

# The Findings from the First Service Design Projects

Yuriko Sawatani, Naoto Kobayashi, and Yoshinori Itoh

**Abstract** The design focus is expanded from physical products to service systems due to the service economy. The research designing a service system becomes more important. The scope of design becomes wider, more complex and including more interactions among various stakeholders. Because of these shifts, the new research on service system design is emerging. The paper shares the evaluation results and findings of the initial service design projects at Waseda University. The service design projects are evaluated based on the service design management framework. The findings include the importance of the joint ownership of the objectives and the deep argument for innovative idea generation. In addition, the design process of service design projects (meta-design process) such as the team configuration and the theme setting is the key to increase the success of service design projects. Lastly, the prototyping of a service/social system is not enough studied and needs to be explored further.

**Keywords** Service innovation • Service design • Prototyping • Management • Engineering and Design (SSMED)

## 1 Introduction

The society has been fast advancing toward a service-based economy. This phenomenon, common to both developed and developing countries, results from the growth of the service sector's share of the economy, spurred by rapid growth in service industries consequent to increased social sophistication and diversification. The growth of services encouraged the researchers to study the fundamental business changes from product-based systems to service economies [1, 2]. Besides the follow-up sales of product-based services, the business strategies of companies had to shift their focus to services as a key differentiator in their new business models [3, 4]. Such a shift does affect the design focus.

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Y. Sawatani (✉) • N. Kobayashi • Y. Itoh  
Waseda University, Waseda-Tsurumakicho 513, Shinjuku-Ku, Tokyo 162-0041, Japan  
e-mail: [yurikosw@gmail.com](mailto:yurikosw@gmail.com)

The design focus is expanded from physical products to service systems due to the service economy. The research designing a service system becomes more important. One of difficulties of designing a new service system is how to share values among many involved stakeholders. The scope of design becomes wider, more complex and including more interactions among various stakeholders. Because of these shifts, the research on service system design is emerging.

The paper shares the evaluation results and findings of the initial service design projects. The service design projects are evaluated based on the service design management framework. The findings include the importance of the joint ownership of the objectives and the deep argument for innovative idea generation. In addition, the design process of service design projects (meta-design process) such as the team configuration and the theme setting is the key to increase the success of service design projects. Lastly, the prototyping of a service system is not enough studied and needs to be explored further.

## 2 Service Design Projects

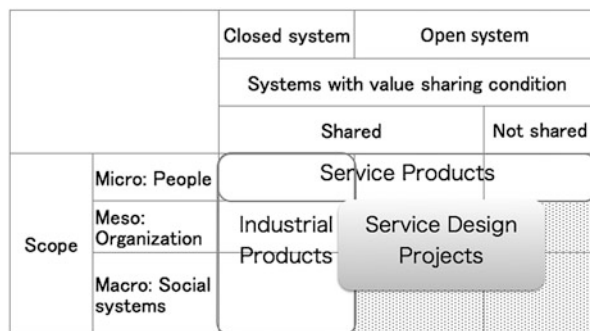
The service design projects aim to create a new service system in the future, which is positioned as the intersection of the meso scope and the open system (Fig. 1). The target of attendees of the service design projects includes students, teachers, and professionals from companies. The six project teams are formed and develop ideas and the prototyping from Dec. 2013 to March 2014.

### 2.1 Design Process

At the project level, the following steps are executed.

1. Problem identification and definition
2. Idea generation

**Fig. 1** The positioning of service design projects [5]



3. Hypothesis inspection based prototyping
4. Prototype testing and feedback

Step1: problem indication and definition is to define the clear goals from the broader task objectives. The task to given to the projects is to create a future living place, which is comfort and attractive. Then five companies, which are related with a living place, provide the future problems and directions. Each team defines the problem statement, which is to solve what for whom by 2020.

Idea generation, step 2, is executed by the innovation workshops using various ideation methods. There are various existing methods and guide books for idea generation, so after these workshops, each team execute idea generation itself based on the given method books.

This program puts stress on concept, product and experience testing by prototyping. So that step 3 and 4 are important, which include plans for the prototyping, the execution and the feedback to the original prototype. The mid-team team presentation is done to show each team's main idea and the prototyping plan. The teams present the overall project progress and the prototype and the feedback from the prototyping execution at the final team presentation.

## ***2.2 Meta-Design Process***

Activities to design, manage and evaluate projects are design processes of the projects, called as meta-design process. At the meta-design process level, we use the following service design management framework, which is extended the input-process-output model [6] from service system viewpoints (Fig. 2).

The inputs of the service design projects are team group composition, such as heterogeneity, size, group tenure, KSA(knowledge, skills, and abilities) and task complexity. The progress of projects is majored by surveys at each event, such as the kick off, idea generation workshops, the mid-term team presentation, and the final team presentation. The outputs are tested by the judges from social, business and technical point of views.

## ***2.3 Methods***

In this project, we focus on the following research questions:

1. What kinds of processes are going on to create innovative solutions by a team?
2. How can a management system help?

To investigate these research questions, a semi-structured interviews and surveys are done as the following:

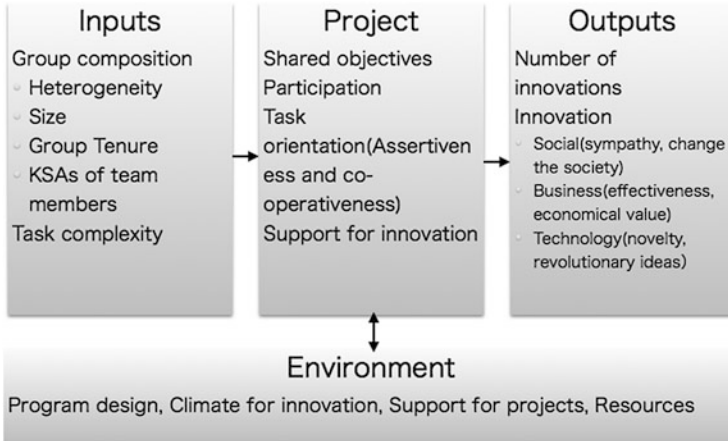


Fig. 2 The service design management framework

- Semi-structured interviews
  - Target: six project leaders
  - Hours: one hour
  - Time: Just after the project
- Surveys
  - Target: All attendees of a project
  - Time: 5 times (Each at workshop, total three times, After the mid-term presentation, After the final presentation)

### 3 Result

Table 1 shows the evaluation results of the service design projects. The team size is from 2 to 6. The team F is a special case, which is created in the middle of projects. The task given to the teams are highly complex. KSAs of teams are from middle to high, however, heterogeneity of teams are various from low to high. The team configuration is done by the attendee's choice without controls from the meta-design process level.

#### 3.1 Outputs

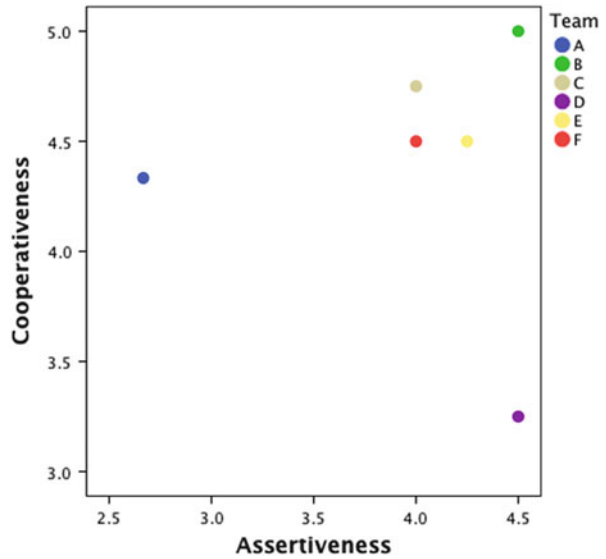
From the outputs, the following points are considered. The total assessment was high when there was an outstanding score at the evaluation. In the service design projects, innovativeness is evaluated from social, business and technology point of

**Table 1** Evaluation results of service design projects

	Inputs				Project							Outputs			
	Group composition			Task complexity	Shared objectives (mid)	Shared objectives (final)	Participation	Task orientation (assertion)	Task orientation (co-operative)	Innovation orientation	Total	Innovation			
	Heterogeneity	Size	Group tenure									KSAs of team members	Social	Business	Technology
A	H	5	3 months	M	H	M	H	L	M	M	4	M	M	L	
B	H	5	3 months	H	H	M	M	H	H	H	3	M	M	M	
C	M	5	3 months	H	H	M	M	M	H	M	2	H	M	M	
D	L	4	3 months	M	H	H	H	H	M	H	1	M	M	H	
E	L	6	3 months	M	H	H	H	H	H	M	5	L	M	M	
F	L	2	2 months	M	H	M	M	M	H	M	6	M	M	L	

Note: *H* high (higher than average), *M* middle (around average), *L* low (lower than average) the number at total shows the order of total evaluation points (1: high to 6: low)

Fig. 3 The task orientation



views, however each judge has the different perspectives of each view. It needs more detail understanding how to evaluate innovativeness.

### 3.2 Task Orientation

Figure 3 shows the task orientation. The most of teams is the right top corner, which is high assertiveness and cooperativeness.

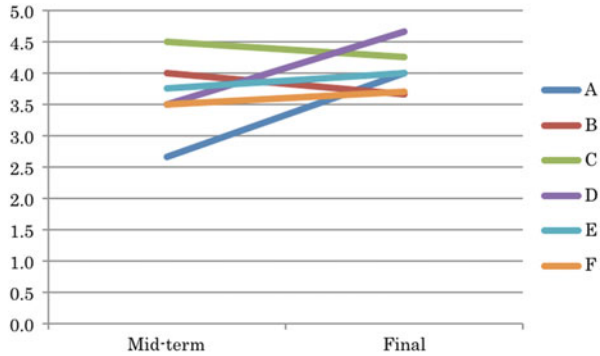
The team D has the stronger assertion task orientation than co-operative task orientation. The team A is opposite. Team D was evaluated as the top at the final team presentation that has a strong technology score.

The deep argument needs to be considered as an important element for innovative idea generation [7]. The excessive sense of cooperation may be rather associated with a sharp idea in an argument reversely.

### 3.3 Shared Objectives

One of difficulties designing a new service system is problem statement development. Without clear definition of goals, team members are not able to share project objectives enough. However, the goal is determined too precisely, then idea generation does not work effectively. Moreover, how to share project objectives and

**Fig. 4** The shared objectives



values delivered from a service system is important since various stakeholders are involved in the system (Fig. 4).

Team D and team C shared project objectives with team highly, which is ranked the first and the second at the final team presentation. The joint ownership of the objectives might be important to start the innovative idea generation. When a purpose is not shared enough, arguments may not be carried out effectively. As a result, an idea may become commonplace.

Team D and team A increase the point of shared objectives from the mid-team to the final team presentation. However, team C and team B decrease the point. In team B and C case, various comments given to the proposed idea at the mid-team team presentation might affect the project activates after that.

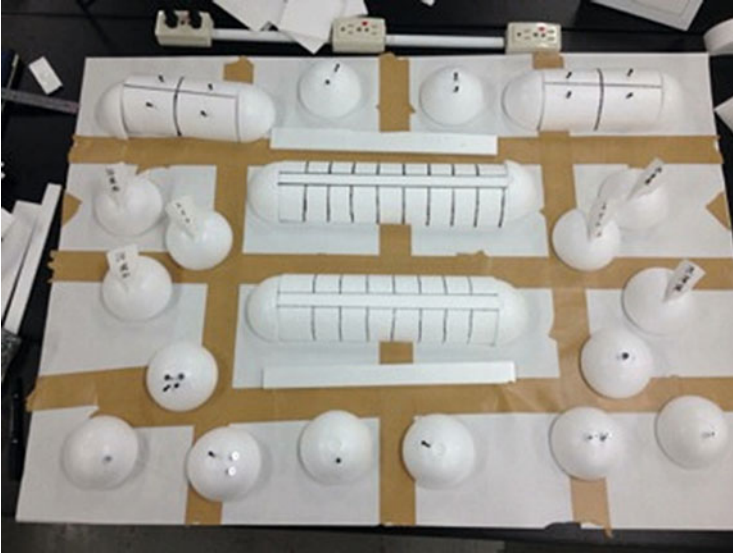
On the other hand, team D was relatively a low point at the mid-team team presentation. For team D case, even though a purpose is not shared enough, the team is more homogeneous and keeps the same quality (all members of team D come from the same discipline, similar school year), then deep arguments might be possible to generate a sharp idea.

### 3.4 Prototyping

Project teams are encouraged to test idea through prototyping. The followings are definition of prototyping via Wikipedia.

“A prototype is an early sample, model or release of a product built to test a concept or process or to act as a thing to be replicated or learned from.”

“A prototype is designed to test and trial a new design to enhance precision by system analysts and users.”



**Fig. 5** The concepts prototype

It covers various products (physical or service) and systems from various points of views (user or business point of views). However, people are used to limit the scope of prototyping to the function realization testing. So that the program tries to extend the scope of prototyping, not only to product prototyping for the function testing, but also concept and experience prototyping for service or social systems.

The following pictures show the various prototypes developed by teams (Figs. 5, 6, and 7).

Each team tried to innovate the way to prototype its idea using various methods. The prototypes are used to communicate the idea with various stakeholders and to learn from the feedbacks. However, only a limited knowledge of service and social system prototyping methods and tools is available [3, 4, 8–14]. The prototyping of a service/social system is not enough studied and needs to be explored further (Table 2).



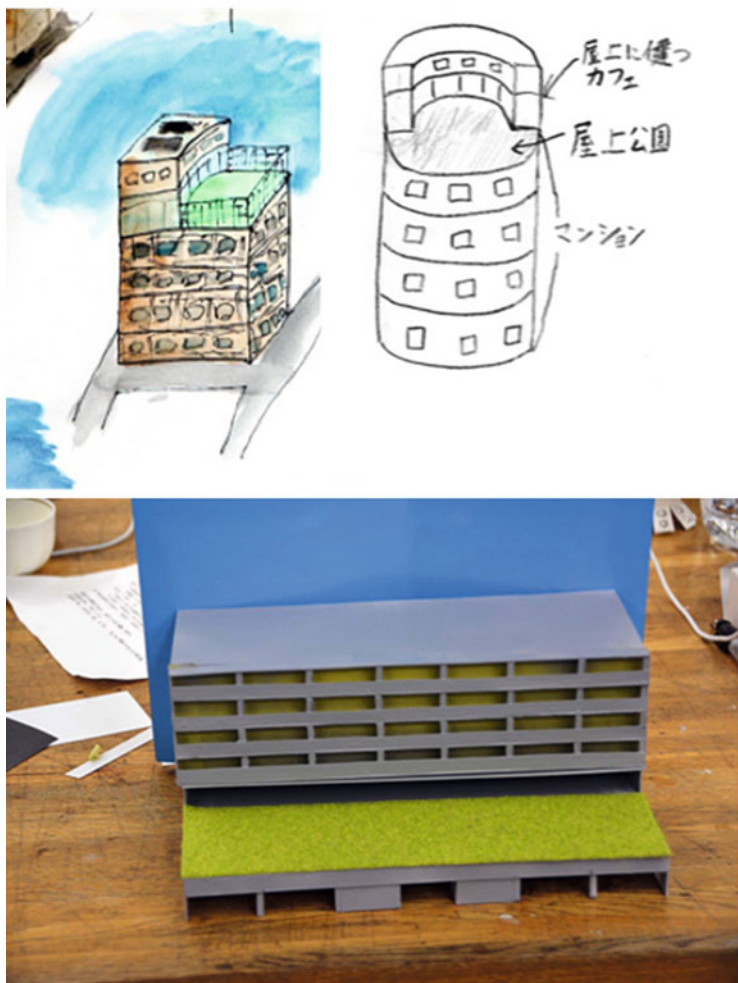


Fig. 6 The product prototype



Fig. 7 The experience prototype

**Table 2** Prototyping from objectives and the target

Objectives of prototyping				
User viewpoints				
	Value	Process	Realization	
The target of prototyping	Goods	Concept, storyboard, scenario, sketch, video, skit, paper prototyping, business model	Interaction Interface, use case, scenario	Vision, strategy, market, society
	Service			
	System	Experience prototyping, storyboard, scenario, sketch, video, skit, blueprinting System prototyping, storyboard, scenario, sketch, view, skit, simulation	Business model canvas	

## 4 Conclusions and Future Research

From the early research on the service design projects, the findings include the importance of the joint ownership of the objectives and the deep argument for innovative idea generation. In addition, the design process of service design projects (meta-design process) such as the team configuration and the theme setting is the key to increase the success of service design projects.

From the interviews of attendees at the service design projects, prototyping of the service system was challenging. The most of the service systems, which teams created, were not a products, but service systems. The areas of prototyping are expanding from products to concepts and experience. The operationalization from the idea and the concept model to the prototyping is effortful.

Even though the prototyping of a service/social system is important, but it is not enough studied yet. The methods and tools supporting the service and social system prototype need to be researched more in the future.

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