

Mod.No. TBD

Title: Selected Issues in Digital Innovation, Transformation, and Entrepreneurship: MANAGING ARTIFICIAL INTELLIGENCE

Overview

Artificial Intelligence (AI) is increasingly becoming a core part of the digital infrastructure for many firms. More and more organizations have implemented AI-based technologies in a variety of professional contexts, usually to augment or automate their business processes and operations. But AI is unlike any other technology that has come before. In comparison with traditional digital technologies used in firms, AI today has greater learning capacity, greater autonomy in decision-making and is also more inscrutable than technologies of the past. Moreover, as data is available in unprecedented volume and quality, the application contexts of AI, its performance and impact have changed immensely. All the while, increasing volumes of funding are continued to be invested in AI, driving further development of the technology and its application.

This situation asks the question of how AI can effectively be managed by companies and leaders. This question is what this seminar will explore. We will examine a variety of traditional management topics – such as learning, innovation, performance, collaboration, development, and ethics – and explore how AI necessitates a change in how these aspects are managed in contemporary firms. Students can select a topic of their choice from a list of available questions and explore a question related to managing AI of their own choosing.

Contents

Our seminar will include:

- An introduction to the history, basic questions, and essential aspects of managing AI
- Refresher workshops on how to design and write a seminar paper:
 - How to write a scientific paper
 - How to do a literature review
- Presentations of the student seminar papers
- Presentations and critical discussions of seminal scientific articles on managing AI.

Seminar Topics

Topic 1	AI and Performance
	<i>Lebovitz, S., Levina, N., & Lifshitz-Assaf, H. (2021). Is AI Ground Truth Really “True”? The Dangers of Training and Evaluating AI Tools Based on Experts’ Know-What.</i>
Topic 2	AI and Strategy
	<i>Li, J., Li, M., Wang, X., & Thatcher, J. B. (2021). Strategic Directions for AI: The Role of CIOs and Boards of Directors.</i>
Topic 3	AI and Organizational Learning
	<i>Sturm, T., Gerlach, J. P., Pumplun, L., Mesbah, N., Peters, F., Tauchert, C., Nan, N., & Buxmann, P. (2021). Coordinating Human and Machine Learning for Effective Organizational Learning.</i>
Topic 4	AI and Development Projects
	<i>van den Broek, E., Sergeeva, A., & Huysman, M. (2021). When the Machine Meets the Expert: An Ethnography of Developing AI for Hiring.</i>
Topic 5	AI and Innovation
	<i>Wu, L., & Lou, B. (2021). AI on Drugs: Can Artificial Intelligence Accelerate Drug Development? Evidence from a Large-scale Examination of Bio-pharma Firms.</i>
Topic 6	AI and Collaboration
	<i>Gupta, A., Fügener, A., Grahl, J., Ketter, W. (2021). Will Humans-in-the-Loop Become Borgs? Merits and Pitfalls of Working with AI.</i>
Topic 7	AI and Ethics
	<i>Kane, G., Teodorescu, M., Morse, L., Awwad, Y. (2021). Failures of Fairness in Automation Require A Deeper Understanding of Human-ML Augmentation.</i>
Topic 8	AI and Creativity
	<i>Seidel, S., Berente, N., Lindberg, A., Lyytinen, K., Martinez, B., & Nickerson, J. V. (2020). Artificial Intelligence and Video Game Creation: A Framework for the New Logic of Autonomous Design. <i>Journal of Digital Social Research</i>, 2(3), 126-157.</i>
Topic 9	AI and Coaching
	<i>Luo, X., Qin, M. S., Fang, Z., & Qu, Z. (2021). Artificial Intelligence Coaches for Sales Agents: Caveats and Solutions. <i>Journal of Marketing</i>, 85(2), 14-32.</i>

Tasks

Students will be assigned to one of the topic areas above and will be asked to:

1. Deal with the corresponding research paper and prepare a presentation introducing their topic on the basis of the seminal articles listed above.
2. Write an essay about a selected aspect within their topic area but going beyond the seminal article associated with that topic. Students can choose to
 - a. explore additional relevant scientific literature on the topic and synthesize that literature to present a comprehensive, balanced, and informed consideration of the topic, or
 - b. find a specific use case referring to their topic and describing and explaining the way in which AI is managed in real-life business practice.
3. Give a short presentation summarizing their essays.

Learning outcomes

Students learn to...

- find and select relevant literature on a given problem or question independently.
- apply discipline and technical knowledge and skills to analyze and evaluate technological influences on a range of managerial questions about innovation, transformation, or entrepreneurship, in particular managing AI.
- acquaint themselves with the scholarship of world class research faculty in the areas of digital innovation, transformation, and entrepreneurship, in particular managing AI.
- understanding some of the leading issues, theories, and methodologies that characterize research in in the areas of digital innovation, transformation, and entrepreneurship, in particular managing AI.
- apply discipline and technical knowledge to analyze and evaluate scientific processes and outcomes.
- develop written communication skills to structure, explain and defend scientific thinking.
- develop presentation skills to present and discuss research processes and outcomes.

Preliminary Schedule

1. Kick-Off: Introduction and topic assignment (3 hours + break): Fr, 08.04, 16:00-19:30 Uhr
2. Refresher workshops on how to design and write a seminar paper (2 x 2 hours): Fr, 22.04. & 20.05., 16:00-18:00 Uhr
3. Topic presentations based on given research papers and discussion (1 day/ 7 hours + break): Sa, 14.05., 09:00-18:00 Uhr
4. Presentation of the essays (1 day/ 7 hours + break) Sa, 25.06., 09:00-18:00 Uhr

Relevant Readings

Berente, N., Gu, B., Recker, J., & Santhanam, R. (2021). [Managing Artificial Intelligence](#). *MIS Quarterly*, 45(3), 1433-1450.

Recker, J. (2021). [Scientific Research in Information Systems: A Beginner's Guide](#) (2nd ed.). Springer. Chapter 6, pp. 163-196.

Further readings will be announced in due time.

Assessment

Grading in this course is on three main components. Grading rubrics will be used and made accessible to the students in advance.

1. Presentation of Seminal Scientific Paper on Managing AI (20% of final grade)
2. Submission of Seminar Essay (50% of final grade)
3. Presentation of Seminar Essay to the class (30% of final grade).

Your lecturers

Jan Recker is Alexander-von-Humboldt Fellow, Nucleus Professor for Information Systems and Digital Innovation at the University of Hamburg, and Adjunct Professor at the QUT Business School, Australia.

In his research he explores the intersection of technology, people and work. He works with particularly large organizations, such as Woolworths, SAP, Hilti, Commonwealth Bank, Lufthansa, Ubisoft, Esri, federal and state governments, and with particularly small organizations ("start-ups") in the consumer goods, hardware, and financial sectors. He tackles questions in the areas of

- systems analysis and design practices in the digital age
- digital entrepreneurship
- digital innovation and transformation in large organizations
- digitalization of products, services, and processes
- digital solutions for a sustainable future

Jan's research in these areas draws on quantitative, qualitative, and computational methods. 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 was Editor-in-Chief of the Communications of the Association for Information Systems from 2015-2020. He is Senior Editor for the MIS Quarterly. In 2019, he was named #1 business researcher under 40 years of age by the German Magazine Wirtschaftswoche. He was the youngest academic ever to be named an AIS fellow in 2018. In 2019, he received an "Outstanding Associate Editor Award" from MIS Quarterly. He publishes a podcast called "this IS research".

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Imke Grashoff completed her master's degree in the field of Social Economics and is now working as a research assistant at the Chair for Information Systems and Digital Innovation. With a strong interest in topics involving the influence of digital technologies on organizations, collaboration and (the future of) work in general, she is currently pursuing her doctoral studies dealing with the question of how Artificial Intelligence is designed for professional decision-making.-