



TJTS5603 DIGITAL SERVICE INNOVATIONS, 5 ECTS

4th Period, Semester 2021

Faculty of Information Technology

Research Group: Value Creation for Cyber-Physical Systems and Services (CPSS)

Course Description

The course focuses on service research. More specifically on service innovation, management and development as well as understanding the design of cyber- physical, cognitive, and smart services. The readings are based on leading academic journals and contemporary conference articles. The course has the goal to critically study, apply and evaluate literature and theories on a variety of key service research topics. The idea is to give you an understanding about contemporary service research in selected areas and prepare you to conduct your future research.

Learning Objectives

- After the course, you will recognize the main concepts, models and methods for digital service innovations prevailing in the academic literature
- You will be able to apply the state-of-the-art concepts and models in your digital service innovation projects
- You will understand the potentials of cyber-physical and other digital systems in the creation of digital service innovations
- You will understand the multidimensionality of digital business and innovation development through the examples among start-ups and industry spinoffs
- You will be able to critically analyze the fit and applicability of various concepts and models in digital service innovation development

Teaching Methods

The course consists of synchronous lectures introducing each weeks' topics with Q&As. For each synchronous lecture, students prepare themselves through readings and given assignments. In addition to the compulsory readings, extra readings are provided to deepen the students' knowledge while their use in assignments is generating extra points. Each topic is also featured with practical examples and/or visiting lecturers as well as workshops with pre-ordered individual and group assignments. The course homework exam is an analysis and report of some of the business cases introduced during the synchronous lectures. By combining theoretical and practical observations, students will develop their skills to conceptualize and communicate which also prepares them to conduct meaningful research. Part of that students need to understand the nature of service research as a discipline and prevailing research issues and themes.

Content Outline

Introduction 12.00

Tue 16.03.2021, 10.15–

Outline of the course, assignments, online tools and conduct for the course.

Lecture 1: Idea – Concepts stimulating ideas and innovations

Visiting lecturer: SOK, Hannu Tarvainen
12.15–14.00

Thu 18.03.2021,

Lecture Readings (Compulsory)

- Tuunanen, Tuure; Kazan, Erol; Salo, Markus; Leskelä, Riika-Leena; and Gupta, Shivam (2019) "From digitalization to cybernization: Delivering value with cybernized services," *Scandinavian Journal of Information Systems*: Vol. 31 : Iss. 2 , Article 3
- Peters, Christoph, Paul Maglio, Ralph Badinelli, Robert R. Harmon, Roger Maull, James C. Spohrer, Tuure Tuunanen et al. "Emerging digital frontiers for service innovation." *Communications of the Association for Information Systems* 39, no. 1 (2016).
- Ostrom, Amy L., Anathanarayanan Parasuraman, David E. Bowen, Lia Patricio, and Christopher A. Voss. "Service research priorities in a rapidly changing context." *Journal of Service Research* 18, no. 2 (2015): 127-159.
- Wirtz, J., Patterson, P. G., Kunz, W. H., Gruber, T., Lu, V. N., Paluch, S., & Martins, A. (2018). Brave new world: service robots in the frontline. *Journal of Service Management*.

Extra Readings

- Plé, L., & Chumpitaz Cáceres, R. (2010). Not always co-creation: introducing interactional co-destruction of value in service-dominant logic. *Journal of Services Marketing*, 24(6), 430-437.
- Chen, H. M., Schütz, R., Kazman, R., & Matthes, F. (2017). How Lufthansa Capitalized on Big Data for Business Model Renovation. *MIS Quarterly Executive*, 16(1).
- Blohm, I., Leimeister, J. M., & Krcmar, H. (2013). Crowdsourcing: How to benefit from (too) many great ideas. *MIS Quarterly Executive*, 12(4), 199-211.
- Ives, Blake; Rodriguez, Joaquin A.; and Palese, Biagio (2016) "Enhancing Customer Service through the Internet of Things and Digital Data Streams," *MIS Quarterly Executive*: Vol. 15 : Iss. 4, Article 5.
- The Truth About Blockchain <https://hbr.org/2017/01/the-truth-about-blockchain>

Workshop 1

Tue 23.3.2021, 10.15–12.00

Lecture 2: Timing and execution – Architectures, management and business ecosystem

Visiting lecturer: Digitalist, Ville Tolvanen
12.15–14.00

Thu 25.3.2021,

Lecture Readings (Compulsory)

- Yoo, Y., Henfridsson, O., & Lyytinen, K. (2010). Research commentary—the new organizing logic of digital innovation: an agenda for information systems research. *Information systems research*, 21(4), 724-735.

- Staudenmayer, N., Tripsas, M., & Tucci, C. L. (2005). Interfirm modularity and its implications for product development. *Journal of Product Innovation Management*, 22(4), 303-321
- 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.
- Patricio, L., Gustafsson, A., & Fisk, R. (2018). Upframing Service Design and Innovation for Research Impact. *Journal of Service Research*, 21(1), 3-16.

Extra Readings

- Sandström, S., Edvardsson, B., Kristensson, P., & Magnusson, P. (2008). Value in use through service experience. *Managing Service Quality: An International Journal*.
- Heinonen, K., Strandvik, T., Mickelsson, K. J., Edvardsson, B., Sundström, E., & Andersson, P. (2010). A customer-dominant logic of service. *Journal of Service management*, 21(4), 531-548.
- European Commission: Committing to climate-neutrality by 2050: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_335

Workshop 2

Tue 6.4.2021, 10.15–12.00

Lecture 3: Team and execution – Provisioning individuals and service ecosystems

Tue 13.4.2021, 10.15–12.00

Lecture Readings (Compulsory)

- Böhmman, T., Leimeister, J. M., & Möslin, K. (2014). Service systems engineering. *Business & Information Systems Engineering*, 6(2), 73-79.
- West, J., & Bogers, M. (2014). Leveraging external sources of innovation: a review of research on open innovation. *Journal of product innovation management*, 31(4), 814-831.
- van der Burg, R. J., Ahaus, K., Wortmann, H., & Huitema, G. B. (2019). Investigating the on-demand service characteristics: an empirical study. *Journal of Service Management*.
- Chandler, J. D., Danatzis, I., Wernicke, C., Akaka, M. A., & Reynolds, D. (2019). How does innovation emerge in a service ecosystem?. *Journal of Service Research*, 22(1), 75-89.

Extra Readings

- Mitchell, A. and Strader, T.J. (2018), “Introduction to the special issue on ‘sharing economy and on-demand service business models’ ”, *Information Systems and e-Business Management*, Vol. 16 No. 2, pp. 243-245.
- Archetypes of Service Innovation: Implications for Value Cocreation Anu Helkkula¹ , Christian Kowalkowski^{1,2} , and Ba’rd Tronvoll^{1,3}
- Service Innovation Viewed Through a Service-Dominant Logic Lens: A Conceptual Framework and Empirical Analysis Andrea Ordanini¹ and A. Parasuraman²
- Holopainen, J., Mattila, O., Parviainen, P., Pöyry, E., & Tuunanen, T. (2021). Sociability in Virtual Reality: Evaluations of Three Iterative Application Versions Along a Design Science Research Process. In Press: *ACM Transactions on Social Computing*.

Workshop 3

Thu 15.4.2021, 12.15–14.00

Lecture 4: Business model – State-of-the-art and evolution

***Visiting lecturer: Visma, Niklas Vettanen
10.15–12.00***

Tue 20.4.2021,

Lecture Readings (Compulsory)

- Giessmann, A., & Legner, C. (2016). Designing business models for cloud platforms. *Information Systems Journal*, 26(5), 551-579.
- Ghazawneh, A., & Henfridsson, O. (2013). Balancing platform control and external contribution in third-party development: the boundary resources model. *Information Systems Journal*, 23(2), 173-192.
- Kazan, E., Tan, C. W., Lim, E. T., Sørensen, C., & Damsgaard, J. (2018). Disentangling digital platform competition: The case of UK mobile payment platforms. *Journal of Management Information Systems*, 35(1), 180-219.
- Fisk, R. P., Dean, A. M., Alkire, L., Joubert, A., Previte, J., Robertson, N., & Rosenbaum, M. S. (2018). Design for service inclusion: creating inclusive service systems by 2050. *Journal of Service Management*.

Extra Readings

- Andreassen, T.W., Lervik-Olsen, L., Snyder, H., van Riel, A.C., Sweeney, J.C. and van Vaerenbergh, Y. (2018), "Business model innovation and value-creation: the triadic way", *Journal of Service Management*, Vol. 29 No. 5, pp. 883-906
- Chasin, Friedrich; Hoffen, Moritz von; Hoffmeister, Benedikt; and Becker, Jorg (2018) "Reasons for Failures of Sharing Economy Businesses," *MIS Quarterly Executive*: Vol. 17: Iss. 3 , Article 4.
- Al-Debei, M. M., & Avison, D. (2010). Developing a unified framework of the business model concept. *European Journal of Information Systems*, 19(3), 359-376.

Workshop 4

Thu 22.4.2021, 12.15–14.00

Lecture 5: Funding – Strategies and tactics

***Visiting lecturer: Workfellow.ai, Kustaa Kivelä
10.15–12.00***

Tue 27.4.2021,

Lecture Readings (Compulsory)

- 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).
- Ordanini, A., Miceli, L., Pizzetti, M., & Parasuraman, A. (2011). Crowd-funding: Transforming customers into investors through innovative service platforms. *Journal of Service Management*, 22(4), 443-470.
- Pennetier, C., Girotra, K., & Mihm, J. (2019). R&D spending: Dynamic or persistent? *Manufacturing and Service Operations Management*, 21(3), 636-657

Workshop 5

Thu 29.4.2021, 12.15–14.00

Learning and Teaching

Teaching Staff:

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Faculty of Information Technology

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Teaching Assistant:

Sanaz Soltani

Faculty of Information Technology

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Lectures and workshops

See lecture and workshop times from SISU. The course will be given online on Tuesdays and Thursdays. The first lecture on Tuesday 16.3.2021, 10.15–12.00. Please note that we will not provide lecture or workshop recordings.

Zoom link for the online meetings: <https://jyu.fi.zoom.us/j/8999820099>

Learning Resources

There is no textbook 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 information systems. 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. Many of these libraries and databases are available online from the University of Jyväskylä Library at <http://kirjasto.jyu.fi/> (usually you are required to login from outside of the university network). Additional citations and resources can be found, e.g., in the *AIS website* at <http://www.aisnet.org/>

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Assessment

Assessment Methods and Criteria:

Online Class Quizzes	10% Pass / No Pass
Workshop Assignments	15% Pass / No Pass
Group Research Report	25% Graded
Final Exam	50% Graded

Note 1: Please note that you need to have a passing mark for the online class quizzes, workshop assignments, group research report, and final exam. Otherwise, the student will fail the course.

Note 2. The course is graded 0-5, where 0 is no pass.

Note 3: Presence at the synchronous lectures and workshops is not required but strongly recommended as interactive learning, materials and business cases for the graded assignments will be provided during them.

Note 4: The synchronous lectures and workshops will not be video recorded.

Note 5: The final exam will be based on the course material and will consider some of the business cases introduced during the synchronous lectures.

Assessment detail

Final Exam (50% Graded)

You will be given a homework exam on the course material. The final exam concerns one of the business cases introduced during the synchronous lectures. At the end of the course, you will be given one week to complete your final exam **individually**. You should ground your analysis on the course readings, lectures and lessons learned from the workshops. Word count for the final exam will be 2000-3000 words. The final exam assignments will be provided on Thu 29.4.2021, 16.00 and the deadline for returning the final exam is on Thu 6.5.2021, 23.59. Optional exam time is Thu 3.6.2021, 16.00 - Thu 10.6.2021, 23.59.

Group Research Report (25% Graded)

Pick up your favorite business case and join the group on the Moodle course page. Combine a business case analysis based on all course themes (x5) and draft a solid report (20-25 slides). Assignment submission deadline Sun 16.5.2021, 23.59.

Workshop Assignments (15% Pass / No Pass)

For each workshop prepare by picking up one business case (NPR's podcast from the course Moodle page). Draft your individual analysis based on the week's theme: what is considered – what could be further developed? (1-3 slides). Pick up the comments from the workshop group discussions to develop your analyses. The final individual report on workshop assignments is a compilation of the individual analyses (x5) (10-15 slides). Assignment submission deadline Sun 16.5.2021, 23.59.

Online Class Quizzes (10% Pass / No Pass)

For each synchronous lecture prepare by reading the assigned articles. For each compulsory article complete the multiple-choice question given by the teacher. Post your own question on comment lines. Answer one of your peer's question on comment lines. Students' questions and answers are introduced and discussed during the synchronous lectures.

Grading rubric applied for the graded assignments. Total maximum of 5 points.

Element/Points	0.2	0.4	0.6	0.8	1
Completeness	1 theme considered	2 themes considered	3 themes considered	4 themes considered	All 5 themes considered
Use of references	Some themes include references	All themes include references	All key course references considered	+ Some additional references considered	Key and additional references included throughout
Literature reflection	Some literature discussed	Some literature discussed under each theme	The key literature discussed under each theme	+ Additional literature discussed	Key and additional literature discussed throughout
Self-reflection	Some own thoughts and ideas	Some innovative thoughts and ideas	Innovative thoughts and ideas under each theme	+ Some executive thoughts and ideas	Innovative and executive thoughts and ideas throughout
Professionalism	Understandable	No evident typos	Great looks	Informative tables and figures	Top-notch professionalism throughout

Course Advice

Prerequisite: this course assumes that you have already completed your bachelor's studies and you are currently doing your master's or doctoral studies.

Course structure: the course will use a typical master's course format. The course consists of theoretical lectures, which are followed up workshops (see SISU). However, it is assumed that students will participate in class discussions and prepare for each of the lectures and workshops beforehand.

Plagiarism

Please refer to the additional handouts about the University's policy on **plagiarism**. In this course, we will use Turnitin.com., a service to assess your written work. The outcome of this assessment will be taken into consideration for your final grade in the course and can ultimately result to failing the course.