

# Syllabus: Introduction to Digital Innovation Management

**Instructor:** Lucas Göbeler, Post Doc

**Course Pre-Registration:** No pre-requisites. No pre-registration is necessary

## Overview

The significance and role of digital technology in organizations has become extremely important. People, organizations, and governments embrace digital innovations in all aspects of life. New digital technologies, including artificial intelligence, IoT, and Blockchain fundamentally transform how we live and do business. While digital technology becomes ever more pervasive and ubiquitous, the management of these digital innovations is getting more relevant but also more complex. For organizations to be successful they must deal effectively with a number of challenges, such as screening digital technologies, adjusting ways of working, and dealing with perpetual and dynamic change. Strategic management of digital innovation forms the foundations for organizations to build digital capabilities and react to such challenges. For organizations to thrive it is vital that future managers in all areas of business have a working knowledge of modern digital innovations and their strategic use in organizations.

Accordingly, this course is open to all students who are interested in management of digital technology and innovation. The course provides an introduction to digital technology, development, and management of digital innovations. The course assumes no prior knowledge of information systems in organizations. New concepts and terms are defined with comprehensive explanations. In this fast-moving area, the course covers both the crucial underpinnings of the subject as well as the most recent business and technology applications.

The course will utilize a flipped classroom teaching model, with classroom sessions being discussion-led and based on group exercises. The course will contain mandatory group works that are presented in class.

## Course Objectives and Learning Outcomes

**Students learn to...**

- describe and apply fundamental theories about digital technology, technology management, digital innovation, and digital strategic management
- explain the interplay of digital technologies, human beings, and organizational management
- describe and explain relevant digital strategies that can be leveraged in different organizational contexts
- apply the key concepts and models of the course to cases/concrete examples
- identify relevant concepts/models for analyzing the challenges and opportunities of digital innovation for an organization.

## Course Plan: Introduction to Digital Innovation Management

Week	Topic/Module	Lecture	Assignments (TBC)	Literature
1	Module 1: Introduction and Digital Technologies in Organizations	In Person Workshop  Lecture & Exercise		<ul style="list-style-type: none"> <li>• Yoo, Y., Henfridsson, O., &amp; Lyytinen, K. (2010). <b>Research Commentary: The New Organizing Logic of Digital Innovation: An Agenda for Information Systems Research</b></li> <li>• Hukal, P., &amp; Henfridsson, O. (2017). Digital innovation—a definition and integrated perspective. In <i>The Routledge companion to management information systems</i> (pp. 360-369). Routledge.</li> <li>• Nambisan, et al. (2017). Digital innovation management. <i>MIS quarterly</i>, 41(1), 223-238.</li> <li>• Nambisan, S., Lyytinen, K., &amp; Yoo, Y. (2020). Digital innovation: towards a transdisciplinary perspective. <i>Handbook of digital innovation</i>, 2-12.</li> </ul> <p><b>Complementary:</b></p> <ul style="list-style-type: none"> <li>• Nambisan, S., Lyytinen, K., &amp; Yoo, Y. (Eds.). (2020). <i>Handbook of digital innovation</i>. Edward Elgar Publishing.</li> </ul>
2	Module 2: Sociotechnical Axis of IS and the Ontology of Digital	Video/Online Lectures		<ul style="list-style-type: none"> <li>• Sarker et al. (2019), The Sociotechnical Axis of Cohesion for the IS Discipline: Its Historical Legacy and its Continued Relevance, <i>MIS Quarterly</i>, (43: 3) pp.695-719</li> </ul>
3		In Person Workshop  Lecture & Exercise	<p><b>Paper-Presentation:</b> Group 1 – Beath et al. (2013) Group 8 – Baiyere et al. (2023)</p> <p><b>Case-Discussion:</b> Group 6 Group 3</p>	<ul style="list-style-type: none"> <li>• Beath et al. (2013), <b>Expanding the Frontiers of Information Systems Research: Introduction to the Special Issue, <i>Journal of the Association for Information Systems</i>, (14:4), pp. i-xvi</b></li> <li>• Kallinikos et al. (2013), The Ambivalent Ontology of Digital Artifacts, <i>MIS Quarterly</i>, (37:2), pp. 357–370</li> <li>• Lyytinen (2022), Innovation logics in the digital era: a systemic review of the emerging digital innovation regime, <i>Innovation</i>, (24:1), pp. 13-34</li> <li>• Baiyere, et al. (2023). <b>Digital “x”—Charting a Path for Digital-Themed Research. <i>Information Systems Research</i>.</b></li> </ul> <p><b>Complementary:</b></p> <ul style="list-style-type: none"> <li>• Winter, S., Berente, N., Howison, J., and Butler, B. 2014. “Beyond the Organizational ‘Container’: Conceptualizing 21st Century Sociotechnical Work,” <i>Information and Organization</i>, (24:4), pp. 250-269</li> <li>• Faulkner and Runde (2019), Theorizing the Digital Object. <i>MIS Quarterly</i>, (43:4) pp. 1279–1302</li> <li>• Cecez-Kecmanovic, D., Galliers, R. D., Henfridsson, O., Newell, S., and Vidgen, R. 2014. “The Sociomateriality of Information Systems: Current Status, Future Directions,” <i>MIS Quarterly</i>, (38:3), pp. 809-830</li> </ul>

4	Module 3: IS in Organizations - Strategies for Digital Innovation	Video/Online Lectures		<ul style="list-style-type: none"> <li>• Bharadwaj et al. (2013). Digital Business Strategy: Toward a Next Generation of Insights. <i>MIS Quarterly</i>, (37:2), 471–482.</li> </ul>
5		In Person Workshop  Lecture & Exercise	<b>Paper-Presentation:</b> Group 2 – Sebastian et al. (2017) Group 9 – Nylen & Holmström (2015) <b>Case-Discussion:</b> Group 7 Group 4	<ul style="list-style-type: none"> <li>• Henfridsson, et al. (2018). Recombination in the open-ended value landscape of digital innovation. <i>Information and Organization</i>, (28:2), 89-100.</li> <li>• <b>Nylén, &amp; Holmström (2015). Digital innovation strategy: A framework for diagnosing and improving digital product and service innovation. <i>Business horizons</i>, (58:1), 57-67.</b></li> <li>• <b>Sebastian, et al. (2017). How big old companies navigate digital transformation. <i>MIS quarterly executive</i>, (16:3), 197-213.</b></li> </ul> <p><b>Complementary:</b></p> <ul style="list-style-type: none"> <li>• Baiyere and Sebastian (<i>working paper</i>) Forms of Digital Strategy. <i>Provided</i></li> <li>• <i>Fonstad (2017) Designing a Competitive Innovation Portfolio, MITcistr</i> (<a href="https://cistr.mit.edu/publication/2017_0701_CompetitiveInnovationPortfolios_Fonstad">https://cistr.mit.edu/publication/2017_0701_CompetitiveInnovationPortfolios_Fonstad</a>)</li> </ul>
6	Module 4: Digital Innovation and Disruption	Video/Online Lectures		<ul style="list-style-type: none"> <li>• Baiyere, A., &amp; Salmela, H. (2013). Review: disruptive innovation &amp; information technology - charting a path. <i>Proceedings of the 24th Australasian Conference on Information Systems</i>, 1–11</li> <li>• Baiyere, A. (2014). <i>Disrupted disruptions: Lessons from potential disruptive innovations that barely disrupted</i>, ISPIIM</li> <li>• <b>Baiyere, A., &amp; Hukal, P. (2020). Digital disruption: A conceptual clarification, HICSS 2020</b></li> <li>• <b>Skog, et al. (2018) Digital Disruption. <i>Business &amp; Information Systems Engineering</i>, 60, 431-437.</b></li> </ul> <p><b>Complementary:</b></p> <ul style="list-style-type: none"> <li>• <i>Christensen, Clayton M. The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail. Boston, MA: Harvard Business School Press, 1997. (Chapter 1)</i></li> </ul>
7		In Person Workshop  Lecture & Exercise	<b>Paper-Presentation:</b> Group 3 - Baiyere, A., & Hukal, P. (2020) Group 10 – Skog et al (2018) <b>Case-Discussion:</b> Group 8 Group 5	
8	Module 5: Digital Transformation Management	Video/Online Lectures		<ul style="list-style-type: none"> <li>• <b>Matt, et al. (2015). Digital transformation strategies. <i>Business &amp; information systems engineering</i>, 57, 339-343.</b></li> </ul>
9		In Person Workshop  Lecture & Exercise	<b>Paper-Presentation:</b> Group 4 – Matt et al (2015) Group 6 – Hining et al. (2018) <b>Case-Discussion:</b> Group 9 Group 1	<ul style="list-style-type: none"> <li>• Wessel, et al. (2021). Unpacking the difference between digital transformation and IT-enabled organizational transformation. <i>Journal of the Association for Information Systems</i>, 22(1), 102-129.</li> <li>• Weill, P., &amp; Woerner, S. L. (2018). Is your company ready for a digital future? <i>MIT Sloan Management Review</i>, 59(2), 21-25.</li> <li>• <b>Hinings, er al. (2018). Digital innovation and transformation: An institutional perspective. <i>Information and Organization</i>, 28(1), 52-61.</b></li> </ul> <p><b>Complementary:</b></p>

				<ul style="list-style-type: none"> <li>• Ross, J., Mocker, M., &amp; Beath, C. (2018). Five building blocks of digital transformation. <i>CISR research briefing</i>, 18(6), 1-4. (<a href="https://cizr.mit.edu/publication/2018_0601_BuildingBlocks_RossMockerBeath">https://cizr.mit.edu/publication/2018_0601_BuildingBlocks_RossMockerBeath</a>)</li> <li>• Grover, V. (2020). Introduction to Part IV. In <i>Handbook of Digital Innovation</i> (pp. 159-161). Edward Elgar Publishing.</li> </ul>
10	Module 6: Managing Digital Platforms and Ecosystems	<b>TBA</b>		<b>To be confirmed</b>
11		<b>In Person Workshop</b>  <b>Lecture &amp; Exercise</b>	<b>Paper-Presentation:</b> Group 5 – Fürstenau et al. (2019) Group 7 – De Reuver et al. (2018) <b>Case-Discussion:</b> Group 10 Group 2	<ul style="list-style-type: none"> <li>• Eisenmann, et al. (2006). Strategies for two-sided markets. <i>Harvard business review</i>, 84(10), 92.</li> <li>• Bonina, et al. (2021). Digital platforms for development: Foundations and research agenda. <i>Information Systems Journal</i>, 31(6), 869-902.</li> <li>• Fürstenau, et al. (2019). A process perspective on platform design and management: evidence from a digital platform in health care. <i>Electronic Markets</i>, 29, 581-596.</li> <li>• De Reuver et al. (2018). The digital platform: a research agenda. <i>Journal of information technology</i>, 33(2), 124-135.</li> <li>• Karhu, et al. (2020) "Four Tactics for Implementing a Balanced Digital Platform Strategy," <i>MIS Quarterly Executive</i>: Vol. 19: Iss. 2, Article 4.</li> </ul>
12	Review and Preparation	<b>Online Q&amp;A</b>		
13		<b>In Person Lecture</b>		

## Mode of Teaching

While this unit follows the traditional separation of "lecture" and "practicals", it follows the flipped classroom model where lecture material will be provided through a mixture of prepared lectures, videos, group sessions, and exercises; and classroom sessions will be discussion-led and based on the presentation of group exercises.

## Required Readings

See Course Plan

## Assessment

Grading in this course is on two main components:

1. **Student team presentations/discussions (20%):** Students will work in groups to present two mandatory assignments
  - a. Presentation of an assigned paper or theory based on one of the lecture topics
  - b. Presentation of a case-based application and discussion of one of the lecture topics

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. **Written Individual Exam (80%) of 60 minutes length.** The exam will be completed as an electronic take-home exam. More details will be provided once available.

- 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).