Creative Technology module 7
Innovation and Entrepreneurship
Block 2A
2015-2016

Contents

Team

- Rik van Reekum (I&E theory)
- Patrick Bliek (I&E practise / project)
- Robert-Jan Geerts (Responsibilities)
- Walter Kern (Strategies theory)
- Corine Laan (Strategies tutorial)
- Jasper de Jong (Strategies tutorial)
- Student assistants for business game
- Joost Brinkman (co-ordinator)

Summary

The module wants to give theoretical insight into questions like: "How can organizations manage their innovation processes?", "How do entrepreneurs start their business after they got a great business idea?" and "What are professional ethics with regard to deploying new and emergent technology to improve quality of life?", "How can you anticipate the impact a technology may have on user well-being and the public good?". Moreover the module will introduce game theory as a mathematical basis for strategic thinking.

At a practical level the student is challenged to explore (in a team) the commercialization of a technology that is chosen by the team itself.

The module has the following components

Innovation and entrepreneurship: Business Game
During three days student teams are challenged to develop and maintain a business strategy, dealing with threats and opportunities the environment offers. This is the start activity of the module. The purpose is to become acquainted with terminology, concepts and issues in a practical setting, before they are introduced in the theoretical context of the Innovation and entrepreneurship component. (This component has no separate grading.)

Innovation and entrepreneurship: Theory
Throughout the module students get lectures about the theory of innovation management and innovation performance, including the introduction of innovation and entrepreneurship models.

Innovation and entrepreneurship: Practice, bringing ideas to the market
Students form groups and create a business idea, analyse its feasibility and identify conditions under which the idea is likely to produce revenues (which means in particular that they know which data are needed to underpin a realistic expectation of consumer needs, consumer markets, investments and resources, and that they can produce these data)

Thinking strategically: Theory
Throughout the module students have two sessions (lecture and tutorial) about the mathematical foundations for strategic decision making. The mathematics involved is game theory.

Acting responsibly
Throughout the module students have afternoon sessions (partly lectures, partly discussion sessions) devoted to ethics and professional responsibility. Issues addressed are: ethical theory (the toolbox for reasoning about ethical issues), philosophy and psychology of creativity, behaviour steering, privacy, property rights, ethics of games and virtual worlds, and user well-being.

Portfolio course
In the course of the module students have sessions with their tutor, at least one of those is a group session. The aim of the portfolio course is to support students to achieve their professional aims and continuously develop their individual and team skills. To reach this purpose students must submit a reflection about their past and present (what is my current position?), propose plans for their future (in this module choice of minor modules in year 3 gets special attention), show-case their qualities and plans (portfolio, how do I present myself to others?), propose a challenge for themselves to improve individual or team skills, and give productive feedback on qualities and plans of others.

Learning objectives

After the module

1. students have become aware of business dynamics and knowledge required to deal with it in a firm;
2. students have gained understanding of alternative ways of earning a living in their future career;
3. students have gained proficiency of business jargon that helps them communicate effectively with business experts;
4. students have knowledge of the most pivotal models for analysing and developing the commercialisation of an inventive (technical) idea.
5. students have learned how to apply concepts and models in discussing and writing their business plan;
6. students have improved their team work abilities
7. students have awareness of the way venture stakeholders perceive inventive ideas and business plans;
8. students are able to critically assess the feasibility of their business concept;
9. students understand basic ethical theory, critical reasoning and professional responsibility, and on this basis are able to clarify how technologies may positively or negatively affect user behaviour and quality of life;
10. students can draw inspiration from theoretical resources, and use for the design/prototype of a technological product;
11. students can engage in unbiased and critical discussion of the ethical implications of technological innovation;
12. students understand the basic mathematical foundations of game theory;
13. students can apply game theory in the context of auctions as an economic platform to make business.

The learning objectives 1 – 8 are covered primarily in the Innovation and Entrepreneurship track (both theory and practice). The learning objectives 9 –11 are covered in the Acting Responsibly track. Learning objectives 12 and 13 are covered in Thinking Strategically.

Teaching and learning methods

	Thinking Strategically	Acting Responsibly	I&E Theory	I&E Practice
Lectures	16 hrs		14 hrs	
Lectorial		28 hrs		14 hrs
Tutorial	16 hrs		4 hrs	
Practical				28 hrs
Project				24 hrs

In addition there is a business game in the first week of the quarter which takes 3 full days (at least 24hrs).

Tutoring

The tutors will organize reflection on the Business Game. (And, as part of their general responsibility, will require efforts in the preparation of the choice of profile modules in the first two quarters of year 3).

	Thinking Strategically	Acting Responsibly	I&E Theory	I&E Practice

Tests and assessment

The module assessment has 5 major parts. The assessment for each part is based on one or more subtests.

The table shows the 5 components of assessment, and, in its final column, the distribution of the assessment in each component over subtests.

The assessment of all components except Portfolio course results in a mark with an accuracy of one decimal. Each of these marks should be at least as high as the mark in the min-column of the table, otherwise the assessment of the module results in a fail.

The assessment for Portfolio course results in a Pass or a Fail. If the mark for this component is a Fail, the assessment of the entire module results in a fail.

If the marks for the four assessments (except Portfolio course) all meet the minimum requirement, the assessment for the entire module results in a mark which is the rounded weighted average of these four, the weights used in this average computation are in the weight column of the table.

(Rounded means: substituted by the nearest integer, and if there are two integers at the same distance, by the higher of these two).

If the mark for the module assessment is below 6, a fail is registered.

	weight	min	load	subtests
Thinking Strategically	20	5,0	3	1 written test
Acting Responsibly	25	5,0	4	1 assignment
I&E Theory	20	5,0	3,5	1 group assignment, 1 written test, 1 multiple choice test,
I&E Practice	35	5,0	4,0	1 group report, 1 reflection report 1 peer assessment
Portfolio course	0	PASS	0,5	1 assignment

The load column gives an estimate for the number of hours a student must expect to spend in order to reach the learning objectives of the component. (The unit used is the EC, each unit stands for 28 hours)

Materials

For the I&E components students must have the following book (obligatory):

> Byers, Dorf & Nelson – Technology Ventures: From idea to enterprise. McGraw-Hill International, Third Edition. 2011. ISBN-13: 978-0073523422

For the Thinking Strategically component a reader will be available.

For the Acting Responsibly component selected articles will be made available via Blackboard.

WARNING:

After Spring Break the period starts for handing in work. There are penalties for students who miss deadlines, but missing a deadline is not immediately fatal.

The key to success is probably to get feedback on your progress. Feedback on your progress will not be available (or will be too late) if you miss deadlines. The biggest penalty of a missed deadline is not the penalty imposed by the teacher, but the opportunity you missed to learn about your progress

NOTES:

For more details on the requirements for assignments and reports to be handed in, please check the BB sections of the respective tracks. I&E Theory and Practice are strongly interwoven, requirements are often similar.

There is an extended period for handing in the Responsibilities assignment. Chances of easy repair are better if the work is handed in early.

Grading of the written test for strategies of April 7 will be available the day after. (April 8)
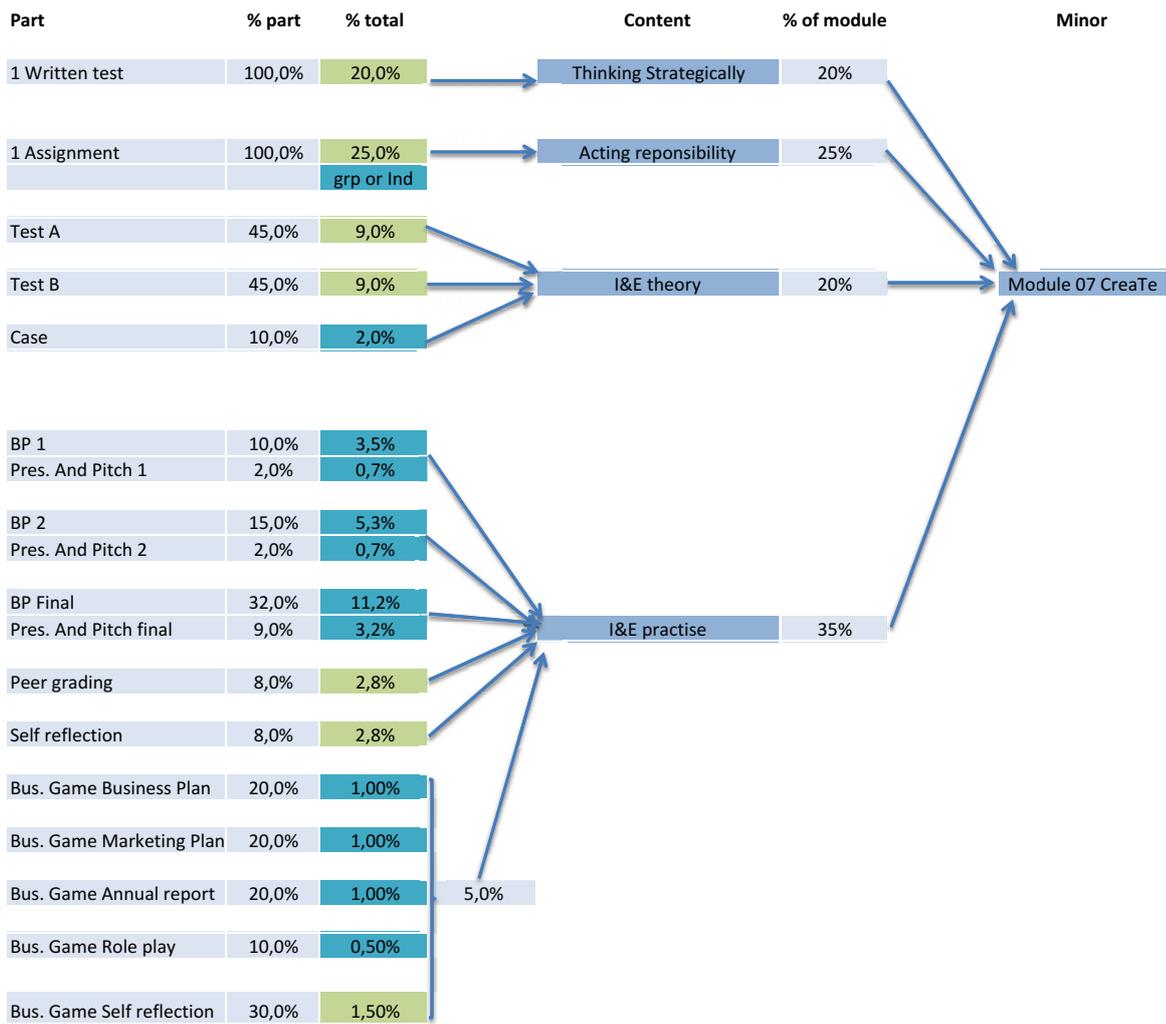
The tutor group meetings are scheduled by tutors, the period as indicated in this overview for the technology acceptance assignment is tentative.

General schedule of subjects (can be changed by teachers) see schedule in Blackboard

Week 1 Feb, 2-6	Business Game	
	Thinking Strategically Introduction	
Week2 Feb , 9-13	I&E Theory	Opportunities and Problems versus Push-Pull, Technology Readiness NPD, Patent searching and Freedom2Operate
	I&E Practice	
	Acting Responsibly	Introduction, meta-ethics, critical reasoning, central topics in Philosophy and Ethics of technology: Behavior-steering, value-sensitive design.
	Thinking STrategically	Game Theory
	Portfolio	
Week3 Feb , 16-20	I&E Theory	Markets; Innovation and competition (forces)
	I&E Practice	
	Acting Responsibly	Ethical theory, the ethical cycle
	Thinking STrategically	Game Theory; Network Traffic and Selfish Routing
	Portfolio	
Spring Break Feb, 23-27		
Week4 Mar, 2-6	I&E Theory	
	I&E Practice	
	Acting Responsibly	Intellectual Property regimes and their (ethical) problems The Cathedral and the bazaar models The ethics of using the crowd
	Thinking STrategically	Network Traffic
	Portfolio	Technology Acceptance Model Technology adoption; Adoption Cycle
Week 5 Mar, 9-13	I&E Theory	Business modelling and Marketing
	I&E Practice	
	Acting Responsibly	Psychology and Neuroscience of creativity How to be creative Creativity in teams and organizations
	Thinking STrategically	Network Traffic, Auctions
	Portfolio	Technology Acceptance Model Technology adoption; Adoption Cycle

General schedule of subjects (can be changed by teachers) see schedule in Blackboard

Week 6 Mar, 9-13	I&E Theory	Organizing for Operations Financial Instruments
	I&E Practice	
	Acting Responsibly	Technological Mediation, Nudging revisited, gamification
	Thinking STrategically	Auctions, Matching Markets
	Portfolio	Technology Acceptance Model Technology adoption; Adoption Cycle
Week 7 Mar 23-27	I&E Theory	Financial Forecasting
	I&E Practice	
	Acting Responsibly	Professional responsibility: workplace conflicts; professional rights and duties; distributed responsibility; Corporate Social Responsibility
	Thinking STrategically	Sponsored Search Auctions
	Portfolio	Technology Acceptance Model Technology adoption; Adoption Cycle
Week 8 Mar 30 –Apr 3	I&E Theory	Financing for Innovations
	I&E Practice	
	Acting Responsibly	Topics as requested by students (esp. as raised by simulation game), Q&A
	Thinking STrategically	Sponsored Search Auctions; Exam Preparation
	Portfolio	

Test schedule Mod07 CreaTe

Part	% part	% total		Content	% of module		Minor
1 Written test	100,0%	20,0%		Thinking Strategically	20%		Module 07 CreaTe
1 Assignment	100,0%	25,0%		Acting reponsibility	25%		
		grp or Ind					
Test A	45,0%	9,0%		I&E theory	20%		
Test B	45,0%	9,0%					
Case	10,0%	2,0%					
BP 1	10,0%	3,5%					
Pres. And Pitch 1	2,0%	0,7%					
BP 2	15,0%	5,3%					
Pres. And Pitch 2	2,0%	0,7%					
BP Final	32,0%	11,2%		I&E practise	35%		
Pres. And Pitch final	9,0%	3,2%					
Peer grading	8,0%	2,8%					
Self reflection	8,0%	2,8%					
Bus. Game Business Plan	20,0%	1,00%					
Bus. Game Marketing Plan	20,0%	1,00%					
Bus. Game Annual report	20,0%	1,00%	5,0%				
Bus. Game Role play	10,0%	0,50%					
Bus. Game Self reflection	30,0%	1,50%					

100,10%   100%

Group	29,0%
Individual	70,1%