

How firms configure and deploy innovation platforms to foster service innovations

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Abstract

Service innovation research has extended the study of service ecosystems to embrace the role of platforms, thus creating a sustainable advantage in competitive markets. Making creative and effective use of innovation platforms requires a better understanding of how key actors foster service innovation by engaging with multiple actors, understanding dynamic structures and managing the innovation process. This article explains how firms configure and use innovation platforms to foster service innovations. Drawing on agency-driven and structure-driven concepts, the framework developed in this paper, links the innovation platform to renew ongoing business. Constituted by shared structures, including norms, standards, and rules together with value co-creation logics, the innovation platform functions as the institutionalized site focused on innovative resource integration and value co-creation processes. The usefulness of the framework is shown by describing how six firms use three categories of a platform to pursue innovation.

1. Introduction

Businesses are dependent on innovations to survive and strengthen competitive advantage [1]. By explaining how firms manage to remain innovative, the paper argues that firms often use innovation platforms to renew their business. The innovation platform's most important function is to orchestrate collaboration among multiple actors using technologies and a wide range of resources, configured to foster service innovations. By facilitating access to and use of appropriate resources, an innovation platform enhances the efficiency and effectiveness of service exchange and so becomes a venue for innovation [2]. Industry logic and contexts enable the use of innovation platforms such as SellaBand in the music business, Kapipal in non-profit services and Ericsson HypeLabs in IoT technology.

Traditionally, innovation processes have been viewed as a pipeline process where value is created by controlling a linear series of activities transforming the resources into outcomes that gain higher value for individual actors. If viewing innovation as a platform,

value is co-created in collaboration among multiple actors joining forces and integrate resources to enhance value in the business contexts. The core of using a platform view is to manage a shift from controlling to orchestrating innovations, from optimizing internal processes to facilitating external interactions, and from increasing customer value to secure the viability of the ecosystem [3]. Thus, the platform view of innovation widens the scope beyond individual innovations to facilitate a series of innovation efforts.

Service innovation has grown to become a rich and dynamic field, marked by novel approaches. One of these approaches emphasizes the recombination of existing actors and resources in service ecosystems [e.g. 4]. Thus, Edvardsson and Tronvoll [5] extended this understanding to include structures such as institutional arrangements. This conceptual article aims to explain how firms configure and deploy innovation platforms to foster service innovations. The structuration of innovation framework developed by Edvardsson, Tronvoll and Witell (forthcoming), built on agency- and structure-driven concepts emphasize that engaged actors act purposefully to facilitate the upscaling of service innovation to explain how different types of innovation platforms are used to foster service innovations.

The article contributes to the understanding of how innovation platforms are used to orchestrate collaboration among multiple actors to achieve service innovations that renew the business. The proposed framework explains how firms become innovative over time by showing how an innovation platform fosters multiple service innovations. The remainder of the article is structured as follows. Following a description of the structuration of service innovation framework and its key concepts, we analyze service ecosystem platforms that have enabled six different firms to develop and upscale innovations. Next, we describe how service innovations are enabled or inhibited by innovation platforms, and conclude by outlining managerial implications and areas for further research.

2. Theoretical framework

Previous research has identified the reconfiguration of resources and actors in ecosystems, with enabling and inhibiting business and social structures as a foundation for conceptualizing innovation. Lusch and Nambisan [2] characterized service innovation as a collaborative process within actor-to-actor networks in service ecosystems. Similarly, Chandler, Danatzis [6] integrated the innovation, institutional theory, and service ecosystem literature to explore how innovations are fostered.

Building on an ecosystem view, Edvardsson and Tronvoll [5] argue that service innovation relies on the engaged actors' ability to act purposefully in relation to recombination of resources and existing market and social structures. Building on this understanding Edvardsson, Tronvoll [7] introduce the so-called *structuration of service innovation* framework, arguing that service innovation is a manifestation of practice that can be described and understood by using agency- and structure-driven concepts, along with concepts describing states of the innovation process. Agency-driven concepts are focusing on the activities to achieve intended innovations and include value propositions, actors and resources. Structure-driven concepts as institutions and institutional arrangements are zooming in on 'the rules of the game' such as norms rules, habits and thus what is accepted, both from a business and social point of view. The structuration of service innovation framework is grounded in earlier work such as Orlikowski [8, p. 405], who stated that "a structural perspective is inherently dynamic and grounded in ongoing human action." The system perspective facilitates the study of dynamics that enable and inhibit service innovation.

Service innovation can be conceptualized using agency- and structure-driven concepts. The agency-driven concepts—consisting of actors, resources and value propositions—are interdependent, driven by actors (e.g., firms, customers) operating on a configuration of resources and directed by value propositions. A value proposition is an invitation from one actor (a key actor or a constellation of actors) to other actors to join forces in value co-creation. The invitation must be of interest both to the proposing actor(s) and to the invited actor(s) to co-create a sustainable service exchange. The invited actors need to understand and accept how they can more effectively realize their intended goals by engaging in innovative co-creation with the proposing actor(s) than otherwise would be possible. As the value proposition is crucial when communicating and scaling up innovations, Skålén, Gummerus [9, p. 150] argued that "service innovation entails the development of existing or the creation of new provision practices." According to

Lusch and Nambisan [2], value propositions play an important role in connecting one actor with other interested actors with complementing resources in the service ecosystem. The value proposition must describe how actors can improve their own and the system's viability by enabling customers to do something novel, guiding and directing service innovation [e.g. 10] and helping actors to develop "more effective value propositions for participating in beneficiaries' resource-integrating, value-creating practices, through service" [11, p. 87].

As drivers of service innovations, actors possess dynamic resources, including knowledge, skills, finance, and motivation. They are creative and have the capacity to recombine resources and innovate new value propositions [12]. Actors also exploit relevant available configurations of resources in service ecosystems [13]—for example, by integrating traditionally unrelated offerings, systems and brands to transgress system boundaries.

To realize the value proposition, key actors draw on resources embedded in service ecosystem structures [14], integrating, recombining and using these as means and enablers. To ensure that the outcome realizes value for actors in the service ecosystem, the proposing actors need the support of an innovation platform to foster, coordinate and manage what are often complex activities, relations, and collaborations between multiple invited actors. These engaged actor's activities are restricted or supported by existing structures grounded in the institutional arrangements.

All social and economic environments, including innovation environments embed a set of norms, rules and beliefs, described as institutions and institutional arrangements. Vargo and Lusch [15] used the term institution to denote relatively individual and independent rules while institutional arrangements refer to interrelated sets of institutions that together facilitate coordination of value co-creation in service ecosystems. An institution is "any structure or mechanism of social order and cooperation governing the behavior of a set of individuals within a given human community" [16]. Institutions specify "the rules of the game" [17, p. 4], including formal constraints like regulations and laws, and informal constraints such as norms and conventions that all actors produce and reproduce. Scott [18, p. 50] contended that the role of institutions is to provide guidelines and resources for taking action, as well as prohibiting or constraining engaged actors' activities and interactions. Vargo, Wieland [19, p. 1] argued that "institutionalization—the maintenance, disruption and change of institutions—[is] a central process of innovation." Innovative actors challenge and change existing institutionalized norms, rules and habits and, by implication, ways of co-creating value with and for

engaged actors [11]. Koskela-Huotari, Edvardsson [20] noted that breaking and making “new” rules is not possible without simultaneously maintaining parts (often the greater part) of existing service ecosystem institutions. Service ecosystems form and reform through recursive relationships of individual actions and the reproduction of relationships and shared meanings (e.g., social norms, cultures). Institutional arrangements shape the dynamics of how actors use resources by regulating (i.e., enabling or inhibiting) actors’ resource integration and value co-creation efforts [21]. Consequently, to explain service innovation there is a need to include both agency- and structural-driven concepts and view them as part of a platform and in an ecosystem perspective.

3. Innovation platforms in service ecosystems

Wheelwright and Clark [22, p. 73] were the first management scholars to invoke the concept of *platform* to describe products that meet the needs of a core group of customers but can be modified through the addition, substitution or removal of features. For McGrath [23], platforms are collections of common elements (often technological) implemented across a range of products. Meyer and DeTore [24] defined a platform as a set of subsystems and interfaces forming a common structure from which a stream of products are developed. However, Robertson and Ulrich [25] suggested a broader definition of platforms as the assets (components, processes, knowledge, people or relationships) shared by a set of products. Gawer and Cusumano [26] recommend that managers should move from “portfolio thinking” to “platform thinking,” which they define as understanding the commonalities that tie a firm’s offerings, markets and processes together, arguing that these should be exploited to create leveraged growth and variety. Krishnan and Gupta [27] used the term *product platforms* to refer to the subsystems and interfaces forming a common structure that enables a firm to efficiently develop and manufacture a family of products. This is close to an ecosystem view on and understanding of platforms. However, we agree with Oh, Phillips [28] who argue that that the concept innovative ecosystem is not yet a clearly defined concept (p. 1) to be used in research. Parker, Van Alstyne [29] are using the term ‘platform ecosystem’ when analyzing innovations. They show how e.g. Apple, Google and Microsoft are using external ecosystem for service innovation and how the locus of value creation moves from inside the firm to outside, often enabled by platforms in ecosystems. We therefore use innovation platform embedded in existing ecosystems in line with e.g. Lusch, Nambisan [2].

Perks, Kowalkowski [30] argue that the traditional firm and product-centric view of platforms are changing, as platforms are often developed by a lead firm within a network of collaborating actors. These actors orchestrate dynamic and purposive inter- or intra-dependent networks where actors co-create value [31]. Gawer and Cusumano [32] argue that a platform must (1) perform a *function* that is essential to a broader technological system and (2) solve a *business* problem for multiple firms and users in the industry. A platform provides a technological foundation for interfaces used by complementary interoperating subsystems [33].

Ojasalo [34] defined an innovation platform as an approach that systematically attracts, facilitates and orchestrates innovation with external actors in order to develop solutions to the problems and needs of the platform owner. Fu, Wang [35] suggested that innovation platform properties function as infrastructures that facilitate relationships in value co-creation activities. The innovation platform has the specific function of introducing innovative value propositions (VPs) and the resulting, novel and useful institutionalized practices.

Building on the structuration of service innovation framework, briefly described above we define an innovation platform as *a space with structures designed for engaged actors’ collaborative activities to foster service innovations*. The activities performed on the innovation platform are often organized as innovation projects, relying on a constellation of actors and their purposeful innovation efforts. These collaborating actors are provided with the necessary resources to stay focused on suitable service innovations. Innovation activities need the support, coordination, and control provided by an architecture or an innovation space guided by institutional arrangements embedded in structures. The innovation space has been characterized as an open and fuzzy supportive structure [36]. For example, an innovation space may include a physical location, labs and virtual communities to develop and test-drive VPs. The combination of innovation space and activities constitute the innovation platform.

The innovation platform is a strategic response to changes among actors and in the market to foster service innovations in line with a firm’s business model. Rather than individual innovations, the focus is on successive service innovations, thus supporting business development. The innovation platform’s in-built structure with norms, and values link the proposing actor’s (firm’s) business model and strategy statements to innovation activities and projects. Key actors create and establishes the innovation platform and, most importantly, serves as gatekeepers, deciding whether an innovation enters the service platform and how it will renew ongoing business. Firms in different markets

enforce a platform focus that best harmonizes internal as well as external interactions and processes, grounded in both B2B and B2C relations.

Innovation platforms can take many forms, differ in scope and focus according to changes in the business context and the firm's strategy and culture. The key actor's orchestration of innovative business activities forms the basis for an innovation platform at the intersection of agency-driven (innovation activities) and structure-driven (innovation space) concepts as shown in Figure 1.

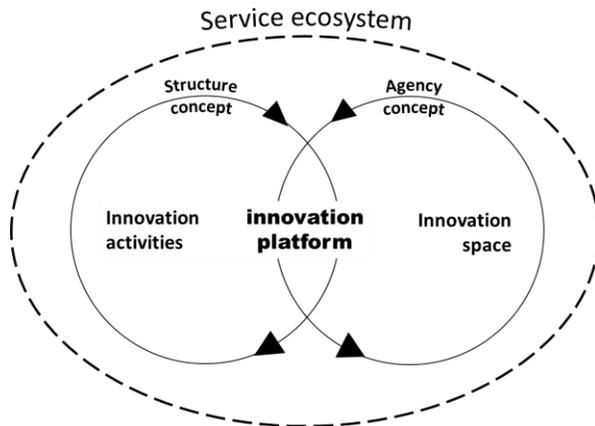


Figure 1: Innovation platform fostering service innovations.

On this view, *innovation activities* are carried out by actors with agency, or rather a constellation of collaborating actors with needed knowledge, skills and access to a wide range or resources, including financial support. The innovation activities are intended to result in new and useful value propositions (VPs) that fit the firm's business model and can scale up, thus contributing to developing the ongoing business. The outcomes of innovation activities are manifested in the renewal of existing VPs or the creation of new ones that renew the business. The development of innovative VPs involves a wide range of activities, including e.g. simulations and testing, risk analysis and profit estimations. Thus, the interdependencies between VP and resources and actors should provide the basis for the agency needed for these innovation activities to arrive at a stream of intended service innovations.

Innovation space refers to an institutionalized practice organized outside the ongoing business at the service platform and designed to foster innovation. An innovation space can be designed in various ways, involving different sets of resources and constellations of actors. Important issues include forms of collaboration with outside experts, how to deal with uncertainty and information security, IPR (intellectual property rights) and of great importance, how to capture the value and make money. The innovation space

includes a governance structure, a budget, legal support when needed, facilitating technologies structured ways of selecting and assessing ideas for innovation projects, milestones and continuous project assessment by actors skilled in innovation.

To illustrate the important role of an innovation platform to explain how service innovations come about we turn to the development of Apple watch. Apple used their innovation platform in a new way, changing existing structures of how a watch should look like, operate and most important the services provided. A wide range of B2B actors were engaged to enable Apple watch to offers new services (apps) to the customers. These service include health functions, financial market updates, access to many other services that together significantly improve value in context for the users. Furthermore, being part of a wider service ecosystem, Apple watch has been positioned as something different from what is expect from a watch and more important creating favorable customer experiences. Customers are thus prepared to pay a price, much higher than for a traditional watch with similar design and fabrics.

4. Empirical contextualization

To demonstrate the utility of this framework, we investigated six very different innovation platforms that have successfully fostered multiple service innovations. To ensure the richness of data, the selection of firms was guided by "theoretical replication logic" [37]. Based on this principle, and to balance consistency and variation, we sought sufficient contextual and structural diversity [38, 39], ensuring that the selected firms reflected all of the theoretically relevant issues. Furthermore, we have first used MacInnis [40] integrative conceptualization to synthesize the understanding of innovation platform and thereafter the differentiated conceptualization making a typology of innovation platform focus. The six studied firms provide service not only to consumers but also to other businesses such as IKEAs office solutions, Amazons e-commerce platforms with related services and KidZania offers service to school for learning experiences and collaborate with other firms including DHL, Tetra Pak and Nippon Airways.

The selected firms—IKEA, Lego, KidZania, Eataly, Amazon, and Spotify—represent a wide range of innovation activities and spaces. They are all known as innovators within their industry. They are well established and rely on a high degree of collaboration with other actors, emphasizing environmental and social responsibility. In all six firms an innovation platform is created to renew the business by exploiting ecosystem dynamics.

To fulfill their vision of creating something novel and useful, the key actors orchestrate collaboration

between multiple actors to access necessary resources. The innovation platform is designed to exploit and respond to changes in context [41] and grounded in (1) new ways of integrating and assembling resources, (2) new constellations of brands or (3) a platform for enabling technologies. We turn now to some examples from our studied firms.

IKEA designs and retails ready-to-assemble furniture and home accessories providing inspiring suggestions for new living rooms, kitchens, and offices on their website and in their stores. Working with disruptive actors, the company described the value proposition as follows; - Together, we explore different perspectives and include outside insights when creating the products and services of tomorrow.

IKEA has created an innovation platform called Space10 and invites people from the different practice fields to participate in different research projects resulting in prototypes, exhibitions, events, and workshops. When designers and interaction artists collaborated to increase body awareness and to address the mental and physical challenges in the digital world, the "In Motion Office" was born. With a pivoting desk, the workstation enables workers to change positions throughout the day, allowing them to enjoy the sunlight, avoid screen glare, change perspective, and interact with different colleagues.

The physical act of moving into different work positions promotes intellectual productivity and reduces the health issues associated with long periods of inactivity. Since its launch in 2015, the platform has generated an astonishing number of ideas, some of which have been developed as innovations. According to Göran Nilsson, IKEA Concept Innovation Manager.

IKEA co-workers have always enjoyed the freedom to address big issues creatively in our own business practices. With a global network of contributors, Space10 – an innovation platform designed for innovation activities supported by an innovation space - reflects the same spirit, enabling them to explore food security, the pace of urbanization, health and wellness and other macro-trends in a fearless way.

He went on to say:

We already do a lot to improve the lives of many people, and with Space10, we hope to take this vision even further. It's about exploring new ways of enabling a better and more sustainable life for many people.

LEGO (meaning "I assemble" in Latin) makes construction toys that consist of interlocking plastic bricks and an accompanying array of gears, figurines or mini-figures and a range of other elements. LEGO's building bricks create "builders of tomorrow through

creative play and learning." The LEGO innovation platform increased the volume of resources available to its customers for solving a particular problem by establishing itself as a new institution within a new service ecosystem.

This is essential, what the LEGO System of Play is designed to do! It is meant to give children (and even adults) the means to create their own play rather than handing out ready-made solutions. The LEGO System of Play is the platform on which a whole ecosystem is based. This platform with its innovation space and innovation activities gives LEGO much of its longevity, spanning generations. With its LEGO Ideas (formerly Cuusoo) portal, LEGO is a leader in crowdsourcing, collecting customer suggestions for new sets and working to create the most popular ones, with a share of the profits going to the originator of the idea.

Being a platform also means that other companies can take LEGOs and do something new with them. An example of this is Pley, the "Netflix for LEGO." Pley runs its own crowdsourcing portal, which is creating more new crowdsourced LEGO sets. (Ville Kilkku, responsible for Toys and games innovation, posted June 25 2015)

LEGO's innovation platform supports managers, who benefit from prevailing institutional arrangements, collaboration with multiple actors and creative use of various resources such as information, physical products, ICT tools and frequent reconfiguration of existing resources. LEGO decided to introduce open source methods and engaged outside developers during a deep crisis in 2004 that led to financial restructuring when the company was unable to compete with rivals such as Nintendo.

Another firm, KidZania helps kids to learn by taking on adult and responsible roles in collaboration with well-known brands such as American Airlines, Tetra Pak, Toyota, DHL, and Burger King. Kids engage in a range of activities that include bottling for Coca-Cola, working in a Crest-sponsored dentist office, working at a McDonald's restaurant, painting with Corporação Industrial do Norte, washing their hands with P&G's Safeguard soap, and using airline tickets from American Airlines. The innovation platforms are flexible and can be adjusted to specific project requirements or local conditions while avoiding any conflict with institutionalized norms, rules and business model requirements. KidZania describes this in the following way:

It is critical that the experience be fun! So whether it is a TV station in Dubai using the most innovative new Sony cameras, the new Fiesta hotel experience in Mexico City, or the Nestle Chocapic cereal-making factory in Lisbon, each experience is

uniquely crafted to be enjoyable for kids and beneficial for partners. (Former Chief Marketing Officer in KidZania Journal 2011)

Contextualization supports Wright and Stigliani's (2015) argument that the decision to grow and upscale is linked to practices for accessing and configuring resources. KidZania's business partners provide the parks with scale replicas that support the integration of well-known local and international brands. The challenge for the upscaling process is to strike a balance between positioning a leading brand in the local market and managing KidZania as a global brand and resource platform to communicate values and social habits to children.

Eataly is an umbrella brand that brings small local brands in the food and wine industry alongside global brands like Barilla, Slow Food (a provider of quality assurance and employee training) and Coop (a provider of logistics solutions in the food sector). Eataly demonstrates how a brand platform can be used to configure local food product suppliers and well-known global brands as a scalable service ecosystem.

In Italy, with the support of Slow Food, the company selects only high-quality brands with traditional and sustainable production practices. Eataly abroad introduces also the brands that local partners suggest to be the more representative of Italy. For instance, in New York, Eataly included the first Nutella bar in the world, and for the same reason selected Barilla as the main brand of pasta. In Brazil, the local partner instead suggested not including Barilla among the pasta brands, because it is not well positioned in the Brazilian market. (Operations Manager)

KidZania collaborates with international and local brand owners in much the same way as Eataly. This contextualization shows how an actor can use an innovation platform to develop service innovation processes and outcomes. This is again illustrated by Eataly:

Worldwide, Eataly stores develop close relationships with the territory, selecting the best local suppliers. In general, for stores abroad, the selection process differs for dry and fresh foods; dry products are exported from Italian suppliers while in the case of fresh products, local providers have to abide by specific methods of production and values, as in Italy. (Operations Manager)

These actors join forces by integrating their resources to realize the value proposition articulated by the service ecosystem's key actor. Collaboration and resource integration among multiple actors is coordinated and managed through web service platforms.

Eataly uses Amazon Web Services (WBS) for a wide range of business functions: running its website and e-commerce platform, providing data storage and communicating with a mobile app, as well as for business analytics. By using AWS, Eataly has been able to expand globally while scaling to support hundreds of thousands of users and millions of page views every month. (Eataly website, August 2018)

By coordinating licensing agreements and contracts with a wide range of actors, including record labels, media companies, and artists, Spotify has developed a technology platform for streaming music, video and podcasts. Users collaborate in creating, editing and sharing tracks and playlists on social media. As illustrated by Spotify, an innovation platform plays multiple roles beyond streaming services offered to customers, including managing the relations with artists (B2B relations):

Unlike physical or download sales, which pay artists a fixed price per song or album sold, Spotify pays royalties based on the number of artists' streams as a proportion of total songs streamed. It distributes approximately 70% of total revenue to rights holders, who then pay artists based on their individual agreements [42].

Amazon's technology platform offers a wide range of e-commerce services, including contracts, financial support services, distribution mechanisms, and logistics solutions. These services are also offered to partners and suppliers (the B2B context) and have a global reach. Amazon "builds a place where people can come to find and discover anything they might want to buy online". In the 2017 Global Innovation Index, Amazon was named as the most innovative company in the world. According to Amazon CEO *Jeff Bezos*,

Our job is to invent new options that nobody's ever thought of before and see if customers like them. Our customers are loyal to us right up until the second somebody offers them a better service. And I love that. It's super-motivating for us.

The latest version of Amazon's streaming music service, Amazon Music Unlimited, sits on top of its original music store (Amazon MP3), which opened nine years ago.

"Amazon Studios' Emmy Award-winning original TV shows are built on an innovation platform for aspiring scriptwriters. And the company's fashion business—Amazon is now the second-largest seller of apparel in the U.S., according to Morgan Stanley—evolved from brand experiments in outdoor furniture (2004), home goods (2008), electronic accessories (2009), diapers (2014), and now (2018) perishables such as organic, fair-trade-certified coffee".

Unlike Apple, Google and Microsoft, Amazon is not fixated on a tightly designed ecosystem of

interlocking apps and services. Instead, Bezos favors platforms that each serves its own customers in the best and fastest way possible.

That impulse has spawned an awesome stream of creative firsts. Just this past year, Prime Video became available in more than 200 countries and territories, following the November debut of The Grand Tour, Amazon's most-watched premiere ever. Twitch, the streaming video-game network that Amazon acquired in 2014, unveiled its first three original titles from its recently formed studios.

Amazon opened two dozen new fulfillment centers, became the largest online store in India and made its first delivery by autonomous drone in the United Kingdom. Amazon has invested millions in startups to build voice control apps for the intelligent assistant Alexa, giving her thousands of new skills and a stream of new services will be launched during the second half of 2019. They are all configured to fit and support the overall Amazon e-commerce platform.

The six firms described above are all known as innovators within their industry with innovations to both consumers and business customers. They can also be said to be founded on a clear value co-creation focus and to have honored this logic over time. The firms exhibit three distinct types of focus, driving the activities and projects on their innovation platform—assembly, brand constellation, and technology—which guide service innovation processes and outcomes, see table 1. IKEA and LEGO are characterized by a focus on assembly, with innovation activities ranging from how to solve customer problems to assembly viewed from an environmental and health perspective. In the case of KidZania and Eatly, established brands play a key role in their service ecosystems, providing physical and financial resources to enable upscaling as well as local adjustments of the service ecosystem. Spotify and Amazon both use technology to connect multiple business actors and customers in complex service ecosystems. Table 1 summarizes the six cases in terms of the strategic focus of innovation platform, innovation activities, and innovation space.

5. Discussion

The aim of this paper is to explain how innovation platforms foster service innovation by broadening the scope beyond individual service innovations.

The article contributes by explaining how platforms with innovation activities (agency) and innovation space (structure) designed to support and direct innovations come about and scale up. An innovation platform builds on existing resources and relations with engaged actors to accomplish, coordinate multi-actor collaboration and facilitate the realization of

innovative value propositions for business renewal. The empirical cases have many things in common but the type of innovation activities and spaces also differ.

The firms' used for contextualizing the innovation platform framework all rely more or less on sets of technologies and use innovation platforms to foster service innovations, see table 1 below. Furthermore, brands and constellations of brands are present in all six firms but might be less important in some and very important in others, with an innovation space labeled 'brands constellation focus'. Assembly is also present in all firms but with different meanings and not physical assembly as in IKEA but e.g. assembly of song-lists in Spotify and logistic solutions in the case of Amazon. The main differences are explained by varied strategic focus of the innovation platforms. Two of the firms – IKEA and Lego - focus their business on physical assembly as the basis for multi-actor collaboration and resource integration. Therefore, this is also shaping the innovation logic. We label this as an assembly focused innovation platform. Kidzania and Eatly represent businesses with a focus on multi-actor collaboration and integration of their well-known brands. They are referred to as innovation platforms grounded in a constellation of brands. Finally, Spotify and Amazon are both technology based businesses and their innovation are technology driven, here referred to as technology focused innovation platform. The three types of innovation platforms are all spaces (structures), physical as well as virtual used to enable and direct innovation projects (activities) with outcomes configured to renew ongoing business.

As part of the innovation efforts the key actors invites other collaborating actors with complementary resources to play various supporting roles. This was discussed by Carida, Edvardsson [43] in terms of embedded processes of matching, resourcing and valuing, and the present paper sheds further light on how key actors use innovation platforms to orchestrate these processes. We also show how innovation platforms, grounded in an innovation space support innovation activity. The innovation space and the platform's activities coordinate and facilitate multi-actor collaboration to improve their own viability and that of the service ecosystem [44]. The actors using the platforms are embedded in different social structures and are shaped by prevailing norms and rules [45].

The six studied firms have all continued to innovate over time—in some cases, over many decades. An innovation platform fosters a continuous stream of innovations and must be sufficiently flexible to cope with changes in market conditions. This includes attracting and retaining new actors, absorbing context dynamics and exploiting new ideas technologies, brands and other resources over time. This is close to

Edvardsson, Frow [41] use of a service ecosystem lens to explain how contextual elements and trends foster service innovation in terms of three characteristics: speed, granularity, and liquefaction. These facilitate the analysis of changes in the contextual elements of space,

resources and institutional arrangements and how these can foster service innovation. The wide range of activities and interactions with a growing number of collaborating actors that must be coordinated,

Table 1: Overview of innovation platforms and the six case firms

Firm	Innovation platform intersections	Innovation activities	Innovation space
IKEA	IKEA's innovation platform draws on a large volume of customer feedback to facilitate expert collaboration to find easier and better lifestyle solutions. The innovation platform focuses on upscaling fabrication across multiple actors.	Expert collaboration focusing on innovative lifestyle creation	Assembling focus
LEGO	The innovation platform supports collaboration among multiple actors. Super customers and user communities are invited to make creative use of information and physical products, using ICT tools to reconfigure existing resources. The innovation platform encourages risk-taking innovative activities to identify new value propositions.	Super customer participation in risk-taking brick building activities	
Kidzania	KidZania's innovation platform focuses on enhancing learning through responsible roles involving well-known brands. Their distinctive business model involves experts from different fields such as marketing, psychology, pedagogy, and ludology, as well as the board of directors. The firm is actively developing an innovative learning platform to prepare kids for the adult world.	Expert collaboration mixing brands to achieve the innovative learning outcome	Brand constellation focus
Eataly	Eataly focuses on the benefits of healthy, nutritious foods and culinary experiences from various Italian brands. The innovation platform is used to widen access to quality food and drinks based on a deep knowledge of what they sell and serve. Eataly invites brand owners and customers to their innovation platform to disseminate ideas about the Italian lifestyle.	Expert collaboration to select brands to create an Italian lifestyle	
Spotify	Spotify's innovation platform is based on technical and legal expertise, using big data to analyze and advocate new offerings. The innovation platform invites record labels, media companies, and artists to collaborate by creating, editing and sharing playlists and tracks on social media.	Expert collaboration combines technical, legal and music knowledge to enhance the listening experience	Technology focus
Amazon	Amazon's innovation platform uses technology to encourage experts from different fields to search for advanced solutions for connecting people to trade. The platform proposes that every actor can connect with others to trade merchandise and services.	Expert collaboration using technology and logistics to create a place to trade	

controlled and directed in a changing context seems to have been successfully accommodated by the platforms in question.

6. Suggestions for further research

Digitalization, robotization, and AI are among the developments that will continue to create both challenges and opportunities for innovative renewal. Innovation platforms will become increasingly

important for business in general and for service innovation in particular. Furthermore, innovation will become increasingly systemic in nature, involving networks of actors facilitated by a wide range of platforms, and future research can usefully address a number of questions. How are these platforms created and used to foster service innovations? Why do some platforms upscale rapidly and become widely used while others fade away? How does a changing context foster the development of innovation frameworks?

These questions provide a basis for further conceptual development, as well as qualitative and quantitative empirical investigation across a wide range of contexts, firms and service ecosystems.

First, we suggest detailed studies of innovation platforms in various service industry settings to explore the characteristics and properties of innovation platforms, asking how and why these platforms foster service innovation and how innovation platforms develop and upscale. Adductive, comparative and longitudinal studies should investigate innovation platforms and their creations, including innovation projects currently underway. These studies should also assess the extent to which contextual dynamics and change promote service innovation.

Second, there is a need to describe and analyze what the key actors are doing when collaborating with other actors. How are challenges identified and managed when designing and deploying service innovation platforms? Here, we suggest the use of practice theory and interviews key actors working with innovation and also secondary data. Specific themes might include (a) the extent to which existing service innovation platforms influence innovative actions; (b) what attracts key actors to specific platform opportunities; (c) how service innovations are managed and which actors, resources and processes are supported by existing platforms and (d) what developments or adjustments are needed.

Third, this article highlights the complexity of defining and exploring how service innovation platforms foster innovation. Recent calls for new methods in service innovation research invite responses that embrace complexity; for example, agent-based modeling and simulation of contextual changes and service ecosystem responses may further illuminate the specific roles and functions of innovation platforms. In particular, this approach could be used to validate and refine our framework, as the use of models can help to address the complexity and is especially relevant to an ecosystem perspective.

Finally, service innovation scholars should collaborate with scholars in other academic disciplines such as computer science, entrepreneurship, design practice, and management. While many service innovation platforms depend on key actors to identify and exploit opportunities in dynamic service contexts, computer science can offer explanations based on AI, data analytics, information security and system integration, including boundary objects. Similarly, design theories and design thinking concepts offer important insights into innovation, including actors' behaviors in different settings. Entrepreneurship theories, including effectuation logic and the mindset theory of action phases, offer a theoretical basis for

exploring how contextual change fosters service innovation.

7. References

1. Gebauer, H., A. Gustafsson, and L. Witell, *Competitive advantage through service differentiation by manufacturing companies*. Journal of Business Research, 2011. **64**(12): p. 1270-1280.
2. Lusch, R.F. and S. Nambisan, *Service Innovation: A Service-Dominant Logic Perspective*. MIS Quarterly, 2015. **39**(1): p. 155-176.
3. Alstynne, M.W.V., G.G. Parker, and S.P. Choudary, *Pipelines, Platforms, and the New Rules of Strategy*. Harvard Business Review, 2016. **94**(4): p. 54-62.
4. Gallouj, F. and O. Weinstein, *Innovation in services*. Research Policy, 1997. **26**(4/5): p. 537.
5. Edvardsson, B. and B. Tronvoll, *A New Conceptualization of Service Innovation Grounded in S-D Logic and Service Systems*. International Journal of Quality & Service Sciences, 2013. **5**(1): p. 19-31.
6. Chandler, J.D., et al., *How Does Innovation Emerge in a Service Ecosystem?* Journal of Service Research, 2019. **22**(1): p. 75-89.
7. Edvardsson, B., B. Tronvoll, and L. Witell, *Understanding Key Market Challenges: An Integrative Framework for Service Innovation*. Marketing Theory, forthcoming.
8. Orlikowski, W.J., *Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations*. Organization Science, 2000. **11**(4): p. 404-428.
9. Skålén, P., et al., *Exploring value propositions and service innovation: a service-dominant logic study*. Journal of the Academy of Marketing Science, 2015. **43**(2): p. 137-158.
10. Little, V.J., et al., *Turning Marketing Promises into Business Value: The Experience of an Industrial SME*. University of Auckland Business Review, 2006. **8**(1): p. 25-36.
11. Lusch, R.F. and S.L. Vargo, *Service-Dominant Logic: Premises, Perspectives, Possibilities*. 2014, Cambridge, UK: Cambridge University Press.
12. Vargo, S.L. and R.F. Lusch, *Service-Dominant Logic: Continuing the Evolution*. Journal of the Academy of Marketing Science, 2008. **36**(1): p. 1-10.
13. Vargo, S.L., P.P. Maglio, and M.A. Akaka, *On value and value co-creation: A service systems and service logic perspective*. European Management Journal, 2008. **26**(3): p. 145-152.

14. Vargo, S.L. and R.F. Lusch, *It's all B2B...and beyond: Toward a systems perspective of the market*. *Industrial Marketing Management*, 2011. **40**(2): p. 181-187.
15. Vargo, S.L. and R.F. Lusch, *Institutions and axioms: an extension and update of service-dominant logic*. *Journal of the Academy of Marketing Science*, 2016. **44**(1): p. 5-23.
16. Miller, S., *Social Institutions*, in *The Stanford Encyclopedia of Philosophy*. 2014, Edward N. Zalta.
17. North, D.C., *Institutions, Institutional Change and Economic Performance* 1990, Cambridge: Cambridge University Press.
18. Scott, W.R., *Institutions and organizations : ideas and interests*. 2008: Thousand Oaks, Calif. : Sage Publications.
19. Vargo, S.L., H. Wieland, and M.A. Akaka, *Innovation through institutionalization: A service ecosystems perspective*. *Industrial Marketing Management*, 2015. **44** . **10p.** (1): p. 63-72.
20. Koskela-Huotari, K., et al., *Innovation in service ecosystems—Breaking, making, and maintaining institutionalized rules of resource integration*. *Journal of Business Research*, 2016. **69**(8): p. 2964-2971.
21. Alderson, W., *Dynamic marketing behavior: a functionalist theory of marketing*. 1965, Homewood, IL: Irwin. IX, 383 s.
22. Wheelwright, S.C. and K.B. Clark, *Creating Project Plans to Focus Product Development*. *Harvard Business Review*, 1992. **70**(2): p. 70-82.
23. McGrath, M.E., *Product strategy for high-technology companies : how to achieve growth, competitive advantage and increased profits*. 1995, Burr Ridge, Ill: Irwin Professional Publishing.
24. Meyer, M.H. and A. DeTore, *Creating Platform-based Approaches to New Services Development*. *Journal of Product Innovation Management*, 1999. **18**(2): p. 188-204.
25. Robertson, D. and K. Ulrich, *Planning for Product Platforms*. *Sloan Management Review*, 1998. **39**(4): p. 19-31.
26. Gawer, A. and M.A. Cusumano, *Industry Platforms and Ecosystem Innovation*. *Journal of Product Innovation Management*, 2014. **31**(3): p. 417-433.
27. Krishnan, V. and S. Gupta, *Appropriateness and Impact of Platform-Based Product Development*. *Management Science*, 2001. **47**(1): p. 52.
28. Oh, D.-S., et al., *Innovation ecosystems: A critical examination*. *Technovation*, 2016. **54**: p. 1-6.
29. Parker, G., M. Van Alstyne, and X. Jiang, *Platforms Ecosystems: How Developers Invert the Firm*. *MIS Quarterly*, 2017. **41**(1): p. 255-A4.
30. Perks, H., et al., *Network orchestration for value platform development*. *Industrial Marketing Management*, 2017. **67**: p. 106-121.
31. Autio, E. and L. Thomas, *Innovation ecosystems*, in *The Oxford Handbook of Innovation Management*. 2014, Oxford University Press: Oxford. p. 204-288.
32. Gawer, A. and M.A. Cusumano, *How Companies Become Platform Leaders. (cover story)*. *MIT Sloan Management Review*, 2008. **49**(2): p. 28-35.
33. Tiwana, A., B. Konsynski, and A.A. Bush, *Platform Evolution: Coevolution of Platform Architecture, Governance, and Environmental Dynamics*. *Information Systems Research*, 2010. **21**(4): p. 675-687.
34. Ojasalo, J., *Open Innovation Platform in a Smart City: Empirical Results*. *The Journal of American Business Review*, 2015. **4**(1): p. 195–202.
35. Fu, W., Q. Wang, and X. Zhao, *The influence of platform service innovation on value co-creation activities and the network effect*. *Journal of Service Management*, 2017. **28**(2): p. 348-388.
36. Fetterhoff, T.J. and D. Voelkel, *Managing Open Innovation in Biotechnology*. *Research-Technology Management*, 2006. **49**(3): p. 14-18.
37. Yin, R.K., *Case study research : design and methods*. 5th ed. ed. 2014, Los Angeles, Calif: SAGE.
38. Flick, U., *An introduction to qualitative research*. 2006, Los Angeles: Sage Publications. XII, 443 p.
39. Strauss, A.L. and J.M. Corbin, *Basics of qualitative research : techniques and procedures for developing grounded theory*. 2nd ed. ed. 1998, Thousand Oaks, Calif.: Sage Publications. 312.
40. MacInnis, D.J., *A Framework for Conceptual Contributions in Marketing*. *Journal of Marketing*, 2011. **75**(4): p. 136-154.
41. Edvardsson, B., et al., *Examining how Context Change Foster Service Innovation*. *Journal of Service Management*, 2018. **29**(5): p. 932-955.
42. IFPI, *Global Music Report 2019: Full report Data and Analysis*, I.F.o.t.P. Industry, Editor. 2019.
43. Carida, A., B. Edvardsson, and M. Colurcio, *Conceptualizing resource integration as an embedded process: Matching, resourcing and valuing*. *Marketing Theory*, 2019. **19**(1): p. 65-84.
44. Normann, R., *Reframing business : when the map changes the landscape* 2001, Chichester: Wiley
45. Edvardsson, B., B. Tronvoll, and T. Gruber, *Expanding understanding of service exchange and value co creation*. *Journal of the Academy of Marketing Science*, 2011. **39**(2): p. 327-339.