. Aligned with Kontostathis et al (2013), these researchers deem that language used in conversations make cyber violence easy to identify. In addition, Zhou's (2010) study disclosed the collective unconsciousness, blind conformity incites irrational behavior, which leads to the language used easily be transferred to verbal violence, especially with the vulgarization of media language make the improper words seems proper, again emphasizes the factor of language use in inciting cyber violence.

Knowing this, it is then easier to identify the boundary of freedom of speech and cyber violence. Despite other possible factors, language use is one easy identification. The characteristics of cyber violence – emotionally, psychologically and physically related – provide a baseline of language formulation when individuals are participating in online discussions, the framing of words should not cause emotional, psychological and physical harm to the others. Moreover, all these must be conducted within the range permitted by the constitution and the laws.

Back to the first cyber case in the beginning of this study. The Chaoyang District Court of China[5] delivery the sentence, Zhang (friend of the suicide wife Jiang) and his website Oriochris.cn that purposely against Wang (the unfaithful husband of suicde wife Jiang), along with Daqi.com, was found liable by the court in Beijing and was order to pay in total RMB8000 to Wang. As Tianya.com removed the material within a reasonable time, it was found not guilty (Chueng, 2009). In this case, Zhang was guilty for the violation of Wang's right of privacy and reputation. Unsurprisingly of the judgment as Zhang has obviously broken the law by disclosing personal information of Wang's and the relevant parties', and resulted in psychological suffering and even physical threat offline. Consider the boundaries establishment that was discussed earlier, based on the legal restraint and self-governance, Zhang clearly has crossed it. Though the liability of other people who involve in this cyber violence was not be judged by court consider the among of population, it ought not to be neglect.

3.7.2 Consequences of freedom of speech in inciting cyber violence

Mill (1966) in his work 'On Liberty' assumed that the consequences of an action assist people to evaluate the rightness and wrongness of it, by believing the morality it produces.

When people talk about the right of free speech, it is unavoidable to mention about the consequences. When it is related to cyber violence, it should not neglect the effect and impact of cyber violence to victims or to the society. Research suggests being cyberbullied is strongly associated with self-esteem and loneliness, especially on reputation attacks (Brighi et al., 2012). Other researches debate the cause and effect of victimization – whether being victimized cause lower self-esteem, or lower self-esteem makes it more likely to become a victim (Cross, Li, Smith & Mons, 2012). The planting of a bad thought can result in challenges on building self-esteem and confidence (Alim, 2016). Low self-esteem decreases the evaluation of one's self and increases the risk of subsequent depression (Brown et al., 2009), and depression could also be both a result and a reason for being bullied, or even independent from depression, cyberbullying could increase the likelihood of severe suicidal ideation (Kaltiala-Heino et al., 1999).

Based on this, the sub question 2 (*What are the consequences of freedom of speech in inciting cyber violence, in environments allowing anonymity*?) can be answered. The anonymity hides people's envy and resentment and helps them to escape possible punishment (Marzano & Lubkina, 2013). This is when the possibility of planting negative thought takes place. Freedom of speech has been abused by people as a tool to vent the dissatisfaction about the real world, and the one dissatisfied speech often easily to trigger another, and incite the attacks (Liu, 2013).

Looking back to the second cyber case presented at the beginning, people express their thoughts and feeling directly without investigating the credit of the incident. As the suicide boy Zeng's last posts – "those who wanted me dead, now have you wish", indicates no less than one individual posts an inappropriate comment that implies death to the victim, which in some degree lead to his death. The lack of self-governance leaves people little to no sense of social responsibility and behavior in an irresponsible manner. It is unfortunate to illustrate the severe consequence of freedom of speech by the death result in this case.

4 CONCLUSION AND RECOMMENDATION

The purpose of this study was to determine to what extend freedom of speech incites cyber violence. As the result displayed, freedom of speech, insofar beyond law restraint and self-governance could consequent in a different level of harm to victims. To reach this conclusion, this study first introduced cyber violence, including its characteristic, forms and causes. Then discuss the boundaries and consequences between the concept of freedom of speech and cyber violence, based on the given knowledge of cyber violence presented (also see Table 1). This study referred to two cyber violence cases for better elaborating the given concepts.

[5] http://www.chinacourt.org/index.shtml

	Freedom of Speech	Cyber violence
Boundaries	• Freedom to hold opinion without interference and regardless of frontiers (UN,1948) • Respect of the right or reputation of others; protect of national security of public order, or of public health or morals (UN, 1976)	• Circumvented the regulations (Milland, 2001) • Threats of physical violence, person ridicule/harassment, and profanity/derogatory terms (Dillon et al., 2016) • Collective unconsciousness, blind conformity (Zhou, 2010)
Consequences	• Exercise of "rights to freedom of opinion and expression" (UN, 1948) • Assist to evaluate the rightness and wrongness, and produced morality (Mill, 1966)	• Reputation attacks (Brighi et al., 2012) • Victimization – Self-esteem (Cross et al., 2012) • Self-esteem – Confidence (Alim, 2016) • Subsequent depression (Brown et al., 2009) • Severe suicidal ideation (Kaltiala-Heino et al., 1999)

Table 1: Summary of Boundaries and consequences between Freedom of speech and cyber violence.

Up to now, it should be clear about the concept of cyber violence, the association with freedom of speech, and the consequences of misuse of the social media. Cyber violence can happen to anyone who is using the internet, back to the very beginning of this research, when you encounter, what would you do?

Encounter a cyber violence could mean being a witness or a victim, either the situation, correct actions should be taken.

4.1 Victim Perspective

Evidence shows that even the victim knows their bully they are reluctant to report (Huang, Chou, 2010; Li, 2007). With the existing studies, a number of strategies was identified by scholars, and be favored by victims, for instance, technical use to block the bully or seeking support are considered effective (Machackova et al., 2015). Machackova and collogues (2015) propose this effectiveness of response (problem or emotionally focused strategies) to cyberbullying is based on the severity of it, they further stress the importance of the effect of purposeful ignoring (the decision to ignore something without doing anything active to change the situation) on helping stop the bully. Riebel, Jager, and Fischer's (2009) study line up with seeking support and advice the victim to call for social support to cope adequately due to the imbalance of power trait of cyber violence. In general, it is encouraged to seek help or legal protection.

4.2 Bystander Perspective

Excluding the victim and the bully, bystanders is the largest group involves in cyber violence but the least one that is likely to take actions, due to the absent sense of social responsibility (Huang &Chou, 2010). Therefore, to increase the sense of social responsibility and morality is important through education. Dillon et al. (2016) found the language used to be an easier way to identify cyber violence, as such, bystander should be aware of their language use when participating on the internet to avoid violations. Scholar stress the importance of individual's rationality in cyber participation, emphasizing one should speak out with rational language when exercising their right of free speech, instead of emotional abreaction (Liu, 2013).

To sum up, this study propose behavior beyond legal and moral (self-governance in terms of social responsibility) incites cyber violence and the effect enlarges by bystanders' participation, and it consequents in different levels of damage to victim or society. For further research on this topic, it is recommended to go deeper in the language use in social media that relate to cybercrime for a better evaluation of net user behavior and participation. Victims of perpetrators are among the group of bystanders; it therefore needs more attention and effort on studying.

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The Future of Cognitive Computing in Marketing Areas

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ABSTRACT
We have entered the cognitive computing era, according to Kelly (2015). With computers getting increasingly smarter, faster, and more accessible for cognitive computing capabilities, this paper takes a glance at what is to be expected for marketers and the field of marketing. A literature review was conducted and some clear indications of what will be in store for marketers have been found. Findings include an large-scale increase in data trading, computers being able to judge personalities better than humans, and the dangers of cognitive computing will be debated. This paper presents suggestions for future studies in the field of cognitive computing and marketing.

Keywords
Cognitive computing, marketing, artificial intelligence, big data, analytics

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: Why this topic?

I have always been fascinated by the advances in artificial intellect. With the rising popularity of big data, of which the interpretation and integration within marketing areas being facilitated by cognitive computing capabilities, I felt the importance of researching the forthcomings on this subject.

1. INTRODUCTION

Ever since IBM's Watson computer made an appearance on the television quiz show Jeopardy!, where it bested two of the grand champions, millions of people realized how smart a computer can be. The machine processed more than one million pages of information to achieve this (Kelly & Hamm, 2013). A more recent example is Google's AlphaGo. Google's AlphaGo demonstrated that computers can learn and think in a way similar to humans. AlphaGo defeated the world champion of Go[1] by playing millions of games with itself, while accordingly learning from its own mistakes and improving its own capabilities and skills in the game. These examples demonstrate that big data is key for cognitive computing or self-learning machines.

The goal of this research paper is to find how cognitive computing will shape the marketing area over the upcoming decade. With notions about cognitive computing dating back to the 1950s and current developments as demonstrated above, some people claim that the cognitive computing era has started.

In this paper, cognitive computing will briefly be explained at its core. Followed by a brief overview of the history of cognitive computing and artificial intelligence. The hazards and dangers of cognitive computing will also be discussed. Subsequently, findings in recent studies of cognitive computing in a marketing area will be analyzed and discussed. Nonetheless, the primary goal of this paper is to find indications of how cognitive computing capabilities will shape the field of marketing in the upcoming decade.

2. COGNITIVE COMPUTING

2.1 Defining Cognitive Computing

The definition of cognitive computing is a topic of debate in the computing community, according to Chen, Ying, Argentinis & Weber (2016). They mention that cognitive computing is often associated with artificial intelligence, a technology covering a broad aspect of human intelligence, including skills such as reasoning, problem solving, perception and the ability to manipulate objects. Important to note is that cognitive computers owe their ability to the large amounts of data they can analyze and accordingly process to feed machine learning algorithms the machines are based on (Coccoli, Maresca, & Stanganelli, 2016).

Wang, Zhang & Kinsner (2010) define cognitive computing as an emerging paradigm of intelligent computing methodologies and those systems based on cognitive informatics implementing computational intelligence by autonomous inferences and perceptions that mimics the mechanisms of a brain. According to Wang, Zhang & Kinsner (2010), computing systems and technologies can be distinguished into three categories, namely, imperative computing, autonomic computing, and cognitive computing. Imperative computers are those computers that are based on stored program controlled behaviors for data processing. Autonomic computers are goal-driven and self-decision-driven machines, while not relying on instructive and procedural information. Finally, cognitive computers are the more intelligent type of computers, embodying major intelligence behaviors of the brain such as think, inference, and learning.

For this research paper, the definition used by Chen et al. (2016) will be used, namely, "cognitive computing refers to a combined subset of these technologies that read, reason, learn, and make inferences from vast sets of unstructured content". In which, these technologies refer to a combination of cognitive computing and artificial intelligence capabilities.

[1] Go is considered the most complex strategic game humans play.

2.2 History of Cognitive Computing

In 1950, Turing came up with a theory resembling cognitive computing. Turing argued that "instead of trying to produce a programme to simulate the adult mind, why not rather try to produce one which simulates the child's? If this were then subjected to an appropriate course of education one would obtain the adult brain". This notion introduces the self-learning aspect of computers.

The first time the term artificial intelligence was coined, was in 1956. McCarthy, Minsky, Rochester & Claude (1956) proposed to attempt finding how to make machines use language, to form abstractions and concepts, to solve problems which were reserved for humans, and to improve themselves. The research by McCarthy and many others gave us important insights into requirements for intelligent action and defining much of the formal theory of artificial intelligence (Buchanan, 2005).

In 1980, the American Association for Artificial Intelligence was founded. The American Association for Artificial Intelligence currently offers members and artificial intelligence scientist numerous services and benefits, such as conferences, workshops, a digital library, scholarship, journals, and an artificial intelligence magazine (Buchanan, 2005).

There were some significant moments in the history where artificial intelligence or cognitive computing made a public appearance. In 1997, Deep Blue computer chess system, developed by IBM, defeated the then-reigning champion in a six-game chess match (Campbell, Hoane & Hsu, 2002). In 2011, IBM's Watson, a cognitive computing system, bested two of the grand champions on the television quiz show Jeopardy! (Kelly & Hamm, 2013). One of the most recent public events was Google's AlphaGo. In March 2016, AlphaGo bested the world best Go player, Lee Sedol, which is considered a huge achievement in artificial intelligence (Lee et al., 2016).

Kelly (2015) reported that there are two distinct eras of computing leading up the cognitive computing era, as they argue. The tabulating era, from 1900s to 1940s, was the first computing era consisting of single-purpose mechanical systems that counted, using punched cards to input and store date, and instructing the machine what to do. The 1950s to the present are known as the programming era, in which digital computers performed if/then logical operations and loops, with instructions coded in software. Finally, the cognitive era started in 2011 (Kelly, 2015). While the cognitive era has just started, according to Kelly (2015), theories and research in cognitive computing date back to more than half a century ago, as previously examined.

2.3 Hazards of Cognitive Computing

Increasing volumes and variety of data combined with the sophistication of advanced analytics capabilities is predicted to have larger risks than typical IT projects experience. It is forecasted that by 2018, 50 percent of business ethics violations will occur through improper use of big data analytics (Press, 2016).

Hopkins, Doty & Belissent (2015) predict that inexperienced data science teams will inadequately exploit algorithms. Hopkins, Doty & Belissent (2015) also state that it will still require a significant amount of skill on how to fit generic algorithms to specific practices and that inexperienced firms will waste time on either developing an algorithm that could be bought or incorrectly trying to apply algorithms.

3. MARKETING AND COGNITIVE COMPUTING CAPABILITIES

For this research, we use the definition of marketing as approved by the American Marketing Association, namely, marketing is the activity, set of institutions, and processes for creating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large (AMA, 2013).

With an estimated growth in data of 800 percent in the next five years, while 80 percent being unstructured, which includes everything humans have recorded (Kelly, 2015), it is important to effectively make use of it in the marketing industry. Cognitive computing capabilities could possibly increase the ease and availability for marketers to interpret data.

At this moment, IBM's Watson Analytics may be one of the answers for marketers to cope with the vast growth of data. Watson Analytics is powered by cognitive capabilities which uses complex analytics in minutes on tasks that previously could take months. IBM (2016) states on their website that Watson Analytics it can automatically identify factors that will most likely influence campaign responses or product selection in a test market. Accordingly, Watson Analytics should be able to answer questions marketers could have, such as, "*How can I target the hottest leads?", "How can I create more successful campaigns?",* and "*What other opportunities can I find?".* However, these questions can only be answered if the marketer actually possesses the right data. It is worth noting that cognitive computing programs, such as IBM Watson Analytics, still have limitations, for instance with semantic search. Semantic search, which refers to the study of the meaning of language, is an important aspect of cognitive computing. Earley (2015) states that computers are good at solving problems that have logical steps and clear rules and structures. The challenge of semantic search lies with language being ambiguous and subject to interpretation. The notion that cognitive computing still needs a structural foundation even as machine learning algorithms enter the equation (Earley, 2015), implies that there are still improvements required in current cognitive systems.

Youyou, Kosinksi & Stillwell (2014) found that computers' judgments of people's personality are more accurate than those made by humans. This means that people's personality can automatically be predicted without involving human social-cognitive skill. Youyou, Kosinksi & Stillwell (2014) also report that with potential growth in both sophistication of computer models and the amount of digital footprint might lead computer models to outperforming humans even more decisively. The results of their research are important for marketers, as it implies that judging personalities for marketing purpose can better be performed by computers than humans.

Exchanging raw data may become an important business for marketers. It might even become a necessity. Either buying, selling, or exchanging data will bring new opportunities for marketers on various fields. Hopkins et al. (2015) report that in 2014, 10 percent of the firms tried to sell their data, while in 2015 this percentage increased by 200% to 30 percent of the firms. Buying or trading data makes it possible for marketers to gain new insights in markets, consumers, and other situation or industry specific information.

4. DISCUSSION

There seems to be a significant research gap in cognitive computing in marketing areas. For that reason this research paper includes some cases taken from the field. These cases are to indicate to possibilities in future research and to highlight topics of interest in the field of marketing.

First, I would like to highlight a discussion by Youyou, Kosinksi & Stillwell (2014), who found that computers were better capable at judging people's personalities than humans. They discussed that knowledge of people's personality can also be used to manipulate and influence them. This could possibly cause distrust or rejection of digital technologies as people realize that, for instance, their own government, internet provider, or online social network can infer their characteristics more accurately than their closest friends and family. Besides that, Youyou, Kosinksi & Stillwell (2014) argue that their research, along with developments in robotics, provide enough empirical evidence that a scenario, in which computers can understand and respond to peoples thoughts and needs in a much better manner than humans can, is becoming increasingly likely, as tools for digital assessment mature. Such a development would shape the field of marketing in a tremendous manner in the next decade, as marketers will be able to assess consumers' needs and act accordingly.

Cognitive computing and artificial intelligence thrive on big data, as demonstrated in this paper. We can indicate that big data comes with great responsibility. However, there is no explcit research in the field of what risks or hazards cognitive computing brings in any situation. Therefore, this topic might be interesting for further research.

Cognitive computing makes raw or big data more accessible for a broader range of marketers and industries. It can be considered that due the increased ease of interpreting raw data by using cognitive computing, that marketers, organizations, and other institutions will increasingly buy, sell and share raw data in the next decade. This could trigger numerous ethical issues. It could be very interesting to research what would happen when companies would start trading data in huge quantities.

Finally, I would like to note that there is a clear lack of studies in cognitive computing capabilities in marketing fields, or other fields of practice in general. I belief that more research is required in order to actually enter the cognitive computing era. By that being said, it is to be assumed that in the next decade a lot can happen to cognitive computing capabilities in marketing areas, because people tend to learn the importance of data.

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New approaches and sources of data – what are the roles of neuroscience, artificial intelligence, cognitive computing, machine learning?

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ABSTRACT

In recent years, the emerging fields of neuroscience (neuromarketing), machine learning, artificial intelligence (AI), and cognitive computing have gained increased popularity in business research and also in a marketing context. Therefore, the purpose of this paper is to review current academic literature related to marketing in order to understand influences on the traditional marketing practices and the daily work of marketers. Yet, the most literature is available about neuroscience in marketing, which is also the reason for the new emerging research area called "neuromarketing" or "consumer neuroscience".

An increasing use of neuroscience, machine learning, AI, and cognitive computing techniques for the evaluation of consumer behavior, customer preferences and decision-making can deliver particular insights of a target group. Furthermore, the success or failure of advertising campaign and communication and branding strategies could be evaluated more in detail. Marketers would be able to make efficient use of unstructured data to better adjust the overall marketing strategy. However, it needs to be recognized that not only the work of marketers would be influenced but also targeted marketing will further influence consumers and may manipulate their free will.

Keywords

Neuroscience, Neuromarketing, Artificial Intelligence, Cognitive Computing, Machine Learning

MSI Topic nr.4: New data, new methods, and new skills — how to bring it all together?

The author's view:

The four introduced approaches lack on advanced literature and studies that highlight the benefits and possible advantages for marketing strategies. These four fields are steadily growing and their importance for marketers will further grow as well. An overview of actual literature is necessary to prioritize future research.

1. INTRODUCTION

1.1 Relevance of Topic

In 2016 the Marketing Science Institute (MSI) published its report with relevant research topics for the next to years. This report should help to set priorities for future research and names topics or specific fields of research in marketing where current research is lacking (Marketing Science Institute, 2016). Within the actual report, the top five research priorities are highlighted based on the answers of every MSI member company Trustee. The present paper focuses on a topic out of research priority number four: "New data, new methods, and new skills – how to bring it all together?" (Marketing Science Institute, 2016). Therefore, this literature review focuses on neuroscience, artificial intelligence, cognitive computing, and machine learning as new approaches and sources of data for different marketing activities.

In general it can be argued that research and academic literature related to these four topics is still lacking, without a clear focus on specific marketing practices or techniques. The most relevant studies exist in the field of neuroscience or even called neuromarketing (Plassmann et al., 2007; Perrachione & Perrachione, 2008; Kumar et al., 2013). Traditionally, neuroscience is highly important in the medical industry and for psychology but the resulting neuromarketing offers several benefits for the economic sector through new data insights (Sanfey et al., 2006; Huber, 2010). Scholars like Sanfey et al. (2006) mentioned that neuroscience represents a basis for the explanation of consumer behavior. By talking about machine learning, often the term "data mining" is also mentioned due to the fact that both relate to research areas of compute science. Furthermore, often machine learning algorithms are used to structure the unstructured data from data mining process (Fürnkranz et al., 2012). Data mining in combination with machine learning provides an effective tool for direct marketing to target customers (Ling & Li, 1998) because a lot of customer information is kept in databases.

The need for artificial intelligence-based systems for marketing practices is already known. Certain studies focus on its use for new product development (Rao et al., 1999) or its implication for industrial marketing (Martínez-López & Casillas, 2013). However, the use of artificial intelligence-based system can promote the decision of marketers, which are usually based on human judgment (Martínez-López & Casillas, 2013).

Finally, the field of cognitive computing related to marketing, represents the area with the lowest amount of relevant literature. One book from Kelly and Hamm (2013) concentrates on IBM's Watson computer software and the resulting era of cognitive computing. Most information can be found online at blogs or on IBMs website for Watson.

1.2 Current Situation

1.2.1 In neuroscience/neuromarketing

The field of neuromarketing emerged in 2002 through the use of neuroscience method for marketing practices (Morin, 2011). In current marketing research, existing knowledge about neuroscience is used to identify brain reactions to adverts and how it is affected by marketing strategies (Khushaba et al., 2013). There already exist a lot of relevant literature that focus on neuroscience and brand preferences (Venkatraman et al., 2012), consumer behavior and decision-making (Kenning, Plassmann & Ahlert, 2007; Smidts et al., 2014) or on neuroscience for advertisers (Plassmann et al., 2007). Neuromarketing is the most researched and elaborated field in comparison to the other three areas.

1.2.2 In machine learning

The importance of machine learning in combination with data mining and the arising Big Data phenomenon has increased over the decades (Mitchel, 2006). Actually the designed algorithms helped managers in all areas to handle the huge and steadily growing amount of unstructured data. However, it is still a research area of computer science and its possible benefits for the marketing sector are slowly recognized (Fürnkranz et al., 2012). But already Ling and Li (1998, p. 1) stated that during the 1990s "data mining, an integration of machine learning, computer visualization, and statistics, has been used widely in direct marketing". Within their study they proved that data mining is more effective as a tool for direct marketing than traditional mas marketing. Therefore they studied three different datasets from the bank, insurance, and retail industry.

1.2.3 In artificial intelligence

Like already mentioned above, does the paper of Martínez-López and Casillas (2013) focus on artificial intelligence (AI) systems in industrial marketing and already at the late 1990s Rao et al. (1999) focused on AI methods for new product development as marketing practices. Within the book "Marketing Intelligent Systems Using Soft Computing" by Casillas and Martínez-López (2010) different marketing and management scholars contributed to each chapter. The first chapter from Berend Wierenga (2010) a marketing professor from the Erasmus University in Rotterdam focuses on marketing in combination with artificial intelligence. In this chapter Wierenga (2010, p. 2) argues that especially artificial intelligence-based systems "can make an important contribution to marketing decision making". Additionally, several opportunities for AI are presented in this chapter and will be introduced in part 3. However, artificial intelligence is still a research area with scarce attention in journals that focus primarily on AI methods and applications for marketing (Martínez-López & Casillas, 2013).

1.2.4 In cognitive computing

Actually there is a limit amount of academic literature, which focuses on the field of cognitive computing and its role or opportunities for marketing activities. Within the search engine Web of Science, the term "cognitive computing" was entered (6.320 results) and the results were again refined by the term "marketing". Finally 59 results were left and most of these articles are related to computer science or electrical engineering. The study by Syzmanski and Hise (2000) mentioned that cognitive computing delivers insights for e-retailing and best practices in e-commerce. The most reliable information related to cognitive computing are available on different websites of IBM that focus on their cognitive computing software called Watson. Therefore, this paper will concentrate on IBM Watson as an example for cognitive computing opportunities in marketing.

1.3 Definitions

1.3.1 Neuroscience/Neuromarketing

The term neuromarketing was developed out of the general term neuroscience (Plassmann et al., 2015). In general, research of neuroscience seeks to understand the structure and function of our brain (Perrachione & Perrachione, 2008). This opportunity of "getting inside the heads" of customer was recognized by marketers and researchers at the beginning of this century (Perrachione & Perrachione, 2008). According to Plassmann et

al. (2012, p. 18) neuroscience "is the study of the nervous system that seeks to understand the biological basis of behavior". Different techniques like EEG (electroencephalography), MEG (magnetoencephalography), and fMRI (functional magnetic resonance imaging) were developed as neuromarketing techniques to explore consumer decision-making, for example (Plassmann et al., 2007). The data gathered by neuromarketing techniques can be used to explain product or brand preferences and the influence of different advertising campaigns (Venkatraman et al., 2012).

1.3.2 Machine Learning

Machine learning is often described as an artificial intelligence approach (Michalski, Carbonell & Mitchell, 2013), which efforts have grown over the past 50 years (Mitchel, 2006). Furthermore, in current literature it is often used in combination with data mining because both are research areas of computer science (Fürnkranz et al., 2012). Mitchel (2006, p. 1) described machine learning as "a natural outgrowth of the intersection of Computer Science and Statistics" that "has spun off an industry in data mining to discover hidden regularities in the growing volumes of online data". In addition, data mining can be described as "the process of discovering interesting patterns in databases that are useful in decision making" (Bose & Mahaptra, 2001, p. 211). Over the decades, machine learning became a broad discipline that produces learning processes and designed learning algorithms for computers (Mitchel, 2006). Nowadays, it represents a useful tool to handle Big Data and make efficient used of gathered data by data mining techniques.

1.3.3 Artificial Intelligence

Same as machine learning is artificial intelligence a growing discipline and area of research since a few decades (Rao et al., 1999). The core focus lies on the "development of valuable, automated solutions […] to problems which would require the intervention of intelligence if done by human beings" (Martínez-López & Casillas, 2013, p. 489). According to Rao et al., (1999, p. 233) exist several definitions of AI but the essence is still the same: "AI is a discipline that is concerned with the study and creation of computer systems that exhibit some form of intelligence. […] that can learn […], reason and draw useful conclusions […]; understand a natural language; perceive and comprehend a visual scene".

Furthermore, important topics in AI are for instance knowledge representation, reasoning, expertise or pattern recognition. In addition, all these elements are relevant for the daily life of marketing managers, who make decisions about products, advertising, distribution channels and further more (Wierenga, 2010). For this reasons artificial intelligence deals with human intelligence and its representation in computers (Wierenga, 2010).

1.3.4 Cognitive Computing

The implementation of cognitive computing initialized the cognitive era (Kelly & Hamm, 2013). The magazine *Forbes* highlighted that cognitive computing is often described as the third era of computing, after computers that were able to calculate sums and programmable systems (Forbes, 2016). A big step into public was done with the use of IBMs Watson in a quiz show named "Jeopardy!". Their IBM demonstrated that a computing system could beat human brains in a question-and-answer competition. The goal of Watson was to push boundaries of science and technology to develop a machine that is able to learn, to handle information and interact with people (Kelly & Hamm, 2013). Through this ability, cognitive computing is also related to the field of artificial intelligence. In business literature cognitive computing is described as a "consumer-oriented approach to site design and management" (Syzmanski & Hise, 2000, p. 309).

1.4 Goal of study

1.4.1 Academic relevance

Like already mentioned before, does the four introduced approaches lack on advanced literature and studies that highlight the benefits and possible advantages for marketing strategies (Venkatraman et al., 2012; Martínez-López & Casillas, 2013). Traditionally, the papers of these areas relate to Computer Science but they could also highly contribute to management and business issues within academic literature.

1.4.2 Practical relevance

An overview of the current state of research of neuromarketing, machine learning, artificial intelligence, and cognitive computing could increase the understanding of these topics in marketing. Additionally, a better understanding of each topics and its relevance for a successful marketing strategy supports marketers to develop more suitable approach for branding processes, distribution channels and other practices.

On the basis of the previous introduction to the topic and its argumentation, the following research questions evolved:

What are potential influences of neuroscience, machine learning, artificial intelligence, and cognitive computing on actual marketing practices?

2. METHODOLOGY

In order to identify the role and possible influences of neuroscience, machine learning, artificial intelligence, and cognitive computing on actual marketing practices, the present paper analyzes several relevant and academic literatures concerning the introduced topic. The topics will be elaborated in form of a critical literature review that will organize each part thematically. Within this critical literature review the most popular and important academic literature in each particular field will be reviewed. Thereby the focus lies on the data each field can contribute to marketing practices.

The key search terms used to get access to relevant literature were primarily "neuromarketing", "machine learning", artificial intelligence", and "cognitive computing" but also in addition with the term "marketing". Therefore, online search engines like Google Scholar and the online library of the University of Twente were used. The language was limited to only English and German results in Google Scholar.

The first part includes a general introduction as well as a description of the current situation within each field. Furthermore, each topic will be defined and the goal of this paper will be summarized. Secondly, the chosen method for this paper will be presented. The third part, the literature review will be organized thematically and related to marketing; beginning with neuroscience, followed by machine learning and artificial intelligence and will end with cognitive computing. According to the overall topic of this paper, the eight traditional marketing practices will explained. Within the result section, the four different fields will be linked with the marketing practices and the influences they have on these practices will be elaborated more in detail. In the last part an overall conclusion will be given.

3. LITERATURE REVIEW

3.1 Neuroscience in Marketing

The ongoing use of neuroscientific methods in combination with economic theory leads to the development of a new approach called *neuroeconomics*. Within the wider field of marketing this is called *neuromarketing* or *consumer neuroscience,* which investigates marketing-relevant problems through neuroscientific approaches (Hubert, 2010). Smidt et al. (2014, p. 259) highlighted the "direct relevance to practice" as a unique feature of consumer neuroscience. In comparison to machine learning, AI, or cognitive computing are scholars aware of the advantages of physiological measurements for marketing for at least two decades (Lee et al., 2007). At first, strong progress has been in the overall understanding of how neuroscientific methods can help to understand consumer decision-making (Smidts et al., 2014). Recently, neuromarketing has become an important application for marketing managers to back their decisions for advertising and branding strategies, for instance (Lee et al., 2007). This growing importance and application in marketing led to a growing amount of neuromarketing companies or agencies (Lee et al., 2007; Smidts et al., 2014). Most of these companies offer biometric methods such as eyetracking or facial coding (Smidts et al., 2007). Ad testing and consumer choice-making are popular subjects for neuromarketing research and of high interests for marketing departments (Lee et al., 2007; Smidts et al., 2014). Overall it can be said that neuromarketing make use of different techniques from neuroscience to explore brain processes with a focus on marketing practices such as customer decision-making. Therefore, papers focus consumer neuroscience in general (Smidts et al., 2014), specifically on advertising and what advertiser can learn from neuroscience (Plassmann et al., 2007), or what topics need to be addressed in future research (Lee et al., 2007).

3.2 Machine Learning in Marketing

In recent years machine learning techniques are used for data analysis and pattern discovery from databases. Therefore, it can play a key role in the further development of data mining applications to make efficient use of unstructured data (Bose & Mahapatra, 2001). One reason for the steadily growing amount of business related data is the Internet (Shaw et al., 2001). The actual technology of data warehouses enables organizations to analyze large volumes of business data. And additionally, the emerging field of artificial intelligence created a set of machine learning techniques (Bose & Mahapatra, 2001). In another article, Bose and Chen (2009) reviewed quantitative models for direct marketing. Within this paper, they argue that machine learning supports direct marketing due to the fact that personalized advertising and direct contact can be targeted to specific customer groups. Furthermore, Bose & Chen (2009) examined the different machine learning techniques for data mining (see Appendix 1a) and mentioned that ANN is the most popular technique. Such techniques are used to extract patterns from Big Data (Shaw et al., 2001) and it allows marketing manager to create market and customer segmentations more in detail (Smeureanu et al., 2013).

Bose et al. (2001) mentioned slightly different major categories of machine learning techniques, namely: rule induction; neural networks; case-base reasoning; genetic algorithms; and inductive logic programming.

The use of machine learning or data mining techniques can help marketers to uncover hidden knowledge and improve customer understanding (Shaw et al., 2001). Therefore, data mining makes use of a broad range of computational methods like statistical analysis, decision trees or graphic visualization (Shaw et al., 2001; Bose et al., 2001). In the field of marketing, data mining applications are included in retail sales anaylsis, product performance analysis or market segementation, for insctance (Bose et al., 2001). Often graphic visualization has been used for consumer product performance and the affecting factors (Bose et al., 2001). Finally, for marketing managers it is important to increase the knowledge about machine learning, the different related fields like data mining and the appropriate techniques (Bose et al., 2001).

3.3 Artificial Intelligence in Marketing

Nowadays, artificial intelligence is no longer purely related to computer science. Its applications can be found in manufacturing, consumer behavior, finance, management and medicine (Rao et al., 1999). By talking about consumer behavior and marketing in general, AI can make an "important contribution to marketing decision making" but this potential is only realized to a very limited extent (Wierenga, 2010, p. 2). But already during the late 1990s Rao et al. (1999) examined how AI applications can be used for new product development (NPD). They summarized that most of the existing AI applications can be found in the design techniques and development tools within the process of NPD. In a current paper from Martínez-López and Casillas (2013) particular and interesting areas of AI applications, also for future research, are listed. Only to name a few: managing customers' relationships marketing channel relationships; B2B communications decisions; B2B pricing strategies; product development (Martínez-López & Casillas, 2013, p. 489). Among others, Martínez-López and Casillas (2013) highlighted in their paper that AI methods and applications have the potential to effectively support the challenges marketers face throughout the marketing planning process. Additionally, AI methods represent real opportunities to advance analytical methods and systems actually used to manage the variety of marketing issues. Wierenga (2010) makes it more precise and named expert systems, neural nets, and case-based reasoning as the main applications of AI in marketing.

Summarized, artificial intelligent is a research area with high potential to strengthen decisional situations faced by marketing managers in their daily life. The intelligent system helps managers to make decisions that are normally based on strategic issues.

3.4 Cognitive Computing in Marketing

After the usage of Watson as software for the quiz show *Jeopardy!* where candidates play against the computer, people become aware of the existence of such smart technology and researchers starts to think about other possible areas for its implementation (Kelly & Hamm, 2013). To make perfectly use of cognitive computing and IBMs Watson big data sets are necessary to get the best possible results. Because the software of Watson relies on deep learning algorithms and the more data the system is exposed to, the more Watson learns and increases the accuracy of outcomes over time (Forbes, 2016). Additional information to cognitive computing and Watson can be found on IBMs cognitive website (IBM Corporation, 2016a). Furthermore, do they have a special focus area on their greater website for the use of Watson in marketing, which is called Watson Marketing (IBM Corporation, 2016b). Within the "Watson Marketing Manifesto" IBM describes how the implementation of Watson leads to a new era of marketing with deeper customer connection and a growing brand value (IBM

Corporation, 2016c). Cognitive computing software like Watson can be appointed to make use of insight and technology in new ways with the aim to elevate the complete costumer experience. The knowledge of customer insights can be critical information to build and maintain brand value (IBM Corporation, 2016c). In comparison to the article from Syzmanski and Hise (2000) who focuses on the use of cognitive computing to get insights into consumer's behavior of e-commerce companies. For IBM, cognitive computing or especially the implementation of Watson is about "building connections with customers" (IBM Corporation, 2016c, p. 3). Within the Watson Marketing Manifesto, IBM does not differentiate between offline and online markets or B2B and B2C relationships.

Getting new insights through the use of Big Data is the key aspect of Watson or cognitive computing in general. Most of current data is available in an unstructured form such as images, natural language, online post from Twitter or Facebook and a lot more. According to the IBM manifesto is 88 percent of all available dark to most organizations. Through Watson it is possible for marketer to correlate and analyze big data sets for the creation of unique customers insights related to their business or product (IBM Corporation, 2016c).

3.5 Overview: Marketing practices

Advertising Generally advertising is used to make customers aware of a product or service, to promote causes and finally to sell it. Since the 2000s, the importance of the Internet as advertising platform increased rapidly and no longer only television, radio and print ads were competing for consumers' attention (Belch & Belch, 2003). The audience that can be reached online is growing rapidly. Furthermore, clients of marketing agencies were spending more money on advertising, want to make use of the new technologies but also their demand for better results increases (Belch & Belch, 2003).

Consumer behavior By asking consumers what their needs and desires are, most people are not able to describe their expectation of a product or service in-depth. Therefore, Sheth et al. (1991, p. 160) developed a model with five values, which independently influence consumer choice, namely: (i) functional value; (ii) social value; (iii) emotional value; (iv) epistemic value; and (v) conditional value. And other scholars such as Morin (2011) argue that emotions (emotional value) are strong mediators of consumer behavior and the measurement of brain activities helps marketers to comprehend consumer behavior.

Communication In both sectors private and public, organizations have recognized that their communication ability with (potential) customers represents a critical success factor (Belch & Belch, 2003). Communication generally links people together and creates relationships (Duncan & Moriarty, 1998). The arising Internet and new advanced technology led to a rapid growth of communication as the new millennium begins (Belch & Belch, 2003). Through the Internet revolution not only new ways of advertising emerged also a lot of new communication channels originated in the form of blogs and message boards and nowadays Twitter, Facebook and many more.

New product development According to Olson et al. (2001) is successful NPD a multidisciplinary process where the cooperation between specific departments (i.e. marketing and R&D) is essential. Olsen et al. (2001) found out that cooperation between marketing and R&D is highest during early stages of the process. Furthermore, already within the literature review section about artificial intelligence was mentioned that AI is a good example how to make use of new technology and simultaneously improve process of new product development (Rao et al., 1999). In the case of AI, Rao et al. (1999) figured out that most of the AI application are implemented within the design and development tools, which both are early stages of NPD.

Pricing Since decades pricing is used a key tool by marketers and organizations in the positioning of their products in a market (Lee et al., 2007). Furthermore, Lee et al. (2007, p. 202) argue that pricing research has "implications for how we understand information processing in any decision context where resources and information are scarce and costs must be weighed against benefits". Currently nearly all pricing research relies on assumptions and is behavioral in nature.

Distribution of products Marketing can be defined as "the task of finding and stimulating buyers for the firm's output" and therefore represents product distribution an important task (Kotler & Levy, 1969, p. 10). The right distribution of a product or service is essential for business and nonbusiness organizations. Weitz and Jap (1995, p. 305) defined that the distribution function "create value by making products and services available to customers in an appropriate form at the right place and time". Furthermore, the management of distribution channels activities offers great opportunities form companies in a way that it helps to create competitive advantage and increases financial performance (Weitz & Jap, 1995). Therefore, a possible measurement of distribution channels and activities supports the decision of the right channel and content for a target group.

Branding A study by Bechara and Damasio (2005) showed that loyalty of costumers to their preferred brand is interconnected with emotions during the decision-making process. This highlights the importance of a good branding process as aspect of a complete marketing strategy. Even in this area it is helpful to make use of technologies that are able to measure brain activities such as EGG to show potential differences between common brands and preferred brands (Kenning & Plassmann, 2005).

Decision-making process In general it can be said that managers have to address the following two issues: (i) What choice criteria do consumers use to evaluate the choice alternatives and choose among them?; (ii) Why are those particular choice criteria personally relevant to the consumers? (Reynolds & Olsen, 2001, p. 7). It can be said that the decision-making process of consumers is influenced by emotions and additional information (Plassmann et al., 2012). Like already described in the Consumer behavior part, the measurement of human brain activities also supports the understanding of consumer decision-making.

4. FINDINGS

The aim of this literature review was to give an overview about current literature in the field of neuroscience, machine learning, artificial intelligence and cognitive computing related to traditional marketing practices.

Neuroscience, neuromarketing or even consumer neuroscience is the most discovered field that also gets the most attention from scholars and organizations. Among others the development of new technologies enables todays eye-tracking or facial coding with (potential) costumers, for instance. Methods like eye-tracking can also be used to examine the effectiveness of adverts, if customers become aware of a product. Furthermore, methods such as MEG and fMRI are used to explore and understand customer decision-making or consumer behavior. Here it is important to keep in mind the first question developed by Reynolds and Olsen (2001) that can

be answered by neuromarketing techniques. In addition, when it comes to further examinations of consumer decision-making also pricing presents a key indicator because consumers mostly evaluate the cost against the benefits. Therefore, neuromarketing techniques can be used in order to determine the willingness to pay a specific price for a product or service and markets can adjust prices according to the results.

Machine learning techniques, such as data mining can be very helpful in all marketing practices where marketers have a lot of unstructured data at disposal. The method ANN, for example, can be used to extract patterns from unstructured data, gathered during the process of new product development or from online communications where the data can be downloaded from Twitter e.g. Furthermore, the analysis of data of specific brands helps marketers to understand why consumers prefer one brand and in combination with neuromarketing techniques the brand related emotions of consumers can be measured.

Nowadays, even artificial intelligence is appointed in marketing to observe consumer behavior. An effective use of AI could help marketers to make the right decisions within the marketing planning process. This includes new product development, communication, distribution of products and consumer decision-making. Because several AI method represent great opportunities to advance actual analytical systems and methods with which marketers currently tries to understand specific consumer behavior and decision making related to pricing and branding, for example.

Finally, cognitive computing with IBMs Watson represents a great opportunity to efficiently use Big Data. For instance, big data sets from communications on Twitter can be easily uploaded to Watson and analyzed to different aspects or factors. With Watson, marketers are able to elevate complete customer experience and receive critical customer insights. Further, this knowledge can be utilized to increase brand value or for the next new product development process. Furthermore, with cognitive computing it is also possible to analyze images and natural language. The high amount of possible datasets that can be analyzed by Watson further particularized the given results and marketing practices can be implemented more goal-oriented and perfectly aligned to a costumer group.

5. CONCLUSION

The awareness of the different benefits of neuroscience, machine learning, AI, and cognitive computing in marketing increases since a few years. However, especially research that focuses on AI, machine learning and cognitive computing in this area is very limited. All these techniques and methods could help marketers to analyze Big Data to superficial understand consumer behavior and consumer decision-making. Through an easier and more effective way of analyzing datasets, marketing practices will be become more efficient and strategy related decisions could be done on the basis of data and only on human experience. Furthermore, the growing amount of online and offline data can be handled now but marketers also have to be aware of the four different fields to choose the right one for their kind of data and marketing strategy. The software program Watson already represents a tool for marketers to efficiently analyze data and develop a plan for action according to them. Nevertheless, companies or more specific marketing departments need to become familiarized with these new technologies and their opportunities. Therefore, more research in every field is needed with certain focus on one or more marketing practices.

Additionally, it is important to keep in mind that the usage of machine learning techniques and AI assumes cooperation between the marketing manager and the computer. The computer further learns from the information and data in its system. Through an increasing amount of all kind of structured data the computer will be more explicit in its results due to consumer decision-making or communication strategies for a target group.

Overall it can be argued that the influences of the four new technologies in marketing will make the daily life of marketers easier due to an increased understanding of consumer behavior and decision-making. The related strategy changes will further influence consumers.

6. LIMITATIONS & FUTURE RESEARCH

The main limitation of this literature review is the limited amount of current literature of these four areas in order to identify influences on marketing. Especially, literature about cognitive computing in marketing is very rare, except the information from IBM about Watson. Furthermore, ethical issues are not taken into account. These concern need to be considered in future research, in how far marketers can manipulate or influence a humans free will by measuring its brain activities and through the development of learning machines. Other future researchers should focus on one area and the specific influences or the role it can occupy in certain marketing practices.

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8. APPENDIX

Figure 1a Machine Learning techniques for data mining

Techniques	Type of response	Type of score	References
ANN	Response probability	Continuous	Kim and Street (2004), Kim et al. (2005), Shin and Sohn (2004)
ANN	Binary choice	Binary	Ha et al. (2005), Kaefer et al. (2005), Viaene et al. (2001a), Zahavi and Levin (1997)
ANN	Categorical choice	Integer	Heilman et al. (2003)
Bayesian ANN	Binary choice	Binary	Baesens et al. (2002)
CHAID/CART	Binary choice	Binary	Haughton and Oulabi (1997)
DT and Naive Bayes	Response probability	Continuous	Ling and Li (1998)
DT	Binary choice	Binary	Buckinx et al. (2004)
LS-SVM	Binary choice	Binary	Viaene et al. (2001b)
GP	Binary choice	Binary	Kwon and Moon (2001)
GA	Revenue	Continuous	Bhattacharyya (1999)
GA and GP	Binary choice and revenue	Binary and continuous	Bhattacharyya (2000)
Hybrid *f*(ANN + Logit + RFM)	Response probability	Continuous	Suh et al. (1999)
Hybrid *f*(ANN + DT + Logit)	Response probability	Continuous	Suh et al. (2004)
Hybrid *f*(BBN + GP)	Response probability	Continuous	Cui et al. (2006)

Adopted from: Bose and Chen (2009).

The Role of Social Media Choice and Use on Online Engagement: Nonprofit and Non-governmental Profiles

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ABSTRACT

Nonprofit and non-governmental organizations increasingly use social media every day. Besides the fact that NPOs and NGOs slightly differ in concept, both try to make work pro-society, without intentions to make profit for themselves. The high affordability and reach of social media open doors for that. In fact, in many cases, NGOs and NPOS mobilize large groups of individuals and persuade them to ideologically support their work, causes or make donations. Nevertheless, prior research suggests that there are proper ways to choose social media channels and use them in order to better engage the public online. Research has provided a big diversity of insights into how the use of social media channels and practices influence online engagement. This literature reviews online engagement with nonprofit and non-governmental's social media pages departing from two antecedents: the social media channel choice and the social media practice used. Following a systematic review process, it was identified 57 relevant articles. Three main themes emerge from the literature. First, the channel choice can definitely influence the result on engagement, as for its social presence and media richness, for the appropriateness with strategy or for its synchronicity with the process of producing communication. Second, the social media practice of big NPOs and NGOs has to improve in interactivity with the public, in order to increase online engagement. Third, there is no consensus about the measures of engagement. They can be as broad to count the interaction between "followers" themselves, and at the same time narrow to include only the "active followers", to consider followers and views as engagement.

Keywords

Social media, social presence, media richness, media capabilities, synchronicity, non-profit, non-governmental.

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: Why this topic?

Social media has brought new data, new methods, and new skills. How to bring it all together is still a debatable answer. The best use of the tools given by social media, developing new skills around data, narratives and storytelling, are some of the challenges. How to do all this with creativity is especially important for NGOs and NPOs, which can highly benefit from this affordable media channel.

1. INTRODUCTION

Many kinds of organizations can benefit from adopting social media. Reasons are the wide reach of this type of channel, besides the few monetary resources required to use it (Curtis et al., 2010, p. 90). What is Social Media? It is defined as a group of Internet-based applications that builds on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content (Kaplan & Haenlein, 2010). Tredinnick (2006) defined social networking sites as those sites driven by user-participation and user-generated content. Today, social media channels such as Facebook, YouTube, LinkedIn, Instagram and Twitter dominate the web landscape. Some social media statistics by the website Brandwatch gives us a dimension of the size of social media: in July 2015, the total worldwide population was 7.3 billion, in the internet itself there was 3.17 billion users, from which 2.3 billion were active users of social media. According to Brandwatch, internet users have an average of 5.54 social media accounts; 1 million new active mobile social users are added every day; that's 12 each second. Looking at those numbers, it is understandable why social media is responsible for 64% of the marketing tactics of organizations, as Brandwatch affirms. The nonprofit and non-governmental organizations can specially benefit from this affordable new kind of media, as those organizations depend on wide public support.

However, in order to best reach and engage audience on social media, it is important to understand the best practices regarding social media channel choice and use. Some practices and channels can be more useful than others for different purposes (Effing, 2014). With the growing amount of studies in the last years, some results related to effects of social media channel and practice are congruent in many points. If nonprofit and non-governmental organizations want to understand the new forms of media and how to use them to persuade the public to support their causes, they need to assess how their choice of social media channel and practice can affect the engagement of their public. Hence, this literature reviews and synthesizes research for social media use especially by NPOs and NGOs.

The research question of this study is: How can social media be used by nonprofit and non-governmental organizations in order to best influence engagement? The scope is on the effects of social media channels and practices on online engagement, besides measures of this engagement. This paper contributes to theory development by identifying similarities and differences between theories that lead to questions for future research on the effects of social media channel and practice on online engagement. Practically, this study is relevant and timely for leaders of NPOs and NGOs. This review aims to orient those organizations who struggle with the use of social media to mobilize the public towards its causes.

This literature review is structured as follows: First, it provides theory about the influence of the social media channels used by nonprofits and non-governmental organizations on the public's engagement. Second, relevant literature about the social media practice used by NPOs and NGOs is presented, comparing observed results on engagement. Third, it investigates how online engagement is being measured in recent researches about the practices of NGOs and NPOs on social media. This literature review is concluded with a discussion of the theoretical and practical implications, directions for future research and limitations of this review.

2. THEORETICAL FRAMEWORK

This review requires an overarching theoretical framework to categorize the studies and their findings according to the main influences on online engagement that can be manipulated. Effing's (2014) concept of Social Media Participation (see Figure 1 below) is used as frame. It departs from two constructs: Social Media Choice and Social Media Use to judge the participation of organizations on social media. It is useful to classify the sections of this literature review with this framework because it refers to the two factors that this literature review aims to study as a cause of engagement: the Social Media (Channel) Choice and the Social Media Use (Practice) by NGO's and NPO's. The first two sections use the concepts below as frame:

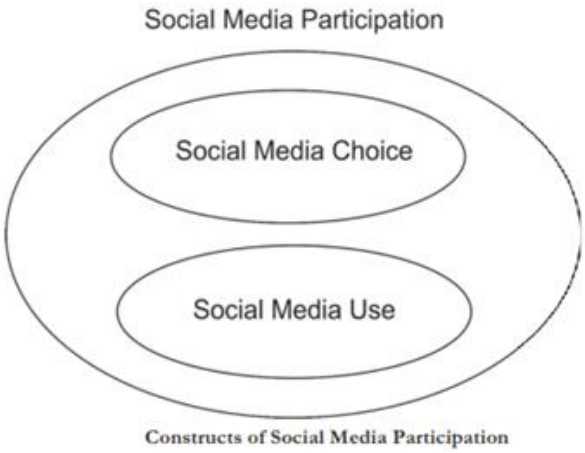

Figure 1 – Effing's Social Media Participation Framework

3. METHODOLOGY

A systematic literature review was conducted to assess the findings of current research on social media use by nonprofit and non-governmental organizations. This review follows a concept-based rather than an author-based approach, which means that relevant articles were categorized and synthesized according to the research concepts used. The first step in the research process was to define 6 inclusion criteria based on our research question. These criteria were: 1) studies that focus on the practices of NPOs and NGOs on social media, 2) studies that focus on the effects of different social media channel choices on engagement, 3) studies in which the effects of social media practices by NPOs and NGOs is presented, 4) studies written in English, 5) for practical limitations, studies accessible by the University of Twente online library, which gives access to the most important databases (in the case of very few results, the filter "Libraries in the Netherlands" and even "Libraries Worldwide" was used, so the relevant studies resulted from those searches could be retrieved), 6) case studies published from 2011 (because digital media change dramatically with the time (O'Reilly, 2014). However, some search terms didn't bring results in this limitations, so there was flexibility with some search terms, making it possible to catch all existent results on those terms.

There were 257 results from the search terms chosen (including doubles). First, the title and abstracts were read to select the articles within the scope of the review as formulated in the introduction. This resulted in a selection of exactly 21 articles. By recommendation, two other articles, PhD thesis of two professors of the University of Twente, were added later: one around the theme of Online Protest, other about Online Participation on social media pages of nonprofits. As those two new concepts emerged, new search (with the terms Online

Protest and Online Participation) was made on the University of Twente Online Library and some other recent studies on these subjects were collected. Many results of the search were cut off and stayed the ones with focus on social media. After that, there was another suggestion of professor to investigate the aspect of the management of communication. More articles were added. At last, the references (back searching) and citations (forward searching) of all the selected articles were scanned to search for more relevant articles. In the end, a refined sample of 57 articles was retrieved based on full text. The analysis aimed at inductively identify discussions in the literature related to the research concepts here proposed for investigation. Most articles covered more than one of the concepts proposed by this research. Subcategories were developed for concepts inside the proposed framework. In the analysis, the articles' results related to the purpose of this literature review were critically compared. The table and image below describe the material and process used.

Table 1 - Literature Search

Online Database	FIND UT (University of Twente)	
Search Query	Selected Filters	Results
"Social media" NGO	Library: University of Twente Year: Last 5 Years Language: English	105
"Social media" NPO	Libraries in The Netherlands Year: Last 5 Years Language: English	16
"online social movement"	Libraries Worldwide Year: Last 5 Years Language: English	25
Facebook NPO	Libraries Worldwide Language: English	31
Twitter NPO	Libraries Worldwide Language: English	23
Twitter NGO	Libraries in The Netherlands Year: Last 5 Years Language: English	6
Facebook NGO	Libraries in The Netherlands Year: Last 5 Years Language: English	51
Total:		257

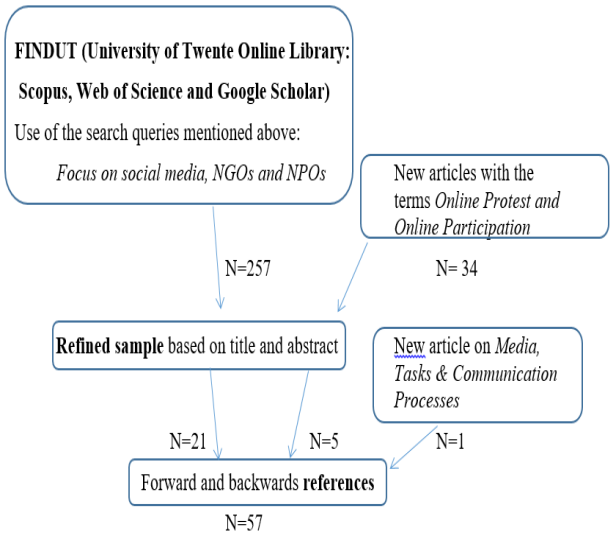

Figure 2 - Flowchart of the selection process

4. LITERATURE REVIEW

This review evaluates studies and their findings according to the effects of social media channel choice and practice on online engagement. The influence of channels in the execution of communication tasks is also discussed. Lastly, how engagement is being measured is presented. In the end, discussion is made, conclusion points to findings, theoretical and practical implications, besides limitations and recommendations for future research. Below, an overview of the topics that are discussed.

Table 2 – Overview of Topics Discussed

Sections	Research topic
Social Media (Channel) Choice	Media Appropriateness - Media Type and Purpose Social Presence - Media Richness Effect of Media on Communication Tasks - Media Synchronicity
Social Media Use (Practice)	E-enabling - Disclosure - Information Dissemination (Type, Vehicle and Frame) E-engaging - Interactivity
Measures of Engagement	Social Media Indicator - Followers, Views and Friends Organization-Stakeholder Interactivity - Active Stakeholder Stakeholder Community Measure - Density Among Stakeholders

4.1 Effects of Social Media Choice on Engagement

This section critically evaluates relevant research on the effects of social media channel choice on engagement. It refers to the effects on online engagement that the choice of different social media channels or platforms can cause. The Social Media Choice concept of Effing (2014) is used for framework (see image below). Effing's construct of Social Media Choice builds on the constructs of Media Appropriateness (Rice, 1993; Kaplan & Haenlein, 2010) and Social Presence (Short, Williams, & Christie, 1976; Kaplan & Haenlein, 2010). As such, the paragraphs below develop under those constructs. Media Tasks & Communication Processes are added to reflect the managerial effects of channels on the production of communication.

Construct	Theory	Reference
Social Media Choice	Media Appropriateness	Rice (1993); Kaplan and Haenlein (2010)
	Social Presence	Short, Williams, Christie (1976); Kaplan and Haenlein (2010)

Figure 3 – The Social Media Choice concept of Effing (2014)

4.1.1 Social Presence

A social media channel may be evaluated in terms of its capacity to transfer Social Presence. Media vary in Social Presence: "the degree to which a medium is perceived as conveying the presence of the communicating participants" (Short, Williams & Christie, 1976). In general, when physical, visual and verbal symbols are removed, there is a reduction in social presence (Rice, 1993; Short et al., 1976). The most influential theory related to Social Presence, at least for the "new media", is Media Richness Theory: "media vary in capacity to process rich information", say Daft and Lengel (1986, p.560). MRT initially did not consider new media, but it has been retroactively fit into the theory's framework. MRT says that digital media can only convey limited social cues (e.g. the communicators' eye contact, tone of voice,

gestures, or facial expression). Face-to-face communication is considered by MRT the richest, while media capable of sending fewer cues (e.g., no vocal inflections) are "leaner". Social media channels that bring video generate a higher level of Social Presence. E.g., Twitter - being mainly a text message microblogging system - is assumed to have a lower maximum of Social Presence than YouTube (Kaplan & Haenlein, 2010).

Some authors alert that social media may lack the emotional richness required to build interpersonal relationships and trust between activists and potential supporters of a cause (Biddix & Han Woo Park, 2008; Clark & Themudo, 2006; Wall, 2007). Still, Van Laer and Van Aelst (2010) compared offline and online protest events and demonstrated that activist groups that were primarily mobilized online shared a stronger understanding of the proclaimed injustice than the activist groups that were primarily mobilized offline.

4.1.2 Media Appropriateness

With social media, nonprofit and non-governmental organizations can reach an audience beyond their members (Eltantawy & Wiest, 2011; Lim, 2012). The connectivity and social observability of social media can stimulate the contagious diffusion of causes among users (Castelló et al., 2013). Social media seems to connect ideologically like-minded users beyond social and geographical boundaries, creating new collective identities (Clark & Themudo, 2006). However, the effect of the social media channel on engagement depends in part on how appropriate this channel is for the message (Effing, 2014). In other words, the social media channel must be appropriate for the communication strategy and purposes of the organization. Different types of social media channels have different levels of appropriateness for different communication strategies (Kaplan & Haenlein, 2010; Kietzmann et al., 2011). Twitter, for example, is known for being proper for political debate, consumer complaints and humor, while Facebook is more a life diary style.

4.1.3 Social Presence & Appropriations' Limits

Theories of Media Appropriateness and Social Presence should not be applied too strictly. Users learn to cope with the limitations of digital communication and even invent ways to transmit social cues through these media (Morris & Ogan, 1996; Kim, 2011; Lowenthal, 2010). Besides, some media carry symbolic meaning (e.g., written media is more formal) that deflects media choice behavior away from the rational matching of media richness (Fulk and Boyde, 1991, p. 410). There are also cognitive aspects. The perception of media richness, for example, is in part socially constructed. Different individuals may hold different perceptions of richness (Lee, 1994), just as appropriateness. "Whether it is a mediated environment or not, and whether the medium is rich or poor, social presence can be perceived differently by individuals" (Kim, 2011, p.764). In the same argumentation, Channel Expansion Theory builds on MRT (Carlson and Zmud, 1999), saying that the perceived richness of a medium depends not only on its characteristics, but also on the users' experience using it. Walther (1992) also argues that rather than looking at media characteristics, we need to consider the people using the media.

4.1.4 Media Tasks and Communication Processes

When producing communication for social media, many NGO's and NPO's depend on a group of dispersed volunteers or employees that work for the cause. As such, they may make use of mediums to work together. It is important to understand how the use of media to work can affect the final result of work – in this case, engaging content on social media. The Media Synchronicity Theory (MST) discuss the capabilities of media to support a shared pattern of coordinated behavior among individuals as they work together. Dennis et al. (2008) argues that the fit of media capabilities to the communication needs of a work task influences the appropriation and use of this media. In other words, it influences the communication performance on the task - defined as a set of communication processes needed to generate shared understanding (Dennis et al. 2008).

The facilitation of interactions necessary for the sharing of information and the development of meaning is a major consideration for many media performance theories. Miranda and Saunders (2003) argue that "meaning derives from interactive interpretation by multiple persons, not simply from the cognition of a single individual" (p.88). In other words, meaning is co-constructed by the communication participants (Boje, 1991; Eisenberg, 1990; Weick, 1979). It means understanding is not just transmitted from one participant to another, but evolves from the interactions among participants. Authors say understanding of meaning is not possible without these interactions.

Dennis et al. (2008) say that regardless overall work objectives, communication (the development of shared understanding) is composed of two primary processes: conveyance of information and convergence on meaning. "Conveyance processes are the transmission of a diversity of new information to enable the receiver to create and revise a mental model of the situation". Individuals participating in conveyance will require time to perform information processing. "Convergence processes are the discussions of preprocessed information about each individual's interpretation of a situation, not the raw information itself". The objective of convergence is to agree on the meaning of the information, which requires individuals to reach a common understanding. All work requiring more than one individual is composed of different combinations of these two processes.

Some media are better for conveying information, while others are better for converging, because of its capabilities. Most tasks are composed of a series of communication processes that need different media capabilities. As consequence, media has different ways to support synchronicity – a state in which actions move at the same rate and exactly together (Random House, 1987). Dennis et al. (2008) identify five capabilities of media that influence the successful performance of conveyance and convergence, as much as synchronicity:

1) Transmission velocity, the capacity of media to allow messages to reach the recipients as soon as they are sent, allows a message to be responded fast. It means communication can approach continuous exchange with quick feedback between individuals, resembling conversation (Goffman, 1967; Rogers, 1986; Schegloff, 1987). High transmission velocity supports synchronicity, as it enables improved behavior coordination and shared focus between co-workers (Dennis et al., 2008).

2) Parallelism is the extent to which signals from multiple senders can be transmitted over the medium at the same time. In traditional media such as the telephone, fewer transmissions can effectively take place over the medium simultaneously, limiting the quantity of information transmitted. In contrast, many of the new media can enable concurrent transmissions, increasing the volume of information in a time (Burgoon et al. 1999).

3) Symbol Sets, derived from Shannon and Weaver's types of symbols, are the number of ways in which a medium allows information to be encoded for communication (Dennis et al., 2008). It includes Daft and Lengel's (1986) multiplicity of cues and language variety. Media with more natural symbol sets (physical, visual and verbal) better support synchronicity.

4) Rehearsability, the extent to which media enables the sender to rehearse or fine tune a message during encoding, before

sending (Rice, 1987) lowers shared focus. It has a negative impact on a medium's capability to support synchronicity.

5) Reprocessability, the extent to which the medium enables a message to be reexamined or processed again, during decoding (Rice, 1987), lowers shared focus. It has a negative impact on a medium's capability to support synchronicity.

Dennis et al. (2008) propose that for conveyance processes, use of media supporting lower synchronicity (e.g., email (depending on the use), mail, voice mail) should result in better communication performance. For convergence processes, use of media supporting higher synchronicity (e.g., face-to-face communication, video conference, telephone conference) should result in better communication performance. The amount of synchronicity needed is connected to the Media Richness Theory. Communication and task performance will improve when managers use richer media for equivocal tasks (where there are multiple and possibly conflicting interpretations of information) and leaner media for non-equivocal tasks (Daft and Lengel, 1986; Daft et al., 1987). The successful completion of most tasks involving more than one individual requires both conveyance and convergence, as such, communication performance will be also improved when individuals use a variety of media to perform a task, rather than just one medium (Dennis et al., 2008).

4.1.5 Synchronicity Theory's Limitations

Dennis et al. (2008) alerts that as the familiarity with the task, co-workers, and communication media increases, the need for media supporting high synchronicity is reduced. Over the long run, communication transcends media (i.e., "the medium is not the message"). Besides, DeSanctis and Poole's (1994) adaptive structuration theory argues that it is not the objective physical capabilities of the medium that matter, but rather how those characteristics are appropriated and used. Communication participants may appropriate and use media as intended by the designers, or in not intended ways.

4.2 Effects of Social Media Use on Engagement

A social media channel with high Social Presence and Appropriateness may not be sufficient to engage audience online. For long, many have advocated for organizations to implement virtual communication strategies to cultivate relationships with key stakeholders (e.g., Kelleher, 2006). While studies have examined the impact of several virtual strategies, results convert to three types of strategies that have regularly been found to help relationship cultivation (Waters, Burnett, Lamm, & Lucas, 2009). In this section, these strategies are discussed under Effing's construct framework of Social Media Use. It builds on previous theories about e-enabling and e-engagement (Macintosh & Smith, 2002; Effing, Van Hillegersberg & Huibers, 2011). Results are presented inside these two concepts.

Construct	Theory	Reference
Social Media Use	e-enabling	Macintosh and Smith (2002); Effing, Van Hillegersberg and Huibers (2011)
	e-engagement	Macintosh and Smith (2002); Effing, Van Hillegersberg and Huibers (2011)

Figure 4 - Effing's Operationalization of Social Media Use

4.2.1 E-enabling

Effing's (2014) construct of Social Media Use considers e-enabling the practice to enable information. In the case of a Blog, for example, it is expressed as Blog Posts. In a YouTube channel, it can be evaluated as posted videos. In the case of a Twitter account, it shows as tweets. In all those cases, information is being enabled. The most frequent and recommended practices to enable information are pointed in the items below.

4.2.1.1 Disclosure

Disclosure is one of the three most advised strategies when enabling information (Waters, Burnett, Lamm, & Lucas, 2009). Kelleher (2006) encouraged practitioners to use the Internet and social networking sites to advocate for their organizations and causes with transparence in their online communication activities. For full disclosure, organizations must make sure to provide a detailed description of the organization and its history, use hyperlinks to connect to the organization's Web site, provide logos and visual cues to establish the connection, and list the individuals who are responsible for maintaining the social networking profile (Berman, Abraham, Battino, Shipnuck, & Neus, 2007). Results from Waters, Burnett, Lamm, & Lucas (2009) points that nonprofit organizations already understood the importance of disclosure in their profiles.

4.2.1.2 Information dissemination

The second frequent practice in e-enabling is information dissemination. Waters (2009) found that nonprofit organizations usually use social media to streamline their management functions and educate others about their programs and services. The most common forms of message dissemination according to Carrera et al. (2008) include posting links to external news items about the organization or its causes; posting photographs, video, or audio files from the organization and its supporters; and use the message board or discussion wall to post-announcements and answer questions. However, they still fail by not including press releases and campaign summaries on their social media sites - it would maximize the impact of their presence (Waters, Burnett, Lamm, & Lucas, 2009). 2009). The evaluation of social networking profiles also focuses on the shapes they disseminate information (Crespo, 2007). The use of multimedia should be considered relevant (see Social Presence). However, Lovejoy, K., Waters, R. D., & Saxton, G. D. (2012) found in their research that the majority of the US nation's largest nonprofits in 2009 were using Twitter mostly with hyperlinks to external information: 68% of the total of tweets. Using Twitpic.com and TwitVid.com was rare.

4.2.1.3 Framing

An aspect that always affect information disseminated is framing. In the case of many NGOs and NPOs, framing refers to how digital pages position their causes to create a shared understanding of it, a prognosis of how change can be achieved, and a collective identity that opposes an oppressor (Benford & Snow, 2000; King, 2008). A frame allows activist groups to legitimate and motivate collective action (Benford & Snow, 2000). There are three factors known for framing typology in social movement theory (Benford & Snow, 2000; Oliver & Marwell, 2001; Ward & Ostrom, 2006): injustice, collective identity, and collective efficacy. Collective injustice is a shared emotion of affective and cognitive perception of an unfair situation (Van Zomeren, Postmes, & Spears, 2008). Collective identity is a sense of belonging together that emerges from common attributes, experiences, and external labels (King, 2008). Last, collective efficacy refers to the shared belief that one's group is capable of resolving its grievances through collective action (Bandura, 2000). Developing a consistent and

precise frame is a fundamental skill that contemporary activists should have (Castells, 2009; Garrett, 2006). With framing, social media can be used as an alternative channel for expressing injustice when the traditional media omits it (Van Den Broek & Ehrenhard, 2014). There, activists can express and share their grievances by circulating framed alternative stories (Hwang et al., 2006; Lim, 2012).

4.2.2 E-engaging

The last recommended strategy to cause stakeholders to engage with a social media page is the interactivity. The interaction of the organization with the public by a social media page is called e-engagement in Effing's framework (2014). Jo and Kim (2003) affirms interactivity is essential if organizations want to develop relationships with their stakeholders. Still, according to the results of the research from Waters, Burnett, Lamm, & Lucas (2009), nonprofit organizations fail to take advantage of the interactive nature of social networking. They rarely provide information in forms other than external links to news stories and photographs, and they only attempt to get interested parties involved by providing them with a contact e-mail address to obtain more information. This study concluded that organizations were losing opportunities to engage with key supporters on Facebook by not interacting with users' public messages. Similar results were found by Lovejoy, K., Waters, R. D., & Saxton, G. D. (2012) in their research also in 2009. Nonprofit organizations were using Twitter mostly to distribute one-way messages. The conclusion came after analyzing 4655 tweets from 73 nonprofit organizations from the listing of the "Nonprofit Times 100," the 100 largest non-university affiliated nonprofits in the United States based on revenue. From those 73 nonprofit organizations, 80.8% (n = 59) were classified as active: at least three tweets per week. But the study found that the US nation's largest nonprofits were using Twitter mostly as a one-way communication channel. The nonprofits were more likely to share their own information than retweet other Twitter users. Less than 20% of their total tweets demonstrated conversations. In 2010 and 2011, one-way communication was still the most pronounced form of messaging strategy used by organizations on Twitter (Waters and Jamal, 2011 and Xifra and Grau, 2010). Attempts to secure followers to receive the one-way messages were the most common non-communication strategy back then (Rybako & Seltzer, 2010).

4.3 Measuring Engagement

Effing (2014) created a Social Media Indicator that comprises of a set of standardized questions to deliver scores indicating the extent to which individuals or organizations are participating (via e-enabling and e-engagement) on social media. The measure can be also used to observe the public engagement. In the case of a Blog, for example, the element to be measured would be the number of comments received. In the case of a Facebook post, the number of likes. In the case of videos on YouTube, the number of comments. In the case of Twitter, the number of retweets, replies and following. In the case of a LinkedIn account, the number of recommendations.

Another way to measure engagement comes from the theory of Ihm (2015). It is more detailed on the online interactions between organizations and its stakeholders. Its Organization-Stakeholder Interactivity measure can be defined as a sum of the standardized value of Reply and Repost by stakeholders and the organization, but considering only the active stakeholders. Active Stakeholder is measured by counting the number of stakeholders who has ever posted anything on an organization's social networking service page (SNS). The author defends that it is a more accurate measure of the number of stakeholders than Followers or Friends, because it captures actual participants who post on an organization's SNS account. Ihm (2015) goes even deeper to define a second measure: the Stakeholder Community Measure of an organization. It is defined as the sum of the standardized value of the Density Among Stakeholders (DS) and the Average Degree Centrality Among Stakeholders (CS). It captures stakeholder-to-stakeholder interactivity. DS compares the number of social media comments connecting active stakeholders on an organization's profile to the maximum number of possible social media comments, if all stakeholders were connected between them. CS measures the average number of comments connecting active stakeholders.

5. CONCLUSION AND DISCUSSION

Social media providing engagement with nonprofit and non-governmental organizations is an emerging field of research. In this literature review, it was investigated how social media channel and use can enable or constrain online engagement with NPOs and NGOs. The aim was to identify the most important research questions in this emerging and fast developing stream of research. It was used Effing's (2014) model of Social Media Participation framework to discuss the results of 57 studies retrieved from many study fields. In this last section, first key findings of the literature review are summarized. Implications of the findings are pointed for NPOs and NGOs practices. Subsequently, theoretical findings are described and research questions are defined in a table (find it in the Appendix). At last, the directions for future research are presented.

5.1 Theoretical and Practical Findings

The research addressed in this literature review focused on the social media channel choice and practice to build and maintain engagement. Nonprofit and non-organizational organizations seem to be increasingly using social media for many purposes, between them, to share their causes with a broader audience. First, research argues that the social media channel must be appropriate for the communication strategy of the organization, in order to cause engagement, as different types of social media channels have different levels of appropriateness for different communication strategies. Second, most studies have found that the social presence of a social media channel depends on its media richness, as different types of channel vary in capacity to process rich information. Third, the media chosen to work in the production of communication can also affect the performance. Fourth, many studies have advocated for organizations to implement communication strategies to cultivate relationships with virtual stakeholders, including the practice of disclosure, information dissemination, framing and interaction.

Besides the fact that many NPOs and NGOs are practicing well the disclosure and dissemination of information, several scholars point that there is still not much interaction with stakeholders. Organizations are practicing a non-communication strategy of one direction on social media. This way, it seems like they are not fully benefiting from social media features. It means organizations still need to strive to make their social media pages more interactive. Social Media could play a better role in expressing and diffusing causes if the social interactivity increased. At last, a finding for research is that there is no conclusion about a best measure of engagement. To what extent the consideration of followers, friends and connections should count to the measure of e-engagement? Does the consideration of only activity stakeholders make for a better measurement? Is the interaction between stakeholders relevant to measure? Future research may compare the different kinds of measurements with results of a same case. The research question formulated in this review provided various directions for research on the influence of social media channel and practice on online engagement. Overview of questions observed in the study are in the Appendix.

5.2 Recommendations for Future Research

Researches are usually based on the practices of big NGOs and NPOs already well known offline. Limited research efforts have been dedicated to the effect of social media channel and practice by small nonprofit and non-governmental organizations. Research could focus on showing how social media might help small organizations to reach engagement for their causes online. Many small NPOs and NGOs probably struggle to gain support on social media. Second, specific attention to the development of frameworks, theory and measurements of the effects of social media use by NPOs and NGOs is rather limited. Effective measurement instruments must be able to produce detailed data to evaluate and compare the effect of social media channel and practice on engagement with NPOs and NGOs' social media pages. Robins' theory is closer to small NGOs and NPOS, which is a reason why it could be used as framework and measure.

There are also a few limitations regarding the literature review as researched and presented by this paper. This literature review only covers items that were retrievable via electronic subscription services. Only English language material was used. Moreover, the literature review was not aimed to give a complete overview but had an exploratory goal to find existing methods, theories and standards to evaluate social media effects within the nonprofit and nongovernmental field. Other keyword combinations could have delivered other insights. It did not try to cover all the relevant theories for this study because it focused on the influence of social media channel and practice on engagement and how to measure it. Some angles could have been relevant for the research but have been eliminated to keep the focus on the effects of the core of the research proposed.

External variables that are possible moderators should be discussed in future research questions, for example, the effects of the offline presence of nonprofit and non-governmental organizations on the online presence of those organizations on social media, or the effects of the individual characteristics of people on the online engagement with those NPOs and NGOs, and their motives for online engagement. Literature review should be done to understand these influences.

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7. APPENDIX

Table 3 – Overview of Topics Discussed and Research Questions Observed in Study

Sections	Research topic	Research questions
Social Media Choice	Media Appropriateness - Media Type and Purpose	How does the social media channel appropriateness influence e-engagement?
	Social Presence - Media Richness	How does the social media channel richness influence e-engagement?
	Effect of Media on Communication Tasks - Media Synchronicity	How does the medium affect the execution of communicating tasks?
Social Media Use	E-enabling - Disclosure	How does the e-enabling of information influence online engagement?
	- Information Dissemination - Frame	How does the shape and frame of dissemination influence e-engagement?
	E-engaging - Interactivity	How does interactivity influences e-engagement?
Measures of Engagement	Social Media Indicator - Followers, Views, Friends	Should the number of followers, friends and connections count to the measure?
	Organization-Stakeholder Interactivity - Active Stakeholder	Should an engagement measure consider only active stakeholders?
	Stakeholder Community Measure - Density Among Stakeholders	Should an engagement measure observe stakeholders' density and centrality?

The role of EEG as a source of customers' neural information for Neuromarketing

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ABSTRACT

This paper is a critical literature review and is aimed to evaluate a potential use of EEG as a Neuromarketing tool to predict customers demand. Since emotional reactions affect our behavior and desires an adequate method to explore and depict the emotional reactions is required. The potential use of this method is set into a scenario that offers a use for Neuromarketing. Due to the increasing popularity of series provider this scenario contains potential similarities in the emotional reactions of people who watch series and people who rather prefer to engage in real social life. Potential similarities in the emotional reactions could be used to explore new methods for Neuromarketing.

Keywords

Neuromarketing, neuroscience, EEG, demand prediction, oxytocin

MSI Topic nr. 4: New data, new methods, and new skills — how to bring it all together?

The author's view: Why this topic?

Due to the increasing popularity of series provider such as Netflix and the digitalization of entertainment services our daily communication and interaction is changing. Those new developments are creating new opportunities but also raise new question regarding the effect of the new circumstances. Especially Neuromarketing has to explore why some people prefer to stay at home and why other people rather engage in social activities in real life in order to understand how and if those choices are made consciously.

1. INTRODUCTION

The topic of 'New Data, new methods and new skills' was chosen in order to address the increasing importance of Neuromarketing by depicting the role of neuroscience for marketing. The EEG devices, which are used for neuroscience have been improved in the recent years. Since EEG devices such as the emotive are easier to use in daily life new upcoming trends could show the daily use of EEG devices. In such a scenario, the EEG devices would be used by customer themselves. The individual brain activity regarding the course of thoughts can be collected by mobile devices such as the emotive. Considering the development of products and services that are increasingly customized it can be assumed that even these EEG devices will be used by individual customer in order to use personalized services. The customer can be motivated to use EEG devices by offering him highly personalized products that adjust automatically to their needs in shape of music apps and advisory schedules. Those services would automatically adjust to the reactions of the user. That could create a great opportunity to collect information about individual customers think patterns and deduce individual profiles of the customer. Once that level of close interaction between customer and company is achieved companies could use the detailed customer profiles to trigger him/her as the receiver of marketing. The aim of triggering customer would primarily be the attraction of the attention and interest of the customer. Thereby companies would be enabled to distinguish and emphasise themselves from other companies. The consequence of such an effect would be among others new advertisement without customer suffering from sensory overload. For the sake of such developments I want to depict Neuromarketing´s state of art and thereby the development of potential applications. The development of ABCIs (augmented brain computer interfaces) and the corresponding development of user-friendly EEG headsets (electroencephalogram headset) can be seen a formidable challenge for innovative marketer. Marketing departments can perceive this development as a call to accomplish the task of utilizing this opportunity for Neuromarketing. Devices like Emotive & NeuroSky or Muse can be used to control smartphone applications or similar products and services. Since the launching of such devices is a very recent realization we cannot focus exclusively on mobile EEG devices but more on the use of EEG for Marketing applications in general. Now due to the increasing popularity of series providers such as Netflix I was wondering if people tend to stay at home more than they did before Netflix became so popular and if so if their perception and cognition would show some similar patterns of reactions just like they would, when the same people engage in social activities with other groups? Anyway, some students have most likely faced a situation where they had to decide whether they should stay at home and meet people in social media or engage in social activities in the real world. Would it be possible to find similar reactions in the brains of the series user like in the brain of people during engaging in social activities and how could that be used to explain at least one aspect of the growing popularity of series provider such as Netflix. We won't be able to exclude the effect of increasing digitalisation, but we could evaluate to what extend the findings could be utilized for Social Media Marketing and series trailers. Assuming that Netflix user experience the same or similar joy when they watch series just like when they spent time with friends offline give us the opportunity to find out if some people became too lazy to engage in social activities in the real world or if they rather use series to compensate missing opportunities to meet people. The findings in such a research might serve as a new source to develop demand prediction of customer and to adjust upcoming series to new identified customer needs in a digitalized society. If people experience similar emotions while they watch series like they do when they meet friends, further researcher could be conducted to explore the causes. Those findings might lead to a new development of neuromarketing.

However, the role of cognitive computing for Neuromarketing regarding the utilization of EEG headsets is not defined yet. A great number of potential developments and upcoming research could shape and guide this progress. This literature review is aimed to evaluate if and how EEG could be used to predict customers demands. The optimal criteria and potential circumstances to motivate customer to use such devices continuously or just during the use of a series provider can be narrowed down to find out how EEG headsets can be exploited as a source for specific customer profiles. Hence our research question is: "How can EEG devices be used as a source of Neuromarketing input to attract and maintain customer's attention and commitment?

2. METHOD

2.1 Method

A critical literature review was conducted in order to evaluate the utilization of EEG for the prediction of customer's demand. The most recent scientific publications of Neuromarketing, cognitive computing and neuroscience as such will be studied, evaluated and processed in a critical literature review. The focus of this literature review will be the crucial developments of Neuromarketing and cognitive computing applications for the markets. It is aimed to select at least 20 relevant articles and use them to depict the state of art of Neuromarketing by answering the research question and corresponding sub questions of interest

2.2 Critical Literature review

First of all, it is required to depict the meaning of Neuromarketing before we get into the evaluation of its use. Neuromarketing is basically defined as "marketing designed on the basis of neuroscience research". (Fisher et al.2014). It is used to gain insights in customer's neurological activities in order to explore, evaluate and explain causes and effects of customer's reaction for the sake of marketing. It is however related to the term Neuroeconomics, but rather specified on marketing. "Neuroeconomics utilizes neuroscience techniques to explore brain mechanisms involved with decision-making and economic analysis (Rustichini, 2005; Sanfey et al., 2006)" (Garcia et al. 2008). It was suggested in the introduction that Netflix user might experience emotional reactions during watching series that are similar to emotional reactions that the user perceive when they engage in real social interactions. Research in the field of Neuroscience led to the findings that human emotions affect their decision-making process and human behaviour (Kenning et. al,2010). Therefore, we will focus on emotional reactions. Emotional reactions can be observed in the human brains. Neurophysiological methods such as EEG helps to depict such reactions and are even more useful than conventional methods such as the analysis of face expression or interviews. "EEG can reveal variations in electrical signals of cortical brain regions as a function of internal or external variables." (Venkatraman et al. 2015, p4). How are emotions defined in the current scientific papers? "Emotion refers to a relatively brief episode of coordinated brain, physiological, and behavioral changes that facilitate a response to an external or internal event of significance (Davidson, Scherer, and Goldsmith 2009)." (Venkatraman et al.2015, p3) Hence, are researcher able to use EEG on the user to observe the reactions of the user to their

product, services, movie trailers or even series. But without knowing the exact parts of the brain that becomes active due to emotional reactions, this method would be useless. Several recent scientific research papers however showed that specific parts of the brain are responsible for the arouse of emotions. Those part is among others, the amygdala. It is crucially involved in the processing of emotions (Venkatraman et. al. 2015, p5). Furthermore, activity in the ventromedial cortex and the ventral striatum are identified as indicators of desirability (Venkatraman et al. 2015, p5). This creates the opportunity to test whether this parts become active in the brains of the user in order to improve the prediction the demand of a product or services (Venkatraman et al. 2015, p14).

2.3 The effect of oxytocin

Can such a prediction also be expanded to our before mentioned scenario of Netflix? If yes, could series producer create series that stimulate emotional arousal that are like the emotional arousal that occur when people engage offline in social interaction? Recent research stressed the effect of oxytocin on social behaviour. Oxytocin was associated with increasing social behaviour, which also covers among others the amount of trust, emotion recognition and prosocial behaviour between people. Even autistic or schizophrenic people were treated with it. But Bartz et al. (2011) found out that the effect of oxytocin is weaker than assumed. Anyway, since this could affect the causal relation between watching series and experiencing specific emotional reactions and desirability, it is necessary to consider the effect of oxytocin and autistic personality traits in the prediction of customer demand. It might be a third variable. Especially the context where the product is consumed and individual issues affect the experience of a product or series. EEG could be used to find out what contextual circumstances would benefit the user experience.

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3. DISCUSSION AND CONCLUSION

It was aimed to evaluate the use of EEG as a tool of customer demand prediction. Based on the findings in the critical literature review we can conclude that EEG is a suitable neurophysiological method to observe, depict and explore users brain activity in order to use the insights for the prediction of customer's future demand. However, this conclusion is limited by the fact that the human brain and its activities is due to the status of technological limitations, not entirely explored.

The limited amount of research papers about this topic is another limitation of this critical literature review Furthermore, we couldn't exclude the potential impact of oxytocin or autistic attitudes on the perception and the experiences of the user.

Further research about the biochemical reactions combined with EEG might give new insights that could be used for Neuromarketing.

4. POSSIBLE ACADEMIC AND PRACTICAL IMPACT OF THE PAPER

It might be that this paper attracts the attention of companies that could adopt the utilization of EEG for Neuromarketing. That might give companies a new point of view about new opportunities. The research gaps however can motivate other researcher to conduct new research to close one of these gaps.

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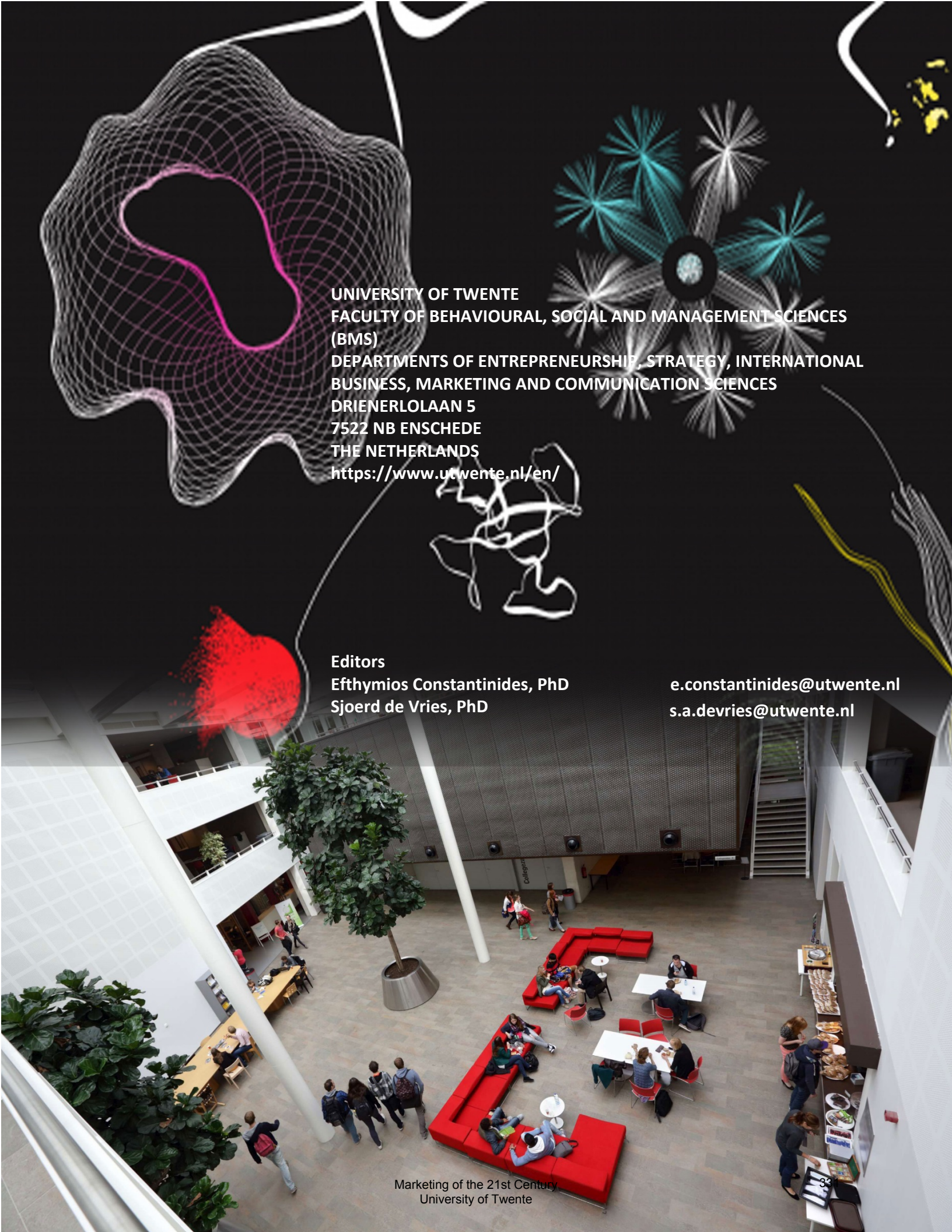
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