



Advanced Seminar on Information Systems and Digital Technology
Regulating Emerging Technologies

14277.0208
Term: Summer 2026

Contact information

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Seminar Topic

The relentless advancement of emerging digital technologies is transforming established processes and practices across industrial domains (Bailey et al., 2022), bringing forth a plethora of ethical and regulatory challenges. To navigate these challenges, regulatory bodies seek to understand the implications of emerging technologies, anticipate future uses and risks, and update regulation or create new regulation (Butler et al., 2023; De Vaujany et al., 2018; Seidel et al., 2025). Accordingly, there has been a recent surge (Shahlaei & Berente, 2024) in new technology regulations in the EU, for instance, the EU Artificial Intelligence Act (AI Act), the Digital Services Act, and the Data Act. Meanwhile, organizations strive to adapt their governance structures to address the regulatory challenges that emerge (Lanamäki et al., 2025).

In an ideal scenario, regulation produces desirable social outcomes while simultaneously promoting or at least not hindering innovation (Butler et al., 2023; Seidel et al., 2025). The main challenge lies in finding an appropriate balance between managing risks associated with technological progression and encouraging competitiveness and innovation. However, this is a difficult task, considering that the technology's prospects are not known at the time of regulation (Bennett Moses, 2017; Collingridge, 1980; Finck, 2018), an issues which has become increasingly prevalent in the digital age. While digital technologies and their uses and outcomes are subject to regulation, it is worth noting that they can also serve as tools for regulation, and the literature accordingly distinguishes between regulation *of* technology and regulation *through* technology (Butler et al., 2023).

This seminar invites students to apply sociotechnical insights from the field of information systems to gain a deeper understanding of how regulatory issues related to emerging technologies evolve and are addressed. The focus will be on the regulatory landscape in the European Union, the interrelationships between different regulatory provisions, the design of regulatory frameworks for emerging technologies, the impact of technology regulation on innovation, and organizational approaches to implementing and updating their practices.

To this end, this seminar will address questions such as:

- What triggers the emergence of new technology regulation?
- How can regulatory frameworks be designed to foster innovation while mitigating risks?
- How does the European Union regulate various aspects of emerging digital technologies and their applications?
- How does this approach differ from the ones taken in other jurisdictions?
- How can regulators seek to balance risk mitigation and innovativeness in regulatory design?

- What are organizational approaches to adopting emerging technology regulation?
- Who are the key actors driving regulatory efforts around emerging technologies, and how do they impact the processes of regulatory construction?
- What is the impact of various ways to govern and regulate technology on innovation and risk mitigation?

Learning Objectives

Students will ...

- understand the main concepts, theories, and methods related to the seminar topic.
- prepare independently a research design for a research question.
- identify relevant data sources, collect data, and process the data in order to develop a key deliverable of the seminar project.
- provide critical feedback on their peers' work.
- write up their findings in a seminar paper, present them, and defend them in critical discussion with fellow students.

Course Design

The seminar consists of the following key elements:

- Students will be exposed to main concepts, theories, methods, and applications related to the seminar topic.
- Each student will work on a specific topic related to those concepts, theories, methods, and applications and write a seminar paper. Topics will be presented and assigned in the first session.
- Other students (peers) will read and evaluate drafts of the seminar papers and provide a review on another student's work.
- Seminar papers will be presented and discussed in class.

Timeline

- 16 April 2026, 08:00-11:30: Welcome presentation, organizational issues, and assignments
- 22 April 2026: Exam registration deadline
- 21 May 2026: Submission of first paper draft
- 04 June 2026: Submission of peer review and of mid-term presentation slides
- 05 June 2026, 10:00-17:30: Mid-term presentations and feedback
- 14 July 2026: Submission of final presentation
- 16 July 2026, 08:00-11:30: Final presentations Part 1
- 23 July 2026 08:00-11.30: Final Presentations Part 2
- 30 July 2026: Submission of final paper

Room for all classroom sessions:

- Please see information provided on KLIPS

Assessment

(1) Drafts (not graded but mandatory submission)

Drafts (3-5 pages text minimum, excluding title page and references) provide an outline that peers can provide comments on. Your draft should highlight the focus of the seminar paper, the discourse it engages with, its structure, and overall objective. The more you provide, the more specific/in-depth feedback you can get.

(2) Peer reviews (10% of grade)

Peer reviews should be between 0.5-1.0 pages and should provide constructive feedback on the submitted draft. To this end, you should highlight strengths of the draft as well as potentials you see for further developing the seminar paper. Particular focus should be on the clarity of the formulation of the paper's objective and how the paper engages with the discourse.

(3) Mid-Term presentation (10% of grade)

This short presentation, which is followed by a discussion, provides an opportunity to receive feedback on your draft. This complements the peer review process. The presentation should cover key aspects of your seminar paper, including the topic, relevant discourse, objectives, and preliminary findings. The specific lengths of the presentation and discussion will be communicated after the first seminar session.

(4) Final presentation (20% of grade)

The presentation, which is followed by a discussion, should encompass all central elements of your seminar paper, including the topic, relevant discourse, objectives, research background, findings, and discussion. The specific lengths of the presentation and discussion will be communicated after the first seminar session.

(5) Final paper submission (60% of grade)

The paper should contain (1) an introduction where you engage with the discourse, (2) a clear statement of the paper's objectives, (3) the research background, (4) a presentation of your findings, and (5) a discussion and summary. You must utilize the institute's template for your final paper submission, which can be downloaded from our flipped classroom course on scientific work (https://www.ilias.uni-koeln.de/ilias/goto.php?target=crs_2169357&client_id=uk). The length of the main text (excluding title page, table of contents, tables, figures, list of references, and whitespace) should not exceed 15 pages.

Further literature will be provided during the first session.

References

- Bailey, D. E., Faraj, S., Hinds, P. J., Leonardi, P. M., & von Krogh, G. (2022). We are all theorists of technology now: A relational perspective on emerging technology and organizing. *Organization Science*, 33(1), 1–18.
- Bennett Moses, L. (2017). Regulating in the face of sociotechnical change. In R. Brownsword, E. Scotford, & K. Yeung (Eds.), *The Oxford Handbook of Law, Regulation and Technology*.
- Butler, T., Gozman, D., & Lyytinen, K. (2023). The regulation of and through information technology: Towards a conceptual ontology for IS research. *Journal of Information Technology*, 38(2), 86–107.
- Collingridge, D. (1980). *The social control of technology*. St. Martin's Poress.
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- Finck, M. (2018). *Blockchain regulation and governance in Europe*. Cambridge University Press.
- Lanamäki, A., Viljanen, M., Väyrynen, K., & Bennett Moses, L. (2025). Legal compliance and the open texture of law. *Journal of the Association for Information Systems*, 26(1), 1–8.
- Seidel, S., Frick, C. J., & vom Brocke, J. (2025). Regulating Emerging Technologies: Prospective Sensemaking through Abstraction and Elaboration. *MIS Quarterly*, 49(1), 179–204. <https://doi.org/https://doi.org/10.25300/MISQ/2024/18039>
- Shahlaei, C. A., & Berente, N. (2024). An Analysis of European Data and AI Regulations for Automotive Organizations. *arXiv preprint arXiv:2407.11271*.