Alternative Logics for Innovation: a call for service innovation research

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Biography

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Abstract

Purpose.

The aim of this paper is to frame innovation within S-D Logic and Service Science and propose a framework in order to launch a call for service innovation research.

Methodology.

Through a review of the literature, we analyse innovation using different approaches such as goods-dominant logic, S-D logic, and cognitive-relational studies as a transitional view.

Findings.

We outline the main elements of each approach and develop a framework with a focus on their differences in terms of drivers, outcomes, processes, and actors' roles. Innovation within goods-dominant logic is analysed in terms of new product development and new service development. In both of these research streams, innovation is seen as an output (a new good or a new service), coming out from an organisational internal process where the firm is the main actor, protecting its knowledge with an owner and secret approach. The cognitive-relational approach provides a different perspective on innovation in which the drivers of the process are *knowledge*, *competencies*, and *relationships*. The firm is still the main innovator, with the key users and partners acting as sources of *knowledge* that is used to produce superior value for the recipients. Recognising the role of resource-based view, S-D logic moves the focus to value-creating innovation. This is an 'open' innovation process in which all actors in the network can mobilise their resources to become co-innovators and co-producers of value.

Research implications

Our theoretical findings represent a good basis upon which further studies of innovation can be undertaken. We call for the development of models and innovation patterns within S-D logic and Service Science.

Originality/Value

Innovation is a key theme in service systems and service science. However, studies are widely based on a goods-dominant logic, even when the offering is itself a service. This paper offers a new and wider perspective on innovation to frame the phenomenon in S-D logic as a basis for further studies.

Key words

Innovation, value, knowledge, relationship, service

Introduction

A general claim in business studies is that innovation is a key source of firms' competitiveness. The ability to continuously generate new ideas and transform them into something marketable is seen as a core competence. The other side of this simple awareness is the high degree of complexity of the innovation phenomenon at both its conceptual and its operative level.

With reference to the definition of innovation, we have a plethora of expressions that examine the outcome (e.g., a new product) or the process (e.g., procedure, input, activity, technology). As de Jong and Vermeulen (2003) note, all definitions: 1) include something new that is 2) aimed at producing some benefits in an intentional way and 3) involves a use component (and not only new ideas).

From an operative perspective, innovation is one of the most resource-consuming processes; it is also highly risky for an enterprise, as its genesis and development require knowledge, skills, and competences (e.g., market, technology, R&D, operations, financial support, etc.) involving areas of a company, as well as external partners (e.g., suppliers, research centres, etc.). The development of knowledge, frameworks, models, and tools can help researchers and companies better handle the innovative process. In a recent presentation, Vargo (2008) notes that "there are alternative logics for understanding service innovation. A service-centered logic is more robust and better suited than a goods-centered logic for all of innovation". We want to go through this affirmation by outlining three different logics underpinning innovation and by examining the respective visions, actors, patterns, and outcomes: Goods-Dominant logic, the cognitive-relational perspective, and Service-Dominant Logic. The aim of this work is to address S-D logic as more appropriate for framing innovation in the actual global competitive context.

The paper is organised as follows. First, we analyse new product development and new service development under a Goods-Dominant logic. We then move our attention to the contribution of the resource and competence-based view in highlighting a diverse set of perspectives from which innovation is performed both in manufacturing and in services. Next, we address S-D logic and service science and their input on framing innovation from a renewed perspective.

After examining innovation using the three logics, we outline a framework, summarising our theoretical findings, from which we draw some research questions as a basis for launching a call for *service innovation research* within S-D logic.

Goods-dominant Logic

Innovation within goods-dominant logic can be analysed in terms of new product development (NPD) and new service development (NSD). In both of these research streams, innovation is seen as an output, creating a new good or a new service, whereas services themselves are benefit-enhancing additions for goods or a particular type of product distinguished by four dimensions: intangibility, heterogeneity, inseparability, and perishability (the so-called IHIP properties).

Innovation is an internal process for which a firm is the main actor (innovator) and, at the same time, the main beneficiary (seen mainly in terms of profitability and advantage over competitors) in its outcome. The locus of innovation (idea generation and development) is strictly inside the firm which protects its knowledge with an owner and secret approach. Trust and cooperation with external partners can be very scarce or ordered by contracts, with the syndrome of "Not Invented Here" arises and R&D employees seen as the main creative enablers.

New product development

The literature on new product development (NPD) is very extensive, and several aspects of innovation in manufacturing firms have been studied.

In the infancy debate (Schumpeter 1934), the conception of a new idea as the starting point in innovation had focused on the distinction between changes in things—product innovation—and changes in the way products are created and delivered—process and organisation innovation. This distinction had been widely overlooked by the literature, which provides a far more blurred picture and begins to widen the definition of innovation to include products, technologies, processes, organisation, and market changes (Clark and Wheelwright, 1993; Nonaka and Takehuchi 1995). As Trott eloquently observes (1998 pag. 18): "It is common to associate product innovation with physical change, but many changes within firm innovation strategy involve very little physical change".

Most writers, including those above, clarify the use of the term "new" in the context of innovation. Here, evolutionary or incremental innovation referring to small changes and variations to existing products has been introduced in opposition to revolutionary or radical innovation, referring to totally new products, which is related to a new technological paradigm (Henderson and Clark 1990, Garcia and Calantone 2002).

A more general definition is suggested in order to encompass this distinction. Cooper (1988) describes a new product as satisfying new needs, wants, or desires, possessing outstanding performance in the satisfaction of such needs compared to any other product, and benefiting from an imaginative combination of technology, product, and communication. Pavitt (2004 p.88) also states: "Innovation processes involve the exploration and exploitation of opportunities for new or improved products, processes, or services, based either on an advance in technical practice ("know-how"), or change in market demand, or a combination of the two."

In line with this assumption, Tidd et al. (2001) speak about "positional innovation", which does not significantly refer to the composition or functionality of the product, but instead considers the meaning of the product in the eyes of the potential customer and/or the market segments selected as targets.

Alongside different ways to classify new products, the literature offers different drivers of new product development (Rothwell, 1992), which is outlined according to varying degrees of newness impact on management and its associated success factors (Ernst 2002). From their different perspectives, the technology-driven model and the market-driven model, respectively, see the market as a simple recipient of R&D breakthroughs (in the former case) or as the main source of the direction of R&D (in the latter case). While many authors have combined technology and market perspectives in their development of theoretical models of innovation (Henderson and Clark 1990, Tushman and Anderson 1997, Chandy and Tellis 1998), others have focused their attempts to explain, as strong market orientation has a significant and positive impact on the performance of new products (Cooper 1994, Li and Calantone 1998). The importance of uncovering and satisfying the needs of the customer in order to create new value is an important role that is played by marketing (Von Hippel 1988), and these activities feed into new product development processes. The customer becomes the main focus of the innovation process, and the understanding of customer the

foundations of successful innovation. As Hauser, Tellis, and Griffin (2006 page 687-688) point out, the research in market-oriented innovation is intrinsically customer and competitor focused, and thus is well situated to study how a firm might better guide innovation in order to meet its profitability goal successfully.

With regard to success factors, other studies have identified traditional drivers of innovation as those controlled by the firm, and therefore as those in the hands of management and situational or environmental variables, which are more difficult if not impossible to influence (Cooper and Kleinschmidt 1987). Cooper and Kleinschmidt's (1995) five dimensions (process, organisation, strategy, culture, and commitment) provide a more well-defined framework that covers the innovation factors within the firm.

Much of the recent literature on success in NPD agrees in considering success (and therefore failure) as a function of the management process (Cooper and Kleinschmidt 2000). Innovation and product development are a strongly firm-focused matter, managed according to an inside-out perspective (Mele, Russo Spena, Colurcio 2008). In this view, the crucial decisions that management must make in order to produce successful outcomes include choosing the right projects to develop and managing and organising innovation activities in the right way (Tidd et al. 2001, Trott 1998). These studies emphasise the organisational and managerial view, which is the means by which a firm attempts to cope with competition and the overall business environment (Cooper and Kleinschmidt 1987; Cooper 1999).

A lot of operative models and tools (QFD, funnel, gate-stage, etc.) have been developed to support management's decision-making and practical activities (Griffin 1997, Hauser and Clausing 1988).

New service development

Since the first studies on new services, researchers have argued with goods innovation. While new product development has been outlined as a well-organised and managed activity, one studied and supported by a large array of research, "the development of new services has been seen as an ad-hoc happening" (Schilling and Werr, 2009 p.7). Innovation in services is a complex question (Tidd and Hull 2003) due to the multifaceted nature of the services. A number of studies have examined the

similarities and differences between NPD and NSD (Dreyer 2004; Tether 2005; Njessen and Hillebrand, Salter and Tether 2006). Three main research streams can be discerned: (i) assimilation; ii) distinction; iii) synthesis.

Assimilation. Services had long been perceived as non-innovative or as simple adopters of existing technologies (especially ICT) rather than as producers of new ones (Gallouj and Weinstein 1997). In 1986, Barras proposed a model, "the reverse product life cycle", which was seen as a breakthrough among theories of NSD, proposing a different pattern for NSD: innovations in financial services were seen as process-driven and not product-driven, as in NPD. However, Barras' ideas have been criticised because in financial services the precise distinction between product and process is questionable and, in many cases, the process is often the product (Pavitt 1984). The subsequent studies of Miozzo and Soete (2001) and Evangelista (2000) assimilated services into innovation research by adopting Pavitt's (1984) supplier-dominated framework; however, the focus of these studies was on the development of new technologies rather than on other types of innovation.

Distinction. Arguing for crucial differences between goods and services, namely, service characteristics such as intangibility, heterogeneity, inseparability, and perishability, this line of research has emphasised the distinctiveness of services (as opposed to goods) and thus tends to focus on the roles of *organisations* and *people* in NSD rather than the role of technology (Gallouj and Weinstein 1997; Sundbo 1997; Den Hertog 2000; Njessen et al. 2006).

Research on service innovation has grown "with a change in the view of service" from being non-innovative to being potential and specific (Schilling and Werr, 2009, p.7). A number of studies have analysed the level, nature, and types of service innovation (Sundbo 1997; Johne and Storey 1998; de Brentani 2001; Dreyer 2004; van Riel 2005; Oke 2007; Smith et al.2007). In particular, Den Horteg and Bilderbeek (1999) identified four dimensions of service innovation: (i) new service concept; (ii) new client interface; (iii) new service delivery system; and (iv) technological options. According to these authors, any service innovation involves a combination of these four dimensions. Other works on innovation in services have focused on KIBs (Den Hertog 2000; Den Horteg and Bilderbeek 2000) in which innovations tend to be open, networked, and developed in close connection with clients.

More recently, Toivonen and Tuominen (2006) noted that the common classification of innovations into product, process, and organisational categories is difficult to apply to services because new products and processes are so closely interlinked. This tendency was confirmed by a survey by Innobarometer (2002) and a study by Salter and Tether (2006), both of which found that manufacturing firms claimed to be oriented toward new products or processes, focusing on R&D and production efficiency, whereas service firms were more likely to claim an orientation towards organisational change, emphasising the 'soft' side of innovation (social technology, staff qualifications, and cooperative practices within the supply chain).

Synthesis. The research stream that seeks a synthesis of NPD and NSD emphasises a convergence between goods and services in production and consumption (Van Riel 2005; Njessen et al. 2006; Smith et al. 2007; Oke 2007). According to this view, both service innovation and product innovation encompass technological innovation and non-technological innovation (such as organisational and relational change). Moreover, it is contended that the key success factors in innovation—including strategic focus, resource commitment, and management support—are similar for services and manufacturing (de Brentani 1995; Griffith 1997). This claim is linked to the change in industry boundaries and the emergence of network-based competition, arguing for new concepts and models that transcend the distinction between the 'manufacturing' and 'services' sectors.

Recently, authors have called for the unification of manufacturing and service strategies based on the "overarching" qualities of services. The term 'servicisation' (Andersen et al. 2000; Howells 2001) has been coined to describe the transition of manufacturers from an exclusively product-oriented business model to a more service-oriented model.

Other authors speak about a "service infusion" to describe the enrichment of manufacturing by services (Gebauer et al. 2008). Although this research stream argues for a synthesis of goods and services and proposes interesting insights, the logic underpinning innovation has not completely changed, remaining goods-dominant: firms and researchers consider the innovation process in terms of value-adding activities and see the innovative outcome as a means of delivery value (for a consumer), whereas the firm is still the main innovator, able to manage external inputs and set up processes.

Cognitive-relational approach

The way that we think about innovation has changed over the past 20 years. Most authors share the view that innovation is primarily concerned with knowledge (Nonaka, Takeuchi, 1995; Leonard Barton, 1995; Cohen and Levinthal 1990) and relationships (Von Hippel, 1988; Chesbrough and Teece, 1996; Castaldo and Verona, 1998), and that these two are the core factors for any successful attempt at innovation (Nahapiet and Ghoshal 1998; Castaldo and Verona, 1998; Colurcio and Russo Spena, 2008). Such an approach to innovation originates from the more complex and competitive business context of the 1980s and focuses on problems connected to knowledge creation and management as sources of competitive advantage (Nonaka, Takeuchi, 1995; Probst, Büchel, Raub, 1998; von Krogh, Ichijo, Nonaka, 2000). Moreover, the knowledge-based view of innovation, drawing on von Hippel's early insights (1978), emphasises the collaborative feature of the innovation processes (Nootebboom, 1999; Jurado et al. 2008; Chesbrough, 2006). As Valdani (2003, p.) remarked:

> "Hypercompetition has made clear the need to pass from the evolution stage to the co-evolution stage where competencies and knowledge are shared with partners that the firm chooses in order to gain its own aims in a win - win perspective of all economics players. So the cognitive approach not only identifies firm-specific variables to develop new products but it also allows to investigate the systemic network which nurtures innovation processes".

A lot of contributions in this sense originate from the knowledge management (KM) research stream. As Lancioni and Chandran (2009) observed, KM is indeed an innovation enabler (see Table 1) for which innovation is meant both in a global sense and, more specifically, as the capacity of the firm to create, combine, and diffuse knowledge (Nonaka and Takeuchi, 1995; Colurcio, 2009).

Table - Reasons for which KM is important for firms

1	Availability of increased knowledge content in the development and provision of products and services to industrial marketing managers at all levels of the firm
2	Achievement of shorter new-product development cycles
3	Facilitation and management of organisational innovation and learning
4	Leverage the expertise of persons across the organisation.
5	Increase the network connectivity between employees and external groups with the objective of improving the information flow.
6	Manage the proliferation of data and information in complex business environments and allow employees to access appropriate information sources.
7	Manage intellectual capital and intellectual assets in the workforce (such as the expertise and know-how possessed by individuals).

Source: Our elaboration on Lancioni, Chandran, 2009

The two concepts of cognitive and relational innovation are intimately related and are sometimes discussed as one concept in the literature. We chose to analyse the main contributions of the literature separately as well for the sake of simplicity, as our goal was to stress a difference between the two dimensions of innovations. Cognitive innovation concerns mainly the content of innovation (NPD) and the passage from embedded knowledge to embodied knowledge (Madhavan Grover, 1998); it focuses mainly on internal networks (new product development teams, research and development groups, etc.). On the other hand, research and studies on relational innovation mainly emphasise inter-organisational networks and collaborations with external players.

Cognitive innovation

Studies that emphasise the cognitive dimensions of innovation focused mainly on two topics: i) the cognitive processes of acquiring, developing and utilising knowledge flow during different NPD activities; ii) the creation of exceptional value for the customer through the incorporation of knowledge into products, services, and delivery.

According to the cognitive perspective, product innovation is the essence of the enterprise's ability to generate and transform knowledge, incorporating it into new products and services that generate customer value (Warglien, 1990, Nonaka and Takeuchi 1995). According to Killon, Lee, and Matheson (2005), product innovation is a multidimensional recombination of knowledge, taking shape in the assignment of major value to the customer (value innovation). Value innovation is not just disruptive innovation (Anderson and Markides 2007); it can arise from an incremental continuum that enterprises pursue in order to quickly and efficiently satisfy their own customers (Castaldo and Verona, 1998; Mele and Colurcio, 2006). The enterprise's ability to produce and transform knowledge and then to innovate is the result of cultural factors, such as organisational routine (Warglien 1990), and the modalities of specific resources' and competencies' employed inside a single enterprise (Nonaka and Takeuchi 1995; Leonard Barton, 1995). Such ability has become more complex today: the undoubtedly hard technological component has added some soft variables associated with management systems, value systems, and the enterprise's knowledge and cultural patrimony (Kim and Maugorgne, 1999; Prahalad and Ramaswamy, 2004). Innovation

management requires enterprises to master mechanisms and tools suitable for creating, fostering and diffusing knowledge that generates customer value. Firms aimed at deploying successful NPD processes cannot leave aside from managerial approaches that are based on customer satisfaction, continuous improvement, and knowledge sharing.

In particularly, many authors (Leonard–Barton, 1992; Trott, 1998; Tidd et al. 2001) emphasise that innovations occur as a result of the interaction of three basic components: 1) organisational capabilities, which include managerial systems, values, and norms; 2) market competencies, which capture the firm's ability to understand and exploit its marketplace; and 3) science-technology competencies derived from in-house R&D activities. From the customer perspective, innovation is referred to as a superior product advantage for customers (O'Connor and Veryzer, 2001) fostered by the learning capabilities used by a firm to transform and exploit its knowledge base.

In cognitive studies, the development of innovation rests on processes occurring primarily within the firm. This concept acknowledges that internal capacities are a key element of a firm's innovation development and highlights their dynamic, cumulative nature. As in the March and Simon studies (1958), many researchers have pointed out that, given the path-dependent nature of the innovation process, knowledge and firm competence tend to evolve incrementally, favouring known technological paths and already guarded markets.

Relational innovation

In the context in which knowledge and competencies become the real source of competitive advantage, the interaction of many players and the institution assumes a crucial role in developing the dynamic knowledge stock of firms. A large number of contributions have been established regarding relational innovation, beginning with the early work of von Hippel (1978). Referring to Castaldo and Verona's (1998) study and integrating it with other recent research, we identified some streams of research that focus on different players/contexts of the network (see Table 2).

The relational dimension of innovation is characterised by two main aspects: first, relationships are integrated along the supply chain and network for the purpose of

optimising operational processes, and then the role of external sources is stressed during the generation and development stage of NPD (Nooteboom 1999).

Table 2 - Main contribution to relational innovation.

Player/ Context	Main topics of analysis	Some relevant works
Suppliers	- Involvement of suppliers in NPD - Success of NP - Role of knowledge - Knowledge asymmetry	Von Hippel (1988); Gupta, Wilwmon (1990); Badaracco (1991); Leonard Barton (1992); Nonaka (1990); Walter (2003); Johnsen, Ford (2006)
Customers	- Involvement of customers in NPD - Success of NP - Role of Marketing - Customer Knowledge Creation Process - Value creation	Cooper, Kleinschmidt (1987); Colurcio; Mele (2005); Mele Colurcio (2006); Colurcio (2005); Campbell, Cooper (1999); Goffin, New (2001); Johnsen (2009); Belbaly, Benbya, Meissonier (2007)
Distributors	- Channel policies for NP - Collaboration for the launch of NP - Communication of innovation	Oakley (1996); Kang, Kim, Park (2007); Mauri (1990); Pellegrini, Bertozzi (1994)
Others (institutions, research centres, competitors)	- Technology supply - Design - Idea generation - Creativity - Absorptive capacity	Jurado et al. (2007); Stampacchia, Bifulco (2005); Russo Spena (2005); Moorman, Zaltman, Deshpandè (1992); Colurcio (2001)
Network	- Advantages of network organisation - Inter-firm linkages - Knowledge opportunities - Technology opportunities	Hakansson (1987; 1989); Ritter, Gemünden, 2003; Jurado (2007); Gummesson (2004); Nooteboom (2005)
Cognitive - relational network	- Resource generation - Resource integration - Trust - Knowledge	Castaldo, Verona (1998); Colurcio, Russo Spena (2008); Vicari (1991).

source: Adapted from Castaldo, Verona (1998)

As Jurado *et al.* point out (2008), the innovation process is reinforced when it is complemented by an interactive dimension, whereby firms forge relationships with other firms and with different actors in their environment. Network characteristics play an important role in learning, and their influence on organisational learning has been deepened by research both from a more market-specific perspective and from a technological perspective (Ahuja, 2000). From the relational perspective, the central challenge is to find a way in which firms learn to exploit their accumulated knowledge, and at the same time prevent existing knowledge and competencies from obstructing the creation of new ones. In other words, different types and sources of innovation must be integrated into a coherent entity that is finalised to accomplish a specific purpose. The overall innovation process may be thought of as a complex set of communication paths

through which knowledge is transferred; this path includes both internal and external linkages (Jurado *et al*., 2008).

Toward an integrated perspective

Interesting insights aimed toward a multifaceted approach also arise from studies on open innovation): "Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively" (Chesbrough, 2006). This study emphasises the role of internal and external networks in the development of innovation, but it focuses mainly on technology. Furthermore, Stampacchia and Bifulco (2005) have proposed a cognitive-relational framework for use in approaching innovation. In a similar vein, Colurcio and Russo Spena (2008) suggest a framework that highlights circular and close connections among resources, relational contexts, and innovation processes and emphasises that such elements are core factors in the process of value creation: they nurture and foster each other and exhibit synergistic forces. This contribution stresses the overtaking of dichotomic internal/external perspective and merges the two dimensions, considering the network as a whole (integrated network) (Castaldo and Verona, 1998.) and as playing the key role of intangible resources.

Service-Dominant Logic and Service Science

The cognitive-relational approach provides a crucial contribution to the understanding of innovative phenomenon. In addition, S-D logic recognises the role of the resource-based view and knowledge management in the development of a new business logic, positing operant resources (such as knowledge, skills, and competences) at the centre of firms' competitive capabilities. Moreover, its authors explicitly recall some important contributions from that research stream (Von Hippel, 2005, Prahald, Ramasway, 2004, Chesbrough, 2003; 2006) as background for and as a strategy to further develop S-D logic.

However, S-D logic goes beyond the cognitive-relational approach with the (implicit) aim of incorporating that approach into something wider and, at the same time, more theory-based for a new business paradigmatic logic (that it is not the aim or the status of the cognitive-relational approach).

First, the concept of innovation is based on the different meanings of the service: the process of applying competences for the benefit of another party (Vargo and Lusch, 2008). In this view, innovation is not an outcome; it is a process in itself concerning "finding more effective ways to participate in resource-integration/value-creation" in terms of the external focus—supporting others in their own value-creating activities—and it is also an internal application used for the efficient and effective integration and use of market-provided resources by customers, suppliers, and other stakeholders (Vargo, 2008).

Within S-D logic, Vargo (2008) points out that "the newness of innovation does not have to be technological, can be a new use "linked to different context, place or time" as "the value of innovation is determined by each beneficiary through integration of resources, context, and experience" (Vargo and Akaka, 2008). This innovation depends on the set of competences, "the firm can continually renew, create, integrate, and transform" (Lusch et al. 2007 p. 11). In other words, innovation is about discovering innovative ways of co-creating value and defining new value propositions, as service innovations are instrumental to value creation. In pursuit of such innovation, S-D logic views all participants in the value-creation process as dynamic operant resources; that is, they are collaborative partners who "should be viewed as the primary source of both organisational and national innovation" (Lusch, Vargo and Malter 2006, p. 271). Innovation is an "open and democratized process", as single firms do not possess "enough knowledge and sufficient human resources to create the innovations that are needed to compete globally" (Lusch, Vargo, Tanniru, 2009, p. 11)

In a similar vein, service science aims to study dynamic and adaptive networks of exchange, whereas service is concerned with the interaction among customers, suppliers, and other partners in value co-creation (IfM and IBM 2008). Service innovation is the aim of service systems seen as "resource facilitators and integrators, connecting internal and external service systems via value propositions" (Maglio and Spohrer, 2008, p.18). Within service science, service innovation is defined as "a combination of technology innovation, business model innovation, social-organisational innovation, and demand innovation with the objective to improve existing service systems (incremental innovation), create new value propositions (offerings), or create new service systems (radical innovation). (e.g. include e-commerce,. home medical test

kits, etc.)" (IfM and IBM 2008, p.17). The increase in the offerings' complexity and diversity offers vast opportunities for service innovations. "Service innovation can impact customer-provider interactions and improve the experience of finding, obtaining, installing, maintaining, upgrading, and disposing of products. Service innovation can enhance the capabilities of organisations to create value with stakeholders "(IfM and IBM 2008, p.17).

Innovation studies within S-D logic

Working on some recent contributes from S-D logic and service science, we can offer a systemic view of innovation not as an isolated happening, but as a continuous process with a favourable context and a group of subjects that are interrelated in a dense network (Vargo and Lusch, 2008). Innovation is characterised by the application of resources (knowledge, relational, physical, economic) through learning cycles that foster the development of core competences via relationships within a company and via networks of service systems.

Studies in this research stream tend to note the increasing blurring of manufacturing activities and service activities. As the report of IFM and IBM (2008, p. 6) observed, it is increasingly common to see "manufacturers of engineering products adopting service-oriented business models and health-care providers learning lessons from modern manufacturing operations".

By going beyond specific models, some authors affirm that there is no single pattern of innovation in services and no single pattern of innovation in manufacturing; rather, multiple patterns have emerged as goods and services are increasingly bundled into so-called 'solutions' (Sawney 2006). As Cova and Salle (2007, p. 141) write:

> "The new role of supplier is no longer a seller … but a consultant able to assist his customer…Therefore we are no longer speaking only about a combination of products and services to [address] the needs of the customer but also a consultancy and expertise implemented to redesign and reengineer the customer's process".

Solutions are therefore distinctive combinations of several elements that contribute to customer value. They are "the type of value proposition which best marries the evolution towards … more integration among the element which make up the offering" (Cova, Salle, 2008, p.272). These combinations of products and services thus include the knowledge, experience, and expertise required to create, deliver, maintain, and operate a high-value integrated solution throughout its life-cycle (Cova and Salle 2007).

From this perspective, innovation should be seen not simply as an output (new products or new goods) but as an input for customers' activities within their value creation process. It is a new solution (mix of integrated resources) that allows the actors "to respond to a complex system of sought benefits" (Borghini and Carù 2008, p. 267), with the aim of offering resources and a context for new experiences.

Mele (2009) offers a vision of service innovation as a value-creating innovation. Speaking of *value innovation* means to situate the innovative phenomenon not only on a strategic dimension, but also to consider it from a cognitive perspective that emphasises the link with the generation and the codification of individual and organisational knowledge on the basis of superior competences. Drawing on the S-D logic terminology of Vargo and Lusch (2008), value innovation is defined as "the development of new competencies or a new combination of existing competencies for the provision of new or increased benefits to one or more parties" (Mele 2009).

According to this understanding of value innovation, a firm that is engaged in innovation produces knowledge, absorbs it, and makes it available as *potential value* to customers, who then participate with their own competencies to realise this potential value through the process of value co-creation.

In this vein, Michel et al. (2008) stress the need to view innovation as an enhanced value proposition that improves or modifies the customer's value co-creation function. Its feature are built on the concepts of asset-sharing, information-sharing, work-sharing (actions), risk-sharing, and other types of sharing that can create value in customer-provider interactions (Grönroos 2008).

In summary, in S-D logic, innovation is no longer seen as an extraordinary event as in G-D, but is instead a process that is not simply linear but also systemic and based on complex interactions between actors, activities, and heterogeneous resources (as R-C already pointed out). In a recent study, Mele, Russo Spena, and Colurcio (2008) outline that innovation is not only a provider concern or a customer concern; rather, it is best understood as a *network* issue. In accordance with SD logic, this can be understood as the generation of value through the integration of resources by such actors as the customer, the supplier, and other stakeholders in a network of relationships in which any relationship can affect another. This changes the model of innovation from one wherein which the supplier is the innovator and the customer is the user (or perhaps the

stimulus) of innovation. The revised model includes a range of other stakeholders—all of whom are not merely sources of ideas or providers of goods and services, but are real *co-innovators*. The innovation process is thus developed through continuous interaction among a range of stakeholders who integrate their resources to co-create *stakeholder value*—that is, value for each of the actors in the innovation network.

Consistent with Gummesson (2008) and Gummesson and Polese (2009), Mele, Russo Spena and Colurcio (2008) point out that innovation emerges from the various contributions of the network's members through B2B, B2C/C2B, and C2C interactions in an integrated many-to-many context.

Summary: Alternative logic for service innovation

Drawing on the literature review, Table 3 provides a tentative schema of the differences between innovation in a GD logic paradigm and innovation in an SD logic paradigm. The table also includes the characteristics of the 'cognitive-relational approach' as a transitional view.

Table 3 – Innovation in G-D Logic, cognitive-relational approach, and S-D Logic.

	Goods dominant logic		Cognitive-relational innovation	*Innovation in S-D logic and SS*
	NPD	NSD	NPD/NSD	Convergence of NPD/NSD
Innovation driver	Market information/technology	Market information/technology	Knowledge, competences and relationships	Value in use and in context
Innovation outcome	New goods/processes	New services/processes	New offering	Solution/Experience Value innovation
Creator of Innovation	Firm	Firm	Firm (Key users/partners)	Network (Suppliers, Customers, Partners, etc.)
Process of innovation	To produce *new added value*	To produce *new added value*	Relationships with customers and suppliers to obtain knowledge in order to produce and *deliver superior value*	Co-involvement, co-production, and co-creation of *value innovation*
Role of firm	Innovator	Innovator	Innovator	Co-innovator and value co-creator
Role of customer	Recipient	Recipient	Source and recipient	Co-innovator and value co-creator
Role of network	Competitor	Competitor	Source	Value innovator and Creator
Main Beneficiary	Firm	Firm	Firm and Customer	Each stakeholder
Locus	Inside the firm	Inside the firm	From outside to inside	Open-ended
Creative	Employees (R&D)	Employees (Front	Idea generation: internal or	Wherever in the

potential		–line)	external to the firm Development: internal to the firm	open network

As shown in Table 3, a firm acting under GD logic is the main innovator to produce new goods and services that provide the recipient with added value, as derived from exploiting *market information and technology*.

The 'cognitive-relational approach' provides a different perspective on innovation in which the drivers of the process are *knowledge*, *competencies*, and *relationships*. The firm remains the main innovator, with the key users and partners acting as sources of the *knowledge* that is used to produce superior value for the recipients.

In the next column, the application of SD logic indicates that the focus is moved to *value innovation*—that is, innovation creating value in use and in context. This is an 'open' innovation process in which all actors in the network can mobilise their resources to become *co-innovators and co-producers of value*. Such value innovation creates value for each of the actors and co-creates value for the others.

Framing innovation from these perspectives moves the locus of innovation from 'products and services' to 'services' and 'value'. It enhances the concept of service and transforms the current understanding of value—from an understanding based on units of output to a conception based on processes that integrate resources (Vargo, Lusch., 2008).

A new innovationscape: a call for service innovation research

The emergence of new concepts and theoretical findings needs a work of systemisation and calls for other theoretical and empirical research. The aim is to understand how to frame and manage innovation processes from a service perspective in terms of resource integration and value creation processes. From this perspective, finding new opportunities for innovation and value creation is a process of managing knowledge and networks of relationships (involving customers, employees, and a climate for innovation).

Some authors, like Vargo (2008), Lusch, Vargo, Tanniru (2009) and Schilling, Werr (2009), call for the development of further research to fill the knowledge gaps regarding service innovation. We draw from these studies and add some other points illustrating that carrying out further research seems worthwhile:

- understanding the dynamics of the service innovation process;
- developing models of service innovation;
- studying service innovation in networks;
- framing innovation as a resource integration process (interaction, resourcing, and innovation)
- innovation as a solution and as experience.
- understanding the way in which several stakeholders contribute to the development of service innovation;
- developing models for integrating new sources of value creation outside the firm (customers, community, competitors etc.).
- understanding collaboration among stakeholders in the pursuit of innovation (and value-creation) within the whole process (from idea generation to experience evaluation).
- reframing value networks
- rethinking traditional categories and classifications of innovation in order to identify different value-creation processes;
- understanding how organisations sense, respond, and learn.
- understanding the creativity process and how to foster creativity within the value network by several stakeholders.
- discovering new metrics of service innovation.
- developing models and tools suitable for service innovation.

A call for service innovation research can be launched to frame a new *innovationscape* wherein service is not simply an output but is instead a process designed to benefit the parties involved.

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