

The evolution of service innovation research: a critical review and synthesis[†]

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(Received 11 October 2011; final version received 4 July 2012)

The number of service innovation articles has increased dramatically in the past 25 years. By reviewing 128 articles published between 1986 and 2010, primarily in leading marketing and innovation journals, this study analyzes the progression of service innovation research according to topicality and perspective. The authors summarize prior research by clustering it into three evolutionary phases and drawing parallels with the evolution of the wider services marketing field. Overall, the view of service innovation has evolved, from a complement of traditional product innovation to a multidimensional, all-encompassing notion that entails several functions, both within and outside the firm.

Keywords: review article; service innovation; product innovation; service development

Introduction

Although service innovation is not a new concept (Miles, 1993), innovation research in general tends to focus on technological innovation by manufacturing firms (Drejer, 2004; Toivonen & Tuominen, 2009; de Vries, 2006). With this view, innovation studies focus on product (e.g. goods) and process (e.g. production systems) innovation (e.g. Utterback & Abernathy, 1975), largely ignoring service innovation and its inherent opportunities. This narrowed focus likely stems from a traditional view of services as activities with low innovative frequency (e.g. Baumol, 1967; Pavitt, 1984; Pavitt, Robson, & Townsend, 1989), and the product-centric orientation of the innovation literature (Garcia & Calantone, 2002; Hauser, Tellis, & Griffin, 2006) that reflects a setting in which manufacturing was the primary economic driver (Drejer, 2004; Sundbo & Gallouj, 2000). However, in developed economies, the service sector now dominates their gross domestic products, and its share continues to grow (Gallouj & Djellal, 2010a; Gallouj & Windrum, 2009). Therefore, both services and service innovation represent central drivers of broader economic growth and innovation (Gallouj, 2002; Miles, 1993; OECD, 2005).

Service innovation ‘introduces something new into the way of life, organization, timing and placement of what can generally be described as the individual and collective processes that relate to consumers’ (Barcet, 2010, p. 51). The innovation process can be planned, intentional, or unintentional, such that it emerges through an interactive learning

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process initiated by any involved parties (Gallouj & Savona, 2009). Related to the distinction between product and service innovation is a distinction between innovation in manufacturing versus service sectors. Generally, the latter is synonymous with service innovation, whereas the former implies product innovation (Gallouj & Windrum, 2009). However, service innovation also increasingly appears in manufacturing firms that hope to differentiate themselves through new services and integrated product–service bundles (Chae, 2012; Kindström, Kowalkowski, & Sandberg, 2012; Ulaga & Reinartz, 2011), often as part of a solution or wider function. As traditional boundaries between sectors fall and service innovation occurs in manufacturing (Barcet, 2010; Bryson, 2010; Gallouj & Djellal, 2010a), it may play a more and more vital role in developing and maintaining firm performance and competitiveness across industry sectors.

Although service innovation research also has gained momentum, the concept remains relatively unexplored compared with product innovation and in need of further conceptual and empirical analysis (Ostrom et al., 2010; Page & Schirr, 2008). Because the service innovation field is expanding and becoming more diversified in its approach (Toivonen & Tuominen, 2009), there is an urgent need for a systematic review of the existing knowledge base (Gallouj & Windrum, 2009). Prior reviews address knowledge-intensive business services (Amara, Landry, & Doloreux, 2009), new product development (NPD) (Page & Schirr, 2008), and service innovation in subsectors, such as wholesale and commission trade, transportation and communication services, or financial services (Vence & Trigo, 2009). However, over the course of nearly 30 years (Barras, 1986), no comprehensive reviews describe the evolution of service innovation research in relation to the fields of marketing and innovation.

To fill this gap, we perform an extensive literature review and synthesis to enable a critical review of extant research on service innovation and trace its evolution, which will establish a firm foundation for further studies. The next section contains our literature review methodology, followed by a presentation of the results and the analysis. We trace the service innovation literature through three phases during the period 1986–2010: formation, maturity, and multidimensional phases. Finally, we conclude with a discussion of potential research directions.

Research method

Screening

Many studies, particularly early in the emergence of the field, used the terms ‘service development’ and ‘service innovation’ interchangeably (Menor, Tatikonda, & Sampson, 2002). Therefore, we conducted a search for articles with titles, keywords, or abstracts containing the terms ‘service/s innovation’, ‘innovation in service/s’, or ‘service/s development’, such that the search terms cover both plural and singular forms. We limit our investigation to journal articles, excluding books and other published materials. To ensure the review focused on the specific research area of interest, we checked the major journals ranked by the Thomson Reuters 2010 Journal Citation Report (ISI) in five research categories: service management and services marketing, general marketing, business-to-business (B2B) marketing, innovation, and economics.

We began with 19 leading marketing and innovation journals, but reviews of the reference lists published with the articles (looking back) and analyses of articles that cited the identified articles (looking forward) indicated 5 additional journals, bringing the total number of relevant journals to 24 (cf. Droege, Hildebrand, & Forcada, 2009; Nordin & Kowalkowski, 2010). The five added journals fell outside the marketing and innovation

domains, categorized as either 'Business' or 'Economics' in the ISI. However, they featured several highly cited articles on service innovation (Atuahene-Gima, 1996b; de Brentani, 1995), service research (e.g. Gadrey, 2000; Hill, 1977), or innovation research (e.g. Miller, Hobday, Leroux-Demers, & Olleros, 1995; Senker, 1995).

The service management and services marketing journals we examined were *Journal of Service Management (JOSM)*, formerly *International Journal of Service Industry Management*, *Journal of Services Marketing (JSM)*, *Journal of Service Research (JSR)*, *Managing Service Quality (MSQ)*, and *Service Industries Journal (SIJ)*. The leading marketing journals were *European Journal of Marketing (EJM)*, *International Journal of Research in Marketing (IJRM)*, *Journal of the Academy of Marketing Science (JAMS)*, *Journal of Consumer Research (JCR)*, *Journal of Marketing (JM)*, *Journal of Marketing Research (JMR)*, and *Marketing Science (MS)*. Because manufacturing firms increasingly develop and offer services, sparking a significant number of articles on this phenomenon in B2B marketing journals (e.g. Evanschitzky, Wangenheim, & Woisetschlager, 2011; Gebauer, 2007; Kowalkowski, Kindstrom, & Brehmer, 2011), we also included the top three B2B marketing journals: *Industrial Marketing Management (IMM)*, *Journal of Business and Industrial Marketing (JBIM)*, and *Journal of Business-to-Business Marketing (JBBM)*. The leading innovation journals reviewed were *Journal of Product Innovation Management (JPIM)*, *R&D Management (RDM)*, *Research Policy (RP)*, and *Technovation (T)*. To include journals with a broader business research scope, we also considered *Journal of Business Research (JBR)* and *Technological Forecasting and Social Change (TFSC)*. Finally, the included economics journals were *Industrial and Corporate Change (ICC)*, *Journal of Evolutionary Economics (JEE)*, and *Review of Income and Wealth (RIW)*. We searched issues published from each journal's inception until the end of 2010, which produced 128 articles for further analysis.

Classification by content and perspective

To identify topics related to service innovation research, we developed an initial list of preliminary topics from our first reading of the article abstracts (Table 1). In turn, we systematically categorized each article according to the content of its *main* topic. If an

Table 1. Initial list of topics.

Topic	Description
Idea generation	How to generate new ideas for service innovation
Offering development	Firm-level approach to designing and developing an offering.
Organizing	Deployment of service innovation personnel and organizational structure
Customer involvement	How to involve customers in the service innovation process
Strategy and management	Higher level of service innovation management issues related to the firm's overall strategy and marketing strategy
Leadership	The role of leadership in service innovation
Implementation	The implementation of a service
Selling	How to sell a service
Launching	The launch of a service
Measurement	Investigation and development of methods for measuring service innovation performance or service innovation impact
Review	Summaries of previous research in different forms of reviews
Service profit	How to form profitable service innovation
Other	Articles that did not fit into any of the other categories

article exhibited more than one main topic, we systematically grouped instances of topic occurrences in the article content, interpreted the grouping against the background of the list of topics and other articles, and thereby derived the primary main topic.

Following the first content analysis, we conducted a qualitative evaluation. During this process, we also continuously revised our initial list of topics, to ensure that it remained representative of the actual topics the articles covered. The revision entailed an iterative process in which the evaluations suggested highly interrelated topics to be merged. For example, we incorporated *idea generation* into *offering development*, because the former represents an initial phase that forms a part of the latter concept (den Hertog, van der Aa, & de Jong, 2010). Similarly, *leadership* merged with *strategy and management* because leadership and management topics overlap significantly. Articles referring to *implementation*, *selling*, *pricing*, and *launching* mainly refer to downstream activities, so we merged these topics into a new topic called *deployment*. We also created a new topic, *policy*, based on our identification of a main topic of 13 articles that covered more general discussions and theoretical issues related to the nature of service innovation. ‘Policy’ offers a more appropriate topic label than, say, ‘theoretical development’, because articles about the nature and theoretical development of service innovation also featured topics such as *offering development*, *organizing*, and *review*. To avoid overlap (i.e. articles were not categorized in more than one topic), we did not create any further topics. In Table 2, we summarize the final topics listing.

After the content analysis and topic categorization, we classified the articles according to prevailing perspectives on service innovation, using Coombs and Miles’s (2000) distinctions among *assimilation*, *demarcation*, and *synthesis*. This frequently cited approach is often used to classify, analyze, and understand service innovation (Drejer, 2004; Droege et al., 2009; Vence & Trigo, 2009); it also provides helpful guidance for understanding the progression of service innovation research. All perspectives were prevalent in more than one of the three phases identified, so they cannot serve as determinant parameters to divide the different phases. However, their occurrence differs over time, so a classification by perspective provides clarification regarding advances in service innovation research.

Table 2. Final topics.

Topic	Description
Offering development	Firm-level approach to designing and developing an offering. How to generate ideas and formalize them as concrete offerings
Strategy and management	Higher level of service innovation management issues related to the firm’s overall strategy and marketing strategy
Organizing	Managing of service innovation personnel and organizational structure
Policy	Contributions to general discussions about the nature and theory of what service innovation is and its specific characteristics
Measurement	Investigation and development of methods for measuring service innovation performance or service innovation impact
Customer involvement	Means of involving customers in the service innovation process
Review	Summaries of previous research in different forms of reviews
Deployment	The later phase of service innovation; launching, selling, pricing, delivery, and implementation issues
Service profit	How to form profitable service innovation
Other	Articles that did not fit into any of the other topics

Research with an assimilation perspective treats service activities as similar to manufacturing activities. That is, models and theories originally developed with manufacturing in mind appear applicable to a service context. Because it suppresses differences between services and manufacturing, the assimilation perspective undermines many unique characteristics of services. In contrast, research with a demarcation perspective emphasizes the unique characteristics of services and thus the need for specifically developed models and theories. Finally, research with a synthesis perspective emphasizes the need for an integrated innovation approach that considers both technological (i.e. product-oriented innovation) and non-technological (i.e. service-oriented innovation) perspectives. Synthesis-focused research thus aims to integrate insights from manufacturing-oriented innovation research with demarcation-oriented research to promote a unified framework (Coombs & Miles, 2000; Gallouj & Savona, 2010; Gallouj & Windrum, 2009).

With this categorization of topics and classification into perspectives, we tracked the evolution of service innovation research into distinct phases, to visualize its progression. The division relied on a pragmatic approach based on personal interpretations, which is common in prior reviews that trace the evolutions of academic disciplines and subdisciplines (Fisk, Brown, & Bitner, 1993; Wilkie & Moore, 2003). We detail the criteria for separating the different phases in the relevant phase sections.

Results

The first article in the sample was published in 1986 (Barras); the last 23 articles were published in 2010. Over these 25 years, the number of published articles addressing the concept of service innovation increased steadily, reaching an annual maximum of 25 in 2009. The distribution in different journals has been wide, but articles primarily have accumulated in innovation and services marketing journals, especially in the recent years (Table 3). In addition, the number of publications related to product development or innovation also has increased sharply (Table 4).

As we show in Table 3, we find increasing recent activity pertaining to service innovation, resulting from, among other factors, the increasing interest in services across various industries and closer links of new topics to the service innovation concept (den Hertog et al., 2010; Toivonen & Tuominen, 2009). Service innovation is no longer regarded merely as a side activity to product innovation; it has become a research topic in its own right, accompanied by an increasing focus on services in major economies, a transformation sometimes referred to as the ‘servitization of society’ (Toivonen & Tuominen, 2009, p. 897). Another partial explanation for the growing number of publications is the increase in issues each year since 1986 – perhaps most evident for *SII*, which expanded from four issues per year in 1993 to 14 issues in 2010. Other journals have shown similar patterns, such as *T*’s increase from 8 annual issues in 1993 to 12 in 2010, while *RDM* increased from 4 to 5 issues over the same period. *JEE* also increased from four issues per year in 1993 to five annual issues in 2010. However, *RIW* had the same publication frequency (four annual issues) since its first service innovation article appeared in 1993.

Relatively few of the articles in our sample appeared in the major marketing journals, and none of them were in the leading US journals: *JCR*, *JM*, *JMR*, or *MS*. This pattern could be related to the charge leveled by senior marketing scholars that the top marketing journals tend to emphasize incremental tests of theories rather than the development of new ideas (Lehmann & McAlister, 2011; MacInnis, 2011), and they might regard service innovation research as a still-emerging research field.

Table 3. Service innovation frequency by journal and year.

	1986	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Service research																					
SIJ			1			1	1	1		1	1		1	3			2	2	4	6	24
JOSM					3				2	1			1	3	1	1			3	3	18
JSR													1	1	2				3	3	10
JSM																			3	2	5
MSQ																			1	2	3
Innovation																					
RP	1				1		2	1					1	1	1	2		2	2	2	16
JPIM						2				1	2			1	1	3		1	2	2	15
T															2	1	2	2	4	1	12
RDM																	1	1			2
General marketing																					
JAMS												1						1		1	3
EJM								1													2
IJRM																1					1
JCR																					0
MS																					0
JMR																					0
JM																					0
B2B marketing																					
IMM		1															1	1			3
JBBM																	1	1			2
JBIM																					0
Other business																					
TFSC		1						1				1							1		4
JBR					1	1		1						1							4
Economics																					
JEE																	1		2		3
ICC																				1	1
RIW																					0
Total	1	2	1	0	5	4	3	4	2	3	3	2	4	10	7	11	8	9	25	23	128

Table 4. Product development and product innovation articles (frequency by year).

Year	Number
1986	9
1987	9
1988	11
1989	12
1990	6
1991	8
1992	12
1993	17
1994	21
1995	20
1996	22
1997	30
1998	27
1999	35
2000	30
2001	26
2002	24
2003	22
2004	16
2005	30
2006	20
2007	22
2008	36
2009	47
2010	62

The listing in Table 5 shows that researchers in the field of service innovation have addressed a considerable number of topics. The most common and perhaps broadest topic is *offering development* ($n = 28$), followed by *strategy and management* ($n = 23$). These data do not reveal general patterns, though the dominant view until very recently was that service innovation was a primarily internal activity that could be managed and controlled by the firm and influenced by the firm's planned strategy.

An evolutionary pattern in service innovation

Research related to service innovation displays three distinct phases, separated by content (main topic) and perspective. The included articles are listed in the Appendix. Each phase reflects an era in the evolution of service innovation research in which topics and perspectives showed a characteristic composition. The composition of the three identified phases also suggests specific patterns that characterize dominant views on service innovation.

Formation phase: 1986–2000

The first, formation phase contains relatively fewer published articles, between 1986 and 2000 ($n = 26$, $n/\text{year} = 1.7$). From a content perspective, the research field is coherent, and most articles focus on offering development. In the 1980s, services marketing expanded quickly as a sub discipline of research in marketing, starting from a relatively low level (Fisk et al., 1993). The early phase in services marketing research thus was a

Table 5. Service innovation article frequency by topic and year.

	1986	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Offering development	1	1			4	1		1	1	1	1			1	3	2	3	1	2	5	28
Strategy and management						2		2		2			1	4	1	1	2		2	6	23
Organizing						1	1		1				2	3	1	3	1	1	3	2	19
Policy		1			1		1	1				1					1	2	3	2	13
Measurement			1				1				1				2	1	1		2	3	12
Customer involvement											1	1	1	2		2		1	3	1	12
Review								1								1		2	3		7
Deployment																1			3	2	6
Service profit																		2	1	1	4
Other																			3	1	4
Total	1	2	1	0	5	4	3	4	2	3	3	2	4	10	7	11	8	9	25	23	128

period of discovery and risk-taking that perceived marketing as a traditional activity, focused on goods instead of services (Fisk et al., 1993). This description also fits the first phase of service innovation research, which challenged the prevailing, product-centric view of innovation that regarded it as more or less synonymous with technological innovation, research and development, and NPD.

Topic observations

In the formation phase, new views of services and service innovation provided foundations for further research (Barras, 1986; Edvardsson, 1997; Edvardsson & Olsson, 1996; Gallouj & Weinstein, 1997). Following an extended focus on product and production process innovation (e.g. Utterback, 1996), the formation phase addressed a latent need for theories applicable to services. This new group of demarcation researchers challenged the prevailing assimilation view, focusing primarily on the development of the actual service offering and the factors that make services successful. Most authors heeded the call for specific service research that would recognize the specific characteristics that distinguish most services from products, such as inseparability of production and consumption, intangibility, low tradability, and heterogeneity (Atuahene-Gima, 1996a, 1996b; de Brentani, 1995; de Brentani & Cooper, 1992; Lievens, Moenaert, & S'Jegers, 1999; Martin & Horne, 1995).

Technology emerges as critical for innovation (Chan, Go, & Pine, 1998; Sirilli & Evangelista, 1998), reflecting the origins of innovation theory in a setting in which manufacturing was the primary economic driver (Drejer, 2004). The distinctions between product and process innovation, as derived from Abernathy and Townsend (1975) and Utterback and Abernathy (1975), also received substantial attention. These distinctions, together with research stressing that services have unique characteristics (Chan et al., 1998; Frambach, Barkema, Nooteboom, & Wedel, 1998), contributed to the rise of the demarcation perspective during the formation phase.

Perspective observations

With respect to their perspectives (Coombs & Miles, 2000), the vast majority of researchers during the formation phase adopted a strong demarcation perspective. Some of them, such as Edvardsson and Olsson (1996) and Sundbo (1997), were pioneers in establishing service innovation as a distinct research area, separate from product innovation. Simultaneously, Gallouj and Weinstein (1997) helped to pave the way for a synthesis perspective with their pioneering article on innovation processes in the service sector, which encompassed both technological and non-technological forms of innovation. Because service innovation was not yet an established area of research, despite the efforts of leading scholars, there was a discernable need to demonstrate the distinctiveness of service innovation from product innovation; demarcation thus became a logical approach (Atuahene-Gima, 1996a, 1996b; de Brentani, 1995; Brouwer & Kleinknecht, 1997; Chan et al., 1998; Frambach et al., 1998).

The most important insight emerging from the research during this phase was the call for a separate research field for services, given their specific characteristics (Flynn & Goldsmith, 1993). Despite the risk involved in challenging the formerly dominant assimilation perspective, researchers developed rationales for service innovation that relied on theories and models different from those applied to traditional product innovation. In a manner of speaking, these early articles started the evolution and laid the foundations on which future research could expand and develop further.

Maturity phase 2001–2005

In 2001, the first customer involvement article appeared, marking the start of the second evolutionary phase, or the maturity phase. A primary focus in this phase was the involvement of customers, including their intentional or unintentional roles in the innovation process, which previously had been a comparatively less explored aspect. Generally, customer involvement referred to deliberate and managed user participation (e.g. Alam, 2002), though later articles also discussed other forms of customer interaction and learning (e.g. Matthing, Sandén, & Edvardsson, 2004). During the maturity phase, the number of articles published each year increased by more than a factor of two, though the overall number of publications remained low ($n = 26$, $n/\text{year} = 5.2$). The increasing publication volume resulted from greater overall interest in services, especially evident in the services marketing journals that published more than half of the articles on service innovation during this phase.

Topic observations

As management and marketing research increasingly viewed customers as active participants in the service process and as co-creators of value (e.g. Louro & Cuncha, 2001; Normann, 2001; Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2004), customer involvement also started to receive significantly more attention as a service innovation topic (Abramovici & Bancel-Charensol, 2004; Alam, 2002; von Hippel, 2001; Magnusson, Matthing & Kristensson, 2003; Matthing et al., 2004). Studies began to focus on how to learn from customers and how to involve them more systematically in the innovation process. Alam (2002) asked *why* users are involved in service development and at *what stages*.

However, in terms of the rate of publication, research into customer involvement (i.e. the customer's involvement with the firm) in service development and service innovation was still underdeveloped and marked by conflicting views. Matthing et al. (2004) took a primarily demarcation perspective and argued that firms must get to know their customers, including proactively interacting with them to uncover latent needs. In contrast, von Hippel (2001) argued, from what might be regarded as an assimilation perspective, that identifying customers' changing needs is too expensive, so the best way to address them is to let customers innovate themselves by supplying them with some type of self-innovation toolkit.

Another influential topic addressed how to organize for service innovation (Drejer, 2004; Stevens & Dimitriadis, 2004; van den Ende, 2003). Typical questions raised during this phase included how organizations are, or should be, configured to succeed in their service innovation activities and which factors might help to increase a firm's performance in relation to its service innovation.

As the field began to mature and researchers continued to publish, more attention moved to the insight that innovation is not only a matter of technological (i.e. product or process) innovation; service innovations tend to represent non-technological innovation (Drejer, 2004; Hipp & Grupp, 2005). In turn, organizational innovations (e.g. interfunctional integration; Perks & Riihela, 2004) and other non-technological innovations began to be regarded as integral parts of service innovation. Accordingly, research topics began to diverge and cover an increasingly broader range, as was apparent in the increased frequency with which more general topics such as leadership, strategy, and management in service innovation appeared in research contributions (Hull, 2004; Johné & Harborne, 2003; van Riel, Lemmink, & Ouwersloot, 2004; van Riel & Lievens, 2004).

Perspective observations

As interest increased in involving the customer in innovation, we note a discernable change in perspective, from demarcation to a synthesis approach. A possible reason for this change is that insights from demarcation researchers integrated with insights gained from studies of service innovation in manufacturing and technology-based services (e.g. telecommunications, Internet-based services). Another reason was the apparent renaissance of Schumpeter's (1934) views on innovation and entrepreneurship (e.g. Drejer, 2004). The neo-Schumpeterian approach offers a unifying perspective on innovation, which Gallouj and Windrum (2009) refer to as synthesis. Furthermore, from a customer perspective, the question of whether innovation and value creation derive from services or products, from technological or non-technological elements, or from any combination thereof (Normann, 2001), is of secondary (if any) interest. If the issue of whether innovation is product- or service-focused is no longer important, as in research with a synthesis perspective, then manufacturing and service activities should be considered and analyzed together (Drejer, 2004; Hipp & Grupp, 2005). Drejer (2004) and Hipp and Grupp (2005) even describe the waning of the discussion about goods versus services – a progression that mirrored Fisk et al.'s (1993) exposé of services marketing research. The maturity phase saw the decline of the debate about the unique characteristics of services, in favor of a more integrative perspective. This important step allowed service innovation scholars to embrace the next phase of service innovation research with a fully integrated approach and diversified topics that covered a wider breadth of service innovation.

Multidimensional phase: 2006–2010

The third phase in the evolution, the multidimensional phase, begins in 2006, with the publication of the first review article on service innovation (Karniouchina, Victorino, & Verma, 2006). These authors called for more multidisciplinary research, reflecting the evolving view of service innovation as a multidimensional, all-encompassing concept that also could include products. Also in 2006, the first article about the deployment of services (Barlow, Bayer, & Curry, 2006), a new area of interest, was published.

The number of published articles increased dramatically during this phase ($n = 76$, $n/\text{year} = 15.2$), primarily appearing in innovation management and services marketing journals, which showed the most visible growth. Virtually no articles appeared in general marketing or B2B marketing journals.

Topic observations

The service innovation concept was, as the name of the phase suggests, used in a more diversified manner. The concept was often defined specifically as being multidimensional (Amara et al., 2009; den Hertog et al., 2010; Rubalcaba, Gallego, & den Hertog, 2010b). A more limited view, such as one in which innovation appeared primarily technological, became clearly inappropriate for attempts to understand service innovation. This development may have been particularly evident from the customer's point of view; an overly narrow view of service innovation creates an obstacle for the firm in terms of being able to serve customers (den Hertog et al., 2010). Therefore, new ways of thinking about and defining service innovation emerged. For example, Rubalcaba, Gago, and Gallego (2010a) and Gago and Rubalcaba (2007) emphasized that technological and non-technological innovation should not be independent but rather reflect a synthesis perspective. The interrelation of service innovation and product innovation supported an

integrated, neo-Schumpeterian approach, leading to a broadening of the research field and new insights into how firms could manage service innovation. Issues regarding strategy and service innovation, innovation systems, and research policy also arose, as did the concept of business model innovation (Amara et al., 2009; Francis & Bessant, 2005; den Hertog et al., 2010; Maglio & Spohrer, 2008; Rubalcaba et al., 2010b; Toivonen & Tuominen, 2009; Yang, 2007). Concept definitions widened along with the field of service innovation. As service innovation issues became more all-encompassing, the need for knowledge and practices to manage this broader set of organizational activities increased. Service innovation also involved more significant firm resources, which means that strategic and policy issues were becoming relevant research areas (Gallouj & Windrum, 2009; den Hertog et al., 2010; Toivonen & Tuominen, 2009).

During the multidimensional phase, service innovation received attention among both service and manufacturing firms as means to achieve competitive advantages (Grenmyr, Löfberg, & Witell, 2010; Kindström & Kowalkowski, 2009; Ostrom et al., 2010). Articles that focused on service profit and methods to measure the impact of services on firm performance thus were popular. Another previously neglected topic emerged, namely, the deployment of innovation process, which primarily includes service delivery and sales-related issues. Chen, Tsou, and Huang (2009) noted the lack of research on the connection between service innovation and delivery, despite the need to explore this topic because of the wider scope of service innovation and the need to integrate downstream activities into the innovation process (Lenfle & Midler, 2009). Service innovation thus appeared cyclic, such that deployment topics became more prevalent (Kindström & Kowalkowski, 2009; Lenfle & Midler, 2009). In addition, the emergence of the service-dominant logic in marketing (Vargo & Lusch, 2004, 2008) and its impact on marketing research prompted a reexamination of the role of innovation in service delivery, defined as the process of applying competences through goods and services, which involves the entire organization (Chen et al., 2009).

Topics related to customer involvement and innovations from the customer perspective were addressed even more frequently during the multidimensional phase, demonstrating the longevity of this topic (e.g. Alam, 2006; Carbonell, Rodriguez-Escuardo, & Pujari, 2009; Magnusson, 2009). Furthermore, a long-term trend among manufacturing firms toward providing integrated solutions (i.e. relational processes, including integrated goods, services, and knowledge components) influenced service innovation to become more diversified, because integrated solutions required wider innovative perspectives, due to their all-encompassing, long-term ambitions (Nordin & Kowalkowski, 2010; Tuli, Kohli, & Bharadwaj, 2007).

Finally, the multidimensional phase paralleled the last phase in Fisk et al.'s (1993) services marketing review too, in terms of its dramatic growth, increasing heterogeneity in topicality, and understanding that the subject was becoming increasingly cross-functional and spreading beyond the traditional boundaries of the firm.

Perspective observations

The overarching perspective in this phase was synthesis; the service versus goods debate was no longer central. The all-encompassing topics within service innovation and the general acceptance of services as an important driver of competitive advantage and economic growth contributed to this perspective; differences or similarities with products became less important. This contribution remained valid for both service and manufacturing industries and on both firm and sectoral levels. The focus therefore shifted to

responsiveness to customer needs and market dynamics. Still, recognition of the assimilation (e.g. Sicotte & Bourgault, 2008) and demarcation (e.g. Pires, Sarkar, & Carvalho, 2008) viewpoints remained, though neither dominated.

Conclusions

Dividing service innovation research into three distinct phases helps to clarify its evolution, which in turn provides a clearer view of how the field has developed, in terms of both volume and topicality. The focus of service innovation research has shifted throughout its evolutionary pattern: Initially, the offering itself was the primary focus of research in the formation phase, before it moved on to involve the customer and form the organization in the maturity phase. Finally, the multidimensional phase featured a much more diversified pattern, emphasizing the linkages between service innovation and business strategy. As the field continues to diversify and the service innovation concept becomes all-encompassing, identifying the exact loci of service innovation research becomes more difficult. This development is driven, among other things, by the service-based economy (Gallouj & Windrum, 2009), which demands an expansive approach to service innovation. In the past three decades, major deregulation has occurred across economies, in industries such as air transportation, financial services, health care, and telecommunications, paralleled by the emergence of new industries, especially in the information and communication technology field (Fisk et al., 1993; Rust & Thompson, 2006). Continuous (and accelerating) technological development is likely to blur the lines between service and manufacturing sectors further, enabling further service growth and thus more service innovation.

With regard to its perspectives (Coombs & Miles, 2000), research in service innovation has shifted from an assimilation perspective, in which innovation appeared generic, through a demarcation perspective, which regarded service innovation as something that should be differentiated from product innovation, and finally into a synthesis perspective. The demarcation perspective often has focused on sector-based case studies and typologies, such that it lacks consistency with and adds little to existing innovation theories (Gallouj & Savona, 2010). By integrating the insights from demarcation-oriented research with those gathered from manufacturing-oriented assimilation research, a synthesis perspective offers a unifying, multidimensional innovation approach. This emerging extension regarding the use of service innovation is likely to continue as a reflection of the dominating synthesis perspective. For manufacturing firms that add services, this extension implies a reconsideration of their innovation setup, toward an integrated approach for product and service innovation activities (Kindström, 2010). For service firms, an increased focus on service innovation and extension of the innovation concept offers a new framework that is not limited to services. Instead, it provides opportunities to better understand customer needs and value creation processes through combinations of services and products.

Although extending the concept of service innovation thus offers new insights, particularly on an aggregate level, a potential risk is inherent: As service innovation becomes all-encompassing, it may lose focus (Toivonen & Tuominen, 2009) and perhaps some relevance. This risk is also symptomatic of the lack of a common definition of service innovation (e.g. Pires et al., 2008). If service innovation includes everything, it eventually may lose meaning and impede opportunities for further analysis or a deeper understanding of its specific nature. Similarly, Araujo and Spring (2006) and Stauss (2005) critique an 'unlimited' broadening of the concept of service. However, an extended

service innovation concept also signals that research in this area is maturing, but not stagnating. In this sense, service innovation research has emerged as a vital, multifaceted research discipline that offers several promising research directions.

Further research

Most existing literature has focused on the actual development process as the key area in which service innovation takes place. However, in dynamic environments in which technology and market needs change quickly, managing service innovations means not only the ability to design the service concept but also continuously redesigning and adapting new and existing services to address frequent exogenous changes and emerging opportunities. Additional studies thus should focus on processes and gain a better understanding of interactions with the customer as well as other stakeholders in the organization's service ecosystem.

Distinguishing the notion of innovation in service firms from that of service innovation is important. The ongoing trend in which manufacturing firms differentiate themselves through new services continues to reduce the traditional distinction between service and manufacturing in internal innovation processes (Barcet, 2010). Therefore, studies that increase our understanding of this convergence, as well as the interplay between new service development (NSD) and NPD within firms will be helpful. The growth of integrated solutions and other product–service bundles demands more research on the possibilities for combining and integrating frameworks and methods from NSD and NPD research and practice (Chae, 2012; Gallouj & Djellal, 2010a). Rather than focusing on intrinsic distinctions between services and products, researchers should strive to develop and conceptualize service innovation typologies.

A key topic that emerged in the multidimensional phase is the issue of deployment, which focuses on the latter phases in the innovation process, such as sales and delivery. Innovation in service deployment is generally accompanied by the development of organizational design (Araujo & Spring, 2006). The connection of various types of innovation, such as deployment and organization in this case, offers a potential research avenue. Service researchers also call for more insight into how to develop flexible, customized offerings while achieving efficiency in deployment through standardized processes (Rahikka, Ulkuniemi, & Pekkarinen, 2011). To develop and elaborate on deployment issues, the concept of service modularity offers an interesting avenue; it refers to 'the smallest service unit that can be offered to a customer in itself or as a part of a service offering creating value perceived by the customer' (Rahikka et al., 2011, p. 358). Research on service modularity might support the decomposition of complex services into smaller units and potentially more efficient service deployment.

Modular units of digitized resources across firm boundaries also could enhance innovation opportunities, despite challenges in practice. The separation of information from matter (Normann, 2001) facilitates the tradability of services, as evidenced by the increasing number of innovations that are digitally enabled, including new combinations of digital and physical components (Yoo, Henfridsson, & Lyytinen, 2010). Thus, information advances call for a better understanding of enablers and inhibitors of technological service innovations.

Because this review and synthesis includes only articles from selected, ISI-ranked journals (especially marketing and innovation), additional studies should integrate books (e.g. Bettencourt, 2010; Chesbrough, Vanhaverbeke, & West, 2006; Gallouj & Djellal, 2010b; Miozzo & Miles, 2002) and other published materials. Furthermore,

this study could be extended or combined with research from other disciplines, such as design, information systems, organization theory, operations, public policy, and strategy.

Finally, the geographical variety of the empirical studies was limited. Most of the reviewed studies focused on Northern and Western Europe, North America, or Taiwan. The rapid economic growth of the BRIC (Brazil, Russia, India, and China) countries and other developing economies, as well as the significant targeting of the world's poorest people by service innovations (Prahalad, 2004), prompts us to suggest that more innovation research in these markets is both important and timely.

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Appendix. Summary of reviewed articles

Year	Author(s)	Title	Main topic
1986	Barras, R.	Towards a theory of innovation in services	Offering development
1992	de Brentani, U., Cooper, R.G.	Developing successful new financial services for businesses	Offering development
1992	Mason, J.H.	Innovation in professional services: Potential productivity and trade improvement	Policy
1993	Flynn, L.R., Goldsmith, R.E.	Identifying innovators in consumer service markets	Measurement
1995	Buzzacchi, L., Colombo, M.G., & Mariotti, S.	Technological regimes and innovation in services: The case of the Italian banking industry	Offering development
1995	de Brentani, U.	New industrial service development: Scenarios for success and failure	Offering development
1995	Edvardsson, B., Haglund, L., & Mattsson, J.	Analysis, planning, improvisation and control in the development of new services	Offering development
1995	Gadrey, J., Gallouj, F., & Weinstein, O.	New modes of innovation: How services benefit industry	Policy
1995	Martin, C.R., Horne, D.A.	Level of success inputs for service innovations in the same firm	Offering development
1996	Atuahene-Gima, K.	Market orientation and innovation	Strategy and management
1996	Atuahene-Gima, K.	Differential potency of factors affecting innovation performance in manufacturing and services firms in Australia	Strategy and management
1996	Edvardsson, B., Olsson, J.	Key concepts for new service development	Offering development
1996	Lapierre, J., Henault, B.	Bidirectional information transfer: An imperative for network and marketing integration in a Canadian telecommunications firm	Organizing
1997	Brouwer, E., Kleinknecht, A.	Measuring the unmeasurable: A country's non-R&D expenditure on product and service innovation	Measurement
1997	Gallouj, F., Weinstein, O.	Innovation in services	Policy
1997	Sundbo, J.	Management of innovation in services	Organizing
1998	Chan, A.D., Go, F.M., & Pine, R.	Service innovation in Hong Kong: Attitudes and practice	Strategy and management
1998	Evangelista, R., Sirilli, G.	Innovation in the service sector results from the Italian Statistical Survey	Policy

1998	Frambach, R.T., Barkema, H.G., Nooteboom, B., & Wedel, M.	Adoption of a service innovation in the business market: An empirical test of supply-side variables	Strategy and management
1998	Johne, A., Storey, C.	New service development: A review of the literature and annotated bibliography	Review
1998	Sirilli, G., Evangelista, R.	Technological innovation in services and manufacturing: Results from Italian surveys	Offering development
1999	Gustafsson, A., Ekdahl, F., & Edvardsson, B.	Customer focused service development in practice: A case study at Scandinavian Airlines System (SAS)	Offering development
1999	Lievens, A., Moenaert, R.K., & S'Jegers, R.	Linking communication to innovation success in the financial services industry: A case study analysis	Organizing
2000	Aung, M.	The Accor multinational hotel chain in an emerging market: Through the lens of the core competency concept	Strategy and management
2000	Kelly, D., Storey, C.	New service development: Initiation strategies	Offering development
2000	Song, X.M., Di Benedetto, C.A., & Song, L.Z.	Pioneering advantage in new service development: A multi-country study of managerial perceptions	Strategy and management
2001	de Brentani, U.	Innovative versus incremental new business services: Different keys for achieving success	Offering development
2001	Storey, C., Kelly, D.	Measuring the performance of new service development activities	Measurement
2001	von Hippel, E.	Perspective: User toolkits for innovation	Customer involvement
2002	Alam, I.	An exploratory investigation of user involvement in new service development	Customer involvement
2002	Smits, R.	Innovation studies in the 21st century: Questions from a user's perspective	Policy
2003	Blazevic, V., Lievens, A., & Klein, E.	Antecedents of project learning and time-to-market during new mobile service development	Organizing
2003	Johne, A., Harborne, P.	One leader is not enough for major new service development: Results of a consumer banking study	Strategy and management
2003	Magnusson, P.R., Matthing, J., & Kristensson, P.	Managing user involvement in service innovation: Experiments with innovating end users	Customer involvement
2003	van den Ende, J.	Modes of governance of new service development for mobile networks: A life cycle perspective	Organizing
2004	Abramovici, M., Bancel-Charensol, L.	How to take customers into consideration in service innovation projects	Customer involvement

(Continued)

Table A1. (Continued.)

Year	Author(s)	Title	Main topic
2004	Drejer, I.	Identifying innovation in surveys of services: A Schumpeterian perspective	Organizing
2004	Hull, F.M.	Innovation strategy and the impact of a composite model of service product development on performance	Strategy and management
2004	Liden, S.B., Sanden, B.	The role of service guarantees in service development	Offering development
2004	Matear, S., Gray, B.J., & Garrett, T.	Market orientation, brand investment, new service development, market position and performance for service organisations	Strategy and management
2004	Matthing, J., Sanden, B., & Edvardsson, B.	New service development: Learning from and with customers	Customer involvement
2004	Perks, H.; Riihela, N.	An exploration of interfunctional integration in the new service development process	Organizing
2004	Stevens, E., Dimitriadis, S.	New service development through the lens of organisational learning: Evidence from longitudinal case studies	Organizing
2004	van Riel, A.C.R., Lemmink, J., & Ouwersloot, H.	High-technology service innovation success: A decision-making perspective	Strategy and management
2004	Van Riel, A.C.R., Lievens, A.	New service development in high tech sectors: A decision-making perspective	Strategy and management
2005	Ahn, J.H., Kim, M.S., & Lee, D.J.	Learning from the failure: Experiences in the Korean telecommunications market	Offering development
2005	Chai, K.H., Zhang, J., & Tan, K.C.	A TRIZ-based method for new service design	Offering development
2005	Echeverri, P.	Video-based methodology: Capturing real-time perceptions of customer processes	Measurement
2005	Francis, D., Bessant, J.	Targeting innovation and implications for capability development	Strategy and management
2005	Hipp, C., Grupp, H.	Innovation in the service sector: The demand for service-specific innovation measurement concepts and typologies	Measurement
2005	Neu, W.A., Brown, S.W.	Forming successful business-to-business services in goods-dominant firms	Organizing
2005	Verganti, R., Buganza, T.	Design inertia: Designing for life-cycle flexibility in Internet-based service	Offering development
2006	Alam, I.	Removing the fuzziness from the fuzzy front-end of service innovations through customer interactions	Customer involvement

2006	Athanassopoulou, P.	Determining relationship quality in the development of business-to-business financial services	Customer involvement
2006	Barczak, G., Kahn, K.B., & Moss, R.	An exploratory investigation of NPD practices in nonprofit organizations	Organizing
2006	Barlow, J., Bayer, S., & Curry, R.	Implementing complex innovations in fluid multi-stakeholder environments: Experiences of 'telecare'	Deployment
2006	Blindenbach-Driessen, F., van den Ende, J.	Innovation in project-based firms: The context dependency of success factors	Organizing
2006	Buganza, T., Verganti, R.	Life-cycle flexibility: How to measure and improve the innovative capability in turbulent environments	Measurement
2006	de Vries, E.J.	Innovation in services in networks of organizations and in the distribution of services	Organizing
2006	Karniouchina, E.V., Victorino, L., & Verma, R.	Product and service innovation: Ideas for future cross-disciplinary research	Review
2006	Nijssen, E.J., Hillebrand, B., Vermeulen, P.A.M., & Kemp, R.G.M.	Exploring product and service innovation similarities and differences	Offering development
2006	Olsen, N.V., Sallis, J.	Market scanning for new service development	Offering development
2006	Ottenbacher, M., Gnoth, J., & Jones, P.	Identifying determinants of success in development of new high-contact services: Insights from the hospitality industry	Strategy and management
2007	Djellal, F., Gallouj, F.	Innovation and employment effects in services: A review of the literature and an agenda for research	Policy
2007	Gago, D., Rubalcaba, L.	Innovation and ICT in service firms: Towards a multidimensional approach for impact assessment	Measurement
2007	Gebauer, H.	An investigation of antecedents for the development of customer support services in manufacturing companies	Offering development
2007	Heikkinen, M.T., Mainela, T., Still, J., & Tahtinen, J.	Roles for managing in mobile service development nets	Strategy and management
2007	Kodama, M.	Innovation and knowledge creation through leadership-based strategic community: Case study on high-tech company in Japan	Strategy and management
2007	Lee, C., Chen, W.J.	Cross-functionality and charged behavior of the new product development teams in Taiwan's information technology industries	Organizing
2007	Miles, I.	Research and development (R&D) beyond manufacturing: The strange case of services R&D	Offering development

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Table A1. (Continued.)

Year	Author(s)	Title	Main topic
2007	Yang, C.C.	A systems approach to service development in a concurrent engineering environment	Offering development
2008	Castellacci, F.	Technological paradigms, regimes, and trajectories: Manufacturing and service industries in a new taxonomy of sectoral patterns of innovation	Review
2008	Junquera, B., del Brio, J., & Fernandez, E.	The client as co-manufacturer and environmental entrepreneur: A research agenda	Customer involvement
2008	Maglio, P.P., Spohrer, J.	Fundamentals of service science	Policy
2008	Mansury, M.A., Love, J.H.	Innovation, productivity, and growth in US business services: A firm-level analysis	Service profit
2008	Page, A.L., Schirr, G.R.	Growth and development of a body of knowledge: 16 years of new product development research, 1989–2004	Review
2008	Pires, C.P., Sarkar, S., & Carvalho, L.	Innovation in services – how different from manufacturing?	Policy
2008	Sicotte, H., Bourgault, M.	Dimensions of uncertainty and their moderating effect on new product development project performance	Service profit
2008	Tether, B.S., Tajar, A.	The organisational-cooperation mode of innovation and its prominence amongst European service firms	Organizing
2008	van den Ende, J., Jaspers, F., & Gerwin, D.	Involvement of system firms in the development of complementary products: The influence of novelty	Offering development
2009	Amara, N., Landry, R., & Doloreux, D.	Patterns of innovation in knowledge-intensive business services	Review
2009	Andreassen, T.W., Streukens, S.	Service innovation and electronic word-of-mouth: Is it worth listening to?	Customer involvement
2009	Carbonell, P., Rodriguez-Escudero, A.I., & Pujari, D.	Customer involvement in new service development: An examination of antecedents and outcomes	Customer involvement
2009	Chen, J.S., Tsou, H.T., & Huang, A.Y.H.	Service delivery innovation antecedents and impact on firm performance	Deployment
2009	Droege, H., Hildebrand, D., & Forcada, M.A.H.	Innovation in services: Present findings, and future pathways	Review
2009	Eisingerich, A.B., Rubera, G., & Seifert, M.	Managing service innovation and interorganizational relationships for firm performance to commit or diversify?	Organizing
2009	Essen, A.	The emergence of technology-based service systems: A case study of a telehealth project in Sweden	Other
2009	Gallouj, F., Savona, M.	Innovation in services: A review of the debate and a research agenda	Review
2009	Gallouj, F., Windrum, P.	Services and services innovation	Policy
2009	Hyder, A.S., Fregidou-Malama, M.	Services marketing in a cross-cultural environment: The case of Egypt	Other
2009	Kindström, D., Kowalkowski, C.	Development of industrial service offerings: A process framework	Deployment

2009	Kirner, E., Kinkel, S., & Jaeger, A.	Innovation paths and the innovation performance of low-technology firms: An empirical analysis of German industry	Service profit
2009	Kwortnik, R.J., Thompson, G.M.	Unifying service marketing and operations with service experience management	Organizing
2009	Lee, R.P., Ginn, G.O., & Naylor, G.	The impact of network and environmental factors on service innovativeness	Organizing
2009	Lee, Y.C., Chen, J.K.	A new service development integrated model	Offering development
2009	Lenfle, S., Midler, C.	The launch of innovative product-related services: Lessons from automotive telematics	Deployment
2009	Magnusson, P.R.	Exploring the contributions of involving ordinary users in ideation of technology-based services	Customer involvement
2009	Manion, M.T., Cherian, J.	Do services marketers' success measures match their strategies?	Measurement
2009	Martinez-Ros, E., Orfila-Sintes, F.	Innovation activity in the hotel industry	Strategy and management
2009	Nakagawa, M., Watanabe, C., & Griffy-Brown, C.	Changes in the technology spillover structure due to economic paradigm shifts: A driver of the economic revival in Japan's material industry beyond the year 2000	Strategy and management
2009	Oztaysi, B., Baysan, S., & Akpinar, F.	Radio frequency identification (RFID) in hospitality	Measurement
2009	Sekhar, J.A.; Dismukes, J.P.	Generic innovation dynamics across the industrial life cycle: Platform equation modeling of invention and innovation activity	Other
2009	Toivonen, M., Tuominen, T.	Emergence of innovations in services	Policy
2009	Vence, X., Trigo, A.	Diversity of innovation patterns in services	Policy
2009	Yang, H.L., Hsiao, S.L.	Mechanisms of developing innovative IT-enabled services: A case study of Taiwanese healthcare service	Offering development
2010	Abreu, M., Grinevich, V., Kitson, M., & Savona, M.	Policies to enhance the 'hidden innovation' in services: Evidence and lessons from the UK	Measurement
2010	Blindenbach-Driessen, F., van Dalen, J., & van den Ende, J.	Subjective performance assessment of innovation projects	Measurement
2010	Cadwallader, S., Jarvis, C.B., Bitner, M.J., & Ostrom, A.L.	Frontline employee motivation to participate in service innovation implementation	Deployment
2010	Candi, M.	Benefits of aesthetic design as an element of new service development	Offering development
2010	Corrocher, N., Zirulia, L.	Demand and innovation in services: The case of mobile communications	Deployment

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Table A1. (Continued.)

Year	Author(s)	Title	Main topic
2010	den Hertog, P., van der Aa, W., & de Jong, M.	Capabilities for managing service innovation: Towards a conceptual framework	Strategy and management
2010	Gottfridsson, P.	Development of personalised services in small business: An iterative learning process	Offering development
2010	Grenmyr, I., Löfberg, N., & Witell, L.	Service innovations in manufacturing firms	Offering development
2010	Holopainen, M.	Exploring service design in the context of architecture	Offering development
2010	Hsueh, J.T., Lin, N.P., & Li, H.C.	The effects of network embeddedness on service innovation performance	Organizing
2010	Hurmelinna-Laukkanen, P., Ritala, P.	Protection for profiting from collaborative service innovation	Service profit
2010	Jaw, C., Lo, J.Y., & Lin, Y.H.	The determinants of new service development: Service characteristics, market orientation, and actualizing innovation effort	Strategy and management
2010	Ko, H.T., Lu, H.P.	Measuring innovation competencies for integrated services in the communications industry	Measurement
2010	Koelling, M., Neyer, A.K., & Moeslein, K.M.	Strategies towards innovative services: Findings from the German service landscape	Strategy and management
2010	Meiren, T., Burger, T.	Testing of service concepts	Offering development
2010	Melton, H.L., Hartline, M.D.	Customer and frontline employee influence on new service development performance	Customer involvement
2010	Ostrom, A.L., Bitner, M.J., Brown, S.W., Burkhard, K.A., Goul, M., Smith-Daniels, V., Demirkan, H., & Rabinovich, E.	Moving forward and making a difference: Research priorities for the science of service	Policy
2010	Ottenbacher, M.C., Harrington, R.J.	Strategies for achieving success for innovative versus incremental new services	Strategy and management
2010	Pisano, G.P.	The evolution of science-based business: Innovating how we innovate	Organizing
2010	Rubalcaba, L., Gallego, J., & Den Hertog, P.	The case of market and system failures in services innovation	Policy
2010	Storey, C., Hull, F.M.	Service development success: A contingent approach by knowledge strategy	Strategy and management
2010	Storey, C., Kahn, K.B.	The role of knowledge management strategies and task knowledge in stimulating service innovation	Strategy and management
2010	Thrane, S., Blaabjerg, S., & Moller, R.H.	Innovative path dependence: Making sense of product and service innovation in path-dependent innovation processes	Other

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