

<b>Module title</b> Service Innovation and Modelling				
<b>Module code</b> Tbd.	<b>Level</b> Bachelor (B.Sc.) IW	<b>Hours per week</b> 4	<b>ECTS credits</b> 5	<b>Duration</b> 2 weeks block course + virtual lectures
<b>Module instructor</b> Petteri Kaskenpalo, AUT, Auckland, New Zealand		<b>Lecture type</b> Regular lecture, on line consultations	<b>Prerequisite(s)</b> Good academic standing	<b>Grading</b> Presentations, Case Study Portfolio
<b>Description</b>	<p>New (IT) services such as app based taxi and hotel booking, payment and fitness services surround us and support our daily lives. Sometimes they offer entirely new services and other times they disrupt conventional ways of doing things – for example the ways business are operated, customers interact with the service provider or resources are sourced.</p> <p>This course covers the lifecycle and processes of new service innovation, and gives you an understanding of how these are connected and what types of tools are available for conducting the work. The course includes a range of interesting case studies that highlight key aspects of innovation processes and challenges.</p>			
<b>Aim</b>	<p>This course covers the rationale and objectives of (IT) service innovation, approaches to encouraging and developing innovation and practical tools to implement innovation. This includes ensuring that the innovation effort is coordinated, connected and waste-free, and engages users and partners in the process. Learners investigate the service innovation life cycle and coordinate its effective implementation throughout the organization. Learners also evaluate modelling for designing and specifying service-oriented business systems within a variety of architectural styles, such as enterprise architecture, application architecture, service architecture, and cloud computing.</p>			
<b>Prerequisites</b>	Undergraduate diploma or equivalent			
<b>Learning Outcomes</b>				
<ol style="list-style-type: none"> <li>1. Relate design thinking concepts in service system development</li> <li>2. Relate service systems theory to the analysis of service systems and service networks</li> <li>3. Consider appropriate service innovation tools for the appropriate stages of the service design and innovation processes</li> <li>4. Discuss best practices for innovation leadership</li> <li>5. Examine information systems using service oriented design concepts</li> <li>6. Consider cloud service paradigms in the implementation of service systems, including Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS) based service solutions</li> <li>7. Visually represent and summarize service designs with Archi and the Archimate visual modelling language</li> </ol>				
<b>Assessments</b>				
<b>Number</b>	<b>Details</b>	<b>Individual or Group</b>	<b>Weighting</b>	<b>Learning Outcomes</b>
1	Two literature review based	Individual	40%	3, 4

	presentations, 2 x 15 minutes			
2	Case Study Portfolio consisting of the results of 12 learning tasks distributed across the course, 300-500 words per learning task	Individual	60%	1, 2, 3, 4, 5, 6,7

### Learning Skills

This course is designed to:

- develop the *why* and *how* skills of service design (LO1),
- examine the tools and techniques that can be used at the different parts of the service innovation processes (LO3), and
- develop the understanding of design thinking through case studies and practice exercises (LO4).

Services are building blocks of any modern computer systems, and:

- The course reviews several case studies to break these into service components to demonstrate the construction of these systems (LO2).
- The different service computing paradigms are discussed in the light of these case studies (LO6).

The service interfaces also need to be modelled in a concise way:

- This course focuses on the Archimate visual modelling language to provide participants a further way to communicate the service designs to a wider range of audiences – both technical and non-technical (LO5, LO7).

### Required Text

- Trott, P. (2016) Innovation Management and New Product Development, 6th Edition, Pearson Education

### Additional Recommended Readings

- Dodgson, M. and Gann, D. (2010) Innovation: A Very Short Introduction, Oxford University Press
- Toivonen, M. (Ed) (2016) Service Innovation – Novel Ways of Creating Value in Actor Systems, Springer
- Stampfl, G. (2016) The Process of Business Model Innovation -- An Empirical Exploration, Springer

### Recommended Journals

- Innovation Journal
- International Journal of Innovation
- Entrepreneur magazine

### Lesson Plan

Each session consists of a 90 minute lecture and a 90 minute tutorial, or a combination of the two across two 90 minute sessions. Lectures and tutorials may be conducted in self-learning based ONLINE mode or interactive ONSITE mode.

Session	Description	Readings	Assessments
1 ONLINE	<p>Introduction to innovation:</p> <ul style="list-style-type: none"> <li>• Characters of innovators</li> <li>• Innovation as a driver for change</li> <li>• Failed innovations</li> </ul> <p>Introduction to services:</p> <ul style="list-style-type: none"> <li>• Characteristics of services</li> <li>• Role of IT based services in society</li> </ul> <p>Role of service thinking in IT systems</p>	Dodgson 2010	<p>Portfolio Learning Tasks:</p> <p>1.1) Analyze the characteristics of an innovator</p> <p>1.2) Examine a failed innovation. Why did it fail? Why was this not foreseen?</p>
2 ONLINE	<p>Introduction to Design Thinking</p> <ul style="list-style-type: none"> <li>• C-K theory and modes of action for designing innovative products and services</li> </ul> <p>Tutorial ideas:</p> <ul style="list-style-type: none"> <li>• Discussion on the impact of personalities in creativity based on self-assessment</li> <li>• Interviews to practice empathy to solicit service interface encounters</li> </ul>	Trott 2016	<p>Portfolio Learning Tasks:</p> <p>2.1) Getting into a creative mood – reflections on personalities. How might your personality impact the way you innovate? How can you compensate on these?</p> <p>2.2) Hands on with empathy – build Point of View mapping by conducting interviews around an example situation</p>
3 ONSITE	<p>Strategy of innovation / Innovation of strategy</p> <ul style="list-style-type: none"> <li>• The process of innovation of new products and services</li> </ul> <p>Tutorial ideas:</p> <ul style="list-style-type: none"> <li>• Group activity and presentations of ideas for the drivers for change</li> <li>• Group activity to map the ecology of actors in an innovation ecosystem for a set of case studies and present the group findings</li> </ul>	Trott 2016	<p>Portfolio Learning Tasks:</p> <p>3.1) Visualizing the drivers for change – use visualization techniques to explore the change drivers for a case situation</p> <p>3.2) Mapping the ecology of actors in an innovation ecosystem – identify actors in a case study situation</p>
4 ONSITE	<p>Different ways of thinking about a user experience in service systems</p> <ul style="list-style-type: none"> <li>• User journeys and story worlds</li> <li>• Co-creation of value and innovation through value-chains</li> </ul> <p>Tutorial ideas:</p>	Trott 2016	<p>Portfolio Learning Tasks:</p> <p>4.1) Mapping the user experience – analyze the user experience in a case study situation</p>

	<ul style="list-style-type: none"> <li>Continue the case studies from previous sessions with focus on user experiences</li> </ul>		and explore opportunities for improvement 4.2) Create a personal / storyworld to explain the case study situation
5 ONSITE	<p>Supporting Innovation with big-data, qualitative ethnographic data and open data</p> <ul style="list-style-type: none"> <li>User/customer based services segmentation</li> <li>Service opportunity spaces</li> <li>Articulating the issues being addressed</li> </ul>	Trott 2016	<p>Portfolio Learning Tasks:</p> <p>5.1) Use opportunity mapping technique to communicate the innovation opportunities in a case situation</p> <p>5.2) Apply a problem definition technique to explain innovation challenges clearly</p>
6 ONSITE	<p>Creativity in designing innovative products and services</p> <ul style="list-style-type: none"> <li>Service innovation habits: excess-simplicity, unfamiliar-familiar-strange, zooming in-out, and connecting-disconnecting</li> <li>Communicating change introduced through the innovation and its technological and organizational implications</li> </ul> <p>Tutorial ideas:</p> <ul style="list-style-type: none"> <li>Group sketching and story telling</li> </ul>	Trott 2016	Presentations that explore the different types of creativity and what tools support them
7 ONSITE	<p>Exploratory Service Systems Prototyping</p> <ul style="list-style-type: none"> <li>Extracting information from prototyping</li> <li>New services blueprinting</li> </ul> <p>Tutorial ideas:</p> <ul style="list-style-type: none"> <li>Group work in service blueprinting</li> </ul>	Trott 2016	<p>Portfolio Learning Tasks:</p> <p>6.1) Use a service blueprinting technique to explore the service opportunities in a case study situation</p>
8 ONSITE	<p>Communicating service system design outcomes</p> <ul style="list-style-type: none"> <li>Communicating with future outcomes framework</li> <li>Articulation of design principles</li> </ul>	Trott 2016	<p>Portfolio Learning Tasks:</p> <p>7.1) Analyze a case study situation and create a justification statement for a design project</p>

9 ONSITE	<p>Building services based business models</p> <ul style="list-style-type: none"> <li>From ideas to market opportunity – building a business model for a new service opportunity</li> </ul>	Stampfl 2016: Chapter 4 & 6	Portfolio Learning Tasks: 9.1) Model the session 6 service blueprint as business process model
10 ONSITE	<p>Excellence through innovation</p> <ul style="list-style-type: none"> <li>Leading and leadership in innovation</li> <li>Developing innovation capabilities</li> </ul> <p>Tutorial ideas:</p> <ul style="list-style-type: none"> <li>Group exploration of great innovation leaders and their personal strengths – groups present their findings</li> </ul>	Trott 2016	Presentation of an example of an innovation leadership success story and evaluation of what made this a success. Focus on service system based innovation case studies.
11 ONLINE	<p>Service modelling with the Archi Tool and the Archimate visual modelling language</p> <p>Tutorial ideas:</p> <ul style="list-style-type: none"> <li>Team work on the service blueprint modelling, presentations and critiques of teams' models</li> </ul>	Archi and Archimate online resources	Portfolio Learning Tasks: 8.1) Model the session 6 service blueprint with Archi
12 ONLINE	<p>Information systems as service systems:</p> <ul style="list-style-type: none"> <li>Modelling service layers and interfaces with Archimate</li> </ul> <p>Tutorial ideas:</p> <ul style="list-style-type: none"> <li>Review and extending of example layered service system models</li> </ul>	Archi and Archimate online resources	Portfolio Learning Tasks: 10.1) Develop the earlier case study Archimate model into a layered model with clear service interface definitions
13 ONLINE	<p>Cloud computing service models – IaaS, PaaS, SaaS, XaaS</p> <ul style="list-style-type: none"> <li>Service innovation in the cloud computing ecosystem</li> </ul>	Article handout	Portfolio Learning Tasks: 11.1) Online discussion and critique of the handout article.
14 ONLINE	<p>Introduction to Service Oriented Architectures software development techniques</p> <ul style="list-style-type: none"> <li>Service interfaces at a low technical level – lessons learned</li> </ul>	Article handout	Portfolio Learning Tasks: 12.1) Online discussion and critique of the handout article.

Note: this is not the official course descriptor according to the "Studien- und Prüfungsordnung" (SPO)