Design-Driven Service Innovation – Introducing Techniques for Changing the Meaning of a Service

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Abstract

This research develops a method called design-driven service innovation (DDSI) by incorporating the approach of design-driven innovation (Verganti 2009) into service design for promoting the radical innovation in the meaning of a service. In particular, it provides a guideline to reframe the context in which a targeted service is used, and also techniques to explore the new meaning of the service by blending the primary context of service usage with different contexts that satisfy the essential property of key interpreter's unique vision. By demonstrating how the method facilitates the process of design-driven innovation, this paper clarifies the benefits of focusing on the meaning and context of a service for service design and innovation.

KEYWORDS: design-driven innovation, meaning of a service, context, service innovation

Introduction

There is a common understanding among practitioners and researchers of service design that the involvement of users in a design process is a distinguished characteristic of the field (Holmid & Evenson, 2008; Holmid, 2009). Such an emphasis on user involvement, reflecting the nature of user-centered and human-centered design approaches which the methodology of service design is based on (Merger 2004), naturally influences the development and diffusion of techniques used for designing services. Indeed service designers often resort to the techniques for collaborating with customers such as contextual interviews, cultural probes, and co-design or participatory design workshops (Stickdorn & Schneider, 2010). However, compared to the popularity for doing research and co-producing solutions with customers, service designers rarely claim the necessity to distantiate the customers intentionally in order to make a breakthrough vision for a service as a surprising proposal to customers. Regarding such a provocative vision making, Verganti (2009) introduces the

approach of design-driven innovation (DDI) in which designers, with the help of other experts called key interpreters, change the meaning of product radically to generate an innovative product that seduces customers. Verganti (2009) characterizes such an approach as the innovation of meaning to distinguish it from the technology-push innovation and also from the market-pull innovation.

Because Verganti's interest focuses on the product innovation, even though he mentions about its applicability to service innovation, researchers and practitioners in service design have not been paying much attention to his research and the examples of its application to service design are quite limited. One exception is found in an application of DDI to servitizing products (Baha, Groenewoud & Van Mensvoort, 2014), though it does not deal with changing the meaning of an existing service. As for a methodical study, Schmiedgen (2011) discusses the difference and the relationship between design thinking and DDI referring the models of innovation introduced by Kumer (2009). Wetter-Edman (2011) also compares DDI and user-centered design to show based on empirical studies of service design practices that designers actually combine these two approaches in a dynamic spiral way, which is contrary to the dichotomous view introduced by Verganti (2009) and Norman & Verganti (2011). Based on the result, Wetter-Edman (2011) asserts that service designers are already practicing the approach of DDI as their expertise in a complementary way to user-centered techniques. However, it is not clearly stated in the research that how strategically those designers' design-driven approaches aim at changing the meanings of services.

Regardless of the degree to which the approach of DDI is performed strategically by service designers in practice, we are not able to depend only upon experienced designers for generating a breakthrough vision considering the fact that many recent service design projects are involving a various stakeholders including ones who are not trained as expert designers. Verganti & Öberg (2013) also emphasize the role of the top management and the necessity of involvement of leaders in the radical innovation of product meanings because "the center of attention should not be on implementation nor on creativity, but on strategy". To promote further the application of DDI to strategic service design and innovation projects, it is desirable for various participants in the projects to understand the strength of DDI and be able to use it.

This research develops a method called design-driven service innovation (DDSI) as a set of techniques used for service design projects by incorporating the approach of DDI to change the meaning of a service for its breakthrough innovation. In particular, it introduces a guideline to reframe the context in which a targeted service is used, and also techniques to explore the new meaning of the service by blending the primary context of service with its apparently distant contexts that satisfy the essential property of key interpreter's unique vision.

In the following, this paper first explains about the strategy to integrate DDI into service design. Then it introduces the techniques of DDSI by demonstrating how they actually facilitate the design process to change the meaning of a service. Finally, it summarizes the benefits of the method and further discusses on the future research possibilities.

The strategy to apply DDI to service design

Need for techniques to guide the meaning change

The process of DDI consists of the three stages of listening, interpreting, and addressing (Verganti 2009). At the listening stage, an internal design team makes a network of external interpreters who are experts in the research of targeted life context to have dialogues with them for reframing the context and deriving a radical change in the meaning of a product used in it. The design team then moves to the interpreting stage where they integrate the insights drawn from the previous stage with their company's assets and knowledge to explore the possible realizations of a breakthrough concept for the product. The last stage is called addressing in which the company resorts to the interpreters once again to ask them to promote the company's vision using their seductive languages and expressions so that the proposal becomes more meaningful and attractive to future customers. Whereas Verganti (2009) describes the detail of activity for each stage by referring to the topics such as recruitment of interpreters for listening, the organization of workshops for interpreting, and the usage of cultural prototypes for addressing, he does not provide specific techniques or tools for facilitating the process of DDI. Although the framework of DDI is theoretically formulated and the procedure to execute the approach is left for the strategy and creativity of each company, it would be helpful for the company to have some techniques or tools that guide the practice of DDI.

Reframing the context

The point Verganti makes for claiming the importance of DDI is that a visionary company should look at how the current context of life where a product or a service is used is evolving and also should explore how they could change the context so that people could give more attractive meaning to the product or service. To understand this claim correctly, it is especially important to pay attention to the expressions, 'the meaning of a product' and 'the life context'. Regarding 'the meaning of a product', Verganti & Öberg (2013, p.87) have provided the following definition. "To clarify, when we mention 'product meaning', we relate to the purpose of a product/service as perceived by the user. It is about the purpose for why a product is used, not how it is used (the user interface), nor what the product consists of (its features)". As for 'the life context', Verganti (2009, p.12) uses it without a clear definition, just presenting its examples such as 'dinner with family at home at night'. For the purpose of our research, we define the meaning of 'context' roughly as a set of behaviours or activities performed to achieve some (life) goal. More precisely, when we use the expression 'the context in which a product or a service is used', it is assumed that we are looking at some archetype of activity pattern found commonly in the behaviours of a targeted user group. Using these definitions, it becomes possible to grasp more explicitly the relation among the context, the meaning of a product/service, and the change of the meaning as following. When we say that the context of life is changing, it now means that the life goal and the activity pattern to seek it are changing. Also when we mention that the meaning of product or service has changed, it denotes that the purpose to use (or the role of) the product or service in an activity to achieve some goal has changed. Then, as an implication from these clarifications of the terminology, we notice that a drastic change in the context (the goal and the activity to achieve it) in which a product or service is used naturally prompts a drastic change in the meaning of (the purpose to use) the product or service. The techniques this research introduces aim at reframing the context strategically for promoting the change in the meaning of a service.

Changing the meaning of a service

The emphasis on the meaning and the context discussed above has further implications for the application of DDI to service design. Compared to the product, a service deals (or influences) more directly with the user's context. It intervenes in the user's behaviour and journey by introducing interactions with various touch-points like things, people, and places in order to support the realization of the user's goal. In other words, every service is trying to participate in and so modifying the user's context to co-create values with users and other stakeholders. However, it is also important to recognize that a service from one provider is not able to change or control the whole activity context since the user of the service always integrates it with other resources such as ones obtained from other providers and also the user's own actions and competences to achieve the goal (Vargo & Lusch, 2004). Such incompleteness of a service necessitates the consideration of the meaning of a service, i.e., the role a service takes in achieving a user's goal and also the view of a service ecosystem, i.e., the relationship between the service and its surrounding services and resources to constitute the whole context.

Design-driven service innovation

The method of DDSI consists of three techniques that assist the activities of the first two stages (the listening and the interpreting) of DDI applied in a service design project. The reason of the focuses on these stages is that these two are dealing directly with the process to make a new proposal while the last stage concerns mainly on the communication of that proposal, though it is possible to extend the method to include a technique for the addressing as discussed later in this paper.

The first technique of DDSI is called Contextual Reframing. Contextual Reframing is used in the listening stage to reframe strategically a life context in which a service is used into another related socio-cultural context for promoting the dialogue with key interpreters. The second technique is named as Structural Interpreting, which is applied in the interpreting stage to grasp the essence of key interpreter's unique perspective in a structural diagram, setting a direction for the ideation of the new meaning of the service. The third technique, Contextual Blending is finally introduced to develop a concept for new service experience by integrating the primary context where the existing service is normally used with some apparently distant contexts in which people already realize the essence of key interpreter's vision. The overall structure of the method of DDSI is represented in Figure 1 and the three techniques used in the method are detailed in order as follows.

Contextual reframing

The first question a company has when it begins a DDI project for service innovation is which context they should investigate to find a new meaning for a service. The appropriate choice of a service context is also necessary for recruiting appropriate interpreters for design discourse. For example, if a company aims at generating an innovative service concept for a supermarket, a dominant view of its use context is preparing meals at home. Since we cannot expect a radical reframing of the concept of supermarket by thinking just inside such an ordinary context, it is more beneficial to look at its associated contexts such as family conversation at table (an activity that follows meal preparation), housework sharing (a larger context that includes meal preparation), or healthcare (a context that has a causal relation to meal preparation). It is possible to use a symbolic association technique here to find some

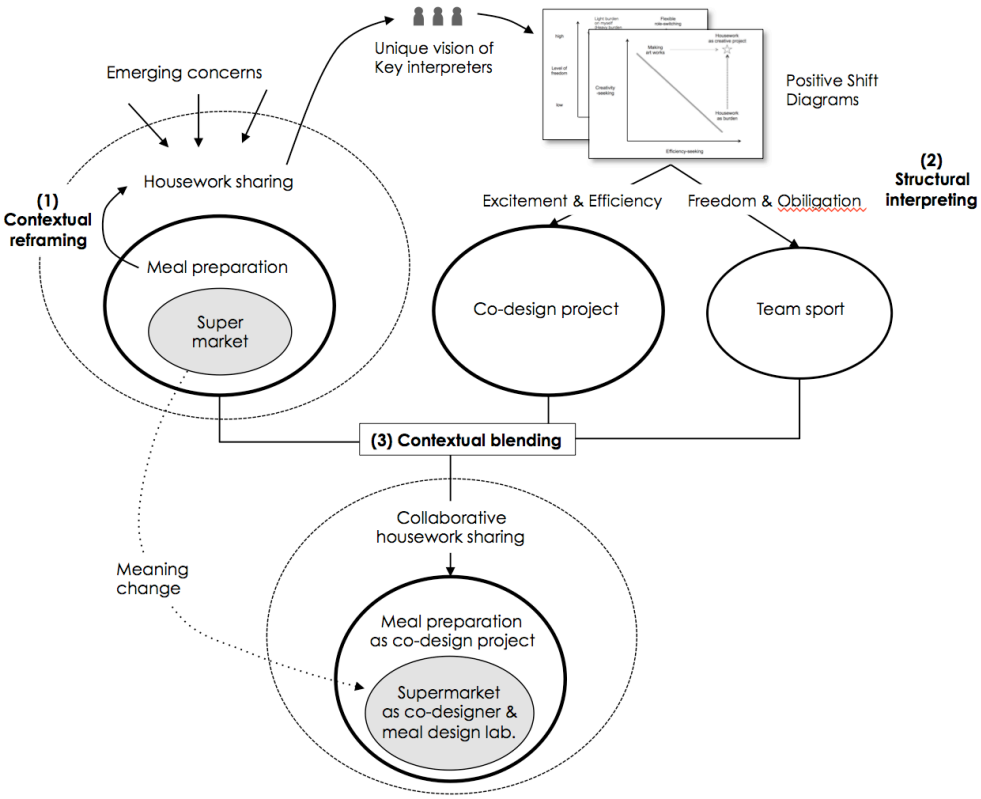

Figure 1 Overall structure of the DDSI method

ideas of life context by deriving associative words (or images) from the words expressing the characteristics of current dominant context. For a commercial project, however, it is especially important to focus on a context for which the company could expect to attract new customers or generate a new opportunity for existing customers to use the service. During such research, the company may also consider their assets applicable to and the consistency of their brand image with the focused new life context. In addition to such business-oriented interests, the company could further consider how a targeted context relates to some emerging social issues or concerns on which more and more people are going to need new solutions to keep or improve their current wellness levels.

We could add a useful tip for reframing the context too. When a company is trying to modify a context in which a product or a service is used, they necessarily look for a new reason why people use the service. It is sometimes easier to pay attention to those who are not currently using the service to find out a new context that could make a reason for them to use the service, rather than figuring out a new reason for the existing customers directly.

Regardless of the techniques to find a new context, as Verganti (2009) mentions, the context the company focus on must be one that its competitors are rarely looking at. Thus, the desirable context to explore a new meaning of a service is one that has a potentially strong connection to the current use context but has not been seek for as a major reason to use the service due to the biases and assumptions of dominant perspective. In general, we can expect that more difficult imagining a new context is in terms of association to the current use context, more radical and innovative a new meaning of the service becomes in the new context.

Structural interpreting

At the interpreting stage, an internal design team of the company confronts the mission to generate breakthrough concepts for a new service that change the meaning of service drastically. Structural Interpreting is a technique used for supporting the ideation of a new service concept based on the insights collected through the design discourse with key interpreters. Suppose that the design team is now provided with many unique visions about a life context, the question they ask is which vision is radical enough and in what sense is insightful to navigate the ideation of breakthrough concepts. Sometimes various opinions from a number of interpreters may cause difficultly for the team to evaluate the visions and set a direction to seek new concepts for a service. To assist a design team in such a situation, the technique of Structural Interpreting together with a tool called as Positive Shift Diagram (PSD) are introduced to represent an interpreter's perspective in a common structural framework helping the team to evaluate if the vision could really evoke a drastic and meaningful shift for a service. A PSD follows the same format as the diagram introduced for breaking conceptual biases by Hideshi Hamaguchi, a former design strategist at Ziba Design and is known as the first inventor of USB flash drive. According to Hamaguchi (2012), because our conceptual bias is often trapped in a trade-off relationship between two properties such as tangibility and data size in the case of computer memory, it is necessary for an innovator to find a solution that satisfies these properties simultaneously by breaking the relationship. In a DDSI project, a PSD characterizes similarly an interpreter's vision in terms of the trade-off relation that the vision breaks.

Let us now look once again at a supermarket as an example. Suppose that a company managing a supermarket chain in Japan launched a service innovation project to change the meaning of supermarket for Japanese customers. While the numbers of female entering into the workforce and accordingly double-income household are increasing continuously in Japan, the average time a husband spends for housework including meal preparation is still much shorter than that a wife does. Considering that housework sharing for a double-income family is an emerging issue in the country, the company might decide to focus on the issue as a social context in which a new meaning of supermarket is explored. Through the discourses with key interpreters on this topic, the design team of the company may be interested in a vision to challenge the dominant view of seeing housework as burden that spouses should share equally through a division of labour. The interpreter's unique vision criticizes this dominant view and provides a new perspective that regards housework as an exciting creative project, which partners can collaborate on with flexibility. In this case, the design team may translate the interpreter's view into the two PSDs represented in Figure 2 and Figure 3.

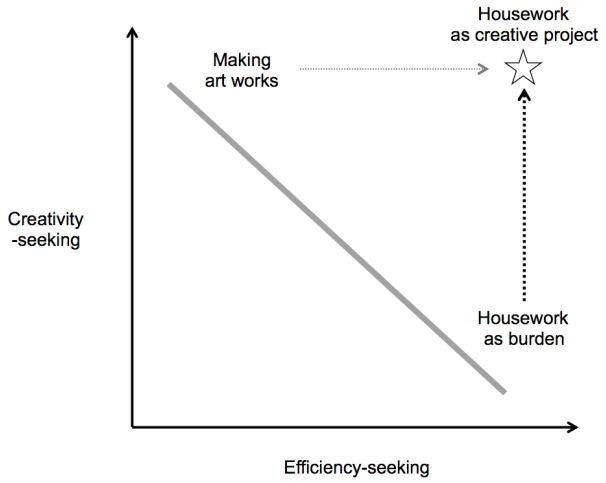

Figure 2: Positive shift diagram on creativity-seeking and efficiency-seeking

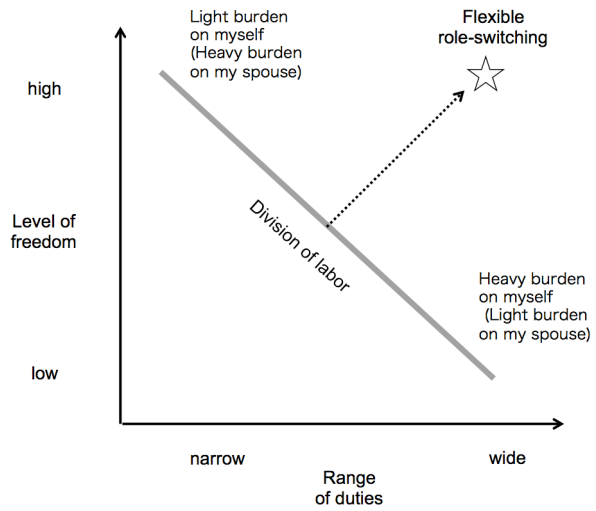

Figure 3: Positive shift diagram on freedom and duties

First, Figure 2 shows the trade-off between efficiency-seeking attitude and creativity-seeking attitude, on which the dominant view of housework is positioned at the lower right on the curve meaning that housework is usually treat as bothering tasks to be worked through efficiently as possible. On the contrary, people usually see a project of making art works, which is positioned at the upper left on the curve, as a very creative activity and they mostly tolerate its inefficient process. Against such perspectives, the new vision looks for the possibility of creative housework, which satisfies both creativity and efficiency simultaneously, being positioned at the upper right in the figure. Secondly, Figure 3 depicts another trade-off between a spouse's freedom (the other spouse's duties) and duties (the other spouse's freedom). In other words, the trade-off explains a division of labour that when the number of one spouse's duties in housework increases, the freedom of his or her home and work life decreases. However, the new vision reveals that if both spouses can switch their roles and shares of housework flexibly according to their fluctuating work-life conditions, instead of relying on a fixed division of labour, they actually have more choices

in the patterns of their housework sharing, thus increasing the degree of freedom in each side's work-life management.

Contextual blending

Once the important characteristics of interpreters' future-looking perspectives are summarized in PSDs, the design team can use these for the ideation of a new service by asking how a new service could support the positive shifts that break the current dominant view. To support such ideation, DDSI uses a technique called Contextual Blending to develop a new vision for the service experience by integrating analogically the context where a targeted service is normally used with another activity context that typically breaks the trade-off depicted in a PSD. The technique of Contextual Blending is developed based on the theory of conceptual blending introduced by Turner & Fauconnier (2002), which explains, in the framework of cognitive linguistics, the structure of metaphorical cognition in terms of the integration between two different conceptual spaces.

In the case of the supermarket innovation project, the company looks for a typical activity context, outside the context of supermarket use, where creativity and efficiency are simultaneously satisfied, and also another activity context where freedom and duties are simultaneously satisfied. One candidate for the former can be the context of a co-design project in the sense that participants in a co-design project usually seek for a kind of creativity to solve a problem collaboratively and at the same time try to complete it efficiently within some limited time and budgets. Similarly, the context of a team sport such as football or basketball can be a good candidate for the latter because we often observe flexible role switching among the players depending on the changing condition of the game development, thus keeping the good balance of players' freedom and obligations.

After setting appropriate contexts that realize the positive shifts, the design team then picks up some properties from these analogical contexts and also some from the context of targeted service usage to integrate these properties into a new blended context in which the expected positive shifts would be realized by the usage of a new service. The process to use the technique of Contextual Blending follows as below. First, suppose that the design team pays attention, as properties to pick up, to the process of a design project known as the double-diamond consisting of the four phases of Discover (research), Define (problem or vision setting), Develop (ideation and prototyping), and Deliver (implementation) (Design Council 2007). They could integrate the structure of this process with the characteristics of meal preparation to derive a new process of meal preparation as a co-design project. For example, the Discover phase for the meal preparation project means to do research on the foodstuffs sold at a supermarket and reserved in the home refrigerator as well as the physical conditions and the appetites of family members. As the Define phase of meal preparation project, a couple of spouses define a theme for a dinner menu such as preparing a meal for keeping them warm in a cold weather. They then move to the Development phase where the ideas for a particular menu and its possible recipes and ingredients are explored. Finally at the Deliver phase, they decide a menu and its recipe and negotiated who buys foodstuffs and who makes meal for the dinner (Figure 4). Regarding the properties of a team sport, the design team may be interested in its various aspects such as training, team management, and strategy. Then they may ask how spouses can develop their cooking competencies and what kind of training program is appropriate for them to practice different work formations and flexible role-switching for meal preparation. Moreover, they could imagine the possibilities of having a strategy meeting for making decisions on buying foodstuffs smart and also hiring an experienced coach for supervising their cooking performances.

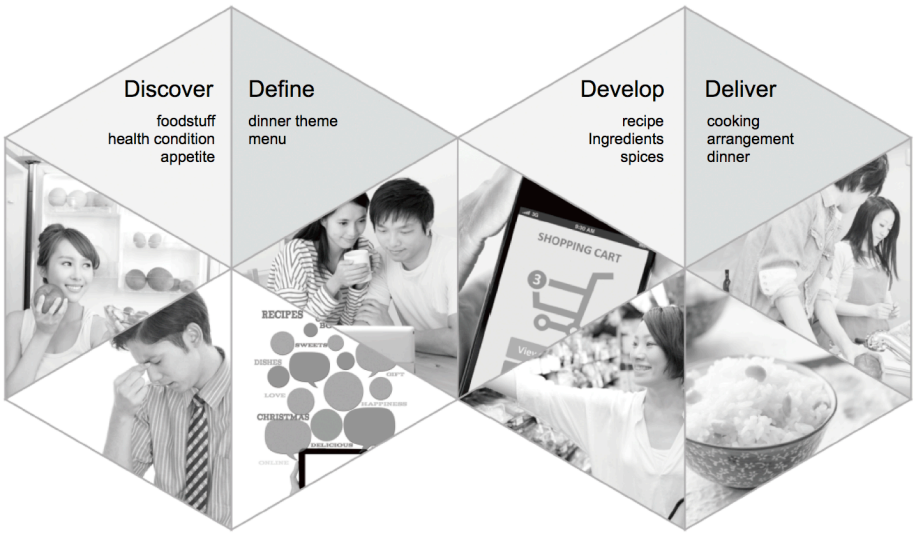

Figure 4: Meal preparation as a co-design project

By using Contextual Blending, the company is now able to develop a new vision and a journey for an ideal meal preparation experience in the blended context. For example, a new vision for meal preparation can be described as a collaborative dining design project for spouses, who change flexibly their formation of cooperation like a team sport according to the work-life conditions of both sides. Such a clear definition allows the design team to draw a new experience journey of meal preparation to realize the concept and a new role (meaning) of supermarket to support it. For example, a supermarket may play a role of a co-designer or a facilitator who participates in the dining design project together with spouses. The co-designer-like supermarket helps researching foodstuff, proposes possible themes for dinner, assists exploring and deciding a menu and recipes, and finding appropriate ingredients. In addition, in considering the application of digital technologies, the supermarket can provide the customer with an online dining design laboratory where the spouses pursue their dining design project using their PCs or smartphones when they are traveling or having break at their offices. The online design laboratory can be a virtual space for brainstorming menu ideas and also for a meeting room to decide which spouse shops or cooks. It may further connect with the food stock inventories both of supermarket and customer's home (say, through a intelligent refrigerator) so that it supports the spouses' design project based on the live information of the food stocks. Continuing such ideation, the design team may happen to come up with a new concept for the retail space of the supermarket. Since spouses of double-income households usually have a limited amount of time to do shop at a supermarket or cook at home, they may prefer home delivery or just picking up foodstuff they have already bought online. For such customers, the supermarket does not necessarily have a large store space but may need a convenient pick-up window for the online shoppers. Or it may also need a new facility for cooking staffs at the supermarket to precook meals according to the order made online by the customer. Figure 5 shows the image of the derived service concept.

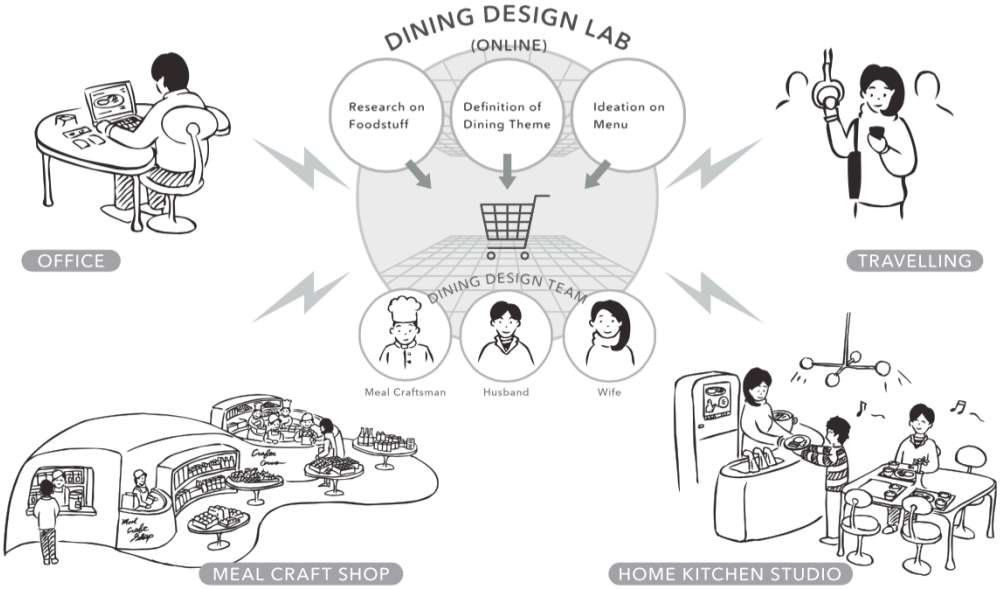

Figure 5: Image of the service concept for changing the meaning of supermarket

Discussions

In the previous chapter, the method of DDSI was introduced by demonstrating how its techniques facilitate the process of design discourse of DDI when applied to the innovation of a service. In particular, this method provided the procedure to transform the current meaning of a service into a new meaning of the service that reflects an interpreter's unique perspective on the reframed life context. Although it is necessary to test the method with real projects for the practical evaluation, we can expect that the approach of DDSI does not just let DDI being more accessible for service design practitioners, including non-experts in design, but also encourages them to coordinate strategically the meaning of a service and the context in which the service is used. Indeed, once a company defines clearly a breakthrough vision of a life context and a novel meaning of a service to support it, these help the company to design the service with keeping coherency among the parts (a behaviour and interaction at each touch-point), the whole (a user journey and experience), and its environment (the life context) of the service.

Such systemic coherence in designing a service along a breakthrough vision also supports the branding of the service. Since the meaning of a service the customer perceives can be influenced by its brand communication, the branding of a service works effectively for the customer's perception of the meaning of a service if it reflects appropriately the vision of the life context for which the customer feels empathy. Moreover, the relationship between the meaning of a service and its branding is not limited to such a one-way effect by the brand on the customer's perception of the service. According to Merz, He, & Vargo (2008), the literature on branding has shifted its focus over the past several decades from viewing a brand as an identifier or an image to viewing it as a dynamic and social process. The authors further explained that this shift has happened in parallel to the shift in the marketing literature in general from goods-dominant logic (brand value is embedded in the physical

goods) toward a more service-dominant logic (brand value is co-created with all stakeholders). Therefore, it becomes important for the project of design-driven service innovation to generate opportunities for all stakeholders to communicate on the new meaning of a service promoting their participation in the process for the co-creation of its brand value that reflects the breakthrough vision of the context.

This line of argument on service branding also indicates the importance of addressing in the process of DDSI, which is not dealt with in the current method. Verganti (2009, p.194) explains the activity of addressing in terms of what he calls as a cultural of prototype, i.e., "an articulation of a new meaning and language", represented in various formats including books, exhibitions, cultural events, and concept products, used for the codification and diffusion of the company's new interpretation and vision. For the future research, it is an interesting question to ask what kind of form and expression would be appropriate for the cultural prototypes to address the design discourse on the meaning of a service.

In addition, the method of DDSI introduced in this paper does not cover the issue of technology epiphany, which is a merge of the radical innovation of meanings with technological breakthrough (Verganti 2009). Although it is not clear if there is a significant difference in the approach for technological epiphany between product innovation and service innovation, the development of a technique to promote technology epiphany for DDSI will encourage a meaningful collaboration among engineers, designers, and business strategists.

Conclusions

The method of design-driven service innovation (DDSI) was developed as a set of techniques for applying the approach of design-driven innovation introduced by Verganti (2009) to service design. DDSI provides a guideline to strategically reframe the context in which a targeted service is used, and also a technique to grasp the essence of the unique visions of key interpreters in a structural format. DDSI facilitates a company's process to generate a new meaning of the service by blending the primary context of service with its apparently distant contexts that stratify typically the visions of key interpreters. Besides the direct merit of using DDSI for service design, this paper also discussed about its applicability to service branding as well as its possible extensions to support addressing and technology epiphany for the future research. The techniques elaborated in this paper do not limit the possible approaches to incorporate DDI into service design but encourage further development of techniques and tools for that.

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