Design for Value Co-Creation: Exploring Synergies Between Design for Service and Service Logic

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Connecting Design for Service and Service Logic

In a Service Logic framework, service is understood as a perspective on value creation where value is co-created by customers and other actors and is assessed on the basis of value-in-use in relation to the involved actors' intentions. Value is often referred to as being experiential and contextual, and Chandler and Vargo (2011) suggest that it is necessary to deepen our understanding of context and its heterogeneous and distinctive nature. This connects to Vargo et al. (2008, p. 151), who raise the question: "What approaches do we need to understand the sociotechnical context of value creation?" There seems to be a lack of knowledge about design for service experience in context.

One approach would be to define a particular context as a set of unique actors with unique reciprocal links among each other and their access to a set of resources (Wasserman and Faust 1994, Carrington et al. 2005). The focus on value co-creation and value-in-context brings the role of the actors and their resources in a service system to the fore. A service system can be described as a configuration of actors, resources, and technology designed to enable and direct value co-creation—and innovation—resulting in the intended value-in-context for the involved actors (Spohrer et al. 2007, Edvardsson et al. 2012). Thus, value co-creation is based on how resources are being integrated and used, but in studies based on Service Logic, there is a lack of knowledge as to how to design these service systems.

This paper considers the lack of knowledge about design for service experience and design for service systems; its core motivation is to explore how *Design for Service* could contribute to the application of Service Logic concepts and frameworks in service system innovation. We are interested in investigating how Service Logic as an analytical perspective could be translated into a practical approach that aims at innovation, where design is regarded as one vehicle. Moreover, this paper considers the concept of *Design for Service* (Kimbell 2011, 2013; Meroni and Sangiorgi 2011) as central for the further development of service design practice while recognizing the need for theoretical foundations, where Service Logic is regarded as one candidate.

Rooted in a European design tradition, Service Design practice has, since its foundation in the 1990s, focused on value in its experiential dimension, proposing an outside-in approach to service innovation. In this practice, contextual experiences and human-centered design have been a much-canvassed topic for well over two decades. Service Design practice focuses on observing and understanding users, as well as facilitating collaboration and participation, at the times and places where value is co-created. Design possesses and applies competences, approaches, tools, and methods, which are partially solution driven, to understand and envision customers' experiences and activities so as to integrate them with the providers' facilitation of service system processes. Furthermore, the introduction of *designing for service* as a way of viewing design practice in service contexts, highlights "that the purpose of the designers' enquiry is to create and develop proposals for new kinds of value relation within a socio-material world" (Kimbell 2011, p. 49), thus making the link between Design for Service and Service Logic possible. As Wetter-Edman (2011, p. 100) propose, "Design practice using designerly tools and methods might be a way to realize a service logic for the organization." Design for Service, as a research perspective, is interested in *outcomes* and how actors' resource integration and value co-creation activities and interactions can be aligned to arrive at the intended value-in-context as the basis for designing a service system. Consequently, Design for service draws on a broad scope of research in and on service design practice.

The rest of this paper is structured as follows: First, the two fields of studies are introduced. Second, we identify key concepts in Service Logic and Design for Service, with the purpose of comparing and introducing concepts from the two fields that could help to better create an understanding of value co-creation and service system design. Third, the paper elaborates on the way Design for Service theorizes, frames, and uses *experiences*, *context*, and *participation* to innovate, which leads to the concept of *value co-creation in designing*. Fourth, a model for the *design for value co-creation* is presented that conceptualizes how Design for Service deepens and extends the conceptualization of value co-creation and innovation in the context of service systems; propositions are presented as a final interpretation of the synergies between Design for Service and Service Logic. These propositions inform research questions for further studies.

An Introduction to Service Logic

In service research, co-creation and value have become central issues over the past decade. Vargo and Lusch (2004), in their study on a service-centered dominant logic of marketing, reintroduce the notion of customers as coproducers of value (Eiglier and Langeard 1975, Grönroos 1978). The notion of co-creation was then emphasized as a key concept of this logic (e.g., Vargo and Lusch 2008). Value is co-created in social contexts through customers' value-creating practices or even individually created by the customer (Edvardsson et al. 2011), where the provider acts as value facilitator and only sometimes as a value co-creator (Heinonen et al. 2010). This relatively new emphasis of the customers' role in value creation and the attention given to value-in-use and value-in-context demands for not only complementary ways of understanding the customers, use, and context but also ways to predict the roles and goals of the actors involved and to initiate joint co-creative design actions between the firm and its customers to finalize the service to be designed. Heinonen et al. (2010) suggest "that instead of emphasizing only one type of activity, i.e., customer-company interactions, the focus should be on customers' activities and different consumption contexts" (p. 542).

The customer's value creation processes are in fact influenced by a wider customer ecosystem, which consists of other customer-related actors (e.g., family, friends) beyond the firm's control (Voima et al. 2011). Similarly, Grönroos and Voima (2013) conclude, "The underlying, though never explicitly formulated, view of value creation is of an all-encompassing process, including activities by service providers, customers, and possibly also other actors, which leads to the conclusion that everything is value creation and everyone co-creates value" (p. 144). They suggest dividing the value creation process into a provider sphere (closed from the customer), a joint sphere (where the customer and service provider directly interact), and a user sphere (closed from the service provider), where the customer independently, or interacting in his or her social context, continues the value creation process. Only the activities in the joint sphere are considered value co-creation (Grönroos and Ravald 2011). Customer experiences have become a recent focus of research interest, where not only the experiences in the joint sphere are important but also experiences created beyond the joint sphere (Baron et al. 1996, Verhoef et al. 2009, Heinonen

Table 1. Key Concepts in Service Logic Research That Form the Basis for Conceptualizing Value Co-Creation

| Concepts | Service logic | | |
|------------------------|--|--|--|
| Actors | Resource integrators | | |
| | Social actors | | |
| | They possess knowledge and skills | | |
| Resources | Knowledge and skills (integrate and operate) | | |
| (resource integration) | No inherent value, but it depends on the context and aims | | |
| | They are not, but they become | | |
| Context | Value is assessed in context | | |
| | Context is a resource constellation that is available to customers | | |
| | The servicescape | | |
| Service system | A service system consists of actors, resources, technology, and institutionalized norms and rules that | | |
| | shape actors' resource integration and value creation | | |
| Experience | Focus on customer experience | | |

et al. 2010). The service provider's role as value facilitator means that the firm does not create any value as such, but through activities in the supplier sphere creates potential value, which is realized in the customer sphere. If direct interactions occur, value is also realized in the joint sphere (Grönroos and Voima 2013). Issues to study here include what actions firms could take to facilitate the design process and what joint collaborative design actions the firm and its customers could engage in to finalize the service to be designed.

Five concepts emerge, of which four key concepts in Service Logic research will be presented in more detail in the following section. These form the basis for conceptualizing value co-creation—actors, resources and resource integration, context, and service system. All five concepts are summarized in Table 1.

Value Co-Creation in Service Logic. *Actors* operate on or activate resources in their efforts to co-create value. Actors are referred to as operant resources and are presented as critical for value creation and innovation (Spohrer et al. 2007). Actors' knowledge, skills, motivation, and understanding of their role have a major impact on value creation in practice. Actors can, for example, refer to customers, employees/providers, and network actors as well as to institutions and the media.

Resources are anything with the potential to create value for the involved actors or beneficiaries. Resources are becoming, which means that resources have potential value, but value is created only when integrated and operated on (or used). This dynamic view of resources has long been recognized in the literature. Zimmermann (1951) pointed out more than 60 years ago that resources are not; rather, they become.

Value is not about knowledge and skills but about using knowledge and skills in a specific context by a specific actor with the intention to create value. Resources enable and facilitate value creation, and most often a constellation and integration of resources forms the basis for value creation. Value is created through actors' resource integration, when the customer and other actors integrate and operate on or apply the resources of the service company with other resources in their own context (Gustafsson et al. 2012), including the social context (Edvardsson et al. 2011).

Resource integration refers to the incorporation and application of a customer's resources within an organization's resources (Moeller 2008). The service-dominant logic is basically a value co-creation framework in which all actors are resource integrators, tied together in shared systems of exchange. Based on this, we see that design plays a key role in enabling and facilitating actors' resource integration. Vargo and Lusch (2008, p. 7) emphasize this understanding in their ninth foundational premise: "All social and economic actors are resource integrators." Lusch et al. (2010, p. 21) go on to contend that "firms exist to integrate and transform micro-specialized competences into complex value propositions with market potential." Customers and other actors on the other end of the process possess resources such as knowledge, skills, and various enabling operand resources (Spohrer et al. 2007) as well as social norms, rules, and roles (Edvardsson et al. 2011), which form the basis for customers' activities and interactions resulting in attractive or unattractive (Echeverri and Skålén 2011) value-in-context. Our view on resource integration is based on Mele et al. (2010), who argue that resources have no inherent value in themselves but instead possess important potential value, depending on how they are integrated and operated on, in specific contexts with specific intentions.

Context refers to a specific value co-creating situation when a constellation of resources and actors co-creates value through activities and interactions. Context can refer to physical, social, or mental contexts, and different actors may have a very different understanding of the same context with implications for value co-creation.

Grönroos and Voima (2013) make a distinction between "social, spatial, temporal, and physical contexts in which usage takes place, and it depends as well on how these aspects of the usage context change" (p. 144). The ability to define context uniquely is sometimes important because its heterogeneity affects how resources can be drawn upon for service. In this paper, we argue that value co-creation takes place within service systems embedded in social systems. In the value co-creation process, human resources such as competence are deployed to integrate and act on other types of resources available in the principal context. The actors and their available resources constitute a value-creating service context.

A *service system* is the entity within which value creation takes place. Service ecosystems are "relatively self-contained, self-adjusting systems of resource-integrating actors connected by shared institutional logics and mutual value creation through service exchange (Vargo and Akaka 2012, p. 207)" (Akaka et al. 2013, p. 2).

Zhang and Chen (2008) argue that co-creation with customers is a systemic process in which resources are integrated and operated on. The role of a service system is to enable and direct (through value proposition(s)) value creation, the outcome being service (value-in-context). Service systems interact with other service systems in practice, and adaptability then becomes important for sustainable value creation. Service ecosystems suggest that service systems in action are not isolated islands but are connected to and dependent on other systems that both enable and inhibit intended indented value co-creation.

Thus, a service system consists of actors, resources, technology, and institutionalized norms and rules that shape actors' resource integration and value creation. Systems, and systems of systems, can (and should) be studied on a micro, meso, or macro level, and attention should be paid to the interdependencies between systems, including system levels.

An Introduction to Design for Service

According to Edvardsson et al. (2005), there are essentially two different approaches in service research: one perceives "service as a category of market offerings," whereas the other describes "service as a perspective on value creation" (p. 118). In the last two decades, designers and design researchers have approached the service sector as a new potential partner for design, introducing a creative, human-centered, and iterative approach to service innovation (Sangiorgi 2009, Blomkvist et al. 2010, Pacenti and Sangiorgi 2010, Meroni and Sangiorgi 2011). Design-based approaches for service innovation include working with user centeredness, multidisciplinary teams, aesthetic and visual competence, and creative processes (Brown 2009, Kimbell 2009, Holmlid 2011).

Central to early studies has been the analogy between the design of service interactions and the field of interaction design, justifying the adoption of tools and concepts from this field (Pacenti 1998; Sangiorgi 2004; Holmlid 2005, 2007). The focus on customer–service interface interactions has then expanded to include issues related to coproduction, public service reform, and organizational and social change, among others. More recently, Service Design has included more advanced research topics and integrated elaborate practices from participatory design, design for social innovation, and transformational change (e.g., Jegou and Manzini 2008, Sangiorgi 2011, Vaajakallio 2012).

These recent studies have expanded the meaning of service beyond traditional sector-specific descriptions and service interactions, but few researchers have debated the implications of adopting a Service Logic. This paper adopts the term *Design for Service* to align with recent theorization of service research that considers service as "a perspective on value creation" or as "a business logic" where the distinction between products and services loses its relevance. Currently, the term "design for service" is used to suggest "the fundamental inability of design to completely plan and regulate services, while instead considering its capacity to potentially create the right conditions for certain forms of interactions and relationships to happen" (Meroni and Sangiorgi 2011, p. 10). Also, Kimbell (2011) suggests how "designing for service, rather than service design, makes clear that the purpose of the designers' enquiry is to create and develop proposals for new kinds of value relation within a socio-material world" (p. 49, italics in original) and is therefore not directed toward a specific kind of outcome. We use Design for Service here to denote this inclusive research perspective with the aim of exploring how and when design contributes to value co-creation and service system innovation.

From design studies and practice emerge six central concepts related to value co-creation (summarized in Table 2), of which five will be described below: human-centered design, participation, experience, context, and service system. These concepts are described below and summarized in Table 2.

Value Co-Creation in Design. *Human-centered design* focuses on making solutions usable and pleasurable for the humans involved in achieving the solutions. The term "human" is used in favor of the more commonly encountered "user," because the "human-centered" approach considers the importance and role of a larger network

Table 2. Key Concepts in Design Research That Form the Basis for Conceptualizing Value Co-Creation

| Concepts | Design for service | |
|----------------------------------|--|--|
| Actors | From "user-centered design" to "human-centered design" Focus on experiences and practices of users and staff Staff and users as co-designers | |
| Resources (resource integration) | Anything that enables actions to achieve aims Capabilities of people as key resources for designing | |
| Context | Service and value-in-use as the context for design Service interface Service as a situated activity | |
| Service system | Service system as the provider Service ecology Sociomaterial configurations | |
| Participation | Participation as a way to engage actors and integrate resources in designing Participation as empowerment and potentially transformative | |
| Experience | Experience is a key source and anticipated outcome for designing Experience is influenced by the social context Experience is explored and understood through narratives and empathy | |

of actors, not only users, who are directly or indirectly involved in the service provision and use (Rizzo 2010, Meroni and Sangiorgi 2011). As described in Meroni and Sangiorgi (2011), a human-centered design approach consists of the capacity and methods to investigate, understand, and engage with people's experiences, interactions, and practices as well as their values and dreams. This understanding is the starting point of a service innovation process. Experiences and interactions can be related to the service delivery and use, but they can also refer to a staff's work practices and experiences or more general interactions and experiences of stakeholders interacting with each other to provide the solution.

On another level, a human-centered design approach refers to the capacity and methods of engaging people in the design and transformation processes, which can vary from the adoption of participatory design techniques where users and staff become co-designers, to co-creation approaches, where users become conscious and active participants in service delivery processes (Holmlid 2009, Meroni and Sangiorgi 2011). This dual interpretation of human-centered design as understanding and engaging people suggests the relevance of both actors' experiences and participation as key concepts for value co-creation in design.

Participation in design is considered a source for value co-creation for different reasons. Value co-creation happens during use as a result of service interactions, but it also happens during designing (Holmlid 2012), as a by-product of participatory approaches centered on people's resources, ability, and willingness to engage in change processes. Moreover, participation is bidirectional in the sense that users participate in the activities of the designers, and designers participate in the activities of the users.

People are considered as precious resources and as experts of their own experiences having the potential to contribute as co-designers (Sanders and Dandavate 1999, Sleeswijk Visser et al. 2005). In participatory design processes, individuals are therefore regarded as possessing important resources to achieve the goals of an innovation/design process (Ehn and Kyng 1987). Some of the approaches, such as design games (Vaajakallio 2012), are based in theories of play where users and other stakeholders are engaged and encouraged to share and use their experiences as a way to imagine and co-construct possible futures (see Figure 1). A participatory approach therefore co-creates value by supporting people to integrate these resources in the design process to generate more effective and meaningful solutions (Holmlid 2009, 2012).

Participation is also considered to be connected to "empowerment" and as a means to democratize processes of innovation (Björgvinsson et al. 2012). In practices involved in Design for Service, such goals for emancipation are common (Holmlid 2009). Participation is thought of as a continuum that moves from consultation to coproduction (Bate and Robert 2007a, b), but only when it is pushed to its extremes can it be linked to more "transformative" aims.

Experience is a key source for directing and evaluating services. Individual user experiences emerge from service interactions that are at the core of any design process. The contextual understanding of user experience and emotions is fundamental, as experiences shape the way people perceive situations and make decisions (Goleman 1996). Central here is the adoption of approaches such as empathic design and design for experience (e.g., Leonard

Figure 1. Example of a Design Game Used in a "Co-Designing University" Project Conducted in Aalto University to Imagine the Future of a Research Center Called "Service Factory"



Source. Figure 18 in Vaajakallio (2012). Used with permission.

and Rayport 1997, Sanders and Dandavate 1999, Koskinen et al. 2003). These approaches describe users as individuals, with rational and irrational motivations and emotions as well as everyday routines and dreams that can inform and inspire design (Sanders and Dandavate 1999, Fulton Suri 2003). Experiences are also dependent on the social context, as Battarbee and Koskinen (2005) explain; drawing on symbolic interactionism, they introduce the concept of coexperience, where individual experiences and their qualities are affected by the situated dynamics of social interactions.

A second aspect of the user experience is closely connected to activities and processes of value co-creation in service performance. These are sometimes referred to as experiential qualities or use qualities (Holmlid 2002, Arvola et al. 2011). These qualities are induced through activities and as phenomena tied to an experiencing, and often proactive, subject. User experiences are thus subjective as well as an invisible phenomenon that emerges at a specific point in time, triggered by previous experiences and expectations, influenced by context, functions, and time (e.g., Mäkelä and Fulton-Suri 2001, Sanders and Stappers 2012).

A third aspect is viewing user experience as the direct perception of an object, an action, or a space (Alexander 1970, Alben 1996). This is sometimes referred to as "look and feel," and concepts such as affordances or signifiers (Gibson 1977, Norman 2008), counterform (Holmlid and Hertz 2007), and service moment (Koivisto 2009) are used to understand design in service. This view is important when specific processes, touch points, and resources that users will integrate into use are designed.

Design research has been looking for ways to capture knowledge of user experiences and context from the ongoing streams of action and consciousness (Mäkelä and Fulton-Suri 2001, Sanders and Stappers 2012). Design probes (Mattelmäki 2006) and design games (Vaajakallio 2012) are two such techniques. Storytelling and different forms of written and visual narratives have been used as means to elicit these reconstructions of what happened in the past (Bate and Robert 2007b); see Figure 2. Visualizing and sharing these stories in the forms of films, video sketches, stories, blogs, or emotional journeys have a powerful capacity to engage people in co-design processes that are centered on people's lives (Tan and Szebeko 2009, Evenson 2011).

Context has traditionally been regarded as everything that surrounds the object that is designed, which is represented and perceived as inseparable from actions. In Design for Service, two conceptualizations are common: that the service is the context and that service is happening in a context. One advanced way of approaching the first conceptualization is through contextual design (Beyer and Holtzblatt 1998), where a set of modeling tools are used to describe the service as the context in order to achieve good design of specific resources of the service.

Figure 2. Emotional Journey Map as Used During a Co-Design Workshop to Redesign a Cancer Hospital Service in the South of England



Note. The map allowed the patients to describe the positives and negatives of their interactions with the hospital and was used as a source for redesign (Bate and Robert 2007b).

In the second conceptualization, a basic understanding of context coincides with the "servicescape" (Bitner 1992) or "service interface" (Pacenti 1998), which is where the service interactions take place. Developing this description, service has been regarded as a situated activity where value is co-created by proactive stakeholders integrating physical and cognitive resources to achieve goals. This perspective often relies on theories of embodied, situated, or distributed cognition (Blomkvist and Segelström 2013), where, for example, context can be viewed as part of a mediated activity. In other descriptions, the context becomes a series of "service moments" (Koivisto 2009) or "service ellipses" (Holmlid 2011), with their specific resources and aims that contextualize sections of the overall service performance. Design for Service ultimately views context as emerging from people's experiences and the service ecologies in which they participate.

In design, the *service system* is generally identified with the organizational setting that makes the service provision possible. The service system therefore becomes an object of design using tools such as blueprints (Shostack 1984) or service system maps (Jegou and Manzini 2008) that allow an analysis of current configurations and link the designed service experience with the necessary resources, processes, and actors. Other visualization tools such as actor network maps (Morelli and Tollestrup 2007) or service ecology maps help to represent "the people, organizations and things which exist (or could exist) around a participant and to think about how these different elements connect to one another" (Kimbell and Julier 2012, p. 33). These emergent representations are in line with sociocultural theories and interpretations of services as "social material configurations which create value in practice" (Kimbell 2013, p. 131). Few studies have looked into the implications of designing within and for ecosystems or complex service systems (Morelli and Tollestrup 2007, Patricio et al. 2011), suggesting the need for new interdisciplinary and integrative design methods.

A Comparison of Perspectives

In the previous section, an overview of the respective discourses was given. A set of key concepts relevant for value co-creation within each respective area was presented with similar but not identical meaning and grounding (see Table 3).

Within Service Logic literature, emphasis is put on context dependence of value co-creation as it is manifested only when actors' resources (knowledge and skills) are integrated within a specific context or situation to achieve a certain goal. Resources are relevant when they can be used and integrated by actors in their activities, which are only in part controlled by organizations. Particular relevance is given to how these instances of value co-creation

Table 3. A Comparison of Key Concepts Relevant to Describe Value Co-Creation in Design for Service and Service Logic Studies

| Concepts | Design for Service | Service Logic |
|------------------------|--|---|
| Actors | From "user-centered design" to "human-centred design" | Resource integrators Social actors |
| | Focus on experiences and practices of users and staff | They possess knowledge and skills |
| | Staff and users as co-designers | |
| Resources | Anything that enables actions to achieve aims | Knowledge and skills (integrate and operate) |
| (resource integration) | Capabilities of people as key resource for designing | No inherent value, but it depends on the context and aims |
| | | They are not, but they become |
| Context | Service as a context for design | Value is assessed in context |
| | Service interface Service as a situated activity | Context is a resource constellation that is available to customers |
| | Service as a situated activity | The servicescape |
| Camina avatama | Compine existence on the manyides | * |
| Service systems | Service system as the provider Service ecology | A service system consists of actors, resources, technology, and institutionalized norms and rules that shape actors' resource integration and value creation |
| | Sociomaterial configurations | |
| Participation | Participation as a way to integrate people's resources in designing | Actors' participation is driving resource integration and value co-creation |
| | Participation as empowerment and potentially transformative | Actors' knowledge and skills are the most important resource in service systems |
| Experience | Experience is a key source and anticipated | Value is experiential |
| | outcome for designing | Focus on creating favorable experiences and avoid |
| | Experience is influenced by the social context | unfavorable experiences for customers and all other involved actors/beneficiaries |
| | Experience is explored and understood through narratives and empathy | |

are then enabled by and manifested within wider interacting service systems. Value propositions are described as the intentional forces that organizations can advance to potentially shape these encounters; however, questions arise as to how to better understand the ways in which actors contribute and engage in value co-creation in specific contexts and how to design for future value co-creation. Service Logic provides a theoretical framework to help organizations adopt a new perspective on value co-creation.

In design, value is also interpreted as experiential and situated; people are described as having and using their own resources to participate in value creating processes both during (value in designing) and after (value in use) design; the context is considered as being where the service interactions take place. Service systems are the organizational settings or the wider set of interconnected resources and actors that create value in practice. Designers adopt a wide set of methods and approaches to understand service systems, context, and experiences and to engage actors in co-designing. Furthermore, in design it is common practice to work with parallel alternatives in fairly rapid iterations to frame problems and develop solutions. These frame-creating processes (Dorst 2011) are characterized by synthesis and interpretation activities that drive sensemaking and designing, often supported by visual and embodied means (Holmlid and Evenson 2007, Segelström 2012, Akama and Prendiville 2013); this way of thinking is generally referred to as "abduction" or a logic of what might be (Martin 2009). Therefore Design for Service provides a practical approach to both interpret and imagine service systems, but its contribution is not fully recognized.

In the following section, we will focus our attention on the concepts of *participation*, *experience*, and *context* to highlight possible synergies with Service Logic. Wetter-Edman (2009) has previously suggested that the understanding of context and experience within service-dominant logic and design thinking shares a common ground. The above overview shows that there are similarities in the importance attributed to the concepts as well as in understanding them to be both situated and individual. However, there are also important differences. Dynamic tensions are to be found between how these concepts are understood and applied, and we will argue that they hold alternative, complementary, and productive perspectives for service system innovation.

Experience, Context, and Participation

Although *experience* is fundamental in understanding value creation in service-dominant logic, Vargo and Lusch (2008) avoid using "experience" in the 10th foundational premise and instead state that "value is always uniquely and phenomenologically determined by the beneficiary" (p. 7). Vargo and Lusch also state experience to be idiosyncratic, experiential, contextual, and meaning-laden, stressing the notion of a more subtle understanding of experiences departing from the first-person point of view. In Service Logic a clear distinction is also made between the experiences that occur through interactions and those that are hidden from actors other than the experiencing actor. These views on experiences connect to the views on users and the methods developed to understand their needs and desires within design that take the situation and the context of use as the starting point. However, there are, as we have shown, multiple perspectives on the design of understanding user experiences and context.

First, users and their experiences are regarded as emanating from individuals whose routines and dreams can inform (and inspire) design. Second, experiences are triggered by previous experiences and expectations, influenced by context, functions, and time. Third, and not least important, user experience takes into account the direct perceptions of an object, action, or space—the look and feel of an interaction. Design for Service views experiences as inseparable from the individual(s) and situated in time, and it interprets and articulates the experiences as design materials for imagining future possibilities. However, Service Logic calls for a wider lens to imagine future value co-creation opportunities that go beyond individual service experiences or what the company offers; there is an interest in developing ways to understand the everyday practice or practices of the user or users as a starting point for possible new value propositions. The aim of this design process would be developing ways to support and facilitate the user's (customer's, citizen's, etc.) everyday practice and contribute to value creation in that practice (e.g., Grönroos and Voima 2013).

In Service Logic literature, *context* is seen as a resource constellation that is available for the customer to co-create value. In previous service research, context has mainly been considered a concept within the so-called experiential service sector and has been considered to be possible to control within the provider sphere. Within Service Logic, attention is placed on resources as *becoming* and resource integration as shaping value-in-context in a social system. Therefore, the understanding and management of the contextual situation cannot be limited to the service provider sphere.

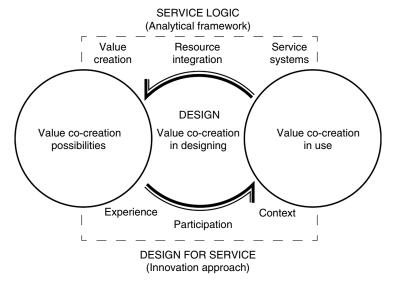
In Design for Service, context is predominantly understood as where service interactions take place and is regarded as situating the activity from the user's perspective. Thus the understanding of context is in line with service logic, but it is mainly focused on what is called the "joint sphere." In Design for Service, contextual understanding is a fundamental source for imagining and proposing new value propositions.

The Design for Service perspective focuses on the actual processes and methods of how to achieve an understanding of the user experience in context, rather than on the character of experience per se. The reason for this understanding is to inform and inspire further development process. Practical tools have been developed to explore and understand the context of use and the various dimensions of experience, and not least to use this contextual understanding for innovation purposes. As Stigliani and Ravasi (2012) discuss, the contribution of design lies in the attention design professionals pay to the specific situation at hand. Thus the focus in design research is on methods and tools as well as on theories that can inform the exploration of specific use situations and their designs.

Approaches in Design for Service are based on empathy as a way to connect with user experience and emotions. This is often supported by the use of *participatory* design methods, where the designers take part in the user context and activities using various kinds of prototyping techniques or invite users to take part in the design process thus setting the conditions for value co-creation in designing. In Service Logic a distinct difference is made between the joint sphere, where interactions among actors happen, and the spheres where actors operate by themselves. In this way, Design for Service introduces approaches to support providers to open their value creation processes and facilitate value co-creation also in the provider sphere to aim at better value-in-use. From a Design for Service perspective, the joint goals are defining the value-creating possibilities and the composition of the different spheres in an operating service system. To achieve this, a design process where interactions among the different actors of the imagined service system are set up is instrumental.

Design for Service Applies methods and tools that are fine-tuned and close to user practices as a way to inquire and make sense of their experiences and the context in which they take place. On the other hand, Service Logic provides a mind-set that brings to focus the experience and the context for value co-creation. In addition, Service Logic provides an analytical framework for articulating what resources are involved and where value co-creation happens in existing service systems.

Figure 3. Design for Value Co-Creation Model



Designing for Value Co-Creation

This analysis shows that Service Logic provides an analytical framework for the interpretation and understanding of service systems and innovation (focusing on the present), whereas Design for Service provides a theoretical and practical approach to analyze resource integration and the value co-creating process in service systems and the resulting experiences. Also, there is a need to imagine future service systems and innovative designs to enable smart resource integrations and value co-creation (with a focus on the future) (see Figure 3). The contribution in the Service Logic field is related to *how* designers frame, use, and interpret service experiences and contexts (with their resources and actors) to innovate service systems moving from the present to the future, as well as how designers integrate knowledge from several different spheres (provider sphere, customer sphere, joint sphere). In this space, design integrates attention to and evaluation of value co-creation in use (present) with a focus on the role of value co-creation in designing, engaging service actors (stakeholders) in the co-creation (via co-design and prototyping) and negotiation of future service configurations.

Service Logic provides a framework for developing a more articulated understanding of service systems in action by focusing on how actors integrate resources to co-create value; design for service provides a practice-based approach and tools to explore service systems in context to imagine future service systems and how innovation may develop as a result of reconfigurations of resources and actors' resource integration and value co-creation processes. Design for Service also provides frameworks and tools that enable involved actors to participate in and be a part of the service system redesign. Thus, the involved actors will learn their new roles and what is expected from them as value co-creation actors in a changed service system. Design for Service is centered on the actor and activity. This is the starting point for designing and contextualizing service processes in which resources are integrated and value is co-created. A major challenge is how to create the necessary change in existing service systems, which was discussed by Tax and Stuart (1997) with a particular focus on the new roles the participants need to enact.

In design for Service, value co-creation is described as part of the design activities, when actors (customers, employees, and partners) participate and integrate their resources in designing for service, and as part of the use activities, when actors access and operate on resources to achieve their goals. In activities of design, resource integration, and value co-creation, actors' experiences in context are key resources to evaluate the current service and imagine future service system designs. Participation, experience, and contextual understanding represent potential areas where Design for Service contributes to Service Logic by widening and deepening the understanding of resource integration and value co-creation and how value is assessed and experienced by actors in different contexts.

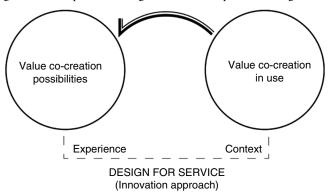
Design for Service is focused on developing different and new ways to engage people in design processes and to learn about their experiences and stories to inform reconfigurations of service systems, and as a consequence, changes to resource integration and value co-creation processes are suggested. Sometimes these changes afford the creation of new service systems that enable the involved beneficiaries to create value in smarter ways. In Design for Service, this is called co-design, where resources are reconfigured in a collaborative and creative way by the involved actors for future integration in use. The process of co-designing leads to actual value co-creation during the design process; this is called *value co-creation in designing*.

In Design for Service, there is limited research into actors' resource integration and value co-creation. Service Logic and service system concepts and frameworks represent, in this sense, a significant source when describing what design is acting on, as well as the outcome of the design process. The outcome is not the service but an intended service or a value proposition and an aligned service system with a configuration of resources and actors enabling customers to co-create value for themselves, in line with the service promise or value proposition (Edvardsson and Tronvoll 2013). By using a Service Logic lens in the analyses of present service systems, the scope of Design for Service can be both clarified and broadened.

We conclude this section by suggesting four propositions: three stating the contribution of Design for Service to Service Logic and the fourth stating the contribution of Service Logic to Design for Service; we provide models outlining these propositions in Figures 4–7:

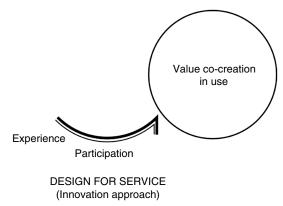
Proposition 1. Design for Service explores service systems to understand them from the perspectives of actors, their value co-creation activities, experience, and assessment of value-in-context in order to project/imagine and design new future service systems.

Figure 4. Model Describing the First Proposition: Design for Service Explores Existing and Proposes New Service Systems



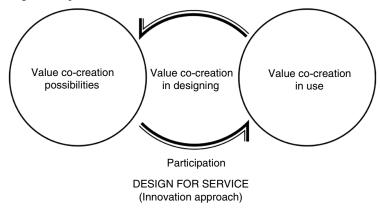
Proposition 2. Design for Service provides approaches (set of tools, competences, and mind-set) for understanding actors and how their experiences are formed in context as a result of how resources are integrated and operated on—in particular, how reconfigurations of resources in context may come about through engaging the involved actors using empathic tools and techniques.

Figure 5. Model Describing the Second Proposition: Design for Service Provides Approaches for Understanding Existing Value Co-Creation in Use



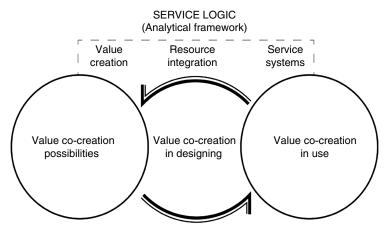
Proposition 3. Design for Service extends the meaning of value co-creation to include not only market-facing resources but also public and private resources in different practices (i.e., tools and approaches). The approach is to use co-design for the collaborative generation of new resource constellations and accordingly become a part of the generation of new service systems. The effect of participation is then called value co-creation in designing.

Figure 6. Model Describing the Third Proposition: Design for Service Extends Service Logic Through Value Co-Creation in Designing Achieved Through Participation



Proposition 4. Service Logic provides a theoretical framework for understanding and analyzing Design for Service practices and contributions. The main contributions from Service Logic literature to the Design for Service field are resource integration, value co-creation, and a systems foundation to describe and analyze how attractive value and experiences can be created for the involved actors.

Figure 7. Model Describing the Fourth Proposition: Service Logic Provides an Analytical Framework for Understanding Design for Service Practices and Contributions



In Figure 3, the four propositions are placed in relation to one another. Thus, a coherent framework is proposed.

Contributions and Concluding Remarks

The perceptions of the concept "value" and how it is created or co-created have shifted from a focus on units of output (in terms of the attributes of goods and services) to a focus on "value-in-use" (Vargo and Lusch 2004, 2008; Lusch and Vargo 2006), "value-in-context" (Vargo et al. 2008), or "value-in-social-context" (Edvardsson et al. 2011). According to this changed perspective, value is understood as something that is co-created with customers and other engaged actors. Furthermore, value is understood as experiential, contextual, and meaning-laden (Vargo and Lusch 2008). The role of a provider is to be a "value facilitator" by offering a configuration of resources or enablers (goods, services, information, etc.), often conceptualized in a service system. Customers, other actors, and beneficiaries integrate and operate on the designed resource configuration to co-create value for themselves and

others. Understanding users, their activities, interactions, and experiences in context has therefore turned out to play a key role when assessing services and actors' resource integration efforts and value co-creation activities as a basis for designing service systems and design for value co-creation. Vargo et al. (2008, p. 151) articulate this as "What approaches do we need to understand the sociotechnical context of value creation?"

Service development and innovation is thus not only about developing new and "better" resource configurations but also about how such resource configurations can be made available for and used by customers in specific service systems. In many instances, this will require changes in both the customers' and the providers' roles, or new combinations of existing resources. In other words, the challenge is both to understand customers and to reconfigure and mobilize existing resources (e.g., knowledge, experience, motivation) within service systems. Knowledge of how to use an understanding of existing experiences to imagine and design future service offerings and their resource configurations is also missing in Service Logic studies.

We propose Design for Service as an approach to understand existing sociomaterial configurations and contexts of value creation practices. We have further argued that design for service contains perspectives, tools, and methods based in creative and artistic knowledge, as well as practices suited to creating smart and favorable prerequisites for value co-creation within a Service Logic. Design for Service highlights the embodied character of customer experiences and context, the situatedness of activity and aesthetic competence for understanding and proposing new service systems. In Design for Service, customers (users) and other actors are engaged in reconfiguring service systems and the prerequisites for resource integration, value co-creation, and the resulting experiences. Design for Service provides practice-based frameworks, tools, and methods that engage customers and other actors in collaborative and creative ways. The process of co-designing—the so-called value co-creation in designing—leads to actual value co-creation during the design process.

On the other hand, Service Logic supports Design for Service by affording wider meanings of "service," considering the role and contributions of design for value co-creation, and how this can be related to resource integration, value co-creation, value-in-context, and the resulting customer/user experiences. Design brings practice-based, context-related, and actor-centric processes to the table and enables service blueprinting and customer journey methods in service research to become more useful in designing service systems and prerequisites for actors' value co-creation.

We bring two, so far separate, research areas closer to one another by showing the similarities as well as the tensions between these areas; in so doing, we find opportunities to connect the two. One obvious challenge is the diverse epistemological foundation they rest on. Tronvoll et al. (2011) discuss the epistemological foundations in service research prompted by the increased multidisciplinarity as well as the change in focus implied by Service Logic. Among the four paradigms found (positivistic, hermeneutic, dialogic, and monologic), the positivistic position has so far been dominant. The scholars suggest a broadening of the paradigmatic positions as a means to enrich and extend the service research discipline. Similarly, Johansson and Woodilla (2008) discuss the paradigmatic positions of design discourse in relation to research in organization/management and design management. They reached a conclusion of diverging knowledge and thought domains. The study presented in this paper confirms that there are different—but complementary—domains of thought and knowledge, but it also presents arguments for their potential for mutual contribution.

Further Research

Based on the four propositions suggested in the previous section, we recommend further research in the following directions:

- 1. Design for Service explores service systems: Current studies on design practice in Design for Service are highly descriptive, whereas those on Service Logic is rather conceptual. We recommend that further empirical research be performed for developing theoretical frameworks that are relevant to design in practice so as to better design for value co-creation.
- 2. Design for Service provides approaches for understanding context and individual actor's experiences: Empathic methods are tailored to the specific demand of resource integration and value co-creation at hand, and the resulting effects are well known. However, which principles underpin this tailoring, and how empathy is actually used in Design for Service, are largely unknown.
- 3. Design for Service extends the meaning of resource integration and value co-creation: We recommend further research into ways of helping firms engage with the customers' own value creation activities grounded in their resource integration capabilities, in a way that co-design processes become co-creation of value as part of the customers' total value creation process. Conversely, other interesting questions relate to what actions should be kept in the provider sphere and what should be co-created, as well as which parts of the firm's design process should be opened for co-creative activities.

4. Service Logic provides a theoretical framework: We would like to see research into how this theoretical framework can shed further light on the contribution of Design for Service in service system innovation and how this could support an expansion of scope and applications in this emergent field of design practice.

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References

Akaka MA, Vargo SL, Lusch RF (2013) The complexity of context: A service ecosystems approach for international marketing. *J. Marketing Res.* 21:1–20.

Akama Y, Prendiville A (2013) Embodying, enacting and entangling design: A phenomenological view to co-designing services. *Swedish Design Res. J.* 5:29–40.

Alben L (1996) Defining the criteria for effective interaction design. *Interactions* 3:11–15.

Alexander C (1970) Notes on the Synthesis of Form (Harvard University Press, Cambridge, MA).

Arvola M, Karsvall A, Tholander J (2011) Values and qualities in interaction design meetings. Paper presented at The Endless End: The 9th International European Academy of Design Conference (EAD09), May 4–7, Porto, Portugal.

Baron S, Harris K, Davis BJ (1996) Oral participation in retail service delivery: A comparison of the roles of contact personnel and customers. Eur. J. Marketing 30:75–90.

Bate P, Robert G (2007a) Bringing User Experience to Healthcare Improvement: The Concepts, Methods and Practices of Experience-Based Design (Radcliffe Publishing, Oxford, UK).

Bate P, Robert G (2007b) Towards more user-centric organizational development: Lessons from a case study of experience-based design. J. Appl. Behav. Sci. 43:41–66.

Battarbee K, Koskinen I (2005) Co-experience: User experience as interaction. CoDesign 1:5-18.

Beyer H, Holtzblatt K (1998) Contextual Design: Defining Customer-Centered Systems (Morgan Kaufmann, San Francisco).

Bitner MJ (1992) Servicescapes: The impact of physical surroundings on customers and employees. J. Marketing 56:57-71.

Björgvinsson E, Ehn P, Hillgren P-A (2012) Design things and design thinking: Contemporary participatory design challenges. *Design Issues* 28:101–116.

Blomkvist J, Segelström F (2013) External representations in service design: A distributed cognition perspective. Paper presented at Crafting the Future: The 10th European Academy of Design Conference (EAD10), April 17–19, Gothenburg, Sweden.

Blomkvist J, Holmlid S, Segelström F (2010) Service design research: Yesterday, today and tomorrow. Stickdorn M, Schneider J, eds. *This Is Service Design Thinking: Basics, Tools, Cases* (BIS Publishers, Amsterdam), 308–315.

Brown T (2009) Change by Design: How Design Thinking can Transform Organizations and Inspire Innovation (HarperCollins, New York). Carrington PJ, Scott J, Wasserman S, eds. (2005) Models and Methods in Social Network Analysis (Cambridge University Press, Cambridge, UK). Chandler JD, Vargo SL (2011) Contextualization and value-in-context: How context frames exchange. Marketing Theory 11:35–49.

Dorst K (2011) The core of "design thinking" and its application. Design Stud. 32:521-532.

Echeverri P, Skålén P (2011) Co-creation and co-destruction: A practice-theory based study of interactive value formation. *Marketing Theory* 11:351–373.

Edvardsson B, Tronvoll B (2013) A new conceptualization of service innovation grounded in SD logic and service systems. *Internat. J. Quality Service Sci.* 5:19–31.

Edvardsson B, Gustafsson A, Roos I (2005) Service portraits in service research: A critical review. *Internat. J. Service Indust. Management* 16:107–121.

Edvardsson B, Skålen P, Tronvoll B (2012) Service systems as a foundation for resource integration and value co-creation. *Rev. Marketing Res.* 9:79–126.

Edvardsson B, Tronvoll B, Gruber T (2011) Expanding understanding of service exchange and value co creation. *J. Acad. Marketing Sci.* 39:327–339.

Ehn P, Kyng M (1987) The collective resource approach to systems design. Bjerknes G, Ehn P, Kyng M, eds. *Computers and Democracy—A Scandinavian Challenge* (Avebury, Aldershot, UK), 17–58.

Eiglier P, Langeard E (1975) Une approche nouvelle pour le marketing des services. Rev. Française Gestion 2:97-114.

Evenson S (2011) Driving service design by directed storytelling. Meroni A, Sangiorgi D, eds. *Design for Services* (Gower Publishing, Surrey, UK), 66–72.

Fulton Suri J (2003) The experience of evolution: Developments in design practice. Design J. 6:39-48.

Gibson JJ (1977) The theory of affordances. Shaw R, Bransford J, eds. *Perceiving, Acting, and Knowing: Toward an Ecological Psychology* (Lawrence Erlbaum Associates, Hillsdale, NJ), 67–82.

Goleman D (1996) Emotional Intelligence: Why It Can Matter More Than IQ (Bloomsbury, London).

Grönroos C (1978) The Nature of Service Marketing (Swedish School of Economics and Business Administration, Helsinki, Finland).

Grönroos C, Ravald A (2011) Service as business logic: Implications for value creation and marketing. J. Service Management 22:5-22.

Grönroos C, Voima PI (2013) Critical service logic: Making sense of value creation and co-creation. J. Acad. Marketing Sci. 41:133–150. Gustafsson A, Kristensson P, Witell L (2012) Customer co-creation in service innovation: A matter of communication? J. Service Management

23:311–327.

Heinonen K, Strandvik T, Mickelsson K-J, Edvardsson B, Sundström E, Andersson P (2010) A customer-dominant logic of service. *J. Service Management* 21:531–548.

Holmlid S (2002) Adapting users: Towards a theory of use quality. Ph.D. thesis, Linköping University, Linköping, Sweden.

Holmlid S (2005) Service design methods and UCD practice. Presentation, INTERACT-05 Workshop: User Involvement in e-Government Development Projects, September 12, SINTEF, Trondheim, Norway.

Holmlid S (2007) Interaction design and service design: Expanding a comparison of design disciplines. *Design Inquiries: Nordic Design Res.* (NORDES 2007), Stockholm, http://www.nordes.org/opj/index.php/n13/article/view/157.

Holmlid S (2009) Participative, co-operative, emancipatory: From participatory design to service design. *DeThinking Service ReThinking Design: First Nordic Conf. Service Design and Service Innovation, Oslo, Norway.*

Holmlid S (2011) There is more to service than interactions. Meroni A, Sangiorgi D, eds. *Design for Services* (Gower Publishing, Surrey, UK), 89–96.

Holmlid S (2012) Designing for resourcefulness in service. Some assumptions and consequences. Miettinen S, Valtonen A, eds. Service Design with Theory (Lapland University Press, Vantaa, Finland), 151–172.

Holmlid S, Evenson S (2007) Prototyping and enacting services: Lessons learned from human-centered methods. *Proc. 10th Quality Services Conf. (OUIS 10), Orlando, FL.*

Holmlid S, Hertz A (2007) Service-scape and white space: White space as a structuring principle in service design. Paper presented at Dancing with Disorder: Design, Discourse and Disaster: The 7th European Academy of Design Conference (EAD07), April 11–13, Izmir, Turkey. Jegou F, Manzini E, eds. (2008) Collaborative Services: Social Innovation and Design for Sustainability (Edizioni Polidessign, Milan).

Johansson U, Woodilla J (2008) Towards a better paradigmatic partnership between design and management. *Internat. Design Management Inst. Ed. Conf., Paris.*

Kimbell L (2009) The turn to service design. Julier G, Moor L, eds. *Design and Creativity: Policy, Management and Practice* (Berg, Oxford, UK), 157–173.

Kimbell L (2011) Designing for service as one way of designing services. Internat. J. Design 5:41-52.

Kimbell L (2013) An inventive practice perspective on designing. Ph.D. thesis, Lancaster University, Lancaster, UK.

Kimbell L, Julier J (2012) The Social Design Methods Menu (Fieldstudio, London). http://www.lucykimbell.com/stuff/Fieldstudio_SocialDesign MethodsMenu.pdf.

Koivisto M (2009) Frameworks for structuring services and customer experiences. Miettinen S, Koivisto M, eds. *Designing Services with Innovative Methods* (Kuopio Academy of Design, Keuruu, Finland), 136–149.

Koskinen I, Battarbee K, Mattelmäki T, eds. (2003) Empathic Design User Experience in Product Design (IT Press, Helsinki, Finland).

Leonard D, Rayport JF (1997) Spark innovation through empathic design. *Harvard Bus. Rev.* 75(November–December):102–113.

Lusch R, Vargo SL (2006) The Service-Dominant Logic of Marketing: Dialog, Debate and Directions (M.E. Sharpe, Armonk, NY)

Lusch R, Wu C (2012) A service science perspective on higher education: Linking service productivity theory and higher education reform. Center for American Progress (blog), August 13, http://www.americanprogress.org/issues/higher-education/report/2012/08/13/11972/a-service-science-perspective-on-higher-education/.

Lusch R, Vargo SL, Tanniru M (2010) Service, value networks and learning. J. Acad. Marketing Sci. 38:19-31.

Mäkelä A, Fulton Suri J (2001) Supporting users' creativity: Design to induce pleasurable experiences. *Proc. Internat. Conf. Affective Human Factors Design* (Asean Academic Press, London), 387–394.

Martin R (2009) The Design of Business: Why Design Thinking Is the Next Competitive Advantage (Harvard Business Press, Boston).

Mattelmäki T (2006) Design probes. Report, University of the Art and Design Helsinki, Helsinki, Finland.

Mele C, Spena TR, Colurcio M (2010) Co-creating value innovation through resource integration. *Internat. J. Quality Service Sci.* 2:60–78. Meroni A, Sangiorgi D (2011) *Design for Services* (Gower Publishing, Surrey, UK).

Moeller S (2008) Customer integration—A key to an implementation perspective of service provision. J. Service Res. 11:197-210.

Morelli N, Tollestrup C (2007) New representation techniques for designing in a systemic perspective. *Design Inquiries: Nordic Design Res.* (NORDES 2007), Stockholm, http://www.nordes.org/opj/index.php/nl3/article/view/148.

Norman D (2008) THE WAY I SEE IT: Signifiers, not affordances. Interactions 15:18-19.

Pacenti E (1998) Il Progetto dell'interazione nei servizi: Un contributo al tema della progettazione dei servizi. Unpublished Ph.D. thesis, Politecnico di Milano, Milan.

Pacenti E, Sangiorgi D (2010) Service design research pioneers. An overview of service design research developed in Italy since the '90s. Swedish Design Res. J. 1(10):26–33.

Patricio L, Fisk RP, e Cunha JF, Constantine L (2011) Multilevel service design: From customer value constellation to service experience blueprinting. *J. Service Res.* 14:180–200.

Rizzo F (2010) Co-design versus user centred design: Framing the differences. Guerrini L, ed. *Notes on Design Doctoral Research*, Chapter 12 (Franco Angeli Editore, Milan).

Sanders E, Dandavate U (1999) Design for experiencing: New tools. Overbeeke CJ, Hekkert P, eds. First Internat. Conf. Design Emotion Proc. (Delft University of Technology, Delft, The Netherlands), 87–92.

Sanders E, Stappers PJ (2012) Convivial Toolbox: Generative Research for the Front End of Design (BIS Publishers, Amsterdam).

Sangiorgi D (2004) Il Design dei servizi come Design dei Sistemi di Attività: La Teoria dell'Attività applicata alla progettazione dei servizi. Unpublished Ph.D. thesis, Politecnico di Milano, Milan.

Sangiorgi D (2009) Building up a framework for service design research. Paper presented at "Connexity": The 8th European Academy of Design Conference, April 1–3, Aberdeen, UK.

Sangiorgi D (2011) Transformative services and transformation design. Internat. J. Design 5(2):29-40.

Segelström F (2012) Understanding visualisation practices: A distributed cognition perspective. Miettinen S, Valtonen A, eds. Service Design with Theory (Lapland University Press, Vantaa, Finland), 197–208.

Shostack GL (1984) Designing services that deliver. Harvard Bus. Rev. 62(January-February):133-139.

Sleeswijk Visser F, Stappers PJ, Van Der Lugt R, Sanders EB-N (2005) Contextmapping: Experiences from practice. *CoDesign* 1:119–149. Spohrer J, Maglio PP, Bailey J, Gruhl D (2007) Steps toward a science of service systems. *Computer* 40:71–77.

Stigliani I, Ravasi D (2012) Organizing thoughts and connecting brains: Material practices and the transition from individual to group-level prospective sensemaking. Acad. Management J. 55:1232–1259.

Tan L, Szebeko D (2009) Co-designing for dementia: The Alzheimer 100 project. Australasian Medical J. 1:185-198.

Tax S, Stuart I (1997) Designing and implementing new services: The challenges of integrating service systems. *J. Retailing* 73:105–134. Tronvoll BR, Brown SW, Gremler DD, Edvardsson B (2011) Paradigms in service research. *J. Service Management* 22:560–585.

Vaajakallio K (2012) Design games as a tool, a mindset and a structure. Report, School of Arts, Design and Architecture, Aalto University, Helsinki, Finland.

Vargo SL, Akaka MA (2012) Value cocreation and service systems (re)formation: A service ecosystems view. Service Sci. 4:207-217.

Vargo SL, Lusch RF (2008) Service-dominant logic: Continuing the evolution. J. Acad. Marketing Sci. 36:1-10.

Vargo S, Lusch R (2004) Evolving to a new dominant logic for marketing. J. Marketing 68:1-17.

Vargo S, Maglio P, Akaka M (2008) On value and value co-creation: A service systems and service logic perspective. Eur. Management J. 26:145–152.

- Verhoef C, Lemon K, Parasuraman C, Roggeveen A, Tsiros M, Schlesinger L (2009) Customer experience creation: Determinants, dynamics and management strategies. *J. Retailing* 85:31–41.
- Voima P, Heinonen K, Strandvik T, Mickelsson KJ, Arantola-Hattab LJ (2011) A customer ecosystem perspective on service. QUIS 12: Advances Service Quality, Innovation Excellence, Ithaca, NY, 1015–1024.
- Wasserman S, Faust K (1994) Social Network Analysis: Methods and Applications, Vol. 8 (Cambridge University Press, Cambridge, UK). Wetter-Edman K (2009) Exploring overlaps and differences in service dominant logic and design thinking. Clatworthy S, Nisula J-V, Holmlid S, eds. Proc. DeThinking Service ReThinking Design, First Nordic Conf. Service Design and Service Innovation (ServDes.2009) (Linköping University Electronic Press, Linköping, Sweden), 201–212.
- Wetter-Edman K (2011) Service design: A conceptualization of an emerging practice. Licentiate thesis, University of Gothenburg, Gothenburg, Sweden.
- Zhang X, Chen R (2008) Examining the mechanism of the value co-creation with customers. *Internat. J. Production Econom.* 116:242–250. Zimmermann EW (1951) *World Resources and Industries: A Functional Appraisal of the Availability of Agricultural and Industrial Materials* (Harper & Brothers, New York).