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Abstract: This paper aims to investigate the effects of service innovation in grocery retail considered as a service ecosystem (SES). The paper highlights the reactions and dynamics of service innovation focusing on value co-creation, on the combinatorial evolution of resources and on the influence of institutions. Service research is the theoretical framework, and a case study is proposed.

Findings regarding dematerialisation, partnership, customisation, and shared behaviour, are brought forth and interpreted in terms of value-in-exchange, value-in-use, value-in-experience, and value-in-context, to understand their potential to spread collaboration for value co-creation, in terms of positive and negative elements to understand the combinatorial evolution of resources that could be fostered, and as possible institutionalisation drivers. According to this perspective, path-finding, cognitive rigidity, emotional reactivity, and short-term attention may help practitioners and researchers frame significant situations and events and interpret the underlying dynamics and forces within the chosen SES.

Keywords: service innovation archetypes; grocery retail; institutional arrangements; value co-creation; Service ecosystems; combinatorial evolution.

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1 Introduction

In recent economies, innovation plays a vital role in the survival of organisations. The retail sector has witnessed numerous proposed innovative solutions, including virtual supermarkets, smart mirrors, and robot assistance. These advancements are driven by strong competition, rapid changes, shorter product life cycles, and profound technological transformations. Understanding the contextual changes brought about by trends like speed, granularity, and liquefaction is crucial for decision-makers seeking to innovate and ensure organisational viability (Carrubbo et al., 2017; Drăgoicea et al., 2020; Edvardsson et al., 2018).

While the introduction of new technologies has affected various industries, the banking and payments sector has experienced significant change and digitisation due to ICT progress and new tax regulations by governments. This transformation has, in turn, led to the adoption of new payment and sales recording methods in the retail sector (Stafford and Turan, 2011; Uyar et al., 2021). However, the effects of introducing new technologies into the grocery retailing sector, which operates as a 'service ecosystem' (SES), remain to be explored in-depth.

This study aims to investigate the effects of introducing new technologies specifically in the grocery retail SES. Grocery retail is chosen as the focus due to its unique characteristics and dynamics within the broader retail sector. The grocery store serves as a pivotal hub where consumers engage with a diverse array of products, creating an optimal environment to investigate how technological advancements shape service innovation, and value co-creation. The SES perspective considers the grocery retail SES as a self-contained system consisting of interdependent actors operating at micro, meso, and macro levels. These actors are connected by shared institutional logics, coordination mechanisms, and mutual value creation through service exchange (Kurnia et al., 2015; Fernie and Sparks, 2018; Vargo et al., 2015, 2017; Frow et al., 2014; Akaka and Vargo, 2015). By focusing on the grocery retail SES, we can gain insights that may differ from other types of businesses and contribute to addressing the existing research gap.

A SES perspective provides a theoretical framework useful for understanding resource integration between actors within that context (Badr et al., 2021), following the common and last purpose of survival (Sansone et al., 2018). The SES is a system in which interdependent actors interact and nest on different levels, which emerge based on a principle of shared intentionality that, through individual actions, allows the collective agency (Taillard et al., 2016). It is an emerging entity that 'is not' but emerges by the viable actors' interactions (Wallezký et al., 2021) which are sharing a common purpose and are exchanging resources for a viable value co-creation (Polese et al., 2017a). It is

based on Actor-for-Actor (A4A) relationships that involve value co-creation based on actors providing benefits to others with intentionality to obtain value and to generate positive effects for the whole emergent viable system in which they are contextualised (Polese et al., 2017b). This type of relationship implies that value co-creation takes place through the resource integration between actors. Heterogeneous actors interact for the benefit of the entire system, looking for their benefit from the benefit created for the system in which they live and act (Polese et al., 2017b).

The introduction of the new technology affects the value co-creation processes at all levels (Frow et al., 2016; Chandler and Lusch, 2015; Pinho et al., 2014; Edvardsson et al., 2011) and deserves to be explored in more detail, especially concerning the role of institutions and institutional arrangements in coordinating firm behaviour (Vargo et al., 2015; Vargo and Lusch, 2016).

Institutions within the context of SES are understood as emerging social practices (Taillard et al., 2016; Vargo and Akaka, 2012) that are more informal than specific laws (Siltaloppi et al., 2016), which serve to coordinate the actions of the actors involved in value co-creation processes (Edvardsson et al., 2014; Wieland et al., 2016; Koskela-Huotari and Vargo, 2016). Based on the above reflections the following research question was constructed:

RQ1: Are the effects of the introduction of a new technology in a grocery retail SES able to shape service innovation with insights in terms of value co-creation?

The new technology considered in this study is the new kind of cash-register that is now composed of the integration of a hardware and software system able to allow the data collection that is stored on a cloud platform. It was designed and produced by an Italian multinational holding company named Ditron Ltd. (Ditron), operating for more than twenty years in Europe, with solid leadership with over 60% of the retailing total market share in Italy.

The paper starts by defining the theoretical framework (par.2), based on Service Innovation (Witell et al., 2016; Lusch and Nambisan, 2015; Lee et al., 2014) and its insights in terms of value co-creation (Verma et al., 2012; Spohrer and Maglio, 2008), using the four main archetypes recently outlined (Helkkula et al., 2018). Next, case study research is presented (par.3); subsequently, a qualitative method for data collection and the SES approach to service innovation for finding analysis are used (par.4). Lastly, non-conclusive considerations and implications for value co-creation in the Retail SES have been explored (par.5).

2 Theoretical framework

2.1 Service innovation in a service ecosystem (SES) perspective

The term service innovation, in this paper, refers to service innovation grounded in the Service-Dominant logic field (S-D logic) (Vargo and Lusch, 2004, 2008). The service-dominant logic represents a theoretical proposal mainly related to marketing studies that highlights the change of perspective compared to traditional interpretative models, defined as Good-Dominant Logic (G-D logic), more focused on the importance of goods and characterised by the historical difference between goods and services. S-D logic is a mindset for a unified understanding of the purpose and nature of organisations, markets

and society that are fundamentally concerned with exchange of service intended as the applications of competences (knowledge and skills) for the benefit of a party.

In this field, service innovation acquires a central role, both as the basis for the creation of new businesses and as a tool for redefining the existing business models (Edvardsson and Tronvoll, 2019; Hysa et al., 2019). The literature on service innovation has flourished in recent years, making a substantial contribution to the coming together of previously fragmented literature (Hauser et al., 2006) and bridging contributions from a variety of theoretical and practical backgrounds (Vargo et al., 2015; Barrett et al., 2015; Mele et al., 2010).

The main conceptual grounds underlying service innovation have been highlighted by Coombs and Miles (2000), who distinguish between assimilation, demarcation, and synthesis view.

Assimilation and *demarcation* views share the perspective of a goods-dominant logic (traditional approach to innovation studies), highlighting the role of the individual firm in innovation processes, stressing the difference between product and process innovation, and focusing, from time to time, either on the service offerings or on the service activities (Droege et al., 2009; Ostrom et al., 2015). The *synthesis* (Coombs and Miles, 2000) refers to an integrated perspective, that allows a convergence between goods and service because it is not limited to technological innovations but focuses on new combinations of resources promoting a multidimensional nature of service innovation, based on networks and system (Corsaro et al., 2012; Geels, 2004).

Building on S-D logic, innovation is guided by the continuous search for co-creation of value among multiple actors within a SES (Polese et al., 2017a). A SES is a “relatively self-contained, self-adjusting system(s) of resource-integrating actors connected by shared institutional logics and mutual value creation through service exchange” (Lusch and Vargo, 2014, p.161) and provides a useful perspective for framing innovation: innovation does not take place in a linear sequence of actions with individual actors embedded in an integrated pathway of activities (Megaro et al., 2022), and is not the result of a dyadic perspective (Lusch and Namibisan, 2015), but it is achieved through a change of existing value propositions through institutionalisation, understood as maintenance, disintegration and change of institution (Vargo et al., 2015). Service innovation depends on a process of practical recombination of resources, in which the integrated value propositions are modified through a process integration of existing resources or new resources (Åkesson et al., 2016); it happens when new practices to pursue value co-creation emerge and allow the emergence of new value propositions (Fulco et al., 2021; Colurcio et al., 2017) and new SES (Kaartemo et al., 2018). As Koskela-Huotari et al. (2016) say, it does not arise when a new product is introduced into a market, but when its introduction determines new institutionalised practices and solutions to co-create value among actors. At that point, innovation occurs when new practices and solutions become institutionalised (Koskela-Huotari et al., 2016). The institutionalisation, that happens in a SES, becomes a central concept to explain innovation from a service perspective.

New institutionalised solutions, therefore, contribute continually to the exchange of service and the co-creation of value, considering all the actors as resource integrators (Vargo et al., 2020; Koskela-Huotari et al., 2016; Peters et al., 2014; Kleinaltenkamp et al., 2012). Therefore, service innovation is achieved through a fruitful combination of

technological elements, social relations, organisational adjustments, and commercial interactions (Barile et al., 2017; Edvardsson et al., 2011), based on a human-centered perspective (Yu and Sangiorgi, 2018).

Service innovation can be intended as an invitation to companies and customers to join forces in co-creating a new and attractive value for themselves and others (Ciasullo et al., 2016; Edvardsson and Tronvoll, 2019).

The service-oriented approach argues that innovation is the result of recombining existing resources (Lusch and Nambisan, 2015) together with the ability of the actors to use and integrate their resources to access additional resources through service-for-service exchange (Caridà et al., 2019), so the view adopted herein is *synthesis* (Coombs and Miles, 2000).

The synthesis perspective lays the foundations for understanding innovation according to Service-Dominant Logic because it provides an integrative framework that is not limited to technological innovations but emphasises the importance of defining a new combination of resources resulting in new and more viable solutions (Ciasullo et al., 2021).

From here, in order to address the research question, it is useful to describe the main four archetypes of service innovation because by integrating them it's possible to understand how novel value co-creation can be enhanced in service innovations (Helkkula et al., 2018): output-based archetype, process-based archetype; experiential archetype; systemic archetype.

The output-based and process-based archetypes of service innovation are based on the traditional assumptions that distinguish between product and process innovation.

According to the *output-based* archetype, service innovation is a measurable output defined in terms of new services associated to an output, an economic concept that gives benefits to its developers (Toivonen and Tuominen, 2009), acquired by customers through a predefined value in exchange (Grönroos and Voima, 2013)

Similarly, the *process-based* archetype assimilates service innovation to an activity (Toivonen and Tuominen, 2009), and assumes the customer participating throughout the process, rather than only at its end (Grönroos and Voima, 2013).

Drawing on the shifting from a G-D logic to the S-D logic, the nature of service innovation has shaped two additional emerging archetypes: experiential, inspired by service theory (Vargo et al., 2008; Polese et al., 2011; Edvardsson et al., 2011), and systemic, inspired by systems approaches (Vargo and Lusch, 2010; Vargo and Akaka, 2012; Lusch et al., 2016).

The *experiential* archetype derives from the idea that experience is something differently and subjectively perceived and understood by individuals. In this sense, service innovation has a different meaning according to the individual that experiences it. Each actor is subjectively engaged in service innovation, experiencing and co-creating value according to his experience, and service innovation is seen as the improvement in single customer's value experience (Rubalcaba et al., 2012; Helkkula et al., 2018).

The *systemic* archetype focuses on resource integration by actors in SES. This perspective focuses on the role of interactions between actors, aimed at co-creating value within a social context (Edvardsson et al., 2011). Each actor integrates available resources, co-creating value within a collective context. SES are embedded in these contexts and value in use is perceived as a value in context (Helkkula et al., 2018).

Hence, technological innovation emerges from the progression of valuable knowledge, both current and past, which becomes institutionalised. However, while

technological innovation leads to the creation of a fresh value proposition, market innovation leads to the establishment of a novel institutionalised solution (Mokyr, 2004; Vargo et al., 2015).

The SES approach to innovation can be investigated by discussing (Vargo et al., 2015):

- 1 Collaboration for value co-creation, because innovation is driven by collaborative efforts to find or develop new ways to create value.
- 2 The combinatorial evolution of resources, since technology is considered as an operating resource made up of dynamic resources, such as knowledge and skills, central to influencing the creation of value and, therefore, innovation. According to this perspective, innovation is driven by the implementation of institutionalised value co-creation practices and by the integration and application of operating resources, which however can be enabled and constrained by a multitude of higher-level social structures or institutions.
- 3 The influence of institutions in the innovation of both technology and markets. Innovation does not occur when a new technology, or a new solution, is proposed within a specific context, but when its introduction determines new ways of integrating institutionalised resources (Koskela-Huotari et al., 2016).

3 Ditron case-study: an overview of service innovation

The case study focuses on an Italian multinational holding, a national leader in the design and production of cash registers and scales, Ditron.

Ditron is an interesting case study as it is the undisputed leader in the retail market with a market share of over 50% in which it operates with continuous proposals for traditional point-of-sale automation solutions; in fact, it was among the first suppliers to review its value proposition when its customers were subject to the obligation to directly transmit fees to the Italian Revenue Agency, for all points of sale.

Due to its continuous attention to changes in the context, it is always looking for innovative solutions and is today one of the main players on the Italian market, distributing through more than 600 specialised retailers and exporting products and know-how to many European and non-European countries, with 18 foreign distributors and the 30% of their turnover from foreign markets.

Over the years, Ditron has maximised investments in R&D and, finally, following a new tax regulation, has proposed a new type of cash register, based on the application of software to hardware through which data can be collected and transmitted.

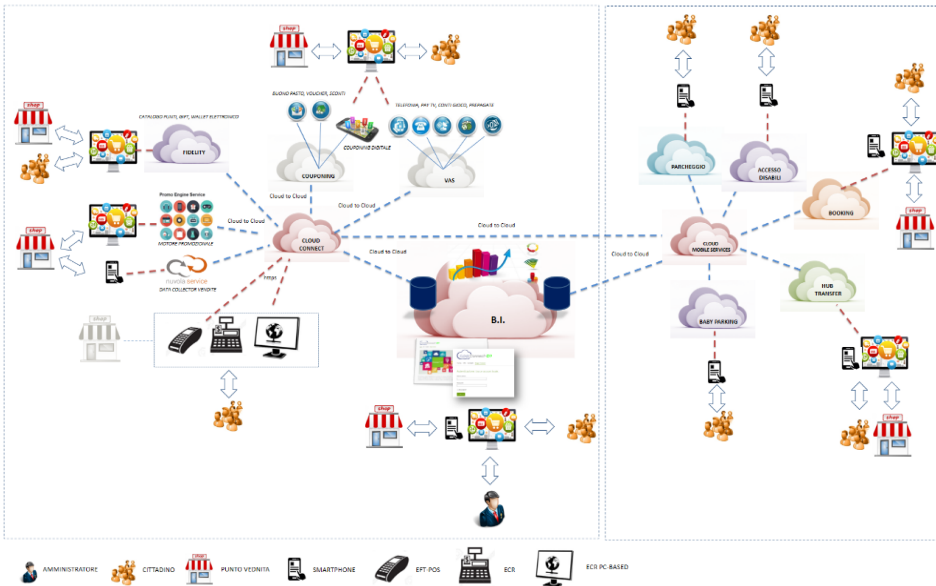
This new type of cash register appears particularly interesting in terms of problem solving and decision-making. New technology, in fact, acts as a tool capable of promoting early forecasts by collecting data (Figure 1). The data collected if systematically transformed into information, can represent strategic resources capable of simplifying problem-solving processes and improving decision-making considerations (Demirkan and Spohrer, 2015) favouring more punctual and functional decisions for the survival of companies.

Figure 1 A tool kit for a new smart cash-point proposed in the grocery retail SES (see online version for colours)



Source: www.ditron.com

Figure 2 The changes in grocery retail SES after the adoption of the new technology (see online version for colours)



Source: www.ditron.com

For service users, many new applicative solutions can arise, such as fidelity service, information-hub, discounts and grants, personal promotions, reservations management, data storing and interface, real-time support. For service providers, as well as, many are new possibilities allowed, like business Intelligence Service, advanced web-oriented terminal node, real-time monitoring of transactions, real-time assistance, promo engine, proximity management, as shown through the changes in grocery retail SES in Figure 2.

The study focused on the cash register which, as a product, does not differ from other POS systems, but has generated a series of effects in terms of service. Ditron immediately understood the service potential associated with the tool and revised its value proposition. The new technology has allowed Ditron to identify new players to interface with, new potentially integrable resources, and new possibilities to co-create value. This condition has generated new processes and therefore new institutions. For this reason, the service innovation approach with a SES perspective was considered useful for evaluating this action effects going beyond the boundaries of the company and sector.

The case study approach allows a better understanding of the phenomenon through a systematic evaluation that considers the actual experiences of individuals and the use of the theoretical framework to evaluate their evolution over time. To test what has been stated in the literature, the case study technique appears particularly useful in that, through empirical evidence, it allows to search for theoretical cues in the dynamic details of the context that also emerge through the interactions between the actors operating there (Stake, 1995; Baxter and Jack, 2008).

3.1 Data collection and analysis

The data collection took place by conducting 18 interviews with top management, characterised by the directors of the various company departments (R&D, marketing, production, administration), here considered key informants as experts of the phenomenon studied (Eisenhardt and Graebner, 2007).

The interviews were conducted with semi-structured questionnaires lasting approximately 1 h each, recorded and then transcribed directly by the authors. Through this type of conversation, some key inputs emerged that were considered relevant and strategic by the interviewees in their performance. The transcripts of the interviews were analysed through a content analysis (Drisko and Maschi, 2016). Based on the service innovation archetypes, used as dimensions to lead the analysis, the content analysis sketch has been designed which enabled the connection of each concept emerged to the theoretical framework used for the interview trace. The texts have been transcribed by two researchers and examined through a replacement process, based on the synthesis of deduction and induction. The dimensions investigated have been divided into keywords to allow the emergence of the topics from the text (deduction) and then, by analysing the data collected (induction), these topics have been further generalised (deduction) to get relevant sub-dimensions and insights.

3.2 Findings

The introduction of a new tax regulation, which required the traceability of payments to retailers, meant that Ditron reformulated its proposal on the market. This event generated the birth of a new SES characterised by old and new actors, new ways of relating, new logics of interaction, new resources to be integrated, and new co-creative practices.

According to the theoretical framework, considering the archetypes as research drivers, four main conceptual knots emerged.

3.2.1 Dematerialisation

Ditron intended itself as a seller of solutions rather than products. Even providing cash registers and scales, he designed a new business based on the integration of hardware and software systems towards cloud platforms, thus reducing dependence on physical materials and processes such as paper receipts and manual data entry. Through the application of software on cash registers, data collection activities were started. This represents a form of dematerialisation, as the company is reducing its use of physical resources and transitioning towards digital ones and it understood that the external context was being to change and was able to anticipate the re-organisation of its own specific business structure as well, maintaining itself viable over time.

Ditron recognised that in order to effectively navigate external complexities, a reconfiguration of both structure and function was required. Consequently, it undertook a redefinition of its market offering. Technology is useful as it favours a certain speed of response, which today the market requires. It cannot longer be managed only by entrepreneurial or managerial skills but must be supported by the application of new technologies, as decision support systems, and by the application of business intelligence logics on big data, which must be able to fully support the single actors, with objective data. Only the human being, due to the amount of information processed, cannot conduct the analysis. The case of Ditron shows how companies can leverage technological advances and dematerialisation principles to adapt to changing market demands and better manage complexity.

3.2.2 Partnership

After the introduction of the new technology, Ditron has established new partnerships within its industry, particularly with a meal vouchers company catering to specific categories of workers.

With the new technology, Ditron had the possibility of acquiring data, however the partnership with the meal vouchers company allowed it to transform this data into personal data (for certain categories of workers) and to generate a customer dataset, useful for the business intelligence service, advanced terminal node web-oriented, real-time monitoring of transactions, real-time assistance, promo engine and proximity management.

Not only that, but the data would have allowed retailers to obtain information also on the capacity of their own structure, on the most effective physical areas of the store and on the less visible or captivating ones, to acquire information on employee performance. All levers able to allow traders increasingly weighted decisions in terms of effectiveness, but also to improve the efficiency of their structure.

3.2.3 Customisation

With personal data, retailers can observe their purchasing behaviour, preferences, and design increasingly personalised offers based on the needs and preferences identified for each. According to Ditron, in fact, before now retailers only had a receipt value, now they

can acquire, share, and use useful information to improve their performance in the eyes of customers.

The possible processing of such data would allow retailers to adapt their value proposition to the needs of specific consumers by offering them a personalised proposition and evaluate their loyalty (Gambarov et al., 2017). Retailers were therefore able to make decisions regarding the value proposal, addressed to each customer, based on useful information gathered from the data, establishing with consumers' direct relationship focused on their emotions and their shopping experience.

3.2.4 *Shared behaviour*

The knowledge generated, enhanced, and disseminated through new information flows has propelled Ditron beyond its organisational boundaries. It has become part of a network of actors and resources, where the satisfaction, trust, and loyalty of consumers can only be attained by identifying strategic connections among the involved stakeholders.

Ditron examined the relational potential that arises in the store, even outside its physical walls. In redeveloping the cashpoint, not only did it answer to a regulatory imposition, but Ditron wanted to redevelop the entire shopping experience within the store, not only usable by the individual but also by a set of actors connected, in a win-win perspective. All players there operating have started to develop new ways of interacting and integrating resources, in a synergic action based on a shared behaviour. The new tax regulation has imposed on all the actors involved to re-elaborate their proposal regarding new regulatory requirements and duties, however favouring new ways of interaction between actors. This issue concerns shared behaviour because it highlights the need for collaboration and cooperation between the various actors involved in the shopping experience, including retailers, employees, and customers. To adapt to new regulations and continue to provide a satisfying shopping experience, these actors will need to collaborate more openly and flexibly, sharing information and resources to find new solutions and strategies. This may involve sharing best practices, exploring new technologies and finding innovative ways to meet customer needs while complying with regulatory requirements. The success of this shared behaviour will depend on the ability of all stakeholders to work together towards common goals and to build trust and cooperation in the face of new challenges.

Shared behaviour can be compared to that of a partnership, although the latter typically carries a more formal and structured connotation, characterised by explicit divisions of responsibilities and resources. In contrast, shared behaviour is informal and collaborative, involving multiple actors who work together in a fluid and adaptable manner.

4 Discussion

Nowadays, firms must operate with threats deriving from a complex context. They are forced to manage this complexity with new partnerships (Polese et al., 2018) and innovation, increasing operational efficiency, satisfaction, and gaining confidence over time (Barile et al., 2012). The development of ICTs is the main enabling factor in this field (Breibach and Maglio, 2016).

Moreover, Retail is now IT-based, capable of self-reconfiguration to be able always of satisfying all relevant actors over time (Barile and Polese, 2010). Actors due to their shared purposes are motivated and willing to develop harmonious interactions with others for a ‘feasible’ exchange of services for the co-creation of value (Polese et al., 2017b; Frow et al., 2016; Chandler and Lusch, 2015; Pinho et al., 2014; Edvardsson et al., 2011).

Ditron, being inherently focused on go-to-market strategies, recognised the need to redefine its value proposition. In order to address the research question, the findings derived from the guided observation of this case study will now be interpreted using the SES innovation framework proposed by Vargo et al. (2015).

This framework emphasises three key aspects:

- 1 collaboration for value co-creation
- 2 the evolutionary combination of resources
- 3 the impact of institutions on innovation.

The following sections outline each of these approaches.

4.1 Collaboration for value co-creation

Innovation is driven by collaborative efforts to find or develop new ways to co-create value, bearing in mind that value is always determined by a beneficiary (Vargo et al., 2015). Perceptions of value are always driven by socially constructed systems of norms, values, and beliefs specific to a service recipient as a function of resource integration.

The service innovation archetypes can be used to highlight which kind of new value co-creation practices may be determined in the grocery retail SES. Linking findings with the theoretical framework, we can summarise the concepts in Table 1. The new technology, potentially smart (Maglio et al., 2018; Napoletano and Carrubbo, 2011), allows actors to use data and information to create real knowledge useful for enhancing the relationship with the customer and greater operational efficiency of the structures (Caputo et al., 2016). Using the new technological solution, the actors can review their interactions, generating new institutions, with effects within the SES observed as a whole.

Table 1 Archetypes and innovation insights in grocery retail SES

<i>Findings</i>	<i>Archetypes-Service Innovation</i>			
	<i>SES-Insights</i>	<i>Value insights</i>	<i>Innovation Insights</i>	
Dematerialisation	Effects on the <i>micro</i> -level of the SES, redefining the mere logic of exchange between actors, retraining the dyadic relationships between supplier and customer considering a new value proposition	The new value proposition is now focused on data. Ditron provides technology to resellers that allows them to acquire data from customers, with effects in terms of <i>value-in-exchange</i>	The outcome of innovation is the realisation of a new value proposition and new SES (Kartemo et al., 2018)	

Table 1 Archetypes and innovation insights in grocery retail SES (continued)

<i>Findings</i>	<i>Archetypes-Service Innovation</i>	<i>SES-Insights</i>	<i>Value insights</i>	<i>Innovation Insights</i>
Partnership	<i>Process-Based Archetype of Service Innovation</i>	Effects at the meso level of the SES: new players have begun to act on the market (e.g., software house). New specialist skills and professional figures are required (e.g., data analysts), new relationships have been sealed	Ditron has identified new players, with new specialist skills with which it has begun to relate. This change has involved changes in the process of creating the service and applying new ideas or existing ideas according to different methods, with potential effects in terms of <i>value-in-use</i>	The introduction of new technologies has generated new relationships. The existing value propositions have been modified through the integration of new and existing resources which have also led to a reconfiguration of resources integration methods
Customisation	<i>Experiential Archetype of Service Innovation.</i>	Effects at the <i>macro</i> level of the SES: the processed data lays the foundation for the definition of new information that can lead to a new kind of decision-making process. The collection of data and the possibility of generating, through new partnerships, a personalised proposal, determines an increasingly customer-based and customer-oriented approach	The new technology has allowed retailers to collect personal and real data about purchasing preferences and experiences, with effects in terms of <i>value-in-experience</i>	A new decision-making method, focused on consumers, goes beyond the concept of offering and product, and fosters a co-creative perspective
Shared behaviour	<i>Systemic Archetype of Service Innovation.</i>	Effects of <i>mega</i> level: the new technology imposes and requires a cultural change in the way of relating and interacting between interconnected actors. Each actor will have to reshape himself according to new institutions	The new technology imposes a change in the ways of integrating resources between actors operating within an ecosystem of services, focusing on the relevance of the exchange of knowledge and new resources necessary (such as ICT-based skills) to co-create value, with effects in terms of <i>value-in-context</i>	Only a cultural change may make new practices and solutions institutionalised. Institutionalisation is the process behind innovation (Toivonen and Kijima, 2018)

4.2 Combinatorial evolution of resources

The described case study expressed several significant elements that deserve to be interpreted. Innovation in service soon stimulates both positive and negative effects in approaching and (later) using the innovative solutions diffused. Hereafter, deep reflections from the two opposite perceptions have been outlined (Table 2), through the same four concept knots emerged before, due that the *richness* of innovative processes includes negative aspects too, making the introduction of a new solution as a ‘combinatorial’ (Vargo et al., 2015) issue to deal with. The introduction of a new tax regulation, which required the traceability of payments to retailers, has meant that Ditron, one of the leading suppliers of cash registers and scales in Italy, has felt the need to reformulate its own proposal to the market. Ditron is always looking for innovative ideas to always align itself with contextual change. This event has generated the emergence of a new SES characterised by new and old actors, new ways of relating, new logics of interaction, new resources to integrate and new co-creative practices. However, in this path, lots have been the frictions tackling and getting in the way the adoption of new cash registers by dealers and other users, due to several aspects (disturbances, delays, rejections, oppositions, confusions, misunderstandings, incompatibilities, etc.) that deserve to be investigated/highlighted as well. Ditron company, during the emergence of the new SES itself, faced with obstacles for resource integration, value co-creation, arising of novel institutional arrangements.

Table 2 Richness in the combinatorial evolution of resources for innovation

	<i>Positive elements</i>	<i>Negative elements</i>
Dematerialisation	Ditron proposed a revision of the knowledge domain in Retail SES and the definition of new routines. To reduce complexity and to generate innovation, companies must be able to valorise and share knowledge, which today means first to collect data, detect information flows, and then convey them to people who can make that that knowledge as a value for the company (Widyaningsih et al., 2017). This can often mean going outside the company boundaries. In this way, the new cash register an information for more informed decisions, with effects in terms of fidelity service, information-hub, discounts and grants, personal promotions, reservations management, data storing and interface, engagement, real time support	The new technology is based on software that had to interface with existing modules to allow correct communication. However, training for new specific operations to be performed for operators could be expensive and reactive slowly and could lead to a bad reorganisation/reconfiguration of the internal processes of some actors involved, increasing the surrounding complexity in the introductory phase (before success) a lot of difficult to interpret and manage. The very concept of the cloud platform is well known today, but the habits of using it as a daily practice in Retail are now far from being effective. Finally, this new value proposition needs several complements to be set up, which require the active participation of users (at all levels) which is not easy or obvious to observe; the involvement of the actors is often not in the initial moments and people are not always ready to accept a radical innovation, only for the radicalism itself

Table 2 Richness in the combinatorial evolution of resources for innovation (continued)

	<i>Positive elements</i>	<i>Negative elements</i>
Partnership	<p>Ditron has been able to collaborate with new companies and develop partnerships by introducing new technologies that have improved its performance with customers. Indeed, because of new partnerships, Ditron has started to carry out customised data collection activities that enable retailers to tailor their proposition to the needs of specific and known consumers and to propose to them an increasingly personalised offer</p>	<p>Not always the effects of such a compulsion (as in the case of tax law reformulation) is good for positive cooperation between actors. Data selling is a great business today, but in Retail SES (from cash-registers in the cloud) is not already and the effects of partnerships and collaborations on assistance, monitoring and promo service could be appreciated not so quickly, also because of context-dependent considerations. Paradoxically, the Ditron's partner was the first 'resistant' player to use strategically the new options origin from the data collection activities and consequent personal offers (due to the clients' privacy and ethics concerns). In the same way, the choice of such technological partners (like CashMatic, DataLogic, Toshiba, Ingenico Group) makes same frictions and misunderstandings with other suppliers of Ditron not yet included in the launch of the new product, affecting/inhibiting future together plans and politics too, since the maintenance, disruption, and change of rules, norms, meanings, symbols sometimes constrain resource integration and value co-creation practices</p>
Customisation	<p>The collected detailed information of consumers can make retailers able to observe customers' buying behaviour and to design increasingly personalised offers based on the needs and preferences of individual consumers. The cash register, through the collection and processing of data, would thus have made it possible to establish a direct relationship with customers and focus on their emotions</p>	<p>The good use of new solutions is not immediate, that happened in this case, where returns of these big investments of Ditron (and his partners) are not yet available and cognizable right now, because of the so recent introduction; without checks or significant feedback we cannot confirm the positive application of this innovation in anyways; this uncertainty led managers/marketers far to be sure how they can continue in pushing it. Considering this kind of barriers, as well as the change management unsolved insights, the success of the innovation decelerates, due to the troubles in the ongoing alignment processes through which institutional arrangements across actors are reconciled, nevertheless decisions are now faster, more consistent, accurate and pertinent than before</p>

Table 2 Richness in the combinatorial evolution of resources for innovation (continued)

	<i>Positive elements</i>	<i>Negative elements</i>
Shared behaviour	The new tax legislation (recently prompted by Government) has led to a top-down influence: all the involved actors had to redevelop their proposal regarding to new regulatory requirements and duties (regulate - push effect). The redefinition of each proposal could generate bottom-up backlashes: new ways of interaction between actors can generated new rules for co-creative practices and therefore a tacitly shared behaviour (Magni et al., 2020) (generate - pull effect)	Being part of the same SES, in which the effects of each behaviour can influence and condition other actors' mode in actions and preferences, new institutions had difficulty to arise effectively due to the 'contention' in their enactment of resource integration practices; for example, a great number of dealers refused to test the new solution in the experimental step of the relative innovative process before the introduction, hindering the first empirical evaluations; some other agents and brokers get so confused and not prepared to facilitate and enable this phase transition (i.e., a sort of problem for new contracts and agreements), showing less flexibility they should be characterised by, obstructing the general practical acceptance at the beginning

4.3 Influence of institutions

As observed earlier, the process of value co-creation facilitated by resource integration and service exchange among multiple actors can be hindered by differing perspectives on the value held by these actors. This divergence of views can potentially hinder institutionalisation, which refers to the maintenance, disruption and modification of resource integration practices that enable innovation.

The SES perspective allows the identification of the social forces that govern actions and interactions between companies, customers, and other actors, who collaboratively contribute to value co-creation, and guide the development and use of new technologies. A critical factor in innovation is therefore the value-in-context.

The concept of 'shared behaviour' is based on the premise that all actors within a SES, operating at different levels within the ecosystem, integrate resources to pursue the overarching aim of the SES, which is the well-being embedded in the purpose and nature of the SES (Beirão et al., 2017).

In light of this, following the introduction of new tax legislation, all actors involved in the relevant SES were required to adapt their offerings to comply with the new regulatory requirements and responsibilities. Under the assumption that these actors are connected in a rational manner and oriented towards value co-creation (Vargo and Lusch, 2016), this situation has led to the emergence of new modes of interaction among the actors. Consequently, new rules for co-creative practices (institutionalisation) have been established, albeit at different paces, as a response to the changed circumstances.

5 Non-conclusive considerations

We can answer the **R.Q.** affirmatively: new technology in the grocery retail SES can be able to shape service innovation with insights in terms of value co-creation. However, service innovation occurs when the adoption of new technology becomes institutionalised within an ecosystem. By way of agreeing to the use of a new solution, every actor contributes to the acceptance of that value proposition.

This is allowed by the convergence of actors' choices, strong beliefs, behaviour rules, institutions, aims. Institutional arrangements play a key role in the adoption of a new solution and innovation diffusion depends on the wide and extended acceptance. The predispositions and the structural compatibilities favour the right resource integration for mutual benefit. As seen before, by answering the proposed research question, at different SES levels we can find the following elements:

- At the micro-level (output-based), to foster the acceptance of a new product a re-thinking is needed; in this case, understanding that solutions are sold and not products help to understand new performances, new opportunities for mutual benefit.
- At the meso-level (process-based), the use of a new solution can be allowed by the new specialised skills developed after the innovation diffusion through new partnerships.
- At the macro-level (experience-based), more information, more collaborations, more resource shared, all enriching the data-driven decisions, help in knowing and acquiring needed elements for a positive perception of the innovation adoption.
- At the mega-level (context-based), a fresh cultural convergence and the emergence of new institutions due to the shared behaviour, express what is going on when an innovation effectively take place in SES from the holistic and system point of view.

The Ditron case study demonstrates how difficult it is to foster the introduction of new products in markets, how many influences and contingencies exist in the grocery retail SES.

When new rules become routines, everyone can actively participate in the co-creation of value (such as those found with the above archetypes). Being aware of this mechanism helps managers to make good use of innovation and scholars to effectively use instruments and models for analysis that are linking phenomena to interpretation.

5.1 Implications for value co-creation in the retail SES

The ideas presented in the Ditron case study have several limitations and consequences.

First and foremost, training operators can incur significant costs and may take a considerable amount of time to yield results. Additionally, the exchange of knowledge, particularly in managing relationships, enhancing end-user satisfaction, fostering trust and loyalty, and creating positive personal perceptions, can be slow and inefficient.

Furthermore, the implementation of the new value proposition necessitates the establishment of various supporting elements, which in turn requires active engagement from users at all levels. However, achieving this level of user engagement is neither simple nor straightforward to accomplish. Although data selling is a booming industry today, Retail SES (from cash registers in the cloud) is not yet there, and due of context-

dependent factors, the impacts of partnerships and collaborations on support, monitoring, and promotional service may not be immediately apparent.

Retailers, according to the respondents, have suppressed resistance and innovation. Retailers resisted because of age-related reasons and resulting weak technological abilities, which created further challenges in fully digitising the business and had an impact on relationships with customers. Last but not least, they opposed innovation because of concern that abandoning “the old method for a new approach” may lead to uncertainty and a higher likelihood of errors.

The case study findings show that merchants have embraced the new technology suggested by Ditron only for the purpose of maintaining their brand recognition. This cash machine is even more costly than alternatives suggested by rivals. They are now utilising this technology, but not to its full potential. The process of gathering data from the sales point has begun. From a static perspective, the conditions for innovation have been created; the introduction of the new technology in this type of market has resulted in the emergence of new relationships and resources at stake, but from a system perspective, new co-creative processes have not yet been fully implemented, and in terms of SES, new institutions have struggled to emerge effectively. According to this perspective, routing seeking, cognitive rigidity, emotional reactivity, and short-term focus may be factors that aid practitioners, researchers, and observers in framing significant situations and events and interpreting dynamics and underlying forces within the chosen SES.

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References

- Akaka, M.A. and Vargo, S.L. (2015) ‘Extending the context of service: from encounters to ecosystems’, *Journal of Services Marketing*, Vol. 29, Nos. 6–7, pp.453–462.
- Åkesson, M., Skålén, P., Edvardsson, B. and Stålhammar, A. (2016) ‘Value proposition test-driving for service innovation: how frontline employees innovate value propositions’, *Journal of Service Theory and Practice*, Vol. 26, No. 3, pp.338–362.
- Badr, N.G., Carrubbo, L. and Ruberto, M. (2021) ‘Responding to COVID-19: insight into capability re-configuration of healthcare service ecosystems? the use case of hospitalization at home’, *Journal of Strategic Innovation and Sustainability*, Vol. 16, No. 2, pp.119–130.
- Barile, S. and Polese, F. (2010) ‘Smart service systems and viable service systems: applying systems theory to service science’, *Service Science*, Vol. 2, Nos. 1–2, pp.21–40.

- Barile, S., Polese, F. and Saviano, M. (2012) *Immaginare l' Innovazione (Imaging Innovation)*. Giappichelli Editore, ToriNo.
- Barile, S., Polese, F., Saviano, M. and Carrubbo, L. (2017) 'Service innovation in translational medicine', in Russo Spena, T., Mele, C. and Nuutinen, M. (Eds.): *Innovation in Practices, Perspectives and Experiences*, Springer, Switzerland, pp.417–438.
- Barrett, M., Davidson, E., Prabhu, J. and Vargo, S.L. (2015) 'Service innovation in the digital age: key contributions and future directions', *MIS Quarterly*, Vol. 39, No. 1, pp.135–154.
- Baxter, P. and Jack, S. (2008) 'Qualitative case study methodology: study design and implementation for novice researchers', *The Qualitative Report*, Vol. 13, No. 4, pp.544–559.
- Beirão, G., Patrício, L. and Fisk, R.P. (2017) 'Value cocreation in service ecosystems: investigating health care at the micro, meso, and macro levels', *Journal of Service Management*, Vol. 28, No. 2, pp.227–249.
- Breidbach, C.F. and Maglio, P.P. (2016) 'Technology-enabled value co-creation: an empirical analysis of actors, resources, and practices', *Industrial Marketing Management*, Vol. 56, pp.73–85.
- Caputo, F., Giudice, M.D., Evangelista, F. and Russo, G. (2016) 'Corporate disclosure and intellectual capital: the light side of information asymmetry', *International Journal of Managerial and Financial Accounting*, Vol. 8, No. 1, pp.75–96.
- Caridà, A., Edvardsson, B. and Colurcio, M. (2019) 'Conceptualizing resource integration as an embedded process: matching, resourcing and valuing', *Marketing Theory*, Vol. 19, No. 1, pp.65–84.
- Carrubbo, L., Iandolo, F., Pitardi, V. and Calabrese, M. (2017) 'The viable decision maker for CAS survival: how to change and adapt through fitting process', *Journal of Service Theory and Practice*, Vol. 27, No. 5, pp.1106–1023.
- Chandler, J.D. and Lusch, R.F. (2015) 'Service systems: a broadened framework and research agenda on value propositions, engagement, and service experience', *Journal of Service Research*, Vol. 18, No. 1, pp.6–22.
- Ciasullo, M.V., Polese, F., Montera, R. and Carrubbo, L. (2021) 'A digital servitization framework for viable manufacturing companies', *Journal of Business and Industrial Marketing*, Vol. 36, No. 13, pp.142–160.
- Ciasullo, M.V., Polese, F., Troisi, O. and Carrubbo, L. (2016) 'How service innovation contributes to co-create value in service networks', *International Conference on Exploring Services Science*, May, Springer, Cham, pp.170–183.
- Colurcio, M., Caridà, A. and Edvardsson, B. (2017) 'Conceptualizing resource integration to advance service innovation', *Innovating in Practice*, Springer, Cham, pp.237–259.
- Coombs, R. and Miles, I. (2000) 'Innovation, measurement and services: the new problematique', *Innovation Systems in the Service Economy*, Springer, Boston, MA, pp.85–103.
- Corsaro, D., Cantù, C. and Tunisini, A. (2012) 'Actors' heterogeneity in innovation networks. *Industrial Marketing Management*, Vol. 41, No. 5, pp.780–789.
- Demirkan, H. and Spohrer, J. (2015) 'T-shaped innovators: identifying the right talent to support service innovation', *Research-Technology Management*, Vol. 58, No. 5, pp.12–15.
- Drágoicea, M., Wallezky, L., Carrubbo, L., Badr, N.G., Toli, A.M., Romanovská, F. and Ge, M. (2020) 'Service design for resilience: a multi-contextual modeling perspective', *IEEE Access*, Vol. 8, pp.185526–185543.
- Drisko, J.W. and Maschi, T. (2016) *Content Analysis*, Pocket Guide to Social Work Re.
- Edvardsson, B. and Tronvoll, B. (2019) 'How platforms foster service innovations', *Organizational Dynamics*, p.100721.
- Edvardsson, B., Frow, P., Jaakkola, E., Keiningham, T.L., Koskela-Huotari, K., Mele, C. and Tombs, A. (2018) 'Examining how context change foster service innovation', *Journal of Service Management*, Vol. 29, No. 5, pp.932–955.

- Edvardsson, B., Kleinaltenkamp, M., Tronvoll, B., McHugh, P. and Windahl, C. (2014) 'Institutional logics matter when coordinating resource integration', *Marketing Theory*, Vol. 14, No. 3, pp.291–309.
- Edvardsson, B., Tronvoll, B. and Gruber, T. (2011) 'Expanding understanding of service exchange and value co-creation: a social construction approach', *Journal of the Academy of Marketing Science*, Vol. 39, No. 2, pp.327–339.
- Eisenhardt, K.M. and Graebner, M.E. (2007) 'Theory building from cases: opportunities and challenges', *Academy of Management Journal*, Vol. 50, No. 1, pp.25–32.
- Fernie, J. and Sparks, L. (Eds.) (2018) *Logistics and Retail Management: Emerging Issues and New Challenges in the Retail Supply Chain*, Kogan Page Publishers, London and Philadelphia.
- Frow, P., McColl-Kennedy, J.R. and Payne, A. (2016) 'Co-creation practices: their role in shaping a health care ecosystem', *Industrial Marketing Management*, Vol. 56, pp.24–39.
- Frow, P., McColl-Kennedy, J.R., Hilton, T., Davidson, A., Payne, A. and Brozovic, D. (2014) 'Value propositions: a service ecosystems perspective', *Marketing Theory*, Vol. 14, No. 3, pp.327–351.
- Fulco, I., Carrubbo, L., Megaro, A. and Liani, F. (2021) 'La Città ideale' as a set of new institutionalized resources integration practices—insights from a pilot project of the sicily region', *Journal of Creating Value*, Vol. 7, No. 2, pp.189–205.
- Gambarov, V., Sarno, D., Hysa, X., Calabrese, M. and Bilotta, A. (2017) 'The role of loyalty programs in healthcare service ecosystems', *The TQM Journal*, Vol. 29, No. 6, pp.899–919.
- Geels, F.W. (2004) 'From sectoral systems of innovation to socio-technical systems: insights about dynamics and change from sociology and institutional theory', *Research Policy*, Vol. 33, Nos. 6–7, pp.897–920.
- Grönroos, C. and Voima, P. (2013) 'Critical service logic: making sense of value creation and co-creation', *Journal of the Academy of Marketing Science*, Vol. 41, No. 2, pp.133–150.
- Hauser, J., Tellis, G.J. and Griffin, A. (2006) 'Research on innovation: a review and agenda for marketing science', *Marketing Science*, Vol. 25, No. 6, pp.687–717.
- Helkkula, A., Kowalkowski, C. and Tronvoll, B. (2018) 'Archetypes of service innovation: implications for value cocreation', *Journal of Service Research*, Vol. 21, No. 3, pp.284–301.
- Hysa, X., Gambarov, V. and Zenelaj, B. (2019) 'The university in a retail context: an illustration of value co-creation through the social business model canvas', in Granata, G., Moretta, A. and Tsiakis, T. (Eds.): *Predicting Trends and Building Strategies for Consumer Engagement in Retail Environments*, IGI Global, Hershey, USA.
- Kaartemo, V., Kowalkowski, C. and Edvardsson, B. (2018) 'Enhancing the understanding of processes and outcomes of innovation: the contribution of effectuation to S-D logic', in Vargo, S.L. and Lusch, R.F. (Eds.): *The Sage Handbook of Service-dominant Logic*, 1st ed., SAGE Publications Ltd., Thousand Oaks, California, pp.522–535.
- Kleinaltenkamp, M., Brodie, R.J., Frow, P., Hughes, T., Peters, L.D. and Woratschek, H. (2012) 'Resource integration', *Marketing Theory*, Vol. 12, No. 2, pp.201–205.
- Koskela-Huotari, K. and Vargo, S.L. (2016) 'Institutions as resource context', *Journal of Service Theory and Practice*, Vol. 26, No. 2, pp.163–178.
- Koskela-Huotari, K., Edvardsson, B., Jonas, J.M., Sörhammar, D. and Witell, L. (2016) 'Innovation in service ecosystems – breaking, making, and maintaining institutionalized rules of resource integration', *Journal of Business Research*, Vol. 69, No. 8, pp.2964–2971.
- Kurnia, S., Choudrie, J., Mahbubur, R.M. and Alzougool, B. (2015) 'E-commerce technology adoption: a Malaysian grocery SME retail sector study', *Journal of Business Research*, Vol. 68, No. 9, pp.1906–1918.
- Lee, J., Kao, H.A. and Yang, S. (2014) 'Service innovation and smart analytics for industry 4.0 and big data environment', *Procedia Cirp*, Vol. 16, pp.3–8.

- Lusch, R.F. and Nambisan, S. (2015) 'Service innovation: a service-dominant logic perspective', *MIS Quarterly*, Vol. 39, No. 1, pp.155–176.
- Lusch, R.F. and Vargo, S.L. (2014) 'Evolving to a new dominant logic for marketing', *The Service-Dominant Logic of Marketing*, Routledge, New York, NY, USA, pp.21–46.
- Lusch, R.F., Vargo, S.L. and Gustafsson, A. (2016) 'Fostering a trans-disciplinary perspectives of service ecosystems', *Journal of Business Research*, Vol. 69, No. 8, pp.2957–2963.
- Maglio, P.P., Kieliszewski, C.A., Spohrer, J.C., Lyons, K., Patricio, L. and Sawatani, Y. (2018) *Handbook of Service Volume, S.I.I.*, Springer Publishing Company, Incorporated.
- Magni, D., Pezzi, A. and Vrontis, D. (2020) 'Towards a framework of students' co-creation behaviour in higher education institutions', *International Journal of Managerial and Financial Accounting*, Vol. 12, No. 2, pp.119–148.
- Megaro, A., Carrubbo, L., Polese, F. and Sirianni, C.A. (2022) 'Triggering a patient-driven service innovation to foster the service ecosystem well-being: a case study', *The TQM Journal*, UK, pp.1–19.
- Mele, C., Pels, J. and Polese, F. (2010) 'A brief review of systems theories and their managerial applications', *Service Science*, Vol. 2, Nos. 1–2, pp.126–135.
- Mokyr, J. (2004) *The Gifts of Athena: Historical Origins of the Knowledge Economy*, Princeton University Press, Princeton.
- Napoletano, P. and Carrubbo, L. (2011) 'Becoming smarter: towards a new generation of services systems', *Proceedings of 1st CooperLink Workshop*, Vol. 3, No. 3, August, pp.1–14.
- Ostrom, A.L., Parasuraman, A., Bowen, D.E., Patricio, L. and Voss, C.A. (2015) 'Service research priorities in a rapidly changing context', *Journal of Service Research*, Vol. 18, No. 2, pp.127–159.
- Peters, L.D., Lobler, H., Brodie, R.J., Breidbach, C.F., Hollebeek, L.D., Smith, S.D., Sorhammar, D. and Varey, R.J. (2014) 'Theorizing about resource integration through service-dominant logic', *Marketing Theory*, Vol. 14, No. 3, pp.249–268.
- Pinho, N., Beirão, G., Patricio, L. and Fisk, R.P. (2014) 'Understanding value co-creation in complex services with many actors', *Journal of Service Management*, Vol. 25, No. 4, pp.470–493.
- Polese, F., Barile, S., Caputo, F., Carrubbo, L. and Wallezky, L. (2018) 'Determinants for value cocreation and collaborative paths in complex service systems: a focus on (Smart) cities', *Service Science*, Vol. 10, No. 4, pp.379–477.
- Polese, F., Carrubbo, L., Bruni, R. and Maione, G. (2017a) 'The viable system perspective of actors in eco-systems', *The TQM Journal*, Vol. 29, No. 6, pp.783–799.
- Polese, F., Pels, J. and Brodie, R. (2011) 'Theoretical underpinning to successful value co-creation', in Gummesson, E., Mele, C. and Polese, F. (a cura di): *Service-Dominant Logic, Network and Systems Theory and Service Science: Integrating Three Perspectives for a New Service Agenda*, Giannini Editore, Napoli.
- Polese, F., Pels, J., Tronvoll, B., Bruni, R. and Carrubbo, L. (2017b) 'A4A relationships', *Journal of Service Theory and Practice*, Vol. 27, No. 5, pp.1040–1056.
- Rubalcaba, L., Michel, S., Sundbo, J., Brown, S.W. and Reynoso, J. (2012) 'Shaping, organizing, and rethinking service innovation: a multidimensional framework', *Journal of Service Management*, Vol. 23, No. 5, pp.696–715.
- Sansone, M., Bruni, R., Colamatteo, A. and Pagnanelli, M.A. (2018) 'Service ecosystem perspective in the retail industry', *Sinergie Italian Journal of Management*, Vol. 107, pp.49–64.
- Sitaloppi, J., Koskela-Huotari, K. and Vargo, S.L. (2016) 'Institutional complexity as a driver for innovation in service ecosystems', *Service Science*, Vol. 8, No. 3, pp.333–343.

- Spohrer, J. and Maglio, P.P. (2008) 'The emergence of service science: toward systematic service innovations to accelerate co-creation of value', *Production and Operations Management*, Vol. 17, No. 3, pp.238–246.
- Stafford, T.F. and Turan, A.H. (2011) 'Online tax payment systems as an emergent aspect of governmental transformation', *European Journal of Information Systems*, Vol. 20, pp.343–357.
- Stake, R.E. (1995) *The Art of Case Study Research*, SAGE Publications Ltd., Thousand Oaks, California.
- Taillard, M., Peters, L.D., Pels, J. and Mele, C. (2016) 'The role of shared intentions in the emergence of service ecosystems', *Journal of Business Research*, Vol. 69, No. 8, pp.2972–2980.
- Toivonen, M. and Kijima, K. (2018) 'The need for a new innovation paradigm and the contribution of service-dominant logic', in Vargo, S.L. and Lusch, R.F. (Eds.): *The Sage Handbook of Service-Dominant Logic*, 1st ed., SAGE Publications Ltd, Thousand Oaks, California, pp.488–507.
- Toivonen, M. and Tuominen, T. (2009) 'Emergence of innovations in services', *The Service Industries Journal*, Vol. 29, No. 7, pp.887–902.
- Uyar, A., Nimer, K., Kuzey, C., Shahbaz, M. and Schneider, F. (2021) 'Can e-government initiatives alleviate tax evasion? The moderation effect of ICT', *Technological Forecasting and Social Change*, Vol. 166, p.120597.
- Vargo, S.L., Akaka, M.A. and Vaughan, C.M. (2017) 'Conceptualizing value: a service-ecosystem view', *Journal of Creating Value*, Vol. 3, No. 2, pp.117–124.
- Vargo, S.L. and Akaka, M.A. (2012) 'Value cocreation and service systems (re) formation: a service ecosystems view', *Service Science*, Vol. 4, No. 3, pp.207–217.
- Vargo, S.L. and Lusch, R.F. (2004) 'Evolving to a new dominant logic for marketing', *Journal of Marketing*, Vol. 68, No. 1, pp.1–17.
- Vargo, S.L. and Lusch, R.F. (2008) 'Service-dominant logic: continuing the evolution', *Journal of the Academy of Marketing Science*, Vol. 36, pp.1–10.
- Vargo, S.L. and Lusch, R.F. (2010) 'From repeat patronage to value co-creation in service ecosystems: a transcending conceptualization of relationship', *Journal of Business Market Management*, Vol. 4, No. 4, pp.169–179.
- Vargo, S.L. and Lusch, R.F. (2016) 'Institutions and axioms: an extension and update of service-dominant logic', *Journal of the Academy of Marketing Science*, Vol. 44, No. 1, pp.5–23.
- Vargo, S.L., Maglio, P.P. and Akaka, M.A. (2008) 'On value and value co-creation: a service systems and service logic perspective', *European Management Journal*, Vol. 26, No. 3, pp.145–152.
- Vargo, S.L., Wieland, H. and Akaka, M.A. (2015) 'Innovation through institutionalization: a service ecosystems perspective', *Industrial Marketing Management*, Vol. 44, pp.63–72.
- Verma, R., Gustafsson, A., Kristensson, P. and Witell, L. (2012) 'Customer co-creation in service innovation: a matter of communication?', *Journal of Service Management*, Vol. 23, No. 3, pp.311–327.
- Wallezky, L., Carrubbo, L. and Romanovská, F. (2021) 'Management of smart city in lens of viable system approach', *International Conference on Applied Human Factors and Ergonomics*, July, Springer, Cham, pp.106–114.
- Widyaningsih, I.U., Gunardi, A., Rossi, M. and Rahmawati, R. (2017) 'Expropriation by the controlling shareholders on firm value in the context of Indonesia: corporate governance as moderating variable', *International Journal of Managerial and Financial Accounting*, Vol. 9, No. 4, pp.322–337.

- Wieland, H., Koskela-Huotari, K. and Vargo, S.L. (2016) 'Extending actor participation in value creation: an institutional view', *Journal of Strategic Marketing*, Vol. 24, Nos. 3–4, pp.210–226.
- Wieland, H., Polese, F., Vargo, S.L. and Lusch, R.F. (2012) 'Toward a service (eco) systems perspective on value creation', *International Journal of Service Science, Management, Engineering, and Technology*, Vol. 3, No. 3, pp.12–25.
- Witell, L., Snyder, H., Gustafsson, A., Fombelle, P. and Kristensson, P. (2016) 'Defining service innovation: a review and synthesis', *Journal of Business Research*, Vol. 69, No. 8, pp.2863–2872.
- Yu, E. and Sangiorgi, D. (2018) 'Service design as an approach to implement the value cocreation perspective in new service development', *Journal of Service Research*, Vol. 21, No. 1, pp.40–58.