Research theme	Design Engineering
Research title	Envisioning a new Knowledge Management Strategy
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Company	University of Twente
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Background

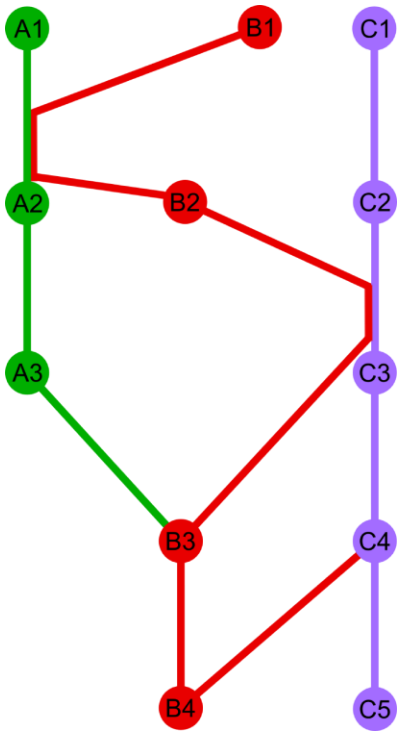
Modern consumers expect more functionalities, better quality and lower prices. As a result, design departments have to develop products in a shorter time to market and with a higher quality. Additionally, companies are increasingly focussing on securing their knowledge, as employees change jobs more often and many of them are about to retire.

Assignment

There is empirical evidence that indicates that successful industrial implementations of Knowledge Management Systems are limited. The research focused on first identifying the real causes of Knowledge Management (KM) implementation failures and secondly in designing a new method to improve current Knowledge Management Systems (KMS). Besides, the applicability of the DPU method to frame the KMS was explored. Design Process Units, as this framework is regarded, can be seen as knowledge building blocks. Design Process Units (DPUs) can be used to build networks representing the knowledge in an artefact.

Results

The results of a literature study and a field research allowed concluding that the main reason why the implementation of KMS has failed is its lack of integration with the product development process. A survey on the design process identified the real dimensions of the problems related to KM during product development, namely, management of uncertainty and implementation of standard documentation and communication policies. Subsequently, a conceptual design of a “Design Support System” was developed. The system indicated the possibility to achieve Knowledge Management intrinsically by storing and the accessibility of decision making, communication based on requirements and a DPU based documentation method. Additionally, the proposed system supports the ideas of a dynamic design process. For example, it uses Metro Maps (see figure) to visualize the progress of a project based on the already generated information.



As a general conclusion, the proposed system provides new methods to handle communication, uncertainty and documentation during the design process in which KM is an emergent result. In the future, the system should be further developed and implemented within a software system.

Personal experience

The assignment was less technical in relation to other master theses of the course Mechanical Engineering. However, the high level of complexity of the assignment requires well developed analytical skills. Additionally, the assignment increased my personal abilities in the field of organizing product development.