

Linking New Service Development and Service Design: An Interdisciplinary Service Research Framework and Future Directions

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Abstract

Background While systematic knowledge about developing services has been theorized as new service development (NSD) in marketing/management from the mid-1980s, service design (SD) in the design community has been discussed as an area for practice and research from the 1990s. While both disciplines address similar issues associated with developing services, their relationship based on similarities and differences has been unexplored. Recognizing the growing need for interdisciplinary service research, this paper aims to frame a theoretical relationship between both bodies of knowledge.

Methods This study begins by reviewing the literature on NSD and SD with a purpose of building an initial comparative framework. Then, to establish the theoretical relationship between both approaches to service innovation, expert interviews with 12 international multidisciplinary professionals mainly in the design and marketing/management/business disciplines were conducted.

Results The synthesis of the literature study and expert interviews led to a conceptual framework to link NSD and SD. The framework indicates two different directions for future interdisciplinary service research that involves NSD and SD. To specify these directions, SD could contribute design practices to reframing NSD towards better reflecting service-dominant logic, whereas NSD may provide SD with its organization-related theories to help SD better engage with organizational contexts.

Conclusions SD has been criticized for its minimal contribution to service development and implementation, which are mainly driven by organizational processes and practices. Therefore, SD needs to engage with organizational innovation management to contextualize design practices in organizations. In that sense, NSD is an appropriate body of knowledge, which SD could be related with. This paper contributes to establishing an initial interdisciplinary relationship between NSD and SD to promote more interdisciplinary studies.

Keywords New Service Development, Service Design, Service Marketing, Interdisciplinary Service Research

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1. Introduction

Recognizing that organizational service innovation can be achieved by multidisciplinary participation, scholars have emphasized the need for service research in cross-disciplinary contexts (Fisk & Grove, 2010; Ostrom et al., 2010). While Service Design (SD) as a young discipline for designers emerged from the 1990s (Meroni & Sangiorgi, 2011), its relation with other disciplines that have a longer history of service research was unexplored, except for some interdisciplinary studies such as Kimbell (2009), Wetter Edman (2009), and Wetter Edman et al. (2014). While these studies mainly focus on the relationship between SD and service-dominant views of marketing/management (i.e., service-dominant logic), systematic studies on SD in the context of service development processes and practices are not sufficient.

NSD is concerned with concepts, activities, processes, and methods for developing and managing service development processes in organizations (Edvardsson et al., 2000; Zomerdijk & Voss, 2011). Therefore, this paper aims to use new service development (NSD) as a frame of reference for studying SD. SD refers to a human-centered and holistic approach to service development and innovation and includes creative and empathic design activities and methods (Meroni & Sangiorgi, 2011). Thus, NSD and SD seem to address similar topics for developing conditions or prerequisites for service innovation, but taking into account their distinct academic roots and developments, their perspectives and approaches might have some differences. However, studies that systematically examine their commonalities and differences are insufficient. Also, less is known about how both disciplines could mutually affect or benefit each other. In this background, the aim of this paper is to explore a theoretical relationship between NSD and SD and build an interdisciplinary research framework.

Through a comparative literature study and semi-structured interviews with 12 international NSD and SD experts, this paper will address the following three agendas. First, given that SD does not have a unified definition across disciplines and even within design (Nisula, 2012; Stickdorn & Schneider, 2010), we will clarify the SD concept and its characteristics to gain a more unified understanding of them across different disciplines. Second, it will address the NSD concept and its validity for studying service innovation. Given that traditional NSD theories are rooted in the manufacturing paradigm, they may be inappropriate for applying to modern service research. Much modern research is based on service-dominant logic (Vargo & Lusch, 2008), which indicates that value is co-created by providers and customers (value co-creation) and it is determined by customers in use situations (value-in-use). Third, it will examine how NSD and SD could be linked as a mutually benefitting relationship based on their similarities and differences. This paper concludes with a reflective discussion on the research findings of two possible interdisciplinary research directions relating NSD and SD.

2. Literature Review

We explored NSD and SD in such a way as to confront NSD literature with SD literature for the comparison of both bodies of knowledge. In this way, we could articulate their own perspectives and approaches to service development. Since both concepts differ in their roots, disciplinary contexts, and languages, they need to be understood on their own terms in the first place, and then they could be interrelated. This literature study therefore compared NSD and SD in terms of innovation process, focus of activity, and enabler/facilitator in a parallel manner.

2. 1. Innovation process

NSD literature widely adopts the cyclic model of Johnson et al. (2000), which prescribes four main process stages (design, analysis, development and full launch) and associated activities. In contrast, SD processes in design literature build on the double diamond process model defined by the Design Council, comprising of four phases: discover, define, develop and deliver (Technology Strategy Board & Design Council, 2015). Whereas the NSD processes indicate phase-dependent activities and actions (Froehle & Roth, 2007), the SD processes represent the alternating shift of modes of thinking, perspectives, and approaches alongside the overall development process. Therefore, the four phases of SD processes seem to serve as a conceptual construct to guide design actions and activities. Under the constructs, design actions and activities were assigned in a flexible and iterative manner (Stickdorn & Schneider, 2010; Zomerdijk & Voss, 2011), not in a prescriptive manner as in NSD.

2. 2. Focus of activity

According to the literature, NSD processes are dedicated to planning and executing service offerings, which correspond to designing service concepts and developing service delivery systems respectively (Johnson et al., 2000). To gain a competitive advantage in the market, a service concept is configured strategically in terms of value, form/function, experience, and outcomes (Clark et al., 2000). On the other hand, developing a service delivery system is focused on preparing service system elements related to structures, infrastructures, and processes that fit the defined service concept (Ponsignon et al., 2011). Thus, designing service concepts and developing service delivery systems depends on the provider's resources and capabilities, and industry contexts (Froehle & Roth, 2007). In contrast, although SD activities involve designing service concepts, their ultimate goal is highly geared toward desirable service interfaces (Secomandi & Snelders, 2011), service experiences (Meroni & Sangiorgi, 2011), and relational experiences (Cipolla, 2007). SD activities greatly build on an empathic and rich understanding of users' needs and contexts rather than providers' contexts and resources. Service systems are designed in consideration of social, material, and technical aspects (Kimbell, 2011; Morelli, 2002), and service system design is strongly informed by people-centered insights derived from delving into actors' needs in the value network (Wetter Edman et al., 2014).

2. 3. Enabler and facilitator

Enablers and facilitators refer to any types of knowledge, practices, or methods/tools to support service development processes. Facilitators for NSD and SD seem to differ in their

focuses. Whereas NSD methods and tools as a facilitator help to capture users' spoken needs (Edvardsson et al., 2000), SD ones as a facilitator are geared to capturing users' contextual and ordinary life experiences and emotions through empathic and ethnographic design research skills (Mattelmäki et al., 2014; Segelström et al., 2009). In NSD literature, the nature of participation of customers and staff in development processes is described as passive (Alam, 2002) except for a few recent studies considering users' latent needs (Matthing et al., 2004). In SD literature, users and stakeholders were involved in development processes as co-designers rather than informants (Godfroija et al., 2013). Also, whereas NSD considered more direct organizational issues (e.g., structures, internal communications and cultures) and industry contexts (Biemans et al., 2015) as a facilitator for successful service development, SD regarded organizational change by engaging with staff and embedding user-centred practices as a facilitator for service innovation (Junginger & Sangiorgi, 2009).

2. 4. Summary

The confrontation of the NSD literature with the SD one led to Figure 1, which shows similarities and differences between them. Part of the similarities comes from apparent processes and activities, but differences occur in orientations and propensities. Whereas NSD indicates the process and methodology, optimized for organization-based service innovation, SD uses a process and methodology to develop valuable service experiences and services from the user's perspective. Overall, NSD seems to resonate with the manufacturing paradigm, reflecting goods-dominant logic, whereas SD is more related to service-dominant logic (Vargo & Lusch, 2004), which emphasizes customers' experiences and value creation. While this theoretical comparison between NSD and SD provides an in-depth understanding of both concepts, how their similarities and differences could be used to link them is not clear. The following expert interviews were used to address this gap.

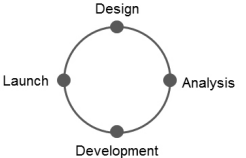
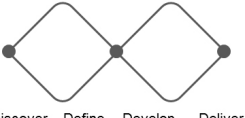
	NSD	Service Design
Innovation Process		
	<i>* Stage-dependent activities and actions</i>	<i>* Modes of perspectives and approaches</i>
Orientation of Activity	<ul style="list-style-type: none"> - Defining service concepts in terms of value, form/function, experience, and outcome. - Developing service delivery systems in terms of structure, infrastructure, and process. 	<ul style="list-style-type: none"> - Designing for contextual user experience of service through touchpoint interaction and interpersonal relationship. - Developing social, material & technical service system.
	<i>* Focus on designing and developing services as a product.</i>	<i>* Focus on developing service systems for user experience.</i>
Enabler & Facilitator	<ul style="list-style-type: none"> - Methods & tools adopted from new product development - Feedback from customers and employees - Industry & organizational contexts 	<ul style="list-style-type: none"> - Empathic and ethnographic design research methods & tools - Co-design approach - Organizational change
	<i>* Inside-out perspective and approach</i>	<i>* Outside-in perspective and approach</i>

Figure 1 A theoretical comparison between NSD and SD

3. Methods

The interviews with twelve NSD and SD experts were conducted to investigate the SD concept and its characteristics, the validity of NSD theories for modern service research, and the relationship between NSD and SD. As NSD and SD are concerned with the marketing, management or business disciplines, and the design discipline respectively, interviewees were selected from these areas. We selected four NSD academics, four SD academics, and four SD practitioners for this study. This selection of three interviewee groups was driven by our need for accessing the primary source for professional first-hand knowledge of NSD and SD, rather than by a pre-defined perfunctory distinction between the groups. Originally, four NSD academics and four SD academics were selected, since their theory-based insights satisfied our need to develop a conceptual relationship between NSD and SD based on an in-depth understanding of the two domains. The interviews with the NSD academics revealed that NSD has been largely developed as conceptual theory rather than formed by practical cases undertaken by organizations. It is also evidenced in NSD literature (Biemans et al., 2015). Therefore, it is recognized that NSD knowledge is more likely to be accessible in academia rather than in practice, and this recognition influenced our exclusion of NSD practitioners in this study. In contrast, since SD as a relatively young domain has developed its perspective, approach, methods, and tools both through academic research and through practical projects (Meroni & Sangiorgi, 2011; Polaine et al., 2013; Reason et al., 2015), there was a strong rationale for including SD practitioners in the interview study. The criteria for selecting the members for each group are as follows:

- The NSD academics have published many papers widely cited in publications, and have an understanding of SD as part of their research track.
- The SD academics have published many papers widely cited in publications, represent diverse research areas within design, and can provide insights into SD in the context of NSD processes and practices.
- The SD practitioners have been working on SD projects for at least 2 years, represent a wide spectrum of job roles within companies, and can provide insights into SD in the context of NSD processes and practices.

Table 1 shows the final list of interviewees.

Table 1 Profiles of interviewees

Group 1 – NSD Academics		
No	Affiliation	Country
1	Full Professor, Marketing Department	The United States
2	Full Professor, Marketing Department	The United States
3	Full Professor, Marketing Department	The United States
4	Full Professor, Business Administration	Sweden
Group 2 – SD Academics		
No	Affiliation	Country
1	Associate Professor, Architecture, Design & Media Technology	Denmark
2	Full Professor, Service Design	Germany
3	Associate Professor, Computer & Information Science Department	Sweden
4	Assistant Professor, Faculty of Engineering	Portugal

Group 3 – SD Practitioners		
No	Affiliation	Country
1	Service Designer at a SD Agency	The United Kingdom
2	Consultant at a SD Agency	The United Kingdom
3	Founder of a SD Agency	The Netherlands
4	Internal Service Designer at a Service Company	Sweden

We collected data from qualitative semi-structured interviews, and the interviews lasted between 20 minutes and 95 minutes. Four interviews were conducted face to face, and eight interviews were done via a video call. While the interviews were conducted based on the questions structured for addressing three agendas (Table 2), respondents also gave their expanded responses to our spontaneous follow-up questions (Gray, 2009). For example, when discussing SD in the context of NSD with the interviewees, we expanded the question about the relationship between NSD and SD, by asking for their opinions about SD contributions to and limitations for NSD.

Table 2 Interview questions for respondents

Research agenda	Interview question	Respondent	Note
Conceptualizations and characteristics of SD	<ul style="list-style-type: none"> • What do you think SD is? • What is the characteristics of SD, which may be distinguished from other disciplines? 	<ul style="list-style-type: none"> • NSD academics • SD academics • SD practitioners 	All the three groups shared their opinions on SD concepts and characteristics from their own disciplinary perspectives.
The validity of NSD for modern service research	<ul style="list-style-type: none"> • The author's preliminary literature review indicated that NSD studies build on the goods–dominant logic perspective. Would you agree with this? If not, what is your opinion? • Is NSD theory relevant and valid for service innovation? 	<ul style="list-style-type: none"> • NSD academics 	Since this agenda was about academic NSD theory and its relevance to modern service research, it could be addressed only by NSD academics.
The relationship between NSD and SD	<ul style="list-style-type: none"> • What is the relationship between NSD and SD? • How does SD contribute to NSD processes and practices? 	<ul style="list-style-type: none"> • NSD academics • SD academics • SD practitioners 	While NSD academics mainly gave their opinions on SD in the context of NSD theory, both SD academics and practitioners talked about SD for NSD practices as they were not experts in NSD theory. Therefore, the relationship between NSD and SD was established based on the synthesis of the experts' differing perspectives and opinions, not based on their direct responses to the topic.

All the interviews were transcribed and analyzed using qualitative content analysis (Zhang & Wildemuth, 2009), which refers to a research method for interpreting the content of text data through coding and classifying data and identifying emerging themes (Hsieh & Shannon, 2005). Since our expert interviews aimed to address the three agendas (i.e., conceptualizations and characteristics of SD, the validity of NSD for modern service research, and the relationship between NSD and SD), coding started with identifying all the data segments related to the defined agendas. While reading over the data, we clustered similar codes into categories, and the categories were again grouped into themes (Figure 2). We identified 221 data segments, 194 codes, 79 categories, and 16 themes.

	A	B	C	D	E
1	Expert Interviews				
2	interviewee	quote	code	category	theme
3	Sharon Hendrick	design research has contributed with the understanding how users, customers and complex stakeholder networks interact to achieve the outcomes of service and a way to visualize this and to engage users	understanding of users, stakeholder networks	understanding of users, stakeholder networks	the contribution of service design to service development
4	Sharon Hendrick	I would think that design, especially service design has contributed by bringing more radical user focus to the development of services. When I started to develop service design 19 years ago there was a very very strong business focus in the whole service development process. And there was very little outreach to understand the world of users and to step into their shoes and to look through their eyes.	understanding of users		
5	Sharon Hendrick	(a designerly approach) has created a growing awareness of, the importance of how people perceive things, so perception, the difference between the rational human-being and the emotional human-being. That is really important because I think in designerly approach you use emotions and not just rational approaches but also intuition and gut-feeling			
6	Sharon Hendrick	The other thing that is related to aesthetics but I think is also more likely to be part of discussions among service designers would be more emotional side of things, which is more related to aesthetics, but more related to how is this experience going to feel to the customers' emotion	design for emotional response		
7	Sharon Hendrick	I think the main contribution of service design is in the introduction of users and consideration of user perspective in designing new services. I think this is the fundamental shifting perspective in service design	bringing users' perspective	co-creation with users	
8	Sharon Hendrick	There is another one that I think quite important, I think Design and service design has brought the idea of co-creation to the service industries	co-creation		
9	Sharon Hendrick	Designer's approach is very much user-centered. It is not just user-centered, but also the emerging service design discipline is very much based on user observation, user participation, co-creation, co-design	user participation beyond user-centered		
	Sharon Hendrick	I think specially the way is communicated to our clients is very different and the way we	working with clients throughout		

Figure 2 Analyzing interview data

4. Findings

The findings of the interviews are summarized in Table 3, which is followed by the detailed descriptions.

Table 3 The comparative summary of interview findings

Research agenda	NSD academics	SD academics	SD practitioners
Conceptualizations and characteristics of SD	<ul style="list-style-type: none"> SD is a customer-focused encompassing approach to the whole service development process. 	<ul style="list-style-type: none"> SD has been developed as a perspective with human-centered approaches, co-creation principles, and visual communications skills. 	<ul style="list-style-type: none"> SD is a human-centered, iterative, systemic, and co-creative approach to service innovation projects.
The validity of NSD for modern service research	<ul style="list-style-type: none"> NSD is relevant to modern service innovation, although the term might sound old. 	N/A	N/A
The relationship between NSD and SD	<ul style="list-style-type: none"> NSD has compatibility with SD in terms of their customer perspective and use of some tools. NSD is theory-focused and SD is practice-oriented, while they can complement each other. NSD needs complementary approaches to include key service-dominant logic ideas. 	<ul style="list-style-type: none"> SD contributes to the early NSD processes with its human-centered, co-design, holistic, and visualization approaches. SD has competences for the later NSD processes with the similar approaches above. SD needs to understand organizational contexts beyond customer contexts. 	<ul style="list-style-type: none"> SD contributes to the overall NSD processes and practices with its human-centered and systemic perspective, co-design and co-creation approach, and visible and tangible prototyping. Understanding organizational internal systems and business can offer better opportunities for successful innovation.

4. 1. SD and its characteristics

The interviewees generally agreed that SD is a methodology based on the human-centered mentality and creative methods/tools. Most of the experts, regardless of their disciplines, said that SD can have an impact throughout the whole development process, not just specific narrow phases. In particular, SD academics and SD practitioners emphasized that SD focus is not on designing objects but on making value-creation systems and this characteristic resonates with service-dominant logic.

“Service design is not about products or services. It is about value-creation. Products are also just the way to create value. We base our ideas and philosophy and methods on service-dominant logic.” (SD practitioner 3)

Some key characteristics of SD that contribute to both the initial stages and later stages of the service development process were reported by interviewees. The human-centered approach was the most frequently mentioned characteristic and benefit of SD. While the focus on users was highlighted as applicable to the early stages of service development processes, the focus on wider stakeholder groups was mentioned as relevant to the later implementation stages. It was said that service implementation requires a very human-centric approach to changing the way of actors’ thinking and doing. Therefore, the human-centered SD approach was expected to be useful in educating actors about their role and responsibility and communicating with consumers so that they may better create value with the service provider. Furthermore, as the human-centered SD approach focuses on understanding the use context of the service, it can infuse service development processes with value-in-use information, which is a key concept of service-dominant logic. One SD academic added that the SD approach can align diverse service delivery actors to the desired and defined service experience for user-centered service implementation.

“Service designer could be a guardian of the initial service concept. I work a lot with engineers, and engineers have a different approach. [...] Service design has two contributions: one is the continuous connection with users, not losing the connection with users and stakeholders, and the other is not to lose the overall picture. Because implementation is very engineering” (SD academic 4)

Another characteristic of SD was the co-design/co-development approach involving users and other actors in service development processes. Most of the SD practitioners said that they involve stakeholders alongside the overall service development process. This nature of SD was applied to both service design and implementation. During the early stage, co-design with stakeholders enables designers to anticipate potential barriers and helps stakeholders feel that they are part of the development process. During the later stage, co-development with stakeholders helps to build stakeholders’ ownership and responsibility for the service and supports sustainable service innovation by building stakeholders’ capabilities.

The holistic approach and systemic thinking were also mentioned as an important characteristic of SD by the NSD and SD experts. It was reported that service designers’ holistic view (a bird’s-eye view) during the early, fuzzy frontend stage of the innovation process contributes to identifying more fundamental problems and actual goals. On the other

hand, during the later phase, it contributes to overcoming the complexity of working with many different parties and departments involved in service implementation, not missing the whole picture of the service system.

Finally, visualization and prototyping were reported by the experts as a distinctive SD characteristic for service design and development. These characteristics were reported to be found throughout the service development process. The iterative processes of SD enabled by prototyping were contrasted to the traditional linear service development process. Visualization was said to facilitate different kinds of communication. During the early stage of service development processes, the communication is more related to envisioning future services or experiences, while during the later phase, it is more concerned with the system change process. For example, one SD academic shared her experience of utilizing visual images with narratives, as a communication tool to facilitate operational and technical decision-making processes involving multiple stakeholders with different disciplinary backgrounds.

4. 2. The validity of NSD for modern service research

Since our earlier literature study indicated that the nature of NSD is close to goods-dominant logic, the relevance of NSD to modern service research, mostly building on service-dominant logic was not clear. When asked about whether and how NSD is valid for contemporary service innovation research, all the NSD academics said that although the term may sound old, NSD theories are still relevant and useful. Specifically, NSD knowledge and approaches were said to be useful for collaborating with organizations, as one NSD academic said:

“Most of NSD studies tended to look at services as offerings. I still think that’s very relevant because services in some cases are offerings, and they need to be viewed that way because companies certainly think that way” (NSD academic 3)

However, they said that NSD can be expanded by contemporary concepts from service-dominant logic (i.e., value co-creation, customers’ involvement and use contexts). NSD can be developed by exploring the use contexts of the service and service actors’ role and responsibility. Also, since contemporary research understands service in the context of a wider value network or system beyond a stand-alone entity, NSD can benefit from understanding value co-creation enabled by different stakeholders. This point is apparent in one NSD academic’s comment:

“What has for years been a weakness of NSD is the scope or the unit of analysis. I think that the offering as a new service is too limited. You need also to include contexts, and actors. For example, how the servicescape is designed and how the roles or responsibilities of service actors are defined, and how the service interacts with other products or services.” (NSD academic 4)

4. 3. The relationship between NSD and SD

According to NSD academics, NSD and SD overlap in terms of the consideration of customers/users and some shared methods/tools (e.g. service blueprint). One NSD academic remarked that SD is bigger than NSD in that while NSD concentrates on developing a new service, SD both improves the existing service and develops new one. According to SD

academics and SD practitioners, SD activities and competences can affect and may transform the whole NSD process and practices as one SD academic said:

“I wouldn’t see service design to replace NSD but instead to permeate the other stages of the NSD. But having said that, service design approach could also change the way the NSD is undertaken.” (SD academic 4)

However, it was pointed out that whereas NSD is highly theory-based, SD provides practice-based knowledge. Therefore, it was assumed that SD practices may contribute to NSD processes by providing more practice-based descriptions of the prerequisites for successful service development, approaches for customer involvement, and methods and tools. In contrast, SD was pointed out as lacking theories, which may be supplemented by other service-related disciplines such as NSD. One NSD academic indicated a potential opportunity that SD can have for a stronger contribution to and greater impact on academia:

“If designers want to publish their service design work in traditional service journals, the challenge is to wrap some theory around those methods. [...] If you can integrate service design perspectives and approaches with theory of other disciplines, that is the uniqueness that service design brings to the service research community.” (NSD academic 3)

5. An interdisciplinary service research framework to link NSD and SD

The synthesis of the literature study and interview study led to an interdisciplinary service research framework to link NSD and SD. The framework is visualized as in Figure 3. The framework generates two possible directions for future inter-disciplinary service research.

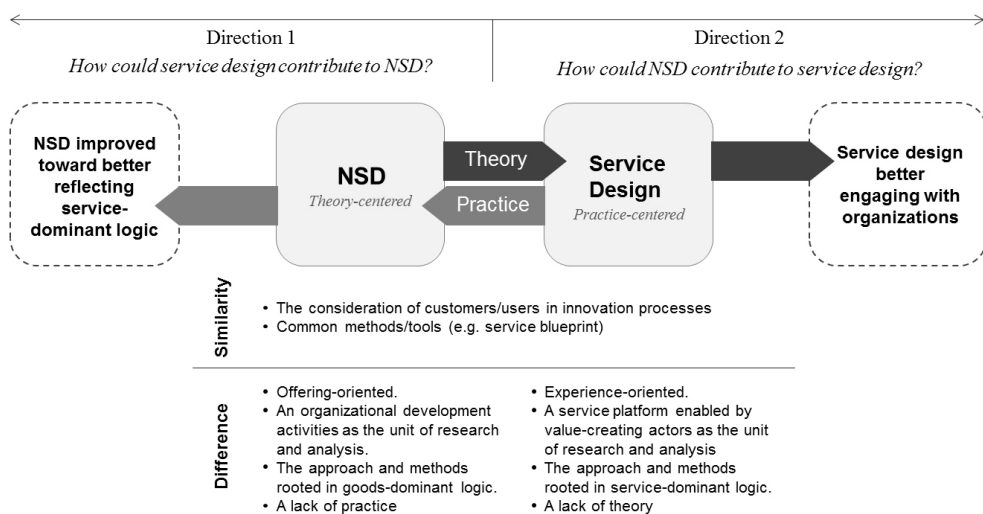


Figure 3 An interdisciplinary service research framework to link NSD and SD

The first direction is about how SD could support NSD by its practices. While NSD is theory-centered, it lacks practical applications. Also, as NSD focuses on designing service concepts and configuring service delivery systems as properties of service products, it is more related to goods-dominant logic. It seems to neglect the service-dominant perspective, which is centered on value co-creation, service systems, and customers' contextual experiences. Therefore, NSD may improve by paying attention towards developing service systems for value co-creation and their outcomes from the customer's perspective. According to our research, this improvement may be enabled by SD, which has the characteristics resonating with service-dominant logic. For example, better engaging with users and fully understanding their individualistic contextual experiences support the key idea of service-dominant logic about customer-driven value creation (e.g., value-in-use). Also, understanding actors' experiences and use contexts, co-design/co-development, and systemic perspectives reflect another key idea of the logic, which is value co-creation (you can see the key tenets of service-dominant logic in Vargo & Lusch (2008)). Therefore, SD could support the NSD process to infuse it with the service-dominant logic perspective.

The second direction is concerned with how NSD can improve SD by providing theories. Since SD lacks theories, its contribution to academia is minimal. This may be related to the fact that much of SD consultancies' knowledge and their skills remain tacit, not being translated into systematized disciplinary knowledge (Kimbell, 2009b). NSD could complement SD practices with its inside-out perspective and organizational knowledge. Considering that service designers are strong in user engagement, yet weak in organizational issues (Mulgan, 2014; Overkamp, 2016), NSD may help service designers' outside-in perspective and user-centered practices to be better integrated into organizational innovation processes. To better engage with organizations, SD may learn from NSD studies about organizational people and structure as two main components that could generate specific organizational issues. These issues may include internal communications, organizational cultures, or service-customer cultures (De Jong & Vermeulen, 2003). Applying the understanding of these organizational issues to designers' SD projects would make SD contributions stronger and its impact greater, since that organizational understanding could serve as a solid ground for involving and collaborating with organizational people.

6. Conclusion

Given that service innovation requires multidisciplinary efforts, this paper investigated NSD and SD as potential knowledge resources for interdisciplinary research. The literature study and interview study identified the nature, roots, perspectives, and approaches of both knowledge and based on this finding, we proposed a theoretical link between NSD and SD and two possible research directions. SD has been criticized for its minimal contribution to service development and implementation, which are mainly driven by organizational processes and practices. Therefore, SD needs to engage with organizational innovation management to contextualize design practices in organizations. In that sense, NSD is an appropriate body of knowledge, which SD could be related with. This paper contributes to establishing an initial interdisciplinary relationship between NSD and SD to promote more interdisciplinary studies.

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