



Innovation through institutionalization: A service ecosystems perspective [☆]



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ABSTRACT

This article explores the role of institutions in innovation from a service-ecosystems perspective, which helps to unify diverging views on innovation and extend the research regarding innovation systems. Drawing on institutional theories, this approach broadens the scope of innovation beyond firm-centered production activities and collaboration networks, and emphasizes the social practices and processes that drive value creation and, more specifically, *innovation* – the combinatorial evolution of new, useful knowledge. Based on this ecosystems view, we argue for *institutionalization* – the maintenance, disruption and change of institutions – as a central process of innovation for *both* technology and markets. In this view, *technology* is conceptualized as potentially useful knowledge, or a value proposition, which is both an outcome and a medium of value co-creation and innovation. *Market innovation*, then, is driven by the combinatorial evolution of value propositions and the emergence and institutionalization of new solutions.

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1. Introduction

The ongoing study of innovation is driven by a need to develop more compelling value propositions (Lusch & Vargo, 2006) in an increasingly interconnected and dynamic world. However, the diversity of disciplines within which innovation is studied, and the fragmented nature of this body of literature (Hauser, Tellis, & Griffin, 2006), make it difficult to understand the central processes by which innovation occurs and, more specifically, how new markets form (Bower & Christensen, 1995; Kim & Mauborgne, 2005). Furthermore, the study of innovation in general has been developed from a view of value creation that separates firms as producers (e.g., innovators) and customers as consumers (e.g., adopters) of market offerings (Vargo & Lusch, 2011). This conventional view has limited the understanding of how multiple participants (e.g., firms, customers and other stakeholders) contribute to value creation, as well as innovation.

Recent research regarding networked (e.g., Corsaro, Cantu, & Tunisini, 2012) and systemic (e.g., Geels, 2004; Sundbo & Gallouj, 2000) views on innovation, provide a more dynamic view of market interactions, which has helped to bring together different components of innovation (e.g., product development and customer adoption) and broaden the scope of innovation from a focus on technology to an

emphasis on market relationships (Coombs & Miles, 2000). In particular, the study of innovation has begun to extend beyond firm-centric development activities and provides evidence of multiple participants in innovation (Corsaro et al., 2012; Dhanarag & Parkhe, 2006). This expanded view has drawn attention toward the interrelated processes and interconnected relationships through which innovation occurs.

While much of this literature remains “production”-centric, and maintains a distinction between those who “develop” and those who “adopt” innovations, the realization that users have the capacity to drive innovative efforts (Oudshoorn & Pinch, 2003; von Hippel, 2007) points to a more interactive and systemic view of innovation. This movement toward a more dynamic approach raises issues with innovation models that center on unidirectional processes, such as the linear model of innovation,³ and emphasize firms as innovators and customers as adopters. It underscores the need for a more unified and comprehensive framework that can provide a deeper understanding of the various participants and underlying processes from which new technologies and, ultimately, markets emerge.

In this paper, we propose an ecosystems approach for considering different “types” of innovation (i.e., technological and market innovation) as driven by a common process – i.e., *institutionalization* (e.g., Barley & Tolbert, 1997). In particular, we apply service-dominant logic (Vargo & Lusch, 2004, 2008), and its institutional, *service ecosystems*

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³ The term linear model is used in a variety of ways that seem to converge in the notion that “innovation starts with basic research, then adds applied research and development, and ends with production and diffusion” (Godin, 2006, p. 639).

view (Vargo & Lusch, 2011), to further extend, and potentially transcend, a systemic view of innovation (e.g., Geels, 2004; Sundbo & Gallouj, 2000). This approach points toward *institutions* – humanly devised rules, norms, and meanings that enable and constrain human action (Scott, 2001) – as a central aspect of generating novel ways to create value.

An S-D logic, service-ecosystems view centers on the collaborative creation of value (i.e., value co-creation), the integration of dynamic resources, and the institutions that influence, and are influenced by, interactions among multiple actors (Vargo & Lusch, 2011). According to Lusch and Vargo (2014, p. 161) service ecosystems are “relatively self-contained, self-adjusting system[s] of resource-integrating actors connected by shared institutional logics and mutual value creation through service exchange.” Within a service-ecosystems view, *technology* is considered as a dynamic resource, or potentially useful knowledge (Mokyr, 2004); *markets* are conceptualized as institutionalized solutions (Vargo & Lusch, 2013); and *innovation* is the collaborative recombination or combinatorial evolution (adapted from Arthur, 2009) of practices that provide novel solutions for new or existing problems.

This focus on the integration of dynamic resources and collaboratively created value suggests that interactions among various actors are not only influenced by, but also influence the reformation of institutions that constitute markets. We argue that this dynamic relationship between interaction and institutions points toward *institutionalization* – the maintenance, disruption and change of institutions (Lawrence & Suddaby, 2006) – as a central process of innovation for both technology and markets. More specifically, we articulate how both technology and market innovation are shaped by ongoing negotiation and recombination of overlapping institutions, driven by value co-creation. This institutional view of innovation can establish a robust, parsimonious and dynamic framework for studying and understanding the central drivers of technological advancements, and provide insight to how the same practices and processes that guide value co-creation drive the innovation of markets as well.

Thus, this article brings together historically divergent perspectives on innovation – particularly those centered on technological development and those centered on market relationships – and investigates the underlying practices and processes that generate new ways to create value. To this end, we first briefly review diverging views regarding different “types” of innovation and then discuss more recent, converging views that point toward a broader, systemic approach. We shed light on the dynamics of innovation systems by highlighting emerging perspectives on technology and markets. We then propose an S-D logic, service ecosystems approach that further integrates and extends these converging views by emphasizing the importance of institutions in innovation. Based on this, we outline the way in which innovation occurs through the institutionalization of new, and potentially useful knowledge. This approach provides a framework for rethinking the relationship between technology and markets by shedding light on how *market innovation* – the emergence and institutionalization of new solutions – is driven by the integration and generation of compelling value propositions (i.e., technologies), which drive ongoing interactions among multiple stakeholders. We conclude with the implications of this (eco)systems approach to innovation and highlight directions for future research.

2. Divergence and convergence of innovation research

The interdisciplinary nature of innovation research has led to important findings regarding multiple aspects of innovation that range from the development of new technologies to customer adoption of new products. However, the advancement of innovation research across diverse disciplines (e.g., management, marketing, and information systems), with varying points of view (Hauser et al., 2006), has resulted in a fragmented body of literature. In particular, innovation research has been largely separated by a primary emphasis on *technological* aspects of innovation, such as product development, and only recently has begun to increase the investigation of *market* aspects of innovation,

such as market relationships (Coombs & Miles, 2000) and socio-technical innovation systems (Geels, 2004; Nelson & Nelson, 2002; Sundbo & Gallouj, 2000). In the following sections, we detail a shift from diverging views in innovation research to the convergence of a socio-technical systems view of innovation.

2.1. Diverging views

The fragmented nature of the innovation literature suggests that there are multiple processes of innovation depending on the “type” of innovation involved. This separation originated with Schumpeter’s (1934) identification of five areas of innovation – product innovation, process innovation, market innovation, input innovation and organizational innovation (see Abernathy & Clark, 1985). Although most of these types of innovation referred to products or processes, Schumpeter (1934) recognized market innovation as a distinct type of innovation as well.

More recently, Abernathy and Clark (1985) separated innovation into two domains of innovative activities: technology/production and market/customer. In their view, the “technology” side of innovation focuses on the production and operation processes involved with the design and development of new products. Alternatively, the “market” side of innovation focuses on the distribution of products and the development of relationships with customers. Along these lines, Hauser et al. (2006) identified five fields of research on innovation that center on the development of new technologies (i.e., organizations and innovation, and prescriptions for product development) and understanding the markets within which technologies are adopted or diffused (i.e., consumer response to innovation, strategic market entry, and outcomes for innovation).

This separation between technological and market aspects of innovation is rooted in a historic economic perspective that separates “production” and “consumption” processes (Vargo & Lusch, 2011) and considers firms as “producers” of value and customers as “consumers” or destroyers of value. Consequently, traditional innovation literature has paid little attention toward the role of “users” in innovation (Oudshoorn & Pinch, 2003; von Hippel, 1978), and has provided limited insight as to how market relationships are developed and new markets are formed (Christensen, Baumann, Ruggles, & Sadtler, 2006). In particular, conventional approaches to innovation have focused on firms as “innovators” (e.g., Schumpeter, 1934; Urban & Hauser, 1980) and centered on the development of new products and corporate processes. In this research, “end users” or “consumers” are largely viewed as having relatively static (current or future) needs (e.g., Griffin & Hauser, 1993), and are often classified into “adopter” categories.

In general, much of the traditional innovation literature has focused on firm-centric, product-development processes. This research has also centered on dyadic interactions through which value flows sequentially from innovation-creating firms to innovation-adopting and value-destroying consumers. In this view, customer influence on innovation is usually centered on the demand of new products or “market demand” (Hauser et al., 2006; Howells, 1997). However, recent research on networked and systemic views of innovation has begun to bring together varying viewpoints and redirect attention toward the roles of multiple actors, including users, in innovation.

2.2. Converging views

Broadening the scope of innovation beyond internal firm activities, Freeman (1991) began the conversation around networks of innovation by recognizing the “external sources of scientific and technical information and advice” from which firms are able to draw upon in order to develop new technologies. Importantly, this networked view of innovation has led the way for considering the participation of multiple actors and the perspectives of *users of technologies*. According to Dodgson, Mathews, Kastle, and Hu (2008, p. 431), “innovation networks

encompass a number of cooperative relationships between firms, with constituent members engaged in innovation-supporting activities ranging from R&D to commercialization and diffusion.”

Along a slightly different vein, Möller and Rajala (2007, p. 900) define innovation networks as “relatively loose science and technology-based research networks involving universities, research institutions, and research organizations of major corporations.” They argue that innovation networks are “characterized by professional and social relationships and are not primarily business networks but are guided by the ethos of scientific discovery.” While these network views of innovation start to highlight the importance of collaboration and relationships, they still seem to reflect the stage-gate approach of the linear model: basic research, applied research, development, production, and diffusion (Godin, 2006). Furthermore, these views are often narrowly focused on technological innovation; somewhat ignoring the relevance of a networked view in the conceptualization of markets, market innovation, and (re)formation.

Teubal, Yinnon, and Zuscovitch (1991) extend this network view in general, and the adoption and diffusion stages in particular, by suggesting that innovation requires the ability for an “innovator” or “entrepreneur” to see beyond its individual viewpoint and consider future uses of a particular technology. More specifically, they argue, “in the case of an independent technical innovator a serious change in perspective must take place, one involving a direct coupling with the needs of an *expanding set of users* over and beyond the initial application” (p. 386, emphasis in original). In their view, successful innovation and, more specifically, market formation require the consideration of future meanings of a particular offering as well as the establishment of social norms and standards in its related market (i.e., institutionalization).

Further emphasizing the role of users, von Hippel (2007, p. 294) argues that “user innovation networks,” “enable each using entity, whether an individual or a corporation, to develop exactly what it wants rather than being restricted to available marketplace choices or relying on a specific manufacturer to act as its (often very imperfect) agent.” Similarly, Geels (2004) points out that innovation research needs to broaden its unit of analysis to explicitly incorporate the user and the use of technology in the analysis. Research in this area has therefore begun to expand the study of innovation beyond the activities of an individual firm and provides important insights on collaboration in networks or systems of innovation. More specifically, the innovation literature has begun to move the context of value creation and innovation, beyond the firm/customer or innovator/adaptor dyad to emphasize the importance of multiple actors and dynamic processes of value creation and innovation.

In addition to considering networks of actors, work on innovation systems has begun to explore the role of institutions in innovation. For example, Nelson and Nelson (2002, p. 267) discuss institutions as “social technologies” that contribute to “molding the technologies used by a society, and technological change itself.” Similarly, Geels (2004, p. 915) argues that only an institutional perspective of innovation can provide “a dynamic sociological conceptualization which understands human action as structure, but leaves much room for intelligent perception and strategic action.” Thus, research on innovation systems has begun to recognize three common building blocks – networks of individuals, social practices, and institutions – that are essential for understanding collaboration in social systems (Peters, Pressey, Vanharanta, & Johnston, 2013).

3. Emerging views on technology and markets

As noted, the recognition of different “types” of innovation (Schumpeter, 1934) has been helpful in identifying various processes and outcomes of innovation. However, the separation between technological and market innovation has made it difficult to develop an underlying framework for studying innovation in general, and even more challenging to understand the relationship between the development of new technologies and new markets. Emerging views on technology

and markets suggest that the nature of technological and market innovation may be more similar than different. These emerging views blur the line between the processes by which each is created and point toward social practices and institutions as central sources of innovation for both.

3.1. Technology

Arthur (2009, p. 28) defines “technology as an assemblage of practices and components” that are “means to fulfill human purposes.” This definition suggests that devices and processes do not need to be classified as disparate categories, but, instead, that the term “technology” can refer to a wide class of phenomena, both “software” (i.e., processes or methods) and “hardware” (i.e., physical devices). Similarly, Layton (1974) equates technology, without reference to physical attributes, to knowledge that provides a rational basis for design. Design, in this context, can be viewed as the reconfiguration of resources to solve a variety of problems (Simon, 1996). Along the same lines, Nelson and Nelson (2002) distinguish between “physical” and “social” technologies, for which the latter are defined as “institutions.”

Thus, based on these views, technology, both physical and social, can be conceptualized as *potentially useful knowledge* that may provide solutions for new or existing problems. This emphasis on technology as knowledge highlights the idea that competences, and not physical things, lie at the heart of technology. Viewing knowledge as foundational to technology, however, does not diminish the importance of physical artifacts in technological innovation, since these artifacts can be viewed as vehicles that convey embedded knowledge and skills (Orlikowski, 1992) as well as mechanisms of institutionalization.

In addition, research on the socially constructed nature of technology (Orlikowski, 1992; Pinch & Bijker, 1984) points to the fact that technology is endogenous to value creation and innovation, *including market formation*, since it is an outcome and a medium of socially embedded practices. More specifically, in a concept that has become known as “interpretive flexibility,” Pinch and Bijker (1984) point out that different social groups can construct radically different meanings of technologies. Thus, innovation not only is centered on technological advances (i.e., new knowledge for design processes), but also is 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 (i.e., potentially useful knowledge) (Orlikowski, 1992).

In particular, Orlikowski (2000, p. 407), describes the interplay between technology and the role of actors in effecting, transforming, and maintaining institutions by stating, “while users can and do use technologies as they were designed, they also can and do circumvent inscribed ways of using the technologies – either ignoring certain properties of the technology, working around them, or inventing new ones that may go beyond or even contradict designers’ exceptions and inscriptions.” Drawing on Giddens’ (1984) structuration theory, Orlikowski (1992) argues for a “duality of technology,” in which technology is both a product and an enabler of human action. In her model, two iterative modes of technology – 1) the *design* mode and 2) the *use* mode – are “tightly coupled” and both influence and are influenced by practices and institutions. Importantly, extending Pinch and Bijker’s (1984) concept of interpretive flexibility, Orlikowski argues that there is flexibility not only in how actors interpret technology but also in how technology is used. Thus, as a technology is used, it takes on new norms and meanings, and can be separated from its inscribed institutions.

The emergence of online higher education, for example, highlights the duality of technology. In a quest to develop cheaper and more convenient educational solutions, the pioneers of online education designed platforms that virtually connect teachers and students. This design phase not only resulted in institutional inscriptions (e.g., webinars), but also was itself institutionally embedded within inconsistencies and contradictions (e.g., the tension between busy lifestyles and the need for

affordable education). Similarly, through their interpretations and use of these online platforms, students participated in the shaping of the new educational practices. Whereas some students used the online platforms as they were designed, others circumvented inscribed ways by holding their study groups in coffee shops or by using more traditional email systems. Viewed in this way, technology is more than an “output” of a particular production process or multiple processes. Rather, emerging and existing technologies – e.g., online education – are both an outcome and a medium of interaction as well as an ongoing influence on the creation of new technologies and markets (i.e., innovation).

3.2. Markets

In line with emerging views on technology, a sociological perspective of innovation has also emerged in recent research on the formation of markets. In particular, Kjellberg and Helgesson (2006, 2007) describe markets as being continually “performed” by the enactment of interlinked sets of exchange, normative, and representational practices. *Exchange practices* are activities involved in the exchange of market offerings, *normative practices* are activities involved in forming normative expectations, and *representational practices* are activities that shape images of markets (Kjellberg & Helgesson, 2006). Viewed from this perspective, markets are not static or pre-existing; rather, markets are seen as being continually performed and shaped by multiple actors (Kjellberg & Helgesson, 2007). In other words, markets are continually formed and re-formed through the activities of social and economic actors, and multiple versions of practices may co-exist (Azimont & Araujo, 2007).

Taking a slightly different approach to markets, Venkatesh, Penaloza, and Firat (2006) argue for the conceptualization of a market as a sign system. More specifically, Venkatesh et al. (2006, p. 258) argue, “signs of all types are conceived and exchanged in markets and each (type of) market is itself a category constructed in the context of a particular sign system.” However, it is not the signs or artifacts themselves that are most important in markets, but the meanings and practices (Löbler & Lusch, 2013) associated with them. This is because symbolic meanings (e.g., brands) are continually reproduced through the enactment of “representational” practices (Kjellberg & Helgesson, 2006). Importantly, the emphasis on symbols in markets underscores the influence of social structures (i.e., practices and institutions) in value creation and innovation, which includes market formation (Kjellberg & Helgesson, 2006).

In the example used above, universities design online learning platforms and processes (i.e., technology can be both hardware and software). However, these technologies do not inherently possess value but are considered as value propositions. Value is only created, and, arguably, innovation only occurs, when students derive value through the use of these technologies by integrating the knowledge and skills that lie at the heart of these technologies with other private (e.g., reading and learning skills), public (e.g., degree requirements) and market resources (e.g., internet service and textbooks). Furthermore, the formation of a market requires not only the proposal and acceptance of an online model as a value proposition, but also the repeat interaction and ongoing exchange between a university (i.e., service provider) and other actors such as students, accrediting associations, various government agencies, hiring firms and society at large (i.e., service beneficiaries). These ongoing interactions involve the enactment of exchange, normative and representational practices, which, in turn, have contributed to the co-creation of a “new” or “renewed” market.

The emerging research trends on technology and markets described above converge on the centrality of practices and institutions in innovation. They begin to bring together previously divergent views on technology and market innovation (discussed above) and point toward the idea that both “types” of innovation are driven by collaborative efforts to find or develop new ways to create value. Based on these perspectives and contrary to more traditional views of markets, innovation does not automatically occur when firms, or even networks

of firms, introduce new ideas or develop new *products* that meet preexisting, though sometime latent, market demands (e.g., Hauser et al., 2006). Rather, in this view, both technological and market innovation involve the active participation (e.g., enactment of practices and determination of meaning) of firms and customers, as well as other actors.

These dynamic views of technology and markets point toward shared social structures or *institutions* as a critical aspect of innovation because they enable and constrain the enactment of practices and interactions among multiple actors and, thus, are guiding forces in the creation and determination of value. This emphasis on institutions in innovation suggests that, in order for new practices to be developed and adopted (i.e., for innovation to occur), existing institutions need to be in place, including some that can be recombined into new ones. To further bridge the gap between technology and market innovation and elaborate the importance of institutions, we discuss an S-D logic, service-ecosystems approach for innovation.

4. A service-ecosystems approach for innovation

As mentioned, S-D logic (Vargo & Lusch, 2004, 2008) is based on the premise that service – the application of one actor's resources (e.g., knowledge and skills) for the benefit of another – is the basis of all economic (and other social) exchange. Recently, Vargo and Lusch (2011) elaborate and extend S-D logic with a service-ecosystems view that centers on the integration of dynamic resources as a central means for connecting social and technological aspects of markets (Vargo & Akaka, 2012). As stated above, service ecosystems are conceptualized as “relatively self-contained, self-adjusting system[s] of resource-integrating actors connected by shared institutional logics and mutual value creation through service exchange” (Lusch & Vargo, 2014, p. 161). This approach emphasizes the *co-creation of value*, the *dynamic integration of resources*, and the *importance of institutions* in inter-related systems of service-for-service exchange.

This perspective integrates emerging views on market formation as socio-technical and systemic processes (Geels, 2004) and provides a transcending approach for considering different “types” of innovation (e.g., technology and markets). This suggests that innovation primarily involves the integration of operant resources – those that are capable of acting on other resources to create value – and the (re)building of structure through interaction and value co-creation among multiple actors, as well as the (de)institutionalization of systems of service exchange. The ecosystems approach, as will be discussed in more detail below, not only highlights that innovation is always a co-creational and ongoing process, but also shows that new technologies (potentially useful knowledge) *always* possess institutional components (Akaka & Vargo, 2013). Stated slightly differently, service can be viewed as beneficially applied useful knowledge, or beneficial technology (e.g. Mokyr, 2004). This implies that technology is always an integral part of service provision (beneficially applied useful knowledge) and thus, also always foundational to markets.

Central to S-D logic is the idea that value creation is driven by the integration, exchange and application of resources among a variety of stakeholders (Vargo & Lusch, 2008); that is, *value is always co-created, often through markets*. This provides an alternative approach to “goods-dominant logic” (Vargo & Lusch, 2004) and traditional views on innovation, in which value is seen as created by firms (i.e., “producers”). S-D logic provides a more-holistic and dynamic lens for understanding value creation and, thus, innovation (Edvardsson, Tronvoll, & Gruber, 2011; Vargo & Lusch, 2008, 2011). Specifically, it differs from the more traditional thought of innovation in that a service-ecosystems approach removes not only the distinction between “producers” and “consumers” of value, but also the distinction between “innovators” and “adopters.” This is based on an actor-to-actor perspective (Vargo & Lusch, 2011) and an emphasis on the co-creation of value as well as markets (Vargo & Akaka, 2012). Furthermore, consistent with the emerging views of innovation in social systems, a service-ecosystems perspective conceptualizes these

systems as always multidimensional and interpenetrating and, thus, as being composed of both “institutional” and “loosely coupled” (Sundbo & Galloju, 2000) subsystems.

In the sections that follow, we elaborate a service-ecosystems approach to innovation by discussing 1) the collaboration in value creation, 2) the combinatorial evolution of resources and 3) the influence of institutions in the innovation of both technology and markets. In this view, institutions are central to innovation because they guide how actors integrate resources and co-create value with other actors. However, institutions are not static and are continually reconstituted through the actions and interactions of multiple actors trying to create (sometimes new forms of) value for themselves and for others. Thus, this framework ultimately points toward *institutionalization* – the maintenance, disruption and change of institutions (Lawrence & Suddaby, 2006) – as a central process of innovation for both technologies and markets.

4.1. Collaboration in value creation

A service-ecosystems approach to innovation broadens the process of value creation beyond a firm's operational activities to include the active participation of customers (and other relevant actors). This balanced and interactive view points “away from the fallacy of the conceptualization of the linear, sequential creation, flow and destruction of value and toward the existence of a much more complex and dynamic system of actors that relationally co-create value and, at the same time, jointly provide the context through which ‘value’ gains its collective and individual assessment” (Giddens, 1984, p. 25; Slater, 2002, p. 60; Vargo & Lusch, 2011, p. 182).

In service ecosystems, each instance of resource integration and service exchange has the potential to change the nature of the system and, thus, the context for the next iteration and determination of value creation. In this way, value co-creation continually occurs as service is exchanged for service and actors integrate value propositions and enact various practices to adapt to contextual requirements. This is why the consideration of future enactments of a value proposition is critical for technological as well as market innovation (Teubal et al., 1991). In addition, as actors engage in value-creating activities, and interact with other actors, they simultaneously change social contexts as well (e.g., Chandler & Vargo, 2011; Edvardsson et al., 2011).

Ultimately, within this view, innovation is driven by collaborative efforts to find or develop new ways to create value. However, in order for value to be created, it must be derived and determined by a beneficiary. Thus, value is proposed by one or more service providers (e.g., firms), but always determined by one or more service beneficiaries (e.g., customers) through the integration of resources, in particular social contexts (Chandler & Vargo, 2011; Vargo & Lusch, 2008). Stated differently, value perceptions are always guided by socially constructed systems of norms, values, and beliefs (i.e., institutional arrangements) that are specific to a service beneficiary. In this view, the integration of resources is central to the generation of new resources, and, thus, innovation is ultimately driven by the combinatorial evolution of new and useful knowledge (Arthur, 2009), or *operant* resources.

4.2. Combinatorial evolution of operant resources

This service-ecosystems view recognizes two broad categories of resources that are continually integrated to create value: *operand* and *operant* resources. Importantly, this approach recognizes the primacy of *operant resources* – those that are capable of acting on other resources to contribute to value creation – rather than *operand resources* – those that require action taken upon them to be valuable (Vargo & Lusch, 2004, 2008). Based on this, Akaka and Vargo (2012) extend the socially constructed model of technology (Orlikowski, 1992) to include the consideration of *technology* as an *operant* resource because it is constituted

by dynamic resources, such as knowledge and skills, and is central to influencing value creation and, thus, innovation.

In the same way, *markets* can also be considered as *operant resources* because they are considered as “institutionalized solutions” that dynamically and continually contribute to the co-creation of value (Vargo & Lusch, 2013). Vargo and Akaka (2012) discuss markets as *operant resources* by extending a practice approach to market formation (Kjellberg & Helgesson, 2006, 2007) and broadening the scope of *exchange practices* to *integrative practices* (inclusive of exchange practices) as a central practice for value creation in markets. In this context, it is important to highlight that both technology and markets can change and be changed and, thus, that *operant resources* can also be acted upon in value creation. The emphasis on the integration of *operant*, as well as *operand*, resources, or *integrative practices*, as a primary driver of innovation, supports Arthur's (2009) view of innovation as “combinatorial evolution” or the combining and recombining of existing technologies to develop “new” solutions.

This view helps to consolidate the literature on technology and markets discussed above into a more comprehensive framework that focuses on the integration and application of *operant resources* in innovation of both technology and markets. In this view, *technological innovation* is the co-creation of new value propositions, or collective, combinatorial evolution that leads to the generation of new, potentially useful knowledge (i.e., *operant resources*). *Market innovation*, then, is driven by and drives the development of new technologies, but also requires the acceptance of a value proposition as well as the continued exchange, integration and application of a particular technology among multiple actors, over time (i.e., *institutionalization*). In both cases innovation is driven by the enactment of value-creating practices (institutionalized activities) and the integration and application of *operant resources* (Vargo & Akaka, 2012). However, these practices are enabled and constrained by a multitude of higher-level social structures, or institutions. This consideration of institutions as a primary resource for innovation requires a deeper understanding of the role of institutions in innovation to better inform how the integration of resources drives both stability and change.

4.3. Institutions in innovation

As discussed, the conceptualization of service ecosystems (Vargo & Lusch, 2011) broadens the dyadic views of interactions between firms and customers, by emphasizing beneficially applied useful knowledge (i.e., service) as the basis of technology, and by rejecting views of markets as relatively static, external entities in which value flows sequentially from value-creating firms to value destroying consumers. In this view, value is created through multiple levels of interaction: micro (e.g., service encounters), meso (e.g., organizations, “industries,” and brand communities) and macro (e.g., societal). However, these levels are not fixed; rather they are relative levels of interaction (i.e., one level is nested within another) that evolve and change over time (Chandler & Vargo, 2011).

At first glance, the conceptualization of service ecosystems might appear similar to a view of innovation that centers on “loosely coupled systems of autonomous firms” (Dhanarag and Parkhe, 2006, p. 659) or “a web of interactions among different actors and within a diverse economic, social, political, cultural and geographical context” (Corasaro et al., 2012, p. 782). However, S-D logic extends its view of value creation and innovation beyond network configurations and interactions, and emphasizes the importance of *institutions* (Vargo & Lusch, 2011). In particular, a service ecosystems view recognizes that institutions influence the interactions that contribute to the creation and evaluation of value among multiple actors, even those that result in the rejection of value propositions.

Furthermore, within service ecosystems, social contexts are composed of networks of actors as well as the *institutional arrangements* – i.e., sets of institutions that are nested in multiple levels of social

systems (Kiser & Ostrom, 1982) – that guide their actions and interactions. Institutions, in particular, are seen as guiding forces of value determination. However, within service ecosystems, institutional arrangements intersect and overlap and often create conflicting views on value and how value is derived. Because of this, the contextual and phenomenological nature of value, *value-in-context* (Vargo & Lusch, 2008) becomes a central aspect to value creation and a critical factor in innovation.

This is because value co-creation is driven through resource integration and service exchange among multiple stakeholders, with varying views on value (institutional arrangements), which determine what works and what does not work (i.e., what is valuable and what is not) (Lusch, Vargo, & O'Brien, 2007). It is through this iterative and dynamic process, involving firms, customers and other actors, that *institutionalization* (i.e., maintenance, disruption and change) of integrative, normative, and representational practices, and ultimately, innovation, occurs. In other words, a service ecosystems view highlights the actions and interactions that collaboratively contribute to value creation, including those that help to maintain and change institutions. Furthermore, this perspective emphasizes the social forces that govern those actions and guide the development, integration and use of new technologies, as well as the formation of markets. The convergence of emerging views on technology and markets is outlined in Table 1, and a service ecosystems view is presented to further integrate the two.

A service-ecosystems view integrates the idea of innovation as “combinatorial evolution” (Arthur, 2009) with a view that “markets are not, they become” (Kjellberg et al., 2012) by focusing on the integration of operant resources as the primary driver of the co-creation of value and markets. In addition, by centering on the combinatorial evolution of operant resources and institutions in innovation, this view conceptually connects the centrality of knowledge in the technology literature (Arthur, 2009; Orlikowski, 1992), which has institutional roots, with the importance of institutions (i.e., social technologies) (Nelson & Nelson, 2002) in the formation and reformation (i.e., innovation) of markets. This view explicates how the innovation of technologies and markets is driven by collaboration in value creation and the integration of operant (and operand) resources, as well as the formation and reformation of institutions.

With regard to the online education example discussed above, a service-ecosystems approach helps to elaborate the relationship between the development of value propositions and the co-creation of markets. In this view, it becomes clear that the development of technologies, such as webinars, is driven by the application of knowledge and skills regarding, among other things, higher education and information technology. However, as mentioned, these technologies are not inherently valuable. Rather, value is determined through the integration of new technologies (e.g., webinars) with existing operant and operand resources (e.g., knowledge of how to interact with online interfaces, computers, laptops, etc). Importantly, in both the development and use of webinars (or other online education tools), resources are integrated by multiple actors and value is proposed and determined as those actors draw on existing institutions (e.g., social norms) for how higher education should be experienced.

In this view, it is the ongoing maintenance, disruption and change of institutions, what we describe as “institutionalization,” that drives

innovation of both technology (i.e., potentially useful knowledge) and markets (i.e., institutionalized solutions). Although the ecosystems approach outlined above emphasizes the critical role institutions play in innovation, the way in which institutions are maintained and change requires elaboration. In addition, further investigation regarding the nested relationship between technological and market innovation is also needed. The following sections extend an S-D logic, service ecosystems approach to innovation by drawing on scholarly work on institutions to elaborate the underlying process by which institutional change takes place and, ultimately, market innovation occurs.

5. Institutionalization as a central process for innovation

The movement toward more deeply understanding the dynamic, systemic and service-driven nature of innovation is “liable to lead to nothing less than a widening or even complete reinterpretation of the concept [of innovation] itself” (Coombs & Miles, 2000, p. 100). Along these lines, we have outlined a service ecosystems approach to innovation that refocuses the study of innovation on understanding how institutions are formed and reformed, or how *institutionalization* occurs. Barley and Tolbert (1997) provide insight to the process of institutionalization, which is based on Giddens' (1984) theory of structuration. The authors draw on structuration theory and develop a framework for *institutionalization* to better understand “the processes by which existing institutions are maintained and modified.” Importantly, they argue that the study of institutionalization requires “a conceptual framework that specifies the relations between interactional episodes and institutional principles” (Barley & Tolbert, 1997, p. 100). Although structuration theory (Giddens, 1984) provides critical insights to how practices contribute to the ongoing formation and reformation of social structures (i.e., institutions) and systems, some argue that it lacks the consideration of the dynamics of institutions (Sewell 1992) that is needed to fully understand *institutional change*.

Institutional change is a central issue for innovation, because it addresses the issue of “how institutions influence actors' behavior but also how these actors might, in turn, influence, and possibly change institutions” (Battilana, Leca, & Boxenbaum, 2009, p. 66). In this context, a view of institutional change has emerged that focuses on the activities of diverse, spatially dispersed actors and their involvement in the political struggles and the interactions among them (Hardy & Maguire, 2008; Lawrence & Suddaby, 2006). This approach, termed *institutional work*, expands the analysis beyond the creation of new institutions (Lawrence, Suddaby, & Leca, 2009) by highlighting the influence of actors on purposefully, maintaining, and disrupting existing institutions. Lawrence and Suddaby (2006) draw on the seminal research from Giddens (1984), as well as DiMaggio (1988), Oliver (1991), and Bourdieu (1977) to emphasize the idea that institutional work is concerned not only with transformative action, but also with repairing and concealing tensions and conflicts within and across institutions. This approach is imperative for the study of innovation because it highlights the importance of *institutional maintenance*, as well as change.

Callon (1998), for example, highlights this importance of institutional maintenance, without explicitly using an institutional vocabulary, by explaining that human actors can only function when certain options have been eliminated and the range of options has been drastically

Table 1
Integration of emerging views on technology and markets.

	Technology	Markets	Service ecosystems
Source of innovation	Useful knowledge	Symbols, representations, meanings	Service-for-service exchange (i.e., beneficially applied useful knowledge and skills)
Process of innovation	Combinatorial evolution	Enactment of market practices	Resource integration and value co-creation
Process of institutional maintenance or change	Structuration	Performativity	Institutionalization
Primary references	Arthur (2009), Mokyr (2004), Orlikowski (1992)	Kjellberg and Helgesson (2006), Venkatesh et al. (2006)	Vargo and Lusch (2004, 2008, 2011)

reduced. Thus, even seemingly constraining institutions (i.e., path dependencies and lock-ins) always exhibit enabling properties, which makes institutional maintenance an important component of institutional change. It is important to highlight that practices that are purposefully aimed at transforming and disrupting, as well as maintaining institutions, are themselves institutionally embedded and therefore rely on resources and skills that are specific to the social system or subsystem in which they occur (Giddens, 1984; Lawrence & Suddaby, 2006). As mentioned, in the example of online higher education, the development of new technologies, such as webinars, is enabled and constrained by existing educational institutions and through the application of the knowledge and skills of actors who are familiar with necessary resources for providing a particular type of education.

This view on institutional work helps to frame service ecosystems as higher-order collectives whose practices are constructed and spatially and temporally maintained through socio-technical processes of human actors, and are best described as open systems with blurred boundaries (Lawrence & Suddaby, 2006; Wieland, Polese, Vargo & Lusch, 2012). More specifically, Lawrence and Suddaby (2006, p. 248), suggest that institutions exist in nested systems “across many levels, from micro-level institutions in groups and organizations that regulate forms of interactions among members to field-level institutions, such as those associated with professions or industries, to societal institutions concerned with the role of family, the nature of gender and the status of religion.” Stated differently, *institutional arrangements*, or integrated clusters of institutions, influence and are influenced by the ongoing value-creating actions and interactions among multiple actors. Thus, it is often the intersection of diverse institutions – e.g., educational norms and standards and prescriptions embedded in information technology – that contribute to both the maintenance and change of institutions, and thus, innovation.

This section highlights research on institutions and institutional change to show that the interconnected practices and processes of multiple actors drive the *institutionalization* (i.e., maintenance, disruption and change) of new technologies in dynamic socio-technical systems. In line with this shift toward social aspects of innovation, Coombs and Miles (2000, p. 100) argue that “we are moving away from a model of innovation that puts all the emphasis on artifacts and technological innovation; and toward a model which sees innovation in terms of changes in market relationships but with major artifact and technological dimensions.” This view of innovation suggests that technological advancement is always embedded within dynamic social systems and technological innovation can be considered as the “combinatorial evolution” of value propositions (Arthur, 2009), which are endogenous to the formation and reformation of markets (Akaka & Vargo, 2013). The following section centers on the discussion of market innovation to further elaborate the relationship between technological and market innovation and how institutionalization drives the ongoing emergence and maintenance of new solutions.

6. Market innovation: the emergence and institutionalization of new solutions

A service-ecosystems approach to innovation supports Orlikowski's (1992) argument that technology is both an outcome and a medium of human action. However, as stated, market innovation does not automatically occur when actors (e.g., firms), or groups of actors (e.g., innovation networks) introduce new ideas or products, but only when new practices (i.e., solutions) become institutionalized. Zietsma and McKnight (2009) describe this institutionalization process as a non-linear process in which all actors engage in institutional work and co-create institutions through multiple iterations of institutional developments until common templates emerge that reflect shared conceptions of problems and solutions. The proposed view of innovation is based on Vargo and Lusch's (2011) normalized actor-to-actor (A2A) view, which was introduced in this journal, and sheds light on how

markets form and reform, through technological advancements and changes in integrative, normative, and representational processes and practices embedded within service ecosystems.

Market innovation therefore involves the ongoing and systemic maintenance, change, and disruptions of the institutional arrangements that enable and constrain integrative, normative, and representational practices. In this dynamic view, service ecosystems, with their overlapping institutions, or institutional arrangements, need to be viewed as the venues for enabling and constraining market innovation (Vargo & Lusch, 2012). Loasby (2000), for example, describes institutions in the context of innovation as “mixed blessings”. Service-ecosystems (including markets) always possess path dependencies, which provide stability through continuity and repetitiveness. However, at the same time, these institutional arrangements also lead to problems and conflicts, through their intra-institutional inconsistencies and contradictions. These conflicts propel the ongoing emergence of new value propositions and drive the institutionalization of new solutions (i.e., market innovation).

In this way, value propositions are always the co-created outcomes of systemic human action and market innovation is driven by the institutionalization – i.e., the *continual application and redevelopment* – of those value propositions within and across ecosystems of service exchange. More specifically, value-proposing actors, based on their institutional arrangements and their competences (i.e., operant resources), engage in institutional work by recombining or proposing not only new integrative practices, but also new normative and representational practices. Somewhat paradoxically, these value propositions are never just aimed at institutional change, but also reflect the institutional work of overlapping maintenance, and disruption components (Creed, Dejorjy, & Lok, 2010). As highlighted, the need for the maintaining elements in institutional change is often overlooked. However, without them, institutional innovations could not achieve “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995, p. 574).

Whereas a newly established online university, for example, might aim to create new practices by introducing online programs, that same university also maintains institutional elements such as teachers, grades, and degrees. Furthermore, a fully online university, at least partly, disrupts the practices of using classrooms in brick-and-mortar universities. After being proposed, value propositions are evaluated with the help of combinations of existing institutions, including those that are prescribed by the value proposing actor, and these institutions may enable and constrain the development of new value propositions – i.e., hiring firms opting to hire graduates from online universities. In this way, reactions or responses to new value propositions, or, lack thereof, influence the further development of a new market. In order for market innovation to occur, changes in practices and institutions (e.g., educational standards and norms) must be integrated with other institutions (e.g., prescriptions embedded in information technology) within a wider service ecosystem and align, at least to some extent, with additional institutions as well (e.g., student perceptions of higher education and demands of hiring companies).

In this example, the distinction between “innovators” and “adopters” becomes blurred as all actors similarly co-create value by enacting integrative, normative, and representational practices and drawing on phenomenological interpretations of value. By using their interpretive flexibility, integrators of value propositions contribute to the ongoing development of new value propositions by proposing modified integrative practices based, similarly, on their own knowledge and institutional arrangements. In this view, the processes of development and use associated with a particular value proposition contribute to technological innovation and the emergence of potentially useful information. However, market innovation requires further integration and continuous interaction among various actors (and their institutional arrangements) over time. That is, even if webinars, for example, are useful for a select group of actors (e.g., current college professors and students), unless this

technology is perceived as valuable by a wider social group (e.g., potential college students and employers) and new institutions are formed (e.g., social norms supporting purely online education), market innovation is constrained.

Consistent with the need to view markets as highly relational, this view highlights a systemic process in which all actors engage in “ongoing negotiations, experimentation, competition, and learning” (Zietsma & McKnight, 2009, p. 145). For instance, a student rejecting the value proposition from the online university in the example above also contributes to institutionalization. This student, by choosing a traditional university, might, at least partly, disrupt the legitimacy of online classes, while, at the same time, might propose new, hybrid educational practices by supplementing his or her classes with study guides and lectures from *YouTube* and other online sources. Even a student who accepts the value proposition of the online university might engage in institutionalization by ignoring certain properties of the value proposition (e.g., not engaging in online discussions) or inventing new ones that may go beyond or even contradict designers’ exceptions and inscriptions (e.g., using the online class forum to promote unrelated ideas, encouraging or sanctioning others) (cf. Orlikowski, 1992). In other words, even this student, based on his or her useful knowledge, institutional arrangements, and access to other heterogeneous resource bundles, actively participates in the shaping of integrative, normative, and representational practices associated with online learning. Students, teachers, university administrators, IT developers and other actors, in our example, therefore all similarly negotiate their actions through ongoing socio-technical experimentation, competition, and learning.

Here, it is important to reiterate the need to view service ecosystems, at least partly, as loosely coupled, interconnected, and nested. “Any particular social structure is viewed not as an isolated, abstract phenomenon but, rather, as part of a larger whole composed of multiple, interpenetrating social structures operating at multiple levels and in multiple sectors” (Seo & Creed, 2002, p. 225). Benson (1977) highlights that social structures, due to their loosely coupled nature, are susceptible to incompatibilities both within and among institutional arrangements. The institutionalization of new solutions always involves the integration of multiple institutions and, therefore, is always an ongoing process, since the social order produced in the process of social construction always creates new institutional contradictions, ruptures, inconsistencies, and incompatibilities (Benson, 1977). Because of this, tensions, can surface when one type of practice (e.g. the normative practice of using *YouTube* lectures and study guides) rubs up against other practices (e.g. the representational practice of only allowing sanctioned faculty members and textbooks). In other words, markets are never completely stabilized, but instead, the institutionalization of new solutions is an ongoing process and markets are continually formed and reformed.

In summary, we propose that a service-ecosystems view emphasizes the participation of systemic actors and the role of institutions in innovation and market (re)formation. In this view, *innovation* can be broadly conceptualized as *the co-creation or collaborative recombination of practices that provide novel solutions for new or existing problems* (i.e., the at least partial disruption of existing institutions). More specifically, *technological innovation* can be considered as the co-creation of new value propositions and *market innovation* can be considered as the *emergence and institutionalization of new solutions* (i.e., the temporal durability of new integrative, normative and representational practices). While the study of innovation networks has recognized the importance of collaboration in innovation, especially in the industrial or B2B marketing literature, we argue that only a systemic, reciprocal-service, and co-creational model of innovation can provide a transcending view that reframes the process of innovation from the development of technology as embedded artifacts or products, to the co-creation of new value propositions and the development of markets as the institutionalization of new solutions.

7. Conclusion

In this article, we explore emerging viewpoints on technology and markets and the importance of institutions in innovation. We argue that a service-ecosystems perspective helps to integrate these views and identify institutionalization as a central process for the innovation of both technology and markets. Thus, the underlying process by which technological innovation and market innovation occur is, ultimately, one and the same. In this view, technological innovation is the combinatorial evolution of useful knowledge, which is enabled and constrained by existing institutions and influenced by the ongoing negotiation and recombination of overlapping institutions (i.e., social technology). In other words, the development of a new technology includes a process of institutional maintenance, disruption and change (i.e., institutionalization), which requires the integration of existing technologies with existing institutions and results in the development of new value propositions. Along these lines, market innovation can be viewed as an extension of technological innovation in that it results in a broader institutionalization of new solutions. Both processes are driven by institutionalization, but whereas technological innovation results in the development of a new value proposition, market innovation results in the development of a new institutionalized solution. Furthermore, both processes are driven by the ongoing co-creation of value among multiple actors, within ecosystems of service exchange. Importantly, as new solutions become institutionalized they recursively contribute to the exchange of service and the co-creation of value.

Foundational to this service-centered approach is the notion that the integration and reintegration (combinatorial evolution) of *operant* resources (useful knowledge) lie at the heart of technology (Arthur, 2009; Mokyry, 2004; Vargo & Lusch, 2004). Using Orlikowski’s (1992) concept of the duality of technology, we argue that technology and value propositions are always endogenous to markets. In this view, technological advancements (i.e., the development of new value propositions) are both an outcome and a medium of human action. In other words, this service-ecosystems perspective allows researchers to zoom out and view market innovation and technological innovation not as separate sequential processes, but rather, view the innovation of both technology and markets as occurring through a single, ongoing process of institutionalization. In this view, value co-creation and innovation occur through institutional, combinatorial evolution in a massively collaborative, ongoing creation of new institutional arrangements.

Importantly, this approach not only helps to consolidate the fragmented innovation literature by focusing on an underlying process of technological and market innovation, but also broadens the scope of innovation to consider the ecosystems within which the generation of new knowledge and markets occurs. Furthermore, this service ecosystems perspective of innovation is based on an actor-to-actor approach that not only removes the divide between “producers” and “consumers” (Vargo & Lusch, 2011), but also blurs the divide between “innovators” and “adopters.” Thus, through this lens, innovation is a collaborative process, rather than an output, which always involves the participation of all value co-creating parties and social, as well as technical, developments. To varying degrees, market innovation is driven by institutionalization of a technology, or a value proposition, which becomes integrated, through institutionalization, into the fabric of a particular socio-technical system, composed of rules, norms, values, meanings and practices.

This consideration of the importance of institutions in ecosystems of service exchange can provide vital insights into both technological and the market components of innovation, and can capture the systemic and relational nature of market (re)formation. Importantly, a service ecosystems perspective directs our attention to the institutions that guide interaction among actors. Although we recognize a multitude of practices and institutions within any given market, the discussion of practices in markets and marketing (Kjellberg & Helgesson, 2007; Schau, Muniz, &

Arnould, 2009; Warde, 2005), as well as value co-creation and innovation, is in its infancy. The existing work on the role of institutions in markets has only begun to explicate institutionalization processes in socio-technical and economic systems. The link between business models, for example, and their embedded institutional prescriptions, and user subscriptions needs a much deeper conceptual and empirical investigation.

Furthermore, the consideration of a service-ecosystems approach for innovation emphasizes that the maintenance, disruption, and change of institutions (i.e., institutionalization) are always co-creational processes in which actors try to resolve the nested contradictions and inconsistencies that are foundational to all institutional arrangements. However, there remain many opportunities for the essential, deeper exploration of how actors resolve these contradictions and inconsistencies. We believe that the linkages between, or relationships among, various levels (micro, meso, and macro) of institutions are important components of this exploration and therefore encourage both conceptual and empirical investigations of these linkages.

Finally, this article suggests that traditional innovation approaches, which center on the development of new products and corporate processes, limit the understanding of the co-created, systemic, and dynamic nature of market innovation. As it relates to the study of innovation, a service-ecosystems framework can be used to further develop theories of entrepreneurship, such as effectuation theory (Read, Dew, Sarasvathy, Song, & Wiltbank, 2009), and provide a revised outlook for marketing strategy in general. The service-ecosystems view on innovation provides an important avenue for reconsidering the purposes and processes of marketing, from the management of firm activities in existing markets (e.g., segmenting, targeting, and positioning) to the maintenance, disruption and change of institutions and the continual co-creation of new solutions.

References

- Abernathy, W.J., & Clark, K.B. (1985). Innovation: Mapping the winds of creative destruction. *Research Policy*, 14(1), 3–22.
- Akaka, M.A., & Vargo, S.L. (2013). Technology as an operant resource in service (eco) systems. *Information Systems and e-Business Management*, 1–18.
- Arthur, W.B. (2009). *The nature of technology: What it is and how it evolves*. New York: Free Press.
- Azimont, F., & Araujo, L. (2007). Category reviews as market-shaping events. *Industrial Marketing Management*, 36(7), 849–860.
- Barley, S.R., & Tolbert, P.S. (1997). Institutionalization and structuration: Studying the links between action and institution. *Organization Studies*, 18(1), 93–117.
- Battilana, J., Leca, B., & Boxenbaum, E. (2009). How actors change institutions: Towards a theory of institutional entrepreneurship. *The Academy of Management Annals*, 3(1), 65–107, <http://dx.doi.org/10.1080/19416520903053598>.
- Benson, J.K. (1977). Organizations: A dialectical view. *Administrative Science Quarterly*, 1–21.
- Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge: The Press Syndicate of the University of Cambridge.
- Bower, J.L., & Christensen, C.M. (1995). *Disruptive technologies: Catching the wave: Harvard Business Review video*.
- Callon, M. (Ed.). (1998). *The laws of the markets*. Oxford: Blackwell.
- Chandler, J.D., & Vargo, S.L. (2011). Contextualization: Network intersections, value-in-context, and the co-creation of markets. *Marketing Theory*, 1, 35–49.
- Christensen, C.M., Baumann, H., Ruggles, R., & Sadtler, T.M. (2006). Disruptive innovation for social change. *Harvard Business Review*, 84(12), 94.
- Coombs, R., & Miles, I. (2000). Innovation, measurement and services: The new problematic. *Economics of Science Technology and Innovation*, 18, 85–104.
- Corsaro, D., Cantu, C., & Tunisini, A. (2012). Actors' heterogeneity in innovation networks. *Industrial Marketing Management*, 41(5), 780–789.
- Creed, W.E.D., DeJordy, R., & Lok, J. (2010). Being the change: Resolving institutional contradiction through identity work. *Academy of Management Journal*, 53(6), 1336–1364.
- Dhanaraj, C., & Parkhe, A. (2006). Orchestrating innovation networks. *Academy of Management Review*, 31(3), 659–669.
- DiMaggio, P.J. (Ed.). (1988). *Interest and agency in institutional theory*. Cambridge, MA: Ballinger.
- Dodgson, M., Mathews, J., Kstelle, T., & Hu, M.C. (2008). The evolving nature of Taiwan's national innovation system: The case of biotechnology innovation networks. *Research Policy*, 37(3), 430–445.
- Edvardsson, B., Tronvoll, B., & Gruber, T. (2011). Expanding understanding of service exchange and value co creation. *Journal of the Academy of Marketing Science*, 39(2), 327–339.
- Freeman, C. (1991). Networks of innovators: A synthesis of research issues. *Research Policy*, 20(5), 499–514.
- 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*, 33(6), 897–920.
- Giddens, A. (1984). *The constitution of society*. Berkeley and Los Angeles, CA: University of California Press.
- Godin, B. (2006). The Linear model of innovation the historical construction of an analytical framework. *Science, Technology & Human Values*, 31(6), 639–667.
- Griffin, A., & Hauser, J.R. (1993). The voice of the customer. *Marketing Science*, 1–27.
- Hardy, C., & Maguire, S. (Eds.). (2008). *Institutional entrepreneurship*. Thousand Oaks, CA: Sage Publication Inc.
- Hauser, J., Tellis, G., & Griffin, A. (2006). Research on innovation: A review and agenda for marketing science. *Marketing Science*, 26(26), 687–717.
- Howells, J. (1997). Rethinking the market–technology relationship for innovation. *Research Policy*, 25(8), 1209–1219.
- Kim, W.C., & Mauborgne, R. (2005). *Blue ocean strategy*. Boston, MA: Harvard Business School Press.
- Kiser, L.L., & Ostrom, E. (1982). The three worlds of action: A metatheoretical synthesis of institutional approaches. In E. Ostrom (Ed.), *Strategies of political inquiry*. Beverly Hills: Sage Publications.
- Kjellberg, H., & Helgesson, C.-F. (2006). Multiple versions of markets: Multiplicity and performativity in market practice. *Industrial Marketing Management*, 35(7), 839–855.
- Kjellberg, H., & Helgesson, C.-F. (2007). On the nature of markets and their practices. *Marketing Theory*, 7(2), 137–162.
- Kjellberg, H., Storbacka, K., Akaka, M., Chandler, J., Finch, J., Lindeman, S., et al. (2012). Market futures/future markets: Research directions in the study of markets. *Marketing Theory*, 12(2), 219–223.
- Lawrence, T.B., & Suddaby, R. (Eds.). (2006). *Institutions and institutional work*. London: Sage.
- Lawrence, T.B., Suddaby, R., & Leca, B. (Eds.). (2009). *Introduction: Theorizing and studying institutional work*. New York: Cambridge University Press.
- Layton, E.T., Jr. (1974). Technology as knowledge. *Technology and Culture*, 31–41.
- Loasby, B.J. (2000). Market institutions and economic evolution. *Journal of Evolutionary Economics*, 10(3), 297–309.
- Löbler, H., & Lusch, R. (2013). *Signs and practices as resources IT-related service innovation. Working paper*. Universität Leipzig.
- Lusch, R.F., & Vargo, S.L. (2006). Service-dominant logic: Reactions, reflections and refinements. *Marketing Theory*, 6(3), 281–288.
- Lusch, R.F., & Vargo, S.L. (2014). *Service-dominant logic: Premises, perspectives, possibilities*. Cambridge, UK: Cambridge University Press.
- Lusch, R.F., Vargo, S.L., & O'Brien, M. (2007). Competing through service: Insights from service-dominant logic. *Journal of Retailing*, 83(1), 5–18.
- Mokyr, J. (2004). *The gifts of Athena: Historical origins of the knowledge economy*. Princeton: Princeton Univ. Press.
- Möller, K., & Rajala, A. (2007). Rise of strategic nets—New modes of value creation. *Industrial Marketing Management*, 36(7), 895–908.
- Nelson, R.R., & Nelson, K. (2002). Technology, institutions, and innovation systems. *Research Policy*, 31(2), 265–272.
- Oliver, C. (1991). Strategic responses to institutional processes. *The Academy of Management Review*, 16(1), 145–179.
- Orlikowski, W.J. (1992). The duality of technology: Rethinking of the concept of technology in organizations. *Organization Science*, 3(3), 398–427.
- Orlikowski, W.J. (2000). Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization Science*, 11(4).
- Oudshoorn, N., & Pinch, T. (2003). *How users matter: The co-construction of users and technology*. The MIT Press.
- Peters, L.D., Pressey, A.D., Vanharanta, M., & Johnston, W.J. (2013). Constructivism and critical realism as alternative approaches to the study of business networks: Convergences and divergences in theory and in research practice. *Industrial Marketing Management*, 42(3), 336–346.
- Pinch, T.J., & Bijker, W.E. (1984). The social construction of facts and artefacts: Or how the sociology of science and the sociology of technology might benefit each other. *Social Studies of Science*, 399–441.
- Read, S., Dew, N., Sarasvathy, S.D., Song, M., & Wiltbank, R. (2009). Marketing under uncertainty: The logic of an effectual approach. *Journal of Marketing*, 73(3), 1–18.
- Schau, H.J., Muniz, A.M., Jr., & Arnould, E.J. (2009). How brand community practices create value. *Journal of Marketing*, 73(5), 30–51.
- Schumpeter, J. (1934). *The theory of economic development*. Cambridge, Mass.: Harvard University Press.
- Scott, W.R. (2001). *Institutions and organizations*. Thousand Oaks, CA: Sage.
- Seo, M.-G., & Creed, W.E.D. (2002). Institutional contradictions, praxis, and institutional change: A dialectical perspective. *The Academy of Management Review*, 27(2), 222–247.
- Simon, H.A. (1996). *The science of the artificial*. Cambridge, MA: The MIT Press.
- Slater, D. (2002). Capturing markets from the economists. *Cultural Economy*, 59–77.
- Suchman, M.C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 571–610.
- Sundbo, J., & Gallouj, F. (2000). Innovation as a loosely coupled system in services. *International Journal of Services, Technology and Management*, 1(1), 15–36.
- Teubal, M., Yinnon, T., & Zuscovitch, E. (1991). Networks and market creation. *Research Policy*, 20(5), 381–392.
- Urban, G.L., & Hauser, J.R. (1980). *Design and marketing of new products*. Vol. 33, NJ: Prentice-Hall Englewood Cliffs.
- Vargo, S.L., & Akaka, M.A. (2012). Value cocreation and service systems (re) formation: A service ecosystems view. *Service Science*, 4(3), 207–217.
- Vargo, S.L., & Lusch, R.F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68 (61–17 January).

- Vargo, S.L., & Lusch, R.F. (2008). Service-dominant logic; further evolution. *Journal of the Academy of Marketing*, 36(1), 1–10.
- Vargo, S.L., & Lusch, R.F. (2011). It's all B2B...and beyond: Toward a systems perspective of the market. *Industrial Marketing Management*, 40(2), 181–187.
- Vargo, S.L., & Lusch, R.F. (2012). *Special issue: Toward a Better understanding of the role of value in markets and marketing*. 9, Emerald Group Publishing.
- Vargo, S.L., & Lusch, R.F. (2013). *Service-dominant logic: Premises, perspectives, possibilities. Paper presented at the Naples Forum on Service*. Italy: Ischia.
- Venkatesh, A., Penalzoza, L., & Firat, F. (Eds.). (2006). *The market as a sign system and the logic of the market*. Armonk, New York: M.E. Sharpe.
- von Hippel, E. (1978). Successful industrial products from customer ideas. *The Journal of Marketing*, 39–49.
- von Hippel, E. (2007). Horizontal innovation network—By and for users. *Industrial and Corporate Change*, 16(2), 293–315.
- Warde, A. (2005). Consumption and theories of practice. *Journal of Consumer Culture*, 5(2), 131–153.
- Zietsma, C., & McKnight, B. (Eds.). (2009). *Building the iron cage: Institutional creation work in the context of competing proto-institutions*. New York: Cambridge University Press.
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