

# Innovation in Service Ecosystems

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## Abstract

We apply service-dominant (S-D) logic and its service-ecosystems perspective as a means for reconceptualizing innovation through a broader and deeper perspective. More specifically, we argue that a service-ecosystems perspective enables researchers and managers to consider the interactions among a full range of actors and processes involved in value creation. This systemic perspective helps to shed light on the processes and practices that are foundational to the formation and re-formation of technologies and markets. Importantly, a service-ecosystems view broadens the scope of innovation to include the social structures (i.e., institutions) that guide and are guided by the actions and interactions among multiple actors.

## Keywords

Innovation, Market Formation, Ecosystems, Institutions

## 1 INTRODUCTION

Over the last few decades, the interconnected and interdependent nature of the networked economy has become increasingly evident. This has led to the development of systemic views of markets (e.g., Callon 1998) and the exploration of intangible and dynamic aspects of resources (e.g., Constantin and Lusch 1994; Vargo and Lusch 2004). The movement toward a systemic and dynamic approach to social and economic exchange has coincided with the exponential growth in the study of service across a variety of disciplines (marketing, management, information technology, engineering, etc.), as well as the development of interdisciplinary service-centered publication outlets such as the *Journal of Service Research*, *Service Science* and now this *Journal of Serviceology*.

One of the focal interests in service research is innovation. “By finding new solutions to problems, innovation can destroy existing markets, transform old ones, or create new ones (Hauser et al. 2006, p. 687).” Thus, not surprisingly, innovation is central to ongoing value creation and resource integration processes. However, traditional models of innovation provide limited insight beyond product (tangible or intangible) development and diffusion (Maglio and Spohrer 2008). These models largely ignore the users and the use of technology (Geels 2004), and, more broadly, the social processes that contribute to “molding the technologies used by a society, and technological change itself (Nelson and Nelson 2002, p. 267).” In other words, the innovation of service – applied knowledge and skills for the benefit of another (Vargo and Lusch 2004) – is not well explained by traditional, linear innovation models, and appears to involve much more complex and expansive processes (Vargo et al. 2015). Thus, service researchers are currently exploring more systemic approaches to innovation

(Coombs and Miles 2000; Maglio et al. 2007) to better explain how new forms of value emerge.

We contribute to this ongoing effort to develop a more systemic approach to innovation through an exploration of service-dominant (S-D) logic (Vargo and Lusch 2004; Vargo and Lusch 2008) as a conceptual foundation for the study of value creation in general, and innovation in particular. S-D logic has been recognized as an alternative theoretical framework for studying the creation of value in a variety of business-related fields (e.g., marketing, management, information technology), and has been foundational to the development of Service Science (Maglio and Spohrer 2008). We believe this is because S-D logic (Vargo and Lusch 2011) provides a deeper and broader perspective of innovation than traditional frameworks as it enables and compels researchers to zoom out beyond dyadic exchange encounters and to view value as being created in (eco)systems of service-for-service exchange. Importantly, this systemic approach helps to (re)conceptualize the processes and practices that are foundational to value creation and innovation, including market formation and reformation.

We begin our discussion with a brief overview of how S-D logic provides a foundation for a systemic understanding of value creation and innovation. In particular, we articulate how a service-ecosystems approach, grounded in S-D logic, broadens the scope of innovation beyond the development of products (both tangible and intangible) and considers the development of social structures, or institutions as central to innovation. We then elaborate how, in this view, innovation processes are driven by the actions and interactions of multiple actors integrating, exchanging and applying resources, and include the development of *both* technologies and markets. Finally, we discuss how ongoing innovation ultimately drives the reformation of markets. We

close with a few thoughts on how this broader, service-ecosystems approach to innovation can guide future research and provide insight to managers who struggle with effectively innovating in dynamic and continually changing environments.

## 2 SERVICE ECOSYSTEMS: A SYSTEMIC, GENERIC ACTOR VIEW

In the collaborative work that has become known as ‘service-dominant (S-D) logic,’ many scholars have contributed to the development of a framework that begins to capture the relational, reciprocal, and interconnected nature of exchange. A first step in this effort was to suggest a transcendence of the ‘goods’ versus ‘services’ divide with an understanding that *it is all about service* (Vargo and Lusch 2011). ‘Service’ (singular) is conceptualized as the application of competences (e.g., knowledge and skills) for the benefit of another party or, stated differently, as the collaborative process of doing something for and with another party. Thus, an S-D logic lens highlights that all social and economic actors (e.g. individuals, businesses, households, etc.) engage, similarly, through the sharing, integration and application of resources, in service-for-service exchange. In other words, “all social and economic actors are resource integrators” (Vargo and Lusch 2008, p. 7).

Consequently, S-D logic argues that all economic exchange, viewed from an ecosystems perspective, needs to be conceptualized as exchange between generic ‘actors’ who participate in value-creation processes. To reflect commonalities among actors, Vargo and Lusch (2011), in line with work from Gummesson and Polese (2009) and the Industrial Marketing and Purchasing Group (IMP) (e.g., Hakansson and Snehota 2000), use the term ‘actor-to-actor’ (A2A) to incorporate a generic actor in the context of reciprocal and interconnected exchange relationships. Consistent with this A2A view, S-D logic conceptualizes value as always co-created (Lusch and Vargo 2014) and points away from linear and sequential value creation and destruction flows that view ‘producers’ as creators and ‘consumers’ as destroyers of value. Instead, this view highlights dynamic systems of actors who relationally co-create value and, at the same time, jointly provide the context through which value gains its collective and individual assessment (Vargo and Lusch 2011; Slater 2002; Giddens 1984).

S-D logic captures this dynamic approach in its definition of service ecosystems: “relatively self-contained, self-adjusting system[s] of resource integrating actors connected by shared institutional arrangements and mutual value creation through service exchange” (Vargo and Lusch 2016). Thus, an S-D logic, service-ecosystems view not only centers on the collaborative creation of value and the integration of dynamic resources, but also on the institutions – humanly devised rules, norms, values and meanings that enable and constrain human action (Scott 2001) – that influence, and are influenced by, interactions among multiple actors (Vargo and Lusch 2016). More specifically, this ecosystems view points toward *institutions* – humanly devised rules, norms, values, and meanings that enable and constrain human action (Scott 2001) – as central elements in resource integration and value creation processes.

In this context, it is important to understand that resources are continually changing because their interpretations and uses are shaped by the institutional arrangements (i.e. sets of institutions) among multiple actors. In addition, resources are, often simultaneously, integrated from private sources (e.g. self, friends, family), market-facing sources (i.e. through economic exchange), or from public sources (e.g., communal or governmental sources). Because of this, the usefulness of any particular potential resource is moderated by the availability of other resources, the removal of resistances to resource utilization, the beneficiary’s ability to integrate them, and the institutional arrangements of the beneficiary (Vargo and Lusch 2011). That is, resource integration and value creation are always contextual (e.g., dependent on other available resources) and each context and perspective of value is unique (e.g., based on varying institutional arrangements).

Because all social and economic actors integrate resources to create value for themselves and for others (Vargo and Lusch 2008) “each instance of resource integration, service provision, and value creation, changes the nature of the system to some degree and thus the context for the next iteration and determination of value creation” (Vargo and Lusch 2011, p. 185). Thus, an ecosystems lens not only brings into view the focal actors, such as a focal service provider (e.g., firm) and a beneficiary (e.g., customer), and their relationship, but also the context, including other actors, and shared structures, such as language, meanings, signs, symbols, experiences, rituals, etc. In other words, a service-ecosystems view emphasizes the co-creation of value, the integration of resources, and the role of institutions in interrelated systems of service exchange.

In summary, a service-ecosystems perspective broadens the scope of value creation to include the actions and interactions of generic actors that are always relational, reciprocal, and contextual. Furthermore, the central role of institutions in service exchange and value creation becomes salient. It is important to reiterate that *all actors*, in this view, are resource integrators, and, thus, co-create their own service-providing resources through their resource-integrating activities. By applying an ecosystems perspective, S-D logic provides a view in which all actors engage in complimentary and reciprocal resource integration and service provision practices.

In the same way that S-D logic removes the divide between ‘producers’ as ‘creators’ and ‘consumers’ as ‘destroyers’ of value, we also suggest that an actor-to-actor approach blurs the divide between ‘innovators’ and ‘adopters’ (Vargo et al. 2015). In particular, an A2A view broadens the scope of innovation to include the actions and perspectives of those that develop and offer new value propositions as well as those who use, refine and/or redevelop emerging value propositions. In this view, innovation – the development of new forms of value – occurs through interactions among multiple actors both contributing to and benefiting from the exchange of service. In the following sections, we will elaborate this systemic, generic and institutional view of actors by showing that it is also foundational to the concepts of innovation and market formation.

### 3 AN ECOSYSTEMS APPROACH TO INNOVATION

Above, we have argued for a service-ecosystems perspective that highlights the importance of resource integration, networks of actors and institutions in value creation. This systemic approach suggests that value is created through ongoing interactions among multiple actors and is influenced by varying sets and nested levels of institutions, or institutional arrangements. Based on this, we have argued that innovation – the creation of new forms of value – is also driven through interactive processes that involve diverse actors engaging in service exchange. In other words, this ecosystems view focuses on actions, interactions and institutions as the underlying drivers of innovation.

This broader, ecosystems approach encourages researchers and managers to reconsider traditional models of product innovation, and moves towards a dynamic ecosystems approach that centers on how interactions guide innovation, including the (re)development of new technologies, as well as markets. In this section, we align this systemic approach with emerging views on technology and markets to draw attention toward the social practices and processes that contribute to all ‘types’ of innovation in service ecosystems.

#### 3.1 Technology

The development of new technologies has been a central concern of innovation-related initiatives (e.g., academic research or firm efforts). However, as Pinch (2008, p. 467) points out, the term technology is “elusive and immediately problematic” since it has taken on various disparate and often limiting meanings. For example, the term technology is often used to exclusively depict physical devices. On the other hand, a service-ecosystems view of technology points to the co-created nature of technology and its dynamic social context. In line with Arthur (2009, p. 28), this approach treats “technology as an assemblage of practices and components” that are “means to fulfill human purposes.” It supports Arthur’s argument that technology is not limited to physical artifacts but can refer to a wide class of phenomena, both ‘software’ and ‘hardware,’ such as processes and methods. This broad definition not only highlights the fact that competences (knowledge and skills) and not physical devices lie at the heart of technology, but also that technology can be conceptualized as potentially useful knowledge because it fulfills human purposes (Mokyr 2004).

Additionally, consistent with the institutional focus of a service ecosystems perspective, multiple scholars (Nelson and Nelson 2002; Pinch and Bijker 1984; Orlikowski 1992) have pointed out that technology is always socially constructed. Pinch and Bijker (1984), for example, empirically show that different social groups can construct radically different meanings of technologies. Similarly, Orlikowski (1992), based on Giddens’ (1984) structuration theory, argues for a ‘duality of technology’ since technology is both an outcome and a medium of socially embedded practices. More specifically, Orlikowski (1992) shows that technological change is always “influenced by the institutions (e.g., social rules, norms, values, meanings and beliefs) that guide both the ‘design’ and ‘use’ phases associated with new and emerging technologies (Vargo et al.)” In other words, building on Pinch and Bijker’s (1984) concept of interpretive flexibility, Orlikowski (1992) points

out that human actors not only have flexibility in how they interpret technology, but also in how they use it.

In summary, *technology*, from a service ecosystems perspective, can be conceptualized, without reference to material constraints, as *potentially useful knowledge* that may offer solutions for new or existing problems. Furthermore, the assessment of this usefulness is always embedded in institutional arrangements that guide both the interpretation and use of technology. This discussion broadens the scope of innovation beyond the development of tangible products and redirects attention toward social conceptualizations of technology. However, this shift toward social conceptualizations suggests that, in order to fully understand innovation, the formation of broader social structures must be considered as well. The following section considers the dynamic nature of markets to shed light on the underlying processes that drive the development of both technology and markets.

#### 3.2 Markets

With regard to understanding innovation, the term ‘market,’ similar to ‘technology,’ is also somewhat problematic. Venkatesh, Penaloza and Firat (2006, p. 252) point out that, particularly in the marketing discipline, the term, “markets are everywhere and nowhere.” Although scholars discuss markets in a large number of contexts and across a variety of disciplines (e.g., finance, economics, marketing, sociology), a comprehensive and foundational understanding of what markets are and how they function remains elusive (Vargo 2007).

More recently, however, market perspectives have emerged that acknowledge and overcome shortcomings related to early neoclassical-based market conceptualizations. That is, these conceptualizations do not see markets as static or pre-existing but rather as being continually performed by multiple actors (Mele et al. 2015). Humphreys (2010) and Kates (2004), for example, aid in the development of a theory of markets by highlighting the importance of institutionalization and legitimization processes in market formation.

Similarly, Kjellberg and Helgesson (2006; 2007) have introduced a *markets-as-practice* model that draws on a sociological perspective and explicates how conceptualizations of the market influence and are influenced by the things actors do in markets. This model, in line with a service-ecosystems view, shows that in order to better understand social activity (e.g., value co-creation) in markets, a discussion of practices and institutions is needed. More specifically, Kjellberg and Helgesson’s (2006; 2007) model assumes a performative approach to markets, in which markets are constantly formed and re-formed through the actions and interactions of economic actors.

Stated differently, a markets-as-practice approach (Kjellberg and Helgesson 2006) describes markets as being ‘performed’ by the enactment of interlinked sets of representational, normalizing and exchange practices. *Representational* practices are the activities of describing and shaping images of markets. *Normalizing* practices are activities involved in establishing rules, norms and guidelines of how markets should work, and *exchange* practices relate to actual activities that fulfill individual economic exchanges. These market practices or activities provide the conditions necessary for economic exchange to take place.

Practices “are by definition social, because it is only at this level that morality, meaning and normativity can be sustained...it follows that all practices imply some level of durability and, in this sense, they carry traces, no matter how weak, of *institutionalization*. Practices differ from events in that they constitute enduring regimes of activity” (Nicolini 2009, p. 1405). Thus, the stabilization and reconciliation of market practices and the enduring nature of these practices in time-space suggests their institutional embeddedness (i.e., practices are embedded within institutions) (Giddens 1984; Scott 2001). Consequently, in this view, market formation and re-formation can be conceptualized as ongoing processes of institutional change. In line with this practice perspective, Vargo and Lusch (2014) describe markets as institutionalized resource integration and application practices, or, stated differently, as ‘*institutionalized solutions*.’

#### 4 HOW INNOVATION DRIVES MARKET REFORMATION

Above, we have suggested that a service ecosystems perspective reveals that all social and economic actors (e.g. individuals, businesses, households, etc.) engage in the same way (i.e., A2A) - through resource-integration and service provision. Foundational to this argument is that S-D logic not only centers on the collaborative creation of value and the integration of dynamic resources, but also on the institutions that influence, and are influenced by, interactions among multiple actors (Vargo and Lusch 2011; Vargo and Lusch 2016). Thus, as stated, an ecosystems view points toward *institutions* as central elements in value creation and innovation (of both technology and markets).

In extending the service ecosystems perspective to innovation, including market (re)formation, we propose that market innovation does not automatically occur when actors (e.g.; firms), or groups of actors (e.g., innovation networks) introduce new value propositions, but only when new practices (i.e.; solutions) become institutionalized. Zietsma and McKnight (2009) describe institutionalization processes as non-linear and co-created processes in which all actors engage in the maintenance, disruption, and change of institutions until, through multiple iterations of institutional developments, common templates emerge that reflect shared conceptions of problems and solutions. More specifically, these authors, consistent with a service-ecosystems view, describe institutional development as highly relational and systemic processes in which all actors engage in “ongoing negotiations, experimentation, competition, and learning (Zietsma and McKnight 2009, p. 145).”

Importantly, this institutional, service-ecosystems perspective on innovation supports and further strengthens a generic, actor-to-actor approach and, arguably, not only removes the divide between producers and consumers (Vargo and Lusch 2011), but also, as noted, blurs the divide between innovators and adopters. “Thus, through this lens, innovation is a collaborative process, rather than an output, which always involves the participants of all value co-creating parties and social, as well as technical developments” (Vargo et al. 2015). In this way, as resource integration and value co-creation occur throughout service ecosystems, new solutions (i.e., innovation) to new and existing problems become (re)institutionalized, and markets continue to form and reform.

#### 5 CONCLUSION

In this short commentary, we present S-D logic as a means for broadening the scope of innovation to include social structures (i.e., institutions and institutional arrangements) that guide and are guided by the actions and interactions among multiple actors. We argue that an S-D logic, service ecosystems perspective highlights the relational, reciprocal, and interconnected nature of value creation, in general, and innovation, in particular. This approach enables researchers and managers to apply a systems perspective that considers the interaction among all actors, in the same way – engaged in complimentary and interdependent resource integration and value creation practices. Stated differently, we arrive at a generic actor-to-actor approach that helps to overcome the traditional producer/consumer divide (Vargo and Lusch 2011). Furthermore, we point out that institutions are central elements in value creation and innovation.

Extending this institutional, service ecosystems view, we broaden the scope of innovation beyond products by extending it to (re)consideration of the nature of joint innovation in technology and markets. In doing so, we show that all innovation is a collaborative process, rather than an output, which involves the participation of all value co-creating parties and social, as well as technical, developments. Thus, we argue that a service-ecosystems perspective helps to overcome false dichotomies between producers and consumers, as well as ‘innovators’ and ‘adopters’. In line with an actor-to-actor view, innovation needs to be conceptualized as the co-creation of useful knowledge (i.e. technology) that becomes institutionalized into the fabric of a particular socio-technical system composed of rules, norms, values, meanings, and practices. These innovation processes are driven by the actions and interactions among multiple actors who continually try to create new forms of value (i.e., innovate) for themselves and for others.

Arguably, reframing innovation with the help of a service ecosystems perspective can guide future research regarding innovation in general, and help to develop related research under the umbrella of *Serviceology* in particular. Furthermore, this approach can provide insights for managers who are beginning to realize that linear innovation models are ill suited for non-deterministic social systems. Instead, design methodologies need to be explored that incorporate the institutional arrangements, resources, and practices that drive value perceptions of human actors in various situations (Buchanan 1992). However, it is important to highlight that a service ecosystems perspective does not imply just a macro-level view. Rather, a service ecosystems approach allows for the investigation of social and economic phenomena across micro, meso and macro levels. Chandler and Vargo (2011), for example, point out that a true investigation of resource integration and value creation practices requires oscillating foci to each of these levels and their influence on one another.

Finally, we suggest that an institutional, service ecosystems view highlights that innovation processes do not end when products are prototyped or service flows are blueprinted. As emphasized, innovation is an ongoing socio-technical process in which solutions (imperfectly) stabilize, at least for a period of time. Thus, managers, and the educators that train them, need to overcome short-term decision approaches, which favor stability, control and predictability. Instead, a service ecosystems perspective points to more

effectual responses to markets in which ongoing changes and uncertainties are not viewed as threats but as further chances to innovate (Read et al. 2009). Thus, in conclusion, we argue that a service ecosystems perspective redirects the focus in innovation away from the development of new outputs toward a need to better understand the collaboration of multiple actors, integrating, exchanging and applying resources and the institutions that guide them.

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