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# Introduction to Service Design for Digital Health

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**Abstract.** This course addresses the service design of wellness and health services which include digital components. The course will cover methodological and practical aspects of service design, focusing on three key methods – stakeholder maps, consumer journey and blueprint. The service design methods are tried out with interactive exercises, where participants in groups apply the methods to a digital health design case. Service design is an emerging field, which applies a holistic design approach to understand and design for human experience. With an increasing number of digital wellness and health services, both in commercial and public frontiers, it is important to develop services that are easy to use, and where the consumer’s journey through the service pathways is fluent and consistent.

**Keywords.** Service design; user centric design; participatory design; wellness; health; digital health.

## 1 INTRODUCTION

Service design is a design field which addresses design challenges in a holistic way, taking into account the different stakeholders involved with the product, and utilizing human centric design and co-design methods throughout the design process [7]. Digital wellness services and products utilize more and more versatile connected gadgets and sensor systems, and pervasive technologies are becoming an essential part of the digital health and wellness service ecosystems. Currently, we are lacking methods that address the challenges and opportunities of having combinations of non-digital and digital service components in the same holistic service pathway, working together to achieve a seamless service experience. Also, there is a need to consider how digital health technologies integrate with public sector healthcare services. With this growing and increasingly complex world of digital services and products, it is important that their design takes a holistic approach to ensure a good usability and user experience (UX).

## 1.1 Focus and Target of the Course

This course provides an introduction to service design as a field and selected key methods used in service design process. These methods are then applied to the problem area of digital health services, which are approached through practical exercises. In this course, researchers and practitioners from different fields – e.g. design, technology, and HCI - gather together to explore digital health and wellness research from the service design point of view. As the learning goal, the course seeks to provide an introductory overview to service design and its key methods. The target of the course is to foster a network of researchers and practitioners interested in service design for digital health, provide insight of service design approach to pervasive health domain, and to develop further service design methods applied in the area of health and wellness.

The target is to attract participants who wish to expand their work towards service design. The preferred number of participants for the course is approximately 20.

## 1.2 Topics of the Course

**Service Design.** The main focus is on the development of service experiences where the service responds to both the service user's needs and the service provider's goals. Service design develops and solves this service problems together with various stakeholders, especially the service's users and providers. The design process is based on user-centered and co-creative design, where everyone is encouraged to be creative and share their ideas. [7]

Service design contains a variety of methods and tools. For example, the stakeholder map, consumer journey and blueprints are common tools that provide a good basic knowledge of the service situation [9]. These three tools provide visualized information from different parts of the service.

- **Stakeholder map** - shows visually who is involved in a particular service and how they are connected to each other.
- **Consumer journey** - visualizes the path of how the user experiences the service. It contains the user's interactions and feelings. With the help of the customer journey it is easier to identify problems and understand why actions happened as they did.
- **Blueprint** - specifies the service and gives more detailed information of an individual part of the service. It is a visualized map showing the various elements that are contained in different parts of the service.

The service design process typically emphasizes visualizations as a tool to support thinking and comprehending how different parts of the service link together [7]. The design process is based on testing, and is not linear but iterative. Together with the users, service providers and other stakeholders, service design seeks to develop new kinds of solutions that will better meet different stakeholders' needs. The aim of service design is to make services more user-friendly, efficient and desirable.

**Digital Health.** Digital technology has become an integral part of life in different sectors of society, including health and wellness. We have vast amounts of smart phone wellness applications with different types of UI solutions [3] and use different activity tracking technologies [10]. We have various forms of telemedicine applications [4], and can use social media for self-reflection on our lifestyle [5], gamified applications for rehabilitation [5], and make more healthy choices for our work routines [0]. Digital health technology is researched from various viewpoints, including e.g. behavior change [2], or user's design preferences [8]. The list of available digital health technologies is getting longer, and they are increasingly much applied for preventive healthcare, in self-care, and in the institutional healthcare sector.

### 1.3 Course Structure

The course is organized as one 80 minute session, consisting of short lectures, group exercises and discussions. Each participant will contribute to the group exercises. The schedule is as follows:

- Lecture: Introduction to service design
- Lecture: Stakeholder maps
- Exercise 1
- Lecture: Consumer journey
- Exercise 2
- Lecture: Blueprint
- Discussion and reflection

The first exercise focuses on drawing stakeholder maps for selected digital health scenarios. The second interactive exercise examines selected digital health service scenarios, around which the customer journey and service touch points are explored from the viewpoint of seamless integration of digital and non-digital elements.

### 1.4 Organizers

**Ashley Colley** (M) is a researcher at the University of Lapland, completing his doctor of arts in summer 2017. Colley has more than 25 years' professional industry experience, and has co-authored more than 50 peer-reviewed research papers. Additionally, Colley is an active entrepreneur, being a co-founder of OuraHealth Ltd ([www.ouraring.com](http://www.ouraring.com)) and a board member at QuietOn Ltd. ([www.quieton.com](http://www.quieton.com)). He is a multi-skilled creative technologist with hands-on capabilities on user centric design methods, interaction design, graphic design and software development.

**Henna Marttila** MA (F) is working as a research assistant specializing in service design at the University of Lapland, currently in the project Critical Communication, Safety and Human-centered Services of the Future (CRICS). One of her research focuses has been to improve people's wellbeing and safety. She sees communication one of the main things in designing these two issue. She is currently developing her skills in service design but also in the fields of graphic design and game design.

## 1.5 Reading for the Course

As background material, we recommend the following reading for the participants:

- Häkkinen, J., Alhonsuo, M., Virtanen, L., Rantakari, J., Colley, A., Koivumäki, T. (2016). MyData Approach for Personal Health – A Service Design Case for Young Athletes. In Proc. of HICSS 2016.
- Miettinen, S., Rontti, S., Jeminen, J. (2014). Co-prototyping emotional value. In Proc. of the 19th DMI: Academic Design Management Conference, 1228-1246.

As future reading, we recommend:

- Marc Stickdorn, Jakob Schneider. 2010. This is Service Design Thinking. Amsterdam: Bis Publisher.

## 2 REFERENCES

1. Aino Ahtinen, Eeva Andrejeff, Maiju Vuolle and Kaisa Väänänen. 2016. Walk as You Work – User Study and Design Implications for Mobile Walking Meetings. In *Proc. NordiCHI*, 72.
2. Sunny Consolvo, David D. McDonald and James A. Landay. 2009. Theory-driven design strategies for technologies that support behavior change in everyday life. In *Proc. CHI'09*, 405-414. ACM.
3. Jonna Häkkinen, Ashley Colley, Virve Inget, Mira Alhonsuo, Juho Rantakari. 2015. Exploring Digital Service Concepts for Healthy Lifestyles. In *Proc. HCI International 2015*, Springer.
4. William R. Hersh, David H. Hickam, Susan M. Severance, Tracy L. Dana, Kathryn Pyle Krages, and Mark Helfand. 2006. Diagnosis, access and outcomes: Update of a systematic review of telemedicine services. *Journal of telemedicine and telecare* 12, no. suppl 2 (2006): 3-31.
5. Ian Li, Anind Dey, and Jodi Forlizzi. 2009. Grafitter: leveraging social media for self reflection. *Crossroads* 16, 2 (December 2009), 12-13.
6. Rui Neves Madeira, Luís Costa, and Octavian Postolache. 2014. PhysioMate-Pervasive physical rehabilitation based on NUI and gamification. In *Electrical and Power Engineering (EPE)*, 2014 International Conference and Exposition on. IEEE.
7. Satu Miettinen, Anu Valtonen. 2012. Service Design with Theory. Lapland University Press.
8. Juho Rantakari, Virve Inget, Ashley Colley, and Jonna Häkkinen. 2016. Charting Design Preferences on Wellness Wearables. In Proc. AH '16. ACM. DOI: <http://dx.doi.org/10.1145/2875194.2875231>
9. Marc Stickdorn, Jakob Schneider. 2010. This is Service Design Thinking. Amsterdam: Bis Publisher.
10. Jakob Tholander and Stina Nylander. 2015. Snot, Sweat, Pain, Mud, and Snow: Performance and Experience in the Use of Sports Watches. In Proc. CHI '15. ACM.