Challenges and perspectives in Service Design curricula. The case of the Service Systems Design Master of Aalborg University in Copenhagen

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Abstract

In this paper the new Master program on Service Systems Design at Aalborg University in Copenhagen will be presented, focusing on the challenges of building such a curriculum and on its peculiar approach to Service Design through the Problem Based Learning methodology. All the semesters will be described.

KEYWORDS: Teaching, service design, case study, learning, problem based learning

Introduction

Service Design is still a quite new and growing topic of research and many different definitions of the field can be found. In a recent paper by Valtteri Nisula (2012) proposes a first attempt to analyse the multiple different definitions and dimensions of Service Design, and a rough categorization through the different approaches: mainly distinguishing among the systemic and the human experience one. Both the work by Sangiorgi (2009) and Blomkvist, Holmlid et al. (2010) tried to define current and future trend in Service design distinguishing basically among two main approaches: the one that try to integrate practices and ideas from other fields and the one that works on the basic assumptions and methods in service design. Between these two main approaches it is possible to analyse some trends that are related to design theory, Management, Systemic approach, Design techniques and case studies. This categorization of research trends can be directly mapped into the actual educations that are now available on Service Design. In a recent workshop, held at the Service Design Conference in Finland (2012), it was discussed what are the competencies that a 'Tomorrow's Service Designer' need to know and, although it is not possible to professionalise the domain, educational programmes should deliver the desirable skills, from conventional and contemporary design skills to business skills. In order to deliver these kinds of skills it is important to also to capitalise the differences that can be taken in the education

from the different background of the students. The Master of Service Design in Aalborg is a particular case, where students both from different Design disciplines and from Management education work together, merging their different perspective on Service Design. This Master program started on September 2012 with the idea of focusing on the systemic approach and giving a more holistic view of Services. In the following paragraphs the semesters will be introduced, focusing on the challenges of the education.

The structure of the master

Being part of the general education at Aalborg University (AAU), the structure of the master is based on two or three 5-ECTS[1] *teaching* modules and one 15-ECTS *project* module per semester. AAU's general teaching approach is based on Project Based Learning (PBL). This approach tends to create strong links between theoretical and methodological contexts and practical problems (Kolmos 2004). This approach transforms the role of teaching and supervision, from a more scholastic view to an approach that encourage the student to engage directly into the key issues in each teaching area. Teaching, in this approach, changes into facilitation, i.e. a process that supports the ability to take control of ones own learning and stresses participatory research, as a source of motivation (Kolmos, Du et al. 2008). The project module is indeed an opportunity to work in direct contact with companies or institutions that propose project areas on which the students will work to generate solutions. The teaching modules are meant to provide the fundamental knowledge for the semester, whereas the project module is an opportunity to apply the methodological and theoretical framework of the teaching modules to a practical problem.

Each teaching module may include theoretical lectures, as well as workshops, small seminars and sometimes open lectures from special guests. The main project in each semester (15 ECTS) addresses a general theme for the semester. The complexity of the problem to solve, in each semester, is shortly described by the title of the general theme.

The progression

The master is structured on the basis of a progression that gradually increase the dimension of the design problems. In the first semester the student is introduced to service design. Here the focus is on different aspects of the services, including technical aspects, aspects related to user interaction and aspects related to design methodology. The title of the semester, "the craft of design" suggests that students are introduced to service design as pupils were introduced to the craftsman workshop, to learn the state-of-the-art methods and tools to design a single service. The first semester looks at the way designer can create a specific instances of a service (e.g. how a local restaurant can personalise its meal service); whereas the second semester introduces a new level of complexity: services are analysed as configurations in which technical, social and design aspects form systemic structures (e.g. the way services can coordinate informal or formal resources in a city). The problem to solve, for the student at this level, is about integrating those aspects, while refining methods and tools that can address technical and user-related issues. The third semester is adding the

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[1] European Credit Transfer and Accumulation System (ECTS) is a standard for comparing the study attainment and performance of students of higher education institutions across Europe.

strategic and business related dimension of service design. Here the students will place service design in a business context and focus on organisational aspects, including reproducibility of services, scalability, modularisation, competences and strategies. Finally the fourth semester is dedicated to the integration of the acquired knowledge in a final project.

First semester: the craft of design

The first semester of this master is articulated over three specific courses:
1) Designing Product Service Systems, 2) Procedural Programming and 3) User Experience Design for Multimodal Interaction.

In the first module students are expected to acquire a basic understanding of the nature and characteristics of services, along with their structure in relation to its time, experience and interaction factors. They should also comprehend the nature and characteristics of the interaction between service providers, technologies and users in a service encounter. Upon the conclusion of the module students are expected to be able to apply adequate analytical and interpretation tools to integrate users' needs and possibly participation in the design process. They are expected to be able to design a simple service, its structure, components and actors, organising the sets of operations, sequence of events, interactions and material evidences that characterize it.

The programming module integrates existing knowledge about programming to a level that is required to understand the basics and work with the most used frameworks and applications in interaction design and digital services that can be used for service platforms. The programming module poses a real challenge in this context, because the technical background required to access the knowledge related to services is fairly advanced, while the perspective candidate students come from diversified backgrounds that rarely encompass a highly technical training. However, the designers of this master firmly believe that a solid grasp on programming techniques allows service designers to communicate with interaction designers. Furthermore, this knowledge enables them to work out rapid quick-and-dirty prototyping while designing new services, which in turn can come very handy while providing representations and mock-ups to stakeholders. Finally, programming knowledge turns out to be very useful when establishing requirements and features of a service during its planning stage.

The module on User Experience Design for Multi-modal Interaction aims at providing a comprehensive knowledge about user involvement in the design process, always pointing out similarities and distances between approaches and tools that comes from interaction design or industrial design (Holmild 2007). It is designed to train students to research, analyse, prototype and conceptualise design considering all system aspects including the social and cultural contexts of use. Possible touchpoints are also discussed as part of the whole system.

Second semester: services as systems

The second semester focuses on a systemic perspective: when working on the design of a service, the designer cannot just work on that single and specific case, because the service s/he is working on may be an instance of a systemic framework, in which that service will be replicated. This implies that the designer understands the links between the single instance of

the service and the technical components of the system s/he is working with. The systemic approach is therefore developed from the single interaction to the technical system that supports it and to the social system in which the interaction is located.

The modules in this semester are: 1) Distributed systems; 2) User participation and social innovation; 3) Designing the experience.

The first module focuses on the concept of distributed system from 2 perspectives: a perspective referring to computer science and one referred to industrial production. The idea of distributed systems in computer science is used to explore the potential of software solutions that allow networks of computers to communicate and multiply their computing capabilities. This idea is now very relevant for online distributed service solutions, that often use distributed computing capabilities and are often accessible via different devices and operating systems. The idea for this part of the module is to give students a deeper understanding of the way the IT part of distributed services is organized.
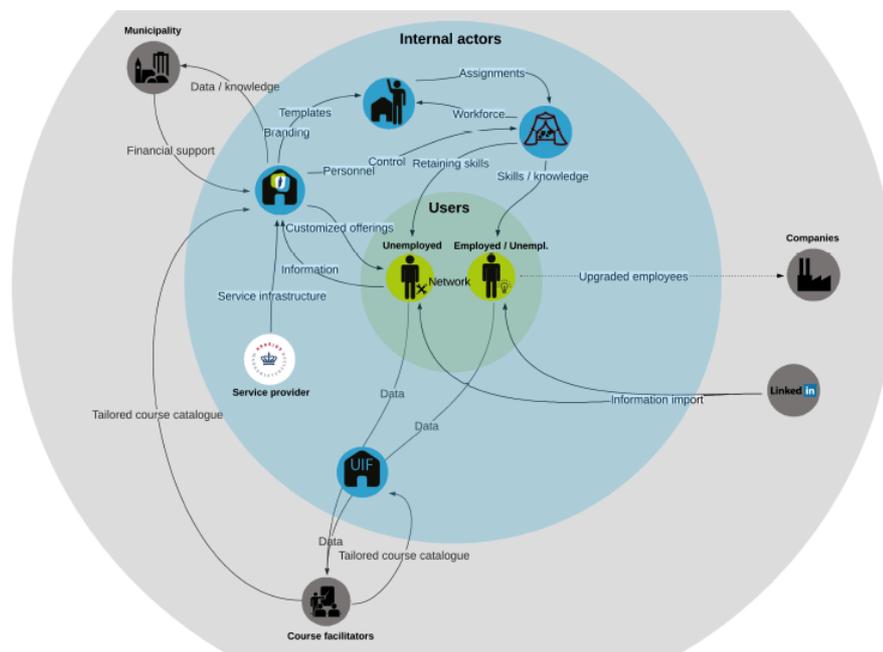

Figure 1 Relationship between actors of a Service for empowering unemployed people (Students: Mortensen, Forss, 2013).

The industrial design component of this module looks at distributed system as a consolidated way to organise industrial production, based on the definition of modular structures that define a product architecture (de Weck, Suh et al. 2003; Utterback, Vedin et al. 2006). This represents a strategy to organise production in a flexible way; in the last decades this strategy created the basis for a high level of customisation in products and services. This is being considered as an emerging approach to the design of complex services in the public and private sector, that are based on open source models and high level of collaboration (Cottam and Leadbeater 2004).

The emergence of new models for the development of public and private services links distributed system with the module on user participation and social innovation. User involvement is at the basis of this module and is a fundamental cornerstone for the master, but in this module this aspect is analysed with a focus on emerging models, based on participatory strategies and open innovation (Cottam and Leadbeater 2004). Students will

work on a methodological approach to those models and explore their potential to generate changes in social patterns.

The need for involving people in the co-design process is very central in this master, this approach changes the role of service designers, from problem solver to facilitator of a design process that involve many actors and different social and cultural backgrounds. For this reason designers have to develop specific tools to represent and propose ideas, concepts and prototypes (Morelli and Tollestrup 2007). According to this approach, the design process is a collaborative activity that should be supported by a common language. This language is often different from the traditional representation language designers use in other disciplines (e.g. technical representations in Industrial Design). The dialogue between actors with different cultural background needs to be supported by colloquial forms of communication, such as video sketching, or experience prototypes which can be used in different phases of a design process to address different communication challenges. This is the theme of the third module for this semester.

The third semester: the business of services

The third semester focuses on the business of service design. Here students will focus on the relevant questions about placing service design in a business framework. The students will work on two theoretical modules on: 1) Strategies and business in services; 2)Industrialising and scaling up services.

The first module focuses on innovation processes in services, emphasizing a design perspective. The idea with this module is to focus on the concept of design-driven innovation (Verganti 2003; Utterback, Vedin et al. 2006). This idea is the ground to explore innovation paths that are not necessarily anchored to functional needs but are rather triggered by new meanings and relevant changes in the way existing meaning are organized.

The module on industrialization and scaling-up of services focuses on another emerging issue: information technology is changing the structure of production and services are now being designed that have high level of personalization or refer to very specific contexts. However this approach does not address the problem of replicating those services beyond their original environment. Can industrial logics be used to support service reproduction? What structure should the service have, to make sure that the solution could be replicated in a different context? Are those new solutions challenging scale-up logic used for the diffusion of industrial products, or for the expansion of major social networks? This module will focus on the organizational structure (Morelli 2007) and the immaterial and knowledge-related components (Rullani 2004) that would allow reproduction and scale-up of services.

Discussion

The progression suggested above, based on logical progression from craftsmanship to industrial services, can be articulated in further layers, that consider the different dimensions of service design, from a technical dimension to social aspects. A map of such aspects, like the one created in Figure 3, would provide a logical and visual frame of the curriculum of this master, however different other dimension (e.g. experience/aesthetic VS organisation) may also apply to the body of knowledge for this master.
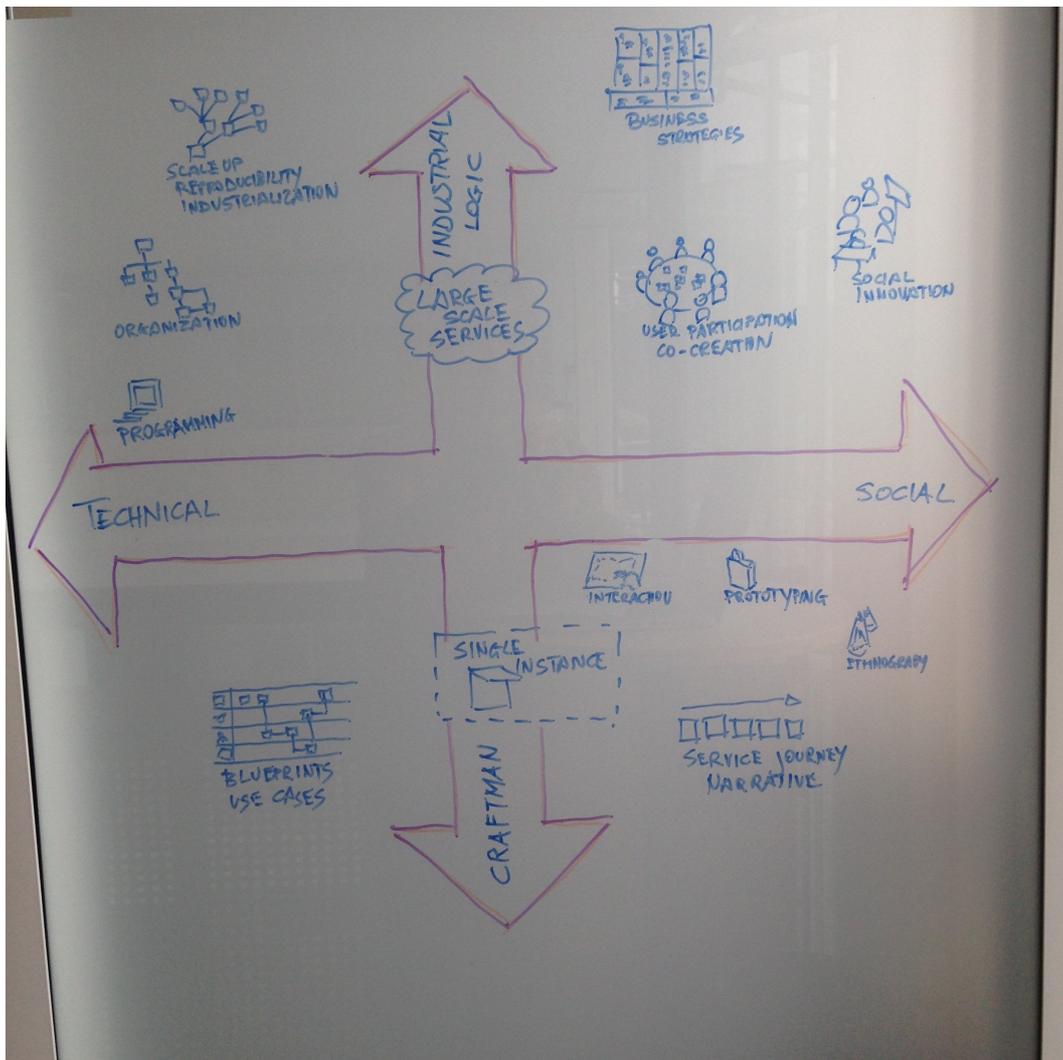
Figure 2 Map of the logical and dimensional aspects of the Service Design Master

The interpretative flexibility of the curriculum could be object of discussion in this conference. It could represent a limitation, because it would not provide a clearly defined profile for the master, but it could also be seen as an advantage, because of its capability to provide a wide range of professional profiles that address a diversified demand for competences within the area of service design. In fact the choice of specific project themes in each semester gives the supervisors and the students the possibility to shape, with a certain margin of freedom, specific professional perspectives. The early semesters of this master, for instance, have proposed projects in collaboration with the public sector, thus emphasise professional aspects related to social innovation, user participation and distributed systems.

Conclusions

The master in Service Systems Design offered by the Aalborg University in Copenhagen faces a number of challenges. Most of these challenges are common to other Service Design education paths around the world. Some of them are peculiar, however to this specific second level degree due to the particular vision that has generated its structure.

Many studies on service design focus on the area of interaction between service and user: the area that is very much on the visible/perceivable side of the line of visibility. This is because several service design studies are strongly linked to interaction studies or experience design. This master is instead framed in an engineering faculty and as such it is an attempt to delve deeply into the analysis of the technical, organisational and systemic implications of the design of services – which encompasses indeed both sides of the line. The two traditions are covering different solution spaces, but the PBL structure, and the strong problem solving orientation it implies, can offer a good ground for bridging the two areas on concrete projects. Of course those projects often reveal the complexity deriving by the influence of knowledge from different disciplines (from engineering to experience design), merging languages and a mix of methodologies belonging to different research area. The challenge of this master is to find paths that define a profile (or different profiles) for tomorrow's service designers.

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