Course Outline
85-114 DIGITALIZATION OF SERVICES
April 14th – June 2nd, 2023

Course Description

Digital innovations and technologies are changing the global economy. This course focuses on digitalization of services, which presents both new opportunities and threats to companies. The course focuses on a critical examination of the literature on a variety of key service research topics of today and conducting hands-on research assignments. The idea is to give you a broad understanding of digitalization of services. The course readings are based on academic journal and conference articles.

Goals of the Course

- Understand the theoretical foundations of digitalization of services
- Familiarize the students with the nature of service research as a discipline and current research issues and themes.
- Applying the theoretical concepts in practice to solve a real-life case that will help to get acquainted with digitalization of services in incumbent firms.

Learning Outcomes

- Will have good knowledge and understanding of research in the area of digitalization of services.
- Can independently acquire knowledge and critically evaluate relevant research articles in some of the leading academic journals and conference proceedings.
- Can apply conceptual models and methods of service digitalization in practice.
- Can apply the laddering interview method for acquisition of digital service requirements and conceptualize novel digital/smart services.

Synchronized Meetings

Meeting title	Date	Start	Finish	Lecturer	Room
1. Introduction	14.04. 2023	12.00	16.00	Lumivalo	
2. Lecture and workshops on smart service conceptualization and conducting a laddering interview study	21.04. 2023	12.00	18.00	Lumivalo	
3. Lecture and laddering clinic	05.05. 2023	12.00	18.00	Lumivalo	
4. Lecture and workshop on laddering interview analysis and finalizing the smart service concepts	12.05. 2023	12.00	18.00	Lumivalo	
5. Group Assignment presentations and feedback	02.06. 2023	12.00	16.00	Lumivalo	

Outline

Meeting 1

Introduction

Introduction lecture, including the outline of the course, assignments, online tools and conduct of the course. Forming Group Assignment groups and presentation of the Group Assignment challenge. Assignment of topics for the individual assignment.

Topics to be covered:

- Who creates value and who co-creates?
- Service system perspective
- Facilitating co-creation with digital services

Meeting 2

Lecture and workshop

Lecture on how digital technologies change the nature of innovation, and a group assignment workshop on conducting laddering interviews for developing requirements for smart service concepts.

Topics to be covered:

- Organizational ambidexterity

- Scales of innovation
- Innovation with digital technologies and digital ecosystems

Meeting 3

Lecture and workshop

The meeting will start with a lecture on smart service systems and how design elements/service attribute combinations impact the outcome-driven design of the service experience. The second part will cover a group assignment workshop on laddering interview technique.

Topics to be covered:

- Information technology-enabled services
- Smart service systems

Meeting 4

Lecture and workshop

The meeting will start with a lecture on how organizations may leverage digital technologies and digital transformation. In the second part, a group assignment workshop is given on the conduct of thematic analysis on laddering interview data and finalizing the smart service concepts.

Topics to be covered:

- Digital ubiquity
- Paths to digital transformation

Meeting 5

Group Assignment Presentations and feedback

Student groups present their smart service concepts and conduct peer-reviews.

Deliverables

Detailed instructions regarding each deliverable and deadlines are made available on the start of the course.

- Quizzes
  - Completion of Quizzes on course readings. To be submitted prior to each meeting.
- Group Assignment
  - Submission of the final deliverables
    - Written report
    - Final data set
    - Presentation slides
  - Group assignment presentation and peer-reviews: Fri June 2nd on campus
- Individual Assignment

- o Submission of a research essay on a topic covered on the course.
  - o Length expectation 2,500 words (+/-10%) excluding figures, tables, and references.
- **Please note:** The course workload is designed to be equivalent to 6 ECTS credits.

Assessment Methods and Criteria

- Quizzes 20 %
- Group Assignment: 30%
- Individual Assignment 50 %

Note 1: Please note that you are expected to participate in all of the meetings.

Note 2: Please note that to complete the course, you need to have a passing mark for the deliverables (1) Quizzes, (2) the Group Assignment and (3) the Individual Assignment.

Note 3: If the student is late on submitting the deliverable(s), the student will fail that particular assessment of the course. Please see the above note 2 for requirements for completing the course. In case of unforeseeable/unavoidable obstacles, please promptly consult with the teacher before the deadline.

Learning and Teaching

Teaching Staff:

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Dr. Juuli Lumivalo is a visiting researcher at Information Systems and Digital Innovation Professorship at the University of Hamburg for the Spring semester 2023. She is also a Postdoctoral researcher in the Faculty of Information Technology in University of Jyväskylä (Finland). Her current research interests include digital and cyber-physical service use, value co-creation/destruction, service-dominant logic, technology as an actor, continuous service innovation, and development and use of green information systems. She received her doctoral degree in Information Systems at the University of Jyväskylä in 2020. Dr. Lumivalo was a doctoral fellow at the Doctoral Consortiums of the International Conference on Information Systems and the European Conference on Information Systems. She has received research funding from several Finnish foundations and the Faculty of Information Technology at the University of Jyväskylä. Dr. Lumivalo's work has been published in peer-reviewed venues such as Pacific Asia Journal of the Association for Information Systems, The International Conference on Information Systems (ICIS),

European Conference on Information Systems (ECIS) and Hawaii International Conference on System Sciences (HICSS).

Learning Resources

There is no textbook as such for this course, since most of the readings are taken from academic journals and conference proceedings. However, students are expected to read more widely including additional articles from any recognized journal in IS. Many useful citations can also be obtained from the AIS Digital Library, the ACM Digital Library, and other bibliographic databases such as ABI/Inform, Science Direct or the Emerald Library. Additional citations and resources can be found, e.g., in the AIS   website at http://www.aisnet.org/.

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Course Readings (to be announced closer to beginning of the course)

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Additional readings:

1. Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European management journal*, *26*(3), 145-152.
2. Grönroos, C. (2008). Service logic revisited: who creates value? And who co-creates? *European business review*.
3. Kinnunen, R.-E., & Turunen, T. (2012). Identifying servitization capabilities of manufacturers: A conceptual model. *The Journal of Applied Management and Entrepreneurship,* 18 (4), pp. 55–78.
4. O'Reilly III, C.A. and Tushman, M.L., 2013. Organizational ambidexterity: Past, present, and future. *Academy of management Perspectives,* 27 (4), pp.324-338.
5. Lucas Jr, H.C. and Goh, J.M., 2009. Disruptive technology: How Kodak missed the digital photography revolution. *The Journal of Strategic Information Systems,* 18 (1), pp.46-55.
6. Raisch, S. and Birkinshaw, J., 2008. Organizational ambidexterity: Antecedents, outcomes, and moderators. *Journal of management,* 34 (3), pp.375-409.
7. Yoo, Y., Boland Jr, R.J., Lyytinen, K. and Majchrzak, A., 2012. Organizing for innovation in the digitized world. *Organization science,* 23(5), pp. 1398-1408.
8. Beverungen, D., Müller, O., Matzner, M., Mendling, J., & Vom Brocke, J. (2017). Conceptualizing smart service systems. *Electronic Markets*, 2019, 29(1), 7-18.

9. Weill, P. and Woerner, S.L., 2015. Thriving in an increasingly digital ecosystem. MIT Sloan Management Review, 56(4), p.27.

10. Tuunanen, T., Salo, M., & Li, F. (2022). Modular Service Design of Information Technology-Enabled Services. Journal of Service Research, 10946705221082775.

11. Bharadwaj, A., El Sawy, O.A., Pavlou, P.A. and Venkatraman, N., 2013. Digital business strategy: toward a next generation of insights. *MIS quarterly,* 37 (2), pp.471-482.

12. Iansiti, M. and Lakhani, K.R., 2014. Digital ubiquity: How connections, sensors, and data are revolutionizing business. *Harvard Business Review,* 92 (11), pp. 90–99.

13. Lerch, C. and Gotsch, M., 2015. Digitalized product-service systems in manufacturing firms: A case study analysis. *Research-Technology Management,* 58(5), pp.45-52.

14. Peffers, K., Gengler, C. E., & Tuunanen, T. (2003). Extending critical success factors methodology to facilitate broadly participative information systems planning. Journal of management information systems, 20(1), 51-85.

15. Andal-Ancion, A., Cartwright, P. A., & Yip, G. S. (2003). The digital transformation of traditional business. *MIT Sloan Management Review,* 44(4), 34.

16. Berman, S. J. (2012). Digital transformation: opportunities to create new business models. Strategy & Leadership.

17. Hanelt, A., Bohnsack, R., Marz, D., & Antunes Marante, C. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. Journal of Management Studies, 58(5), 1159-1197.

18. Correani, A., De Massis, A., Frattini, F., Petruzzelli, A. M., & Natalicchio, A. (2020). Implementing a digital strategy: Learning from the experience of three digital transformation projects. California Management Review, 62(4), 37-56.

19. Ulaga, W. and Reinartz, W.J., 2011. Hybrid offerings: how manufacturing firms combine goods and services successfully. *Journal of marketing,* 75 (6), pp.5-23.

20. Vendrell-Herrero, F., Bustinza, O.F., Parry, G. and Georgantzis, N., 2017. Servitization, digitization and supply chain interdependency. *Industrial Marketing Management,* 60, pp. 69-81.

21. Paschou, T., Rapaccini, M., Adrodegari, F., & Saccani, N. (2020). Digital servitization in manufacturing: A systematic literature review and research agenda. *Industrial Marketing Management*.

22. Tuunanen, T., Lumivalo, J., Salo, M., Zhang, Y., & Myers, M.D. (*). Micro-Level Mechanisms to Support Value Co-Creation for Design of Digital Services. * Journal of Service Research.

23. Grönroos, C., & Voima, P. (2013). Critical service logic: making sense of value creation and co-creation. *Journal of the academy of marketing science,* 41(2), 133-150.

24. Maglio, P. P., Vargo, S. L., Caswell, N., & Spohrer, J. (2009). The service system is the basic abstraction of service science. *Information Systems and e-business Management, 7*(4), 395-406.

25. Vargo, S. L., Koskela-Huotari, K., & Vink, J. (2020). Service-Dominant Logic: Foundations and Applications. *The Routledge Handbook of Service Research Insights and Ideas*, 3-23.

26. Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: an extension and update of service-dominant logic. *Journal of the Academy of marketing Science, 44*(1), 5-23.

27. Lumivalo, J., Tuunanen, T., Päivärinta, T. (forthcoming). "Value Co-creation for Smart Villages: The Institutionalization of Regional Service Ecosystems" in Advancing Digital Value, Edward Elgar Publishing Inc.

28. O'Reilly, C. a., & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. Research in Organizational Behavior, 28, 185–206.

29. O'Reilly, C., Harreld, B., & Tushman, M. (2009). Organizational ambidexterity: IBM and emerging business opportunities. California Management Review, 51(4), 75–100.

30. Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2009). Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. *Organization science, 20*(4), 685-695.

31. Svahn, F., Mathiassen, L. and Lindgren, R., 2017. Embracing Digital Innovation in Incumbent Firms: How Volvo Cars Managed Competing Concerns. Mis Quarterly, 41 (1), pp. 239-254.

32. Poutanen, P. K., Soliman, W., & Ståhle, P. (2016). The complexity of innovation: An assessment and review of the complexity perspective. European Journal of Innovation Management, 19(2), 189–213.

33. Pagani, M. (2013). Digital business strategy and value creation: Framing the dynamic cycle of control points. *Mis Quarterly*, 617-632.

34. Bonamigo, A., & Frech, C. G. (2020). Industry 4.0 in services: challenges and opportunities for value co-creation. Journal of Services Marketing, 35(4), 412– 427. https://doi.org/10.1108/JSM-02-2020-0073

35. Williams K, Chatterjee S, Rossi M., 2008. Design of emerging digital services: a taxonomy. *European Journal of Information Systems.* 7 (5), pp. 505-17.

36. Kannan, P.K., 2017. Digital marketing: A framework, review and research agenda. *International Journal of Research in Marketing,* 34 (1), pp.22-45.

37. Lenka, S., Parida, V., & Wincent, J. (2017). Digitalization capabilities as enablers of value co-creation in servitizing firms. Psychology & marketing, 34(1), 92-100.

38. Maglio, P. P., Vargo, S. L., Caswell, N., & Spohrer, J. (2009). The service system is the basic abstraction of service science. Information Systems and E-Business Management, 7(4 SPEC. ISS.), 395–406.

39. Yoo, Y., Henfridsson, O., & Lyytinen, K. (2010). The new organizing logic of digital innovation: An agenda for information systems research. Information Systems Research, 21(4), 724–735.
40. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. Journal of Business Research, 122, 889-901.