

Mod.No.: MA-UFÜ 10(D)

Title: Advanced Topics in Technology and Innovation Management

Overview

Firms find themselves at the crossroads between digital innovation and transformation. New and emergent digital technologies, such as artificial intelligence, IoT, blockchain, or microprocessors, offer new opportunities for the creation of new infrastructures, products, processes, business models and organizational forms, and reshape traditional ways of organizing and working. At the same time, digital technologies are also increasingly more affordable and accessible to everyone, embedding themselves into society and altering the ecosystems in which firms operate. This fusion of digital technology within firms' environments produces ongoing changes in customer expectations, the competitive landscapes, and regulation. Windows of opportunities are created for new ventures and new ways of working. At the same time, the lowering of entry barriers and proliferation of new digital ventures, in some cases involving new platform business logics that have the potential to disrupt existing industries, puts large established firms under significant competitive pressure to transform their legacy systems and reshape their business strategies and processes. It is no longer only startups who innovate digitally and are leveraging the new opportunities provided by digital technologies, new ways of working, and the associated market changes. Large and small incumbents across a great diversity of different industries and geographies are embracing digital innovation activities, and as they scale them, they transform their entire organization. Within and across organizations, digital technologies give rise to new ways of collaboration, leveraging resources, development, and deployment over open standards and shared technologies. Firms are moving from stand-alone organizations to open, collaborative eco-systems in which multi-firms' networks collaboratively innovate with partners, suppliers, customers, and even competitors.

This unit will explore advanced topics and emerging scientific knowledge about digital innovation, digital transformation, and digital entrepreneurship as modern forms of technology and innovation management. This knowledge is relevant to organizational leaders, directors, and other roles about managing technology-enabled organizing.

Course Objectives and Learning outcomes

This unit pursues three aims:

1. to offer students who completed the basic module “Technology and Innovation Management” an opportunity to explore selected topics in much more detail.
2. to offer students an opportunity to meet, identify, explore, and critically discuss latest world-class faculty research on digital innovation, digital transformation, and digital entrepreneurship.
3. to provide students with additional scientific method competencies and content competencies about digital innovation, digital transformation, and digital entrepreneurship, which they can utilize for their master theses or future scientific or professional careers.

Students learn to...

- ... analyse current issues in specific topic areas of technology and innovation management
- ... describe and apply fundamental theories about digital innovation, digital transformation, and digital entrepreneurship
- ... acquaint themselves with the scholarship of world class research faculty in the areas of digital innovation, transformation, and entrepreneurship.
- ... learn some of the leading issues, theories and methodologies that characterize research in in the areas of digital innovation, transformation, and entrepreneurship.
- ... learn new oral and written competencies about how they approach, critique and construct research papers.

Contents and Schedule

The course will be held in the form of seven sessions of 4h length (16.00-20.00), with teaching commencing 16.15 and finishing after 180 minutes plus breaks. Additionally, seven practical sessions of 2h length (90 minutes plus breaks) will assist you with writing your essay. Each session will have a dedicated topic area.

Date	Topic	Lecture session	Practical session, Group I	Practical session, Group II
Di, 9.4.24	Introduction: Advanced Topics in Technology and Innovation Management	16.15-19.30h		
Di, 16.04.24	Practical Session		10.00-11.30h	10.00-11.30h
Di, 23.4.	Digital Product, Service, and Experience Innovation	16.15-19.30h		
Di, 30.4.	Practical Session		10.00-11.30h	10.00-11.30h
Di, 7.5.	Digital Process Innovation: Robotic Process Automation and Process Mining	16.15-19.30h		
Di, 14.5.	Practical Session		10.00-11.30h	10.00-11.30h
Di, 14.5.	Managing Artificial Intelligence	16.15-19.30h		
Di, 28.5.	Practical Session		10.00-11.30h	10.00-11.30h
Di, 28.5.	Ethics and Digital Technology	16.15-19.30h		
Di., 11.6.	Practical Session		10.00-11.30h	10.00-11.30h
Di, 11.6.	Digital Entrepreneurship	16.15-19.30h		
Di, 25.6.	Practical Session		10.00-11.30h	10.00-11.30h
Di, 25.6.	Digital Technology and the Future of Work	16.15-19.30h		
Di, 2.7.	Practical Session		10.00-11.30h	10.00-11.30h

Mode of Teaching

While this unit follows the traditional separation of "lecture" and "practicals", it does not actually have traditional lectures or practicals.

In the lectures, instead of the lecturer presenting content, we will instead jointly assess, review, understand, critique, and discuss latest research under each topic area. The lectures will make minimal use of slides and maximal use of interaction and discussion.

Specifically, in each lecture session, we will discuss 3 selected studies (1h each). These will be made available in advance and be assigned to student teams. The student teams need to review, synthesize, present, and lead a discussion of these papers in class.

Student teams should deliver a presentation that acts not as a summary of the paper but rather as a **provocative "conversation starter,"** which integrates the assigned reading with your own experience and personal insights. The goal of the presentation should be to start a lively discussion. For example, you could raise interesting questions, take a particular side in an argument, disagree with some argument(s), or otherwise spark a debate.

In the practicals, instead of the tutor giving you exercises to complete, we will guide you in learning how to construct your own essays on research related to advanced topics in technology and innovation management. You will learn how to pick a topic, structure your analysis, work in a team, structure your essay, and write the different paper sections. This way, we help you construct your own essay over the course of this course.

Required Readings

Studying literature relevant to selected topics of technology and innovation management will be key in this course. Relevant papers and other reading materials will be announced and made available in due time.

Assessment

Grading in this course is on two main components:

1. **Student team presentations/discussions (30%):** In each of six topic areas (except for the first session), the lecturer will grade each student team on their presentation and discussion. Five grading criteria will be used:
 - a. Correctness: do you correctly portray the study, its procedures, and findings?
 - b. Clarity: how well do you communicate about the study and its findings?
 - c. Critique: What are your own findings about the study and its findings? What implications do you see and what limitations do you identify?
 - d. Lead of discussion: how effective are you in leading and moderating a broader discussion with the class?
 - e. Interaction with the audience: how well are you delivering our presentation and discussion? How effective are your aids if any? How do you handle questions and feedback?

For each grading criterion we will use a simple scoring scheme from 0 (criterion not at all met) to 6 (criterion fully met), totaling a score from 0 to 30 points (5x6).

2. **Group written essay (70%):** in groups of 4-6 members, all students have to prepare and hand-in a concise essay paper after the course has finished. We will circulate a detailed list of potential topics in the form of research questions to choose from toward the end of the course. In the paper we expect student groups to (1) give a concise introduction into the topic and state why it is relevant, (2) describe the state-of-the-literature in this field, (3) develop a sound but concise line of arguments to answer the chosen research question and (4) give an outlook of potential further research to be done in the chosen area. Students are meant to learn how to structure their thoughts and to write as concise as possible. Therefore, the essay should not be longer than 10 pages (single-line spacing, 11pt font size, excl. references and appendices). This will challenge students to really think through what they want to communicate. The submission will be due at the end of the semester, to provide students sufficient time to develop the paper. A grading rubric will be provided to help students understand how their essays will be graded.

Brief Bio

Jan Recker joined the University of Hamburg in 2021 as Nucleus Professor and holder of the chair for Information Systems and Digital Innovation, funded through the Excellence Strategy of the Federal and State Governments.

Previously, he was Professor for Information Systems and Systems Development at the University of Cologne from 2018-2021, Full Professor for Digital Innovation at the School of Management at the QUT Business School in Brisbane, Australia, from 2016-2017, and inaugural holder of the Woolworths Chair of Retail Innovation and Full Professor of Information Systems in the School for Information Systems at QUT in 2012. Since 2012, he is an Honorary Guest Professor at the International School of Software at Wuhan University, China. Jan Recker holds bachelor's and master's degrees in information systems from the University of Münster and a PhD in Information Systems from the Queensland University of Technology.

Jan Recker is an AIS Fellow, a Fellow of the Alexander-von-Humboldt-Foundation as well as a Fellow of the Liechtenstein Chapter of the Association for Information Systems. He is holder of multiple editorial appointments for the leading journals in the field of information systems: he was Editor-in-Chief for Communications of the Association for Information Systems between 2015 and 2020, and he is presently Senior Editor for MIS Quarterly.

In his research, Jan Recker explores how organizations deal with digital innovation, digital transformation, and digital entrepreneurship. As a field researcher, he has cooperated with particularly large organizations (e.g., Woolworths, SAP, Hilti, Commonwealth Bank, Federal Police, Lufthansa, Ubisoft, federal and state governments) and with particularly small organizations, such as different start-ups. Jan Recker employs quantitative, qualitative, and mixed field methods in his research and is also competent in design research.

Jan Recker's research has appeared in leading journals in information systems, management science, organization science, computer science, and social science. He has also written popular textbooks on scientific research and data analysis, which are in use in over 500 institutions in over 60 countries. He ranks as one of the most published information systems academics of all time. In 2019, he was named #1 Business Researcher under 40 years of age by the German publication Wirtschaftswoche. Jan Recker is one of the University of Hamburg's most cited scholars.

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