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Digital Transformation (BIS6031)

Syllabus

Winter Term 2020_21

Time:	see schedule below
Room:	W2.2.01 (11:30 - 13:00) and Audimax (13:45 - 15:15)
Begin:	Tuesday, 06th October, 2020
ECTS-Credits:	5
Level:	Advanced
Prerequisites:	Basic knowledge in Computer Science and Information Systems
Accessibility:	Course is compulsory for 3 rd semester MBA-IM students and open to international guest students on MBA-level

Learning Objectives:

By the end of the course, the participants shall...

- explain and define change drivers in the environment of companies that influence digital transformation
- define digital transformation and give concrete examples
- define, repeat and illustrate what digital strategies are based on concrete examples and use cases
- explain and discuss the key messages and research domains of service systems engineering and how it contributes to synthesize and evaluate solution designs
- recall and describe a systematic way how companies can transform their value creation processes
- summarize and argue the role of enterprise architecture to overcome challenges of digital transformation
- define and discuss new capabilities that companies need to execute digital strategies
- recall, name and define pivotal concepts and their impact on digital transformation
- classify digital business models based on introduced frameworks and dimensions
- analyze and discuss digital business models based on real life examples and referring to case studies of the course

- discuss and criticize existing business models and recommend how they value propositions need to be transformed to sustain in the digital age
- combine and integrate approaches and concepts to design digital strategies, digital business models
- point out and argue how S-D logic and service systems can be the basis to derive new capabilities to master digital transformation
- propose and validate independently solution designs to solve typical problems in relation to digital transformation
- analyze and formulate concrete requirements for solutions designs following an explorative and use-case based design approach
- describe and discuss pros and cons of service science research to master digital transformation and recall and explain main purpose and objectives of action design research as process model; including selection and comparison of alternative approaches

Course contributions to the MBA program goals / learning outcomes

Goal	Learning Objectives	Course Contributions to Goal	Assessment
1 Responsible leadership in organizational contexts	1.1 Knowledge of leadership principles 1.2 Application of leadership principles 1.3 Critical reflection of leadership concepts	Understand how digital strategies can be designed and executed in a real life organizational context. Besides hard facts as well soft aspects of culture, organizational structures and teams are considered. Interdependencies and existing models and thought leaders in practice and science will be consulted and looked at. Students will bring in past experiences and will be equipped with required rhetoric to communicate change, to foster identity and required action as leaders.	
2 Creative problem solving skills in a complex business environment	2.1 Ability to identify, differentiate and classify problems 2.2 Ability to analyze problems (instrumental competence) 2.3 Ability to find creative solutions (systemic competence) 2.4 Ability to present problems (communicative competence)	Implications of new management paradigms such as service orientation (mainly S-D logic) and related strategic imperatives to design creative solutions and synthesize concepts to appropriate strategies to (re)position the company in the context of digitalization and digital transformation. Students will get equipped with new thinking and concepts which can be used and applied to develop solutions for given problems in an industrial context.	Discussion within class, Term Paper, Presentation and Discussion of Term Paper and use case (term project). Presentation of Management Summary of an Article Students will conceptualize solution designs and propose high-level artefacts which address and solve identified problems based on scientific methods and approaches.
3 Research Skills	3.1 Methodological knowledge (extending knowledge) 3.2 Competence in applying relevant state of the art research methods (instrumental competence) 3.3 Ability to collect innovative results by using relevant research methods (systemic competence)	Results and outcomes of research papers will provide insights and understanding how knowledge and innovative results are produced and/or published. Students will discuss of research methods and bodies of knowledge can be synthesized to solutions following an eclectic research approach and related paradigm. By following a research-based teaching approach students get acquainted with research methods and approaches. Exemplarily, Design Science	Self-directed development of use cases and transfer of new concepts to new domains and application contexts. Students will get acquainted with appropriate methods, techniques and tools to design, plan and communicate. Students will conceptualize solution designs and propose high-level artefacts based on elicited requirements (e.g. through applying basic modeling techniques).

		Research methods are of interest and will be introduced.	
4 Management of Innovation	<p>4.1 Fundamental knowledge of operational innovation processes</p> <p>4.2 Ability to assess a company's innovation potential</p> <p>4.3 Ability to develop complex technological strategies</p>	To analyze requirements and to arrive at practical solutions, students learn new concepts and will be acquainted with conceptualizations of solutions designs, to understand that a systems perspective ("purposed systems") are fundamental for research and practice, respectively.	<p>Discussion within class, Term Paper, Presentation and Discussion of Term Paper and use case (term project) Presentation of Management Summary of an Article.</p> <p>Students will conceptualize solution designs and propose high-level artefacts which address and solve identified problems based on scientific methods and approaches.</p>
5 Management of the challenges of global sustainability and awareness for social and corporate responsibilities	<p>5.1 Fundamental knowledge of sustainability issues</p> <p>5.2 Ability to identify and analyze sustainability issues and its causes</p> <p>5.3 Development of sustainability strategies</p>		<p>Discussion within class, Term Paper, Presentation and Discussion of Term Paper and developed use case (term project), Presentation of Management Summary of an Article.</p>

Main course topics:

- Digitization and digital transformation
- Digital strategies and strategic agility
- Development of a compelling digital strategy (ingredients, elements)
- Foundations and theories to back up and inspire digital strategies
- Digital business models
- Enterprise architecture and enterprise coherence
- Foundations of execution
- Service systems engineering (architecture, interaction, mobilization)
- S-D logic
- Service-led strategies
- Digitally enabled services
- Digital service innovations
- Platform-based strategies
- Enterprise capabilities
- New perspectives and new capabilities
- Case studies on digital transformation

Basic outline and organization:

The course is organized as a lecture in form of seminar, thus throughout the course special emphasis is met on discussion and interaction with the students. Based upon profound knowledge of theory and its implications during the lecture critical discussions are in focus. This covers discussions concerning current challenges of digital transformation. New paradigms and strategic implications will be discussed. The course introduces approaches, concepts and contributions informing about the challenges and potential ways to arrive at solutions to master digital transformation.

The course follows a research-based teaching approach, which is interactive and requires student's active participation and individual engagement. Student will get assigned a topic (scientific paper) that student will prepare to present in class. Together we will learn and explore about the relevant concepts, about their applicability and usefulness; and how they can be applied in real life settings and business contexts. Based on cases and use cases student will learn about applicability and relevance of presented theoretical concepts to solve some of the problems ahead.

In this course, up to date material provides the foundation to elaborate on solutions, such as scientific papers, case studies published in MIT Sloan Management Review and Harvard Business School Publishing. Some of these papers are only accessible by fees or membership (e.g. AIS conferences and journals). An important part of the learning process is getting feedback. Each group is invited to come to my office during my office hours or based on an individual appointment to get my feedback about the paper and the presentation.

Topics of the course will be carefully selected and will be the base for your scientific work and successful learning process. The case studies and learning material will reflect current state of play, existing vantage points and current as well as future developments in information technology and information systems with the aim to show existing links and influences on digital transformation endeavors and in consequence on strategizing information systems and yielded results of IT strategy management. The list of topics is still tentative, changes can happen. The complete list will be presented at the first class session.

The lecture materials such as term papers, slides, case studies and study texts are accessible for students via the e-learning platform (Moodle).

Grading:

The grading approach will be discussed during the first lecture.

To get credits for the course it is necessary that the student has to complete all the team assignments and foreseen tasks.

Course Material:

- Norman, R.: Reframing Business: When the Map Changes the Landscape. John & Wiley, New York, 2001.
- Vargo, S. L. & Lusch, R. F. (2018). The sage handbook of service-dominant logic 55 City Road, London: SAGE Publications Ltd
- Galliers, R.D., Leidner, D.E. (Eds): Strategic Information Management: Challenges and Strategies in Managing Information Systems. Fourth Edition. Routledge, New York, 2009.
- Parker, G.P.; Alstyne, Van, M.W; Choudary, S.P. (2016): Platform Revolution. Norton & Company, New York London.
- Johnson, M. W.: Reinvent Your Business Model. Harvard Business Review Press Boston, 2018.
- Evans, E.: Domain-Driven Design: Tackling Complexity in the Heart of Software. Addison-Wesley, Boston, 2004

Complementary/ Additional Reading/ Case Material (tentative to be completed / updated):

- Chesbrough (2011): Open Service Innovation: Rethinking Your Business to Grow and Compete in a New Era. Jossey-Bass.
- Kagermann, H.; Oesterle, H.; Jordan, J. (2011): IT-Driven Business Models: Global Case Studies in Transformation. John Wiley & Sons.
- Ross, J.W.; Weill, P.; Robertson, D.C. (2006): Enterprise architecture as strategy. Creating a foundation for business execution. Harvard Business School Press, Boston, Massachusetts.
- Lusch, R.F.; Vargo, S.L.: Service-Dominant Logic: Premises, Perspectives, Possibilities. Cambridge University Press, 2014.
- Luftman, J.N. (Ed.): Competing in the Information Age: Align in the Sand. 2nd Edition. Oxford University Press, Oxford, 2003.
- J.W. Ross, I.M. Sebastian, C.M. Beath, "How to Develop a Great Digital Strategy", In: MIT Sloan Management Review, Vol. 58, No. 2, Winter 2017 Issue, pp. 6-10.
- Arthur, W.B., The Nature of Technology: What it is and how it evolves. Free Press, New York, 2009.
- Böhmman, T., Leimeister, J.M., Möslin, K.: Service Systems Engineering. Business & Information Systems Engineering 6, 73-79 (2014)
- Moore, G.: Systems of engagement and the future of enterprise IT: A sea change in enterprise IT. AIIM (2011)
- Akaka, M.A., Vargo, S.L.: Technology as an operant resource in service (eco)systems. Information Systems and e-Business Management 12, 367-384 (2014)
- D.K. Rigby, "Digital-Physical Mashups". In: Harvard Business Review, September 2014.
- M.A. Akaka, S.L. Vargo, "Technology as an operant resource in service (eco)systems", Information Systems and e-Business Management, 12 (3), 2014, pp 367–384.

- M. Warg, P. Weiß, A. Zolnowski, R. Engel, "Service Dominant Architecture based on S-D logic for Mastering Digital Transformation: The Case of an Insurance Company", RESER Conference Proceedings, Naples, Italy, 2016.
- Weiß, P.; Zolnowski, A.; Warg, M.; Schuster, T.: Service Dominant Architecture: Conceptualizing the Foundation for Execution of Digital Strategies based on S-D logic. In: Proceedings HICSS 2018, 03-06 January 2018, Hawaii.
- Kane, G.C., Palmer, D., Phillips, A.N., Kiron, D., Buckley, N.: Coming of Age Digitally. MIT Sloan Management Review and Deloitte Insights June, (2018)
- Ross, J.W., Sebastian, I., Beath, C., Mocker, M., Moloney, K., Fonstad, N.: Designing and Executing Digital Strategies. Thirty Seventh Int. Conf. on IS, Dublin (2016)
- G.C. Kane, D. Palmer, A.N. Philips, D. Kiron, N. Buckley, "Strategy, not Technology Drives Digital Transformation", MIT Sloan Management Review. Deloitte University Press. Summer, 2015, pp.3-24.

Availability of the lecturer and teaching philosophy:

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An important part of the learning process is presenting, discussing, and getting feedback. Student's competence to conceptualize solutions and to research independently for concepts and solution designs will be strengthened. Often solution designs are derived from eclectic research approaches. An interesting research field is design science research and in particular design action research (Böhmman et al., 2014).

To demonstrate this competences and capabilities, students will write a short term paper concerning an assigned topic which will summarize student's presentation in class. In the term paper students will make a statement and will find arguments how companies are overcome the challenges of digital transformation.

Student will work in groups, interact with the lecturer and student's fellow colleagues. Each group is invited to come to my office during my office hours or based on an individual appointment to get my feedback concerning assigned tasks and produced results, e.g. term papers and presentation slides.

In support of this course, an e-learning platform (Moodle) will be used which offers several advantages. Firstly, teaching material will be made available via this platform. Secondly, questions that might arise can be discussed among the students through the use of this platform. Finally, general questions can be answered transparently by the lecturer, i.e. all students will be able to see the answers. For specific questions, you may always contact the lecturer in person or via email.

For preparing the paper the students have to follow the "Guidelines of the Business School for Academic Writing".

Preliminary schedule for BIS6031 – Digital Transformation

	Date	Term Paper or Class Topic	Case Study
1	Week 1	Introduction/Preliminaries/Organization/Assignments	Overview and materials
2	Week 2	Challenges of Digital Transformation Introductory case studies and examples	
3	Week 3	Success factors for Digital Transformation Introductory case studies and examples	
4	Week 4	Examples of Digital Transformation Introductory case studies and examples	
5	Week 5	Design and Execution of Digital Strategies Ingredients and foundations to design and execute digital strategies	
6	Week 6	Design and Execution of Digital Strategies Framework and Design Principles	
7	Week 7	Design and Execution of Digital Strategies Framework and Design Principles	
8	Week 8	Design and Execution of Digital Strategies Framework and Design Principles	
9	Week 9	Foundations of Execution Case Studies and Solution Designs	
10	Week 10	Foundations of Execution Case Studies and Solution Designs	
11	Week 11	Foundations of Execution Case Studies and Solution Designs	
12	Week 12	Foundations of Execution Case Studies and Solution Designs	
13	Week 13	Digital Business Models Towards a Taxonomy of Digital Business Models Case Studies	
14	Week 14	Digital Business Models Towards a Taxonomy of Digital Business Models Case Studies	
15	Week 15	Digital Business Models Towards a Taxonomy of Digital Business Models Case Studies	
16	Week 16	Digital Business Models Towards a Taxonomy of Digital Business Models Case Studies	
17	Week 17	Capstone Session	