Designing collaborative services on the digital platform

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Abstract: This paper is based on an on-going doctoral research on service design for social innovation and sustainability. It introduces the notion of collaborative service and discusses its two dimensions in relation to information communication technologies (ICT). Case studies of collaborative service on the digital platform were conducted to identify the role of ICT in developing and diffusing collaborative service and a part of the result is introduced.

Keywords: Service design, sustainability, social innovation, P2P (Peer-to-Peer), ICT, social network, collaboration

Summary
Triggered by the current economic crisis, people have become more conscious of the alternative and sustainable ways of living that can substitute the traditional ones that fail to meet their needs. At the same time, advanced technologies are diffusing into our daily life, thereby democratizing and accelerating innovation. These two phenomena create a favorable condition to design and diffuse social innovation. Having contributed to the consumption-oriented ways of living, we designers are both obliged and able to participate in changing our society. One possible role of a designer is to facilitate the on-going transition by creating conditions for people to use creativity and innovate at the local scale and that of design researchers is to identify the environment in which innovations are born, developed and replicated and to provide designers with appropriate methodologies.

In the past, a series of projects have been conducted to collect the cases of so-called creative communities around the world (Meroni ed. 2007, Manzini and Jegou 2007). Creative communities are groups of people who creatively solve social problems around them rather than complying with existing solutions that fail to meet their needs (Meroni Ed. 2007). They produce what is called collaborative service which is defined as a social service in which the final users collaborate to produce solutions to a wide range of social needs that have failed to be met by existing solutions (Jegou and Mansion 2008). Collaborative services exist in the areas of housing, education, transportation, food and socialization. Although their main goal is to serve individual social needs, they contribute to the transition towards sustainable societies in the macro level because these radical innovations of local systems, i.e. discontinuities with regard to a given context, that challenge traditional ways of doing things introduce a set of new, very different and intrinsically more sustainable ones and that these micro-transformations become the groundwork for great systemic change (Manzini in Meroni ed. 2007).
Collaborative service shares several aspects in common with collaborative production in the digital sphere\(^1\). Both of them require collaboration rather than competition, inclusiveness rather than exclusiveness and are based on a platform that is decentralized rather than centralized. They also aim to improve the quality of the commons rather than privatized goods. Digital collaborative production aims to expand the repository of digital commons that are mainly information whereas the latter focuses on improving social commons such as relational qualities and social network. For this reason, the collaborations in the physical sphere and digital sphere are merging and have great potentials to produce synergy effects. Firstly, when digital, networked platform is applied to collaborative service, it can increase the accessibility and replicability of the given service, making it available to wider social and economical contexts. Secondly, it can enhance communication between stakeholders within a service and between similar services, thereby strengthening the social fabric and making a service more resilient. Finally, advanced ICT, collective knowledge and innovative business models in open networked platform can reduce the technological, bureaucratic and economical burden of creating and supplying a service respectively. In summary, technologies, especially ICT, can be used an enabling solution that motivates and empowers people to collaborate and innovate. To confirm this phenomenon and to explore possible applications of ICT to collaborative services, case studies of collaborative services on the digital platform were conducted.

The aim of the case studies was to find answers to the following questions:

- What kind of collaborative services on the digital platform exist?
- Why do they use ICT and how?
- How do we facilitate collaborative services using ICT?

Case studies consist of two stages: in the first stage, 30 cases were selected from different parts of the world and analyzed using so-called a ‘light format’. The aim of the light analysis is to obtain basic information – both qualitative and quantitative - of the cases in order to understand and affirm the phenomenon. To collect data, desktop research and interview were conducted. In the second stage, 5 cases were selected from the 30 cases for in-depth analysis in order to understand how ICT facilitate the diffusion of collaborative services. In this paper, the result of the first stage and a part from the second stage are introduced.

In order to select the cases that satisfy the definition of collaborative service, over 100 cases were reviewed using the following criteria:

1. A service uses ICT to promote itself and enhance communication within community.
2. A service requires collaboration in both physical and digital spheres.
3. A service must be designed and provided by users in order to satisfy their unmet social needs.

The light analysis led to the following insights: First, there exists a structural system in which a collaborative service function. Second, based on the primary goals of the cases, 7 typologies of collaborative service on the digital platform exist. Third, there are patterns in the way ICT is used to promote and spread collaborative

\(^1\) Collaborative production in digital world is distinguished from traditional ways of production in the market economy in that it is more democratic in political aspect and more efficient in economical aspect (Benkler 2006). It is a socio-technological innovation that are changing our ways of production and living.
services. Finally, collaborative service has two dimensions of production – solution and social capital.

The structural system of collaborative service on the digital platform consists of 4 elements: an event, a collaborative service, an enabling solution and a platform (Figure 2).

Based on the primary goal of collaborative services on the digital platform, the cases were categorized into 7 typologies:

- **Producer/consumer network.** In this typology, producers and consumers pursue mutual benefits by establishing a direct network.
- **Mapping diffused information.** In this typology, users collaborate to map diffused locational information.
- **Aggregate social action:** In this typology, users act together and use their collective power to achieve certain social goals.
- **Creating a network for social conviviality.** In this typology, the primary goal is to improve social conviviality of a local community through building social networks.
- **Mutual support circle.** In this typology, users provide mutual support to one another in order to solve problems that they have in common.
- **Competences, time and products exchange.** In this typology, people collaborate through the exchange of competences, time and products.
- **Products, places and knowledge sharing.** In this typology, people collaborate through sharing products, places and knowledge.

The case studies revealed that collaborative services on the digital platform benefit from ICT mainly in the following ways:

- Sharing and creating the Creative Commons.
- Various digital tools that improve productivity and enable efficient communication and interaction between the participants.
- Easy participation and withdrawal from collaboration thereby lowering the threshold of participation.
- Various incentive mechanisms that motivate people to collaborate.

It has been stated that collaborative service requires relational qualities of users as a pre-requisite. From the case
studies, it became clear that collaborative service has a dual dimension of production: the first dimension is the production of a solution, i.e., a service that solves social problems of users. Because this is the main goal of a collaborative service and the outcome is visible and measurable, all the service design tools that are currently available are dedicated to this dimension, i.e., how to design a solution that most effectively solves the existing social problems. The other dimension is the production of social capital. Social capital is not only essential to the creation of a collaborative service and is amplified through the service. One element of social capital that is focused on this research is social network.

According to the sociologist Granovetter (1973), a difficult innovation diffuses through personal weak ties. Because ICT can contribute to the creation of new social networks and reinforcement of the existing social networks (Kavanaugh 1999), it can be concluded that ICT can contribute to the diffusion of innovations by enriching the social networks - especially the weak ties - of innovators. Going back to the relationship between collaborative services and ICT, ICT creates and reinforces the weak ties of collaborative organizations and through these weak ties the innovative solutions of collaborative services spread. The solutions, in turn, enrich the social network through various collaborative activities. This virtuous cycle between the solution and the social network creates a synergy effect in diffusing social innovations.

The future works to be done can be summarized into two tasks: First, to analyze in depth the synergy between the dual dimension of collaborative service using qualitative method such as interview and quantitative method such as social network analysis. Second, to use this result to identify how a designer can create an environment that stimulates people to form the social network and to produce creative ideas. Through these works, the following questions need be answered: Can a designer create a condition that stimulates the production of social network using design tools and can it be included in the process of service design? How does social network influence creativity?

Reference


Among many definitions of Social capital, one by Putnam best describes social capital in this context: ‘features of social organization, such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit’ (Putnam 1995)