

14277.0205 Selected Issues in Information Systems in Digital Innovation, Transformation and Entrepreneurship

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Learning Goals

Students...

- ... analyse current issues in specific topic areas of information systems.
- ... describe and apply fundamental Information system theories.
- ... 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.
- ... develop new ways of thinking, especially in terms of how they approach, critique and construct research papers.

Overview

Firms find themselves at the crossroads between digital innovation, transformation, and entrepreneurship. 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 environments of firms. 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 forms and modes of entrepreneurship involving the creation of new ventures and the use of 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 course will provide information systems students who possess an aptitude for research to become acquainted with the latest studies, theories and empirical insights about the phenomena and issues surrounding digital innovation, transformation and entrepreneurship. The course provides students with a broad-based exposure to research that occurs in the Cologne Institute for Information Systems but also globally, specifically research around digital technologies, innovation, transformation, and entrepreneurship. Taken together, this course will give you a broad exposure of the kind of research that is possible to conduct in a Master and Ph.D. program.

The overall design of this course consists of a number of different elements:

- Inclusion of the faculty inside and outside the institute, so that students can begin to become acquainted with their research interests.
- A relatively large reading list, to ensure that students have the opportunity to develop a broad perspective on the topic area.
- Three kinds of deliverables required from the students
 1. A written essay about a particular topic in information systems research, relevant to either digital innovation, transformation and entrepreneurship
 2. one digital presentations on a research paper from the reading list
 3. four short quizzes about the content of the different topic areas
- No exams to worry about, but plenty of pressure to keep up with the readings; the need to be well prepared for the class discussions and presentations.

Structure and Schedule

The entire course will be held online, using digital formats for teaching and learning. This allows maximum flexibility in learning the contents and preparing your deliverables at your own leisure and pace.

The course is structured into four topic areas:

1. Digital technologies
2. Digital innovation
3. Digital transformation
4. Digital entrepreneurship

In each topic area we will cover three to four aspects of the topic, each portrayed through a different study or paper.

Each topic area will include readings, a digital presentation, lecture or interview by a renowned faculty speaking on one of the aspects, plus student video presentations on selected papers covering other aspects. Each topic area will be summatively assessed through a short quiz.

As in a regular course format, we devote roughly one full day for each topic area. But because the content presentations (in whatever format) will be available online, you are free to study each topic areas as you see fit. You can use the time allotted on the day to study the materials, or study at your own pace and leisure.

On each of the four days we will have a joint online meeting for two hours (13:00-15:00) using a video conferencing solution (Adobe Connect), where we can discuss questions and complete the mini-quizzes for each topic areas.

<u>Date</u>	<u>Topic Area</u>	<u>Video lecture</u>	<u>Student presentation1</u>	<u>Student presentation2</u>	<u>Student presentation3</u>	<u>Online meeting</u>
17.4.	Digital Technologies and Objects	Baskerville, R., Myers, M. D., & Yoo, Y. (2020). Digital first: The ontological reversal and new challenges for is research. MIS Quarterly, 44, forthcoming.	Faulkner, P., & Runde, J. (2019). Theorizing the digital object. MIS Quarterly, 43(4), 1279-1302.	Jarvenpaa, S. L., & Standaert, W. (2018). Digital probes as opening possibilities of generativity. Journal of the Association for Information Systems, 19(10), 982-1000.	-	13:00-15:00 (Adobe Connect)
20.4.	Digital Innovation	Werder, Karl, Seidel, Stefan, Recker, Jan, Berente, Nick, Kundert-Gibbs, John, Abboud, Nouredine (2020), Data-Driven, Data-Informed, Data-Augmented: How Ubisoft's Ghost Recon Unit Uses Data for Continuous Product Innovation, California Management Review (62:3), forthcoming	Svahn, F., Mathiassen, L., Lindgren, R. (2017). Embracing digital innovation in incumbent firms: How Volvo cars managed competing concerns, MIS Quarterly 41 (1), 239-253	Kyriakou, H., Nickerson, J. V., & Sabnis, G. (2017). Knowledge reuse for customization: Metamodels in an open design community for 3d printing. MIS Quarterly, 41(1), 315-332.	Lee, J., Berente, N. (2012). Digital innovation and the division of innovative labor: Digital controls in the automotive industry, Organization Science 23 (5), 1428-1447	13:00-15:00 (Adobe Connect)
18.5.	Digital Transformation	Kane, G. C., Phillips, A. N., Copulsky, J. R., & Andrus, G. R. (2019). The technology fallacy: How people are the real key to digital transformation. Cambridge, Massachusetts: MIT Press.	Henfridsson, O., Mathiassen, L., and Svahn, F. (2014). "Managing Technological Change in the Digital Age: The Role of Architectural Frames," Journal of Information Technology (29:1), pp. 27-43.	Gregory, R. W., Kaganer, E., Henfridsson, O., & Ruch, T. J. (2018). It consumerization and the transformation of it governance MIS Quarterly, 42(4), 1225-1253.	Selander, L., & Jarvenpaa, S. L. (2016). Digital action repertoires and transforming a social movement organization. MIS Quarterly, 40(2), 331-352.	13:00-15:00 (Adobe Connect)
19.5.	Digital Entrepreneurship	Huang, J., Henfridsson, O., Liu, M. J., & Newell, S. (2017). Growing on steroids: Rapidly scaling the user base of digital ventures through digital innovation. MIS Quarterly, 41(1), 301-314.	von Briel, F., Davidsson, P., & Recker, J. (2018). Digital technologies as external enablers of new venture creation in the IT hardware sector. Entrepreneurship Theory and Practice, 42(1), 47-69.	von Briel, F., Recker, J., & Davidsson, P. (2018). Not all digital venture ideas are created equal: Implications for venture creation processes. Journal of Strategic Information Systems, 27(4), 278-295.	Nambisan, S., & Baron, R. (2019). On the costs of digital entrepreneurship: Role conflict, stress, and venture performance in digital platform-based ecosystems. Journal of Business Research (In Press).	13:00-15:00 (Adobe Connect)

Required Readings

All readings in this course are compulsory. They will be made available via ILIAS prior to the start of the course.

Readings assigned under Video Lecture will be provided in digital paper format (PDF) and in a digital format (video or podcast).

Readings assigned under student presentations will be provided in digital paper format (PDF). Assigned students will also prepare a digital format (video, presentation, podcast, webpage or similar).

For all readings, it will be required that all participating students study both formats. For each of the key dates for each topic areas, it is expected that all students have studied all papers. On these key dates, students' knowledge of the papers will be assessed through a mini quiz, which we will complete during the online meeting scheduled on the days.

Assessments

Portfolio (Kombinierte Prüfung: RE, HA): Grading in this course is on three main components:

1. **One Digital Presentation (30%):** You need to prepare a digital presentation and critique about an article that is assigned to you. You are free to present the paper in any way you see fit, as long as your message will be delivered effectively to the audience. The presentation format must be digital – you will not present the paper in person. Suitable formats could be an online presentation, a video, a podcast, an interview, or a webpage. Other formats are possible as well. Be creative in communicating the article's message and your critical appraisal of it.

Generally, you will need to show mastery of the paper that goes beyond a pure summary, a critical appraisal will be expected! What is the impact this paper has had? Why do you think it was published? Are there things (e.g. approach, analysis, and discussion) that you would have done differently? What's missing in the paper? Which research would you do next based on this paper (i.e. show your future work ideas; potentially also applied to your own research)?

To grade the deliverable, a grading assessment form will be used. It will be made available on ILIAS.

2. **Topic Area Mini-Quizzes (20%):** In each of the topic areas, the lecturer will prepare a short mini-quiz to query students' knowledge of the required readings. During the online meeting time on each relevant date, you will need to complete the quiz and submit it electronically to the lecturer. There are four quizzes in total with five questions each. Each question is worth 1 point (i.e., 4 quizzes with 5 questions each)

= 20 points in total). The quizzes are not difficult or deep, they are merely used to ensure students study all assigned readings.

3. **One Written Research Essay (50%):** Everyone has to prepare and hand-in a concise seminar paper after the course has finished. I will circulate a detailed list of potential topics in the form of research questions to choose from **after** we have gone through all topic areas. In the paper I expect you 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 your research question and (4) give an outlook of potential further research to be done in your area. As I want you to learn how to structure your thoughts and be as concise as possible, your essay should be to 10 pages (single-line spacing, 11pt font size, excl. references and appendices). This will challenge you to really think through what you want to communicate. The submission will be due at the end of the semester (17 July), to give you sufficient time to develop the paper.

Brief Bio of Lecturer

Jan Recker is [Alexander-von-Humboldt Fellow](#), Chaired Professor for Information Systems and Systems Development at the University of Cologne, and Adjunct Professor at the [QUT Business School](#) at Queensland University of Technology, Brisbane. He previously held positions as inaugural Woolworths Chair of Retail Innovation, Leader, Digital Innovation Research Group, and Visiting Professor, Wuhan School of Software. When he was first promoted to Full Professor in 2012, he was one of Australia's youngest professors in its history. In 2018, he was named an [AIS Fellow](#), making him the youngest ever IS academic to receive this award.



Jan Recker holds Bachelor and Master degrees in Information Systems from the University of Münster and a PhD in Information Systems from Queensland University of Technology. His theses received multiple national and international [awards](#).

Jan is one of the University of Cologne's [most cited scholars](#) and one of QUT's [most read authors](#). He has written over 200 journal articles, conference papers and books, and has been speaking at universities and events all over the globe. Being primarily a field researcher, he has worked both with several of the largest organizations, including Woolworths, SAP, Hilti, Commonwealth Bank, Federal Police, federal and state governments, and also with several particularly small ("start-up") organizations.

Jan's research explores the intersection of **technology**, **people** and **work processes**, often with a focus on *design* and the use of *representations*. He has worked with particularly large organizations (such as Woolworths, SAP, Hilti, Commonwealth Bank, Federal Police, Lufthansa, Ubisoft, federal and state governments) and with particularly small organizations ("start-up"). Amongst others, he studies how the work systems of large organizations can be

redesigned through digital innovations, or how tech startups design their ventures to bring digital products to the market. He also studies how work processes need to be redesigned when technology, culture, or both, change. Jan uses quantitative, qualitative and mixed field methods in his work. He is also competent in design research and associated methods.

Jan's current interests include:

- changes to systems design practices in the digital age
- digital entrepreneurship and digital venture design
- digital innovation and change in especially large organizations
- digitalization of products, routines and processes
- digital solutions for a sustainable future

Jan's research has appeared in leading information systems, management science, software engineering, project management, computer science, and sociology journals. He has published in journals of the associations ACM, IEEE, AIS and AOM. 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 is currently Editor-in-Chief of the [Communications of the Association for Information Systems](#), one of two flagship journals of the global information systems association, and an Associate Editor for the [MIS Quarterly](#), the leading journal of the field. He is also co-editing two special issues at present, one on [BPM and Digital Innovation](#), and one on [Managing Artificial Intelligence](#).

For more information about his academic and professional background please visit [janrecker.com](#). You can follow Jan on [Twitter](#), and many of his public talks are available on [SlideShare](#). His research is regularly featured in the [media](#).