

# The role of institutions in achieving radical innovation

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## Abstract

**Purpose** – The purpose of this paper is to analyze how institutions can facilitate or inhibit radical innovation. The authors argue that organizational radical innovation is necessary to maintain a competitive advantage and to evolve in the market place, and institutions are the basis of this innovation. From an innovation and service dominant (SD) logic perspective, network ties are proposed to be a determining factor for the achievement of innovation through institutionalization in the university knowledge management context.

**Design/methodology/approach** – A conceptual approach is applied to develop and propose a framework for deepening understanding of radical organizational innovation, institutions and network ties. Data were gathered from Link by UMA-ATech, which in the context of the University of Málaga (Spain) is with great success developing a strategy based on fostering innovation. In all, 22 in-depth interviews were conducted with actors in the Link context, together with additional important second-order data analyses (sector analyses, statistics and company websites). Because of the perceived desirability of innovation, public universities have established a model as a part of this strategy in order to foster and develop new businesses through technology transfer.

**Findings** – Changing institutional arrangements are the basis of innovation. Opening universities to the actors around them, with an interest in exchanging resources through the evolution of network ties toward a less bureaucratic and more collaborative and open university (*tertius iungens*) is the basis for reaching organizational radical innovation in the university context to develop the provider-driven radical innovation network structure via the “University Living Lab” theoretical model.

**Research limitations/implications** – A conceptual understanding is used in combination with an empirical approach, in which one case study and 22 organizations are considered in the context of Link-by-UMA ATech, at the University of Málaga. A range of different contexts from other universities would also be useful to add new perspectives to the development of the theory.

**Practical implications** – Although radical innovation is occasionally seen in systems and arises naturally in markets, it is interesting to consider the possibility of designing strategies that facilitate the process from the beginning of the design of the business model. In this sense, the present findings could help organizations in general and universities in particular, to devise strategies resulting in positive relationships that could facilitate the design of business model structures. These could in turn foster the development of new institutions resulting in new network ties, which could give rise to radical innovation through the attraction of new actors interested in exchanging service-for-service resources.

**Originality/value** – The present paper develops the provider-driven radical innovation network structure of the “University Living Lab” theoretical model, which encourages the university to make decisions to devise more open models based on a change of network ties, in turn based on the design of new institutional arrangements. These concepts have not previously been put together, and build on the theories of institutions and organizational radical innovation. This theoretical contribution is framed within the SD logic perspective and specifically in the 11th fundamental premise (FP 11/5th axiom) to better understand how innovation occurs in service ecosystems, allowing the provider the possibility of developing such processes through the design of institutional arrangements.

**Keywords** Innovation, Value co-creation, Service dominant logic, Radical innovation, Network ties, Systems of value co-creation

**Paper type** Research paper

## Introduction

There is a growing interest in the process by which universities proceed to obtain value from research and transfer technology (Galán-Muros *et al.*, 2017; Muscio *et al.*, 2016; Perkmann *et al.*, 2013; Baldini, 2010; Gomez-Gras *et al.*, 2008; Lockett and Wright, 2005). This process is usually linked to innovation; generally, the strategy involves the organization developing institutions (rules) that encourage scholars and other university



staff to achieve sufficient benefits to become involved in the process, in which both academics and graduates benefit from the results (i.e. through the creation of job opportunities), as proposed by Rizzo (2015) and Friedman and Siberman (2003).

Obstfeld (2005, p. 100) was the first who brought together the innovation concept to the social network of the organization, raising the need for research because “the social nature of the innovation process remains unanswered.” For their part, Muscio *et al.* (2016, p. 1386) contend that “university policies can play a crucial role in influencing spinoff creation.” However, the hitherto little literature has studied the phenomenon of innovation from a network perspective. The present paper analyzes how in a growing open and networked economy based on the open innovation model (Chesborough, 2003), there is a need to include more activities and actors than were assigned to the traditional innovation model (Van de Vrande *et al.*, 2009) and provides a description of the process that enables innovation through network institutionalization (Koskela-Huotari and Vargo, 2016; Edvardsson *et al.*, 2014). The purpose of the study is to develop a university network model based on achieving radical innovation through institutionalization. We aim to identify the institutions that allow the achievement of radical innovation through the development of new institutions reflected in network ties (Hao and Feng, 2016) and institutions (Vargo and Lusch, 2016; Koskela-Huotari and Vargo, 2016) in the university context.

The service dominant (SD) logic (Vargo and Lusch, 2004, 2008, 2016) and its service ecosystem perspective (Vargo *et al.*, 2016; Vargo and Lusch, 2014; Akaka *et al.*, 2012; Chandler and Vargo, 2011) provides the theoretical basis of this research. Specifically, the present paper builds on the 11th fundamental premise (5th axiom), which includes institutionalization as a drive for establishing innovation in organizations. The research questions to be addressed are:

- RQ1. Does the development of new institutions in the university can result in the development of new network ties?
- RQ2. Do new network ties result in the attraction of new actors, allowing an innovation structure to be established in the university, based on the needs of users, providers and the other actors involved?
- RQ3. Do new network ties result in radical organizational innovation?

The remainder of the paper is organized as follows. First, we review the relevant literature on radical innovation, network ties and innovation through institutionalization. Preliminary research using recent publications in marketing, the SD logic, radical innovation, network ties and other related studies through the databases EBSCO, JSTOR and ABI Inform allowed us to conduct a systematic review of the literature. Second, the gap that ties innovation, institutionalization and network ties is described and research questions are proposed to describe the theoretical model of the research. Third, the empirical approach is described and the results of the qualitative research are analyzed. We conclude by discussing the implications for theory and practice and outline several suggestions for future research.

## Institutions

As a starting point, some clarification is needed to define what is meant by an “institution.” Different disciplinary perspectives have resulted in various approaches to this concept (sociology, economics, political science, etc.) as shown in Table I. Representatives of the sociological and economic approaches have pointed to the consideration of institutions as the basis of stability and meaning in social life through the specification of norms, rules and cultural-cognitive beliefs (Scott, 2014). As stated by North (1990, pp. 3-5), institutions are considered the “the rules of the game,” and organizations are “the players.” From the same broad perspective, Ostrom (2005, p. 3) conceives institutions as the prescriptions used by

**Table I.**  
Classification of  
network ties

Types	Context	Author
Buyer-supplier ties	Theoretical approach	Hao and Feng (2016)
Peer collaboration ties		
Equity ties		
Excellent collaborators	University–industry	Rajalo and Vadi (2017)
Promising collaborators		
Modest collaborators		
Academic engagement	University–industry	Perkmann <i>et al.</i> (2013)
Academic involvement in commercialization		
Tertius iungens (“the third who joins”)	B2B automobile	Obstfeld (2005, p. 100)
Tertius gaudens (brokerage)		
Hunters	B2B several	Leifer <i>et al.</i> (2001)
Gatherers		

**Source:** The authors

humans “to organize all forms of repetitive and structured interactions including those within families, markets, firms and governments.”

From the SD logic perspective, institutions have had a changing role, having increased in importance and should be considered fundamental to processes of value co-creation. Vargo and Lusch (2016, p. 18) refer to an institution as “a relatively isolatable, individual ‘rule’ (e.g. norm, meaning, symbol, law, practice),” taking “institutional arrangements” to refer to “inter-related sets of institutions that together constitute a relatively coherent assemblage that facilitates coordination of activity in value co-creating service ecosystems.”

We adopt the SD logic perspective to understand institutions as rules or norms that can be established strategically within contexts (i.e. organizations, enterprises and societies) with the aim of achieving a specific desired state (i.e. improving the strategic benefit for all the actors involved).

Following Scott (2014) and Edvardsson *et al.* (2014), three institutional pillars can be identified:

- regulative pillars comprise all formal rules that regulate and consequently enable or constrain the behavior of actors;
- normative pillars consist of norms (which specify how certain things should be done), values (what is desired) and standards through which behavior and structures can be evaluated; and
- cognitive pillars are related to actors’ perceptions of reality. The cultural context determines actors’ way of behaving.

Lawrence and Suddaby (2006, p. 215) develop an interesting concept related to institutions, namely “institutional work,” defined as “the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions.” Koskela-Huotari and Vargo (2016) recently researched this concept, combining it with the service ecosystem perspective. Their contribution highlights the efforts of actors to break, make and maintain institutionalized rules of resource integration on multiple levels of the institutional context (micro, meso and macro). Using an empirical approach to analyze four organizations, they identify direct and indirect effects at every level of the ecosystem. According to Koskela-Huotari and Vargo (2016), innovation is no longer the result of the work of an organization; its collaborative nature has widely been recognized, and it requires the joint action of a network of actors (Lusch and Nambisan, 2015; Koskela-Huotari and Vargo, 2016). Vargo *et al.* (2015, p. 71) state that “The link between business models, for example, and their embedded institutional prescriptions, and user subscriptions, needs a much deeper conceptual and empirical investigation.” In the

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same sense, Lusch and Vargo (2017, p. v), posit that “Relatively recent trends in innovating practices unequivocally demonstrate that theory is once again lagging practice, furthering validation is needed. Some of the more contemporary practices that lag theory include: open innovation, user-led innovation, co-creation, wisdom of crowds, and lean Start-Up.”

Since this work aims to fulfill one of the gaps in the theory related to institutions as a stream for innovation through the development of network ties in the University context, based on innovating practices such as open innovation, user-led innovation, co-creation, the wisdom of crowds and lean start-up, the first research question is therefore:

*RQ1.* Does development of new institutions in a university can result in the development of new network ties?

### Network ties

In a growing open economy, the role of network ties is considered a key factor in innovation (Leminen *et al.*, 2016; Mahmood *et al.*, 2011; Capaldo, 2007). Organizations aiming to develop radical innovation require access to dissimilar knowledge (Greve, 2007). In this context, universities are in an excellent position to bring about interactions in an innovative way, facilitating innovation through novel knowledge (Rajalo and Vadi, 2017). Hao and Feng (2016) propose that buyer – supplier ties can be particularly useful for providing firms with access to novel knowledge. Lay and Moore (2009) identify two types of business networks – collaborative and coordinated – and argue, in coherence with SD Logic perspective (Vargo and Lusch, 2004, 2008, 2016) that collaborative networks are characterized by high complexity and a focus on innovation, and are organized in a hub. Lazer and Friedman (2007) posit that centralized networks are effective in coordinating simple problems, with decentralized networks being better suited to more complicated problems. Perkmann *et al.* (2013) analyze the difference between academic engagement and academic involvement in commercialization, this being considered one of the main university–industry relationships. Academic engagement (collaborative research, contract research and consulting) is practiced by a far larger proportion of academics than commercialization (i.e. the founding of a firm, with the objective of the commercial exploitation of a patented invention). Obstfeld (2005) has an interesting approach to network ties, connected with the modern perspective of triads (Sitaloppi and Vargo, 2017), considering the “*tertius iungens*” strategy as a behavioral orientation that connects people in their social network by either introducing disconnected individuals or facilitating new coordination between connected them. The alternative strategy of “*tertius gaudens*” is based on structural hole theory (Burt, 1992), which applies between two acquaintances in an individual’s network when they share a tie but are not connected to each other. Another interesting approach comes from Leifer *et al.* (2001) who apply a radical innovation to network ties in referring to the concept of a “radical innovation hub,” which is used to oversee and nurture projects by reducing uncertainty without increasing bureaucracy. In this context, “gatherers” are alert and ready to react to promising radical ideas, while “hunters” take responsibility for actively seeking out ideas with business potential. Table I contains a summary of the classification of network ties.

The approaches to network ties are heterogeneous, as seen in the literature, given the need for an adaptation of the general concepts to a specific context. As explained by Chandler and Vargo (2011), there is a need to specify a context prior to describing how value (in our case, innovation) can arise. From the literature on B2B innovation, we describe a model in the context of university innovation, where the university can be considered a hub that coordinates the hunters (usually from the industrial sector) with gatherers (university knowledge: academic), to achieve radical innovation. Connections are developed through new network ties founded on new institutions that facilitate radical innovation (open innovation, user-led innovation, co-creation, the wisdom of crowds and lean start-up). From this

perspective, we observe an evolution in universities, which are changing their traditional brokerage position (*tertius gaudens*), in which structural holes appeared and are seeking to achieve innovation in an open economy through a *tertius iungens* model, based on open innovation and value co-creation. From this perspective, the second research question is:

*RQ2.* Do new network ties will result in the attraction of new actors allowing for an innovation structure in the university, based on the needs of users, providers and other involved actors?

### **Radical innovation in the university context**

From the S D logic approach, context is a key factor in the appropriate understanding of how value is created. The present paper relates to a very specific context, i.e., a university, which has a group of rules and norms that configure a specific ecosystem. Following Vargo *et al.* (2016, p. 1): "Importantly, a service-ecosystem view broadens the scope of innovation to include the social structures (i.e. institutions) that guide and are guided by the actions and interactions among multiple actors."

Following Leifer *et al.* (2001, p. 203) radical innovation is "a product, process or service with either unprecedented performance features that offer significant improvements in performance or cost that transform existing markets or create new ones." Linton (2009) uses two dimensions to identify radical innovation, technical and social. Sorescu *et al.* (2003, p. 84) refer to the social dimension as "a substantially different technology while offering a substantial increase in customer benefits." Azar and Ciabuschi (2017, p. 327) refer to organizational innovation as being relatively unexplored and maintain, according to Hamel (2006) and Damanpour and Aravind (2011), that "adopting organizational innovation results in changes in strategy, structure and administrative procedures that improve, *inter alia*, the organization's climate, communication, personnel policies, teamwork, information sharing and coordination and cooperation mechanisms." In addition, they adopt the concept of "radicalness" and relate it to several benefits for the enterprise, such as offering novel functionalities, increased sales, etc. These theoretical contributions are summarized in Table II.

We advocate for the social dimension of radical innovation. According to Hao and Feng (2016, p. 760) "In contrast to a dyadic partnership, a focal firm involved in a network obtains access to diverse resources through different network ties." Our research is consistent with Beldebro *et al.* (2004), who posit that "different types of partners (customers, suppliers, competitors, universities and research institutes) lead to different levels of innovativeness." From this perspective, in the university context, we look into the way universities are able to reach radical innovation through the development of new institutions that change network ties, resulting in a substantial increase in the benefits to universities' customers, one of which is the increase in spinoffs in terms of their number and success in the market, ultimately resulting in a financial return to the university.

Leminen *et al.* (2016) adopt the perspective suggested by Biemans (1992), which is the end-user's, namely an analysis of the overall value produced by the innovation to the user/and or consumer (in our case this is from the university to the spinoff, which can be considered a B2B or A2A relationship). The university is considered, from this perspective, to be a provider-driven living lab. From this point of view, the way network ties are structured and institutions dominate information exchange among actors facilitate the improvement of information access and experience, enhancing radical innovation (McDermott and O'Connor, 2002; Scheremata, 2000).

Following the radical innovation literature, the present paper builds on the social dimension of radical innovation based on the development of new social connections among actors in the University context. The last research question that arises from theory is therefore:

*RQ3.* Do new network ties result in radical organizational innovation?

**Table II.**  
Radical innovation:  
the organizational  
dimension

Radical innovation: concept	Content	Authors
Radical innovation	The propensity of a firm to introduce new products that (1) incorporate substantially different technology from existing products and (2) can fulfill key customer needs better than existing products	Chandy and Tellis (1998, p. 475)
Incremental innovation	Incremental innovations are step-by-step improvements to a product, service and/or a process designed to better meet customer and market needs	McDermott and O'Connor (2002)
Radical innovation: technical and social dimensions	Innovation from the perspective of a technology or the unit that tends to exploit the technology	Linton (2009, p. 731)
Radical innovation: the social dimension	A substantially different different technology while offering a substantial increase in customer benefits	Sorescu <i>et al.</i> (2003, p. 84)
Innovation radicalness	Two types of managerial innovations: those that require an exploratory search for more in-depth learning to produce more novel management tools and techniques vs those that need an exploitative search based on the existing ideas to define management process and systems	Damanpour and Aravind (2011)
Organizational innovation	Organizational innovation is often a process of creating new social connections between people and the ideas and resources they carry, so as to produce novel combinations	Obstfeld (2005, p. 100)
Radical innovation in living labs	The living lab is a new focal point for multi-organizational collaboration on innovation	Leminen <i>et al.</i> (2016, p. 744)

**Source:** The authors

Characterizing provider-driven living labs in the university-educational context, Leminen and Westerlund (2012) and Westerlund and Leminen (2011) highlight the importance of enhancing learning through living-lab activities, and describe two courses of action: project-based and long-term activities and describe how the premise of living labs affiliated with educational institutes is to enhance learning through living-lab activities.

### Theoretical model proposal

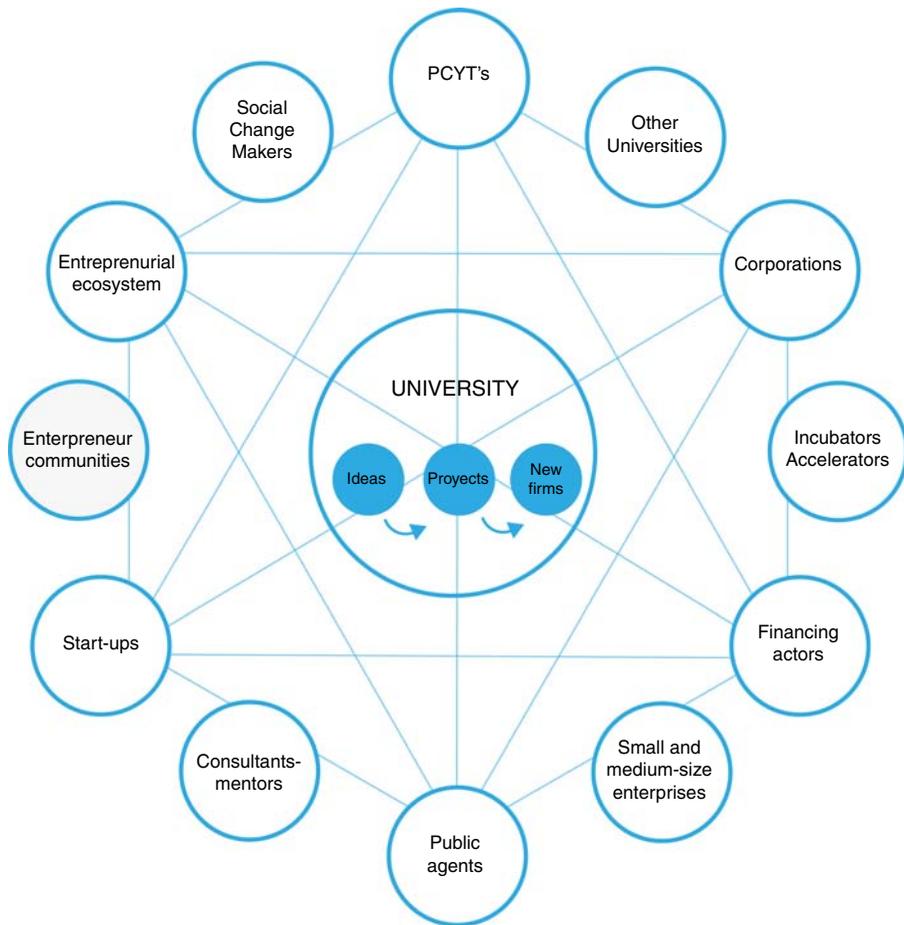
The proposed research questions build a model of University as Radical Innovation Living Lab, which changes institutions in order to develop “institutional work” (Lawrence and Suddaby, 2006; Koskela-Huotari and Vargo, 2016) and provides the context for actors to break, make and maintain institutionalized rules of resource integration on multiple levels of the institutional context. Institutional changes are organized along five lines proposed by Lusch and Vargo (2017, p. VI) as “recent trends in innovating practices”: open innovation, user-led innovations, co-creation, the wisdom of crowds and lean start-up.

Network ties are the result of institutional change, which provides a distributed provider-driven network structure (following Leminen *et al.*, 2016, p. 748). Figure 1 shows the theoretical model. New network ties have evolved from a brokerage (*tertius gaudens*) structure, which was a barrier to innovation through new formulas of value co-creation in an open innovation organizational model, to a *tertius iungens* strategy, based on cooperation.

### Methodology

#### *The link by UMA-Atech case*

The first question to be addressed concerns justification of the case selection: Link by UMA-Atech (henceforth, referred to simply as Link). In the last decades, it has been a common strategy for European universities to develop different kinds of liaison activities to foster relationships among diverse actors to the benefit of all parties involved. Link – located in Málaga (Spain) – is born out of this context, and in its three years of existence has created high



**Figure 1.**  
The provider-driven radical innovation network structure of the University Living Lab

levels of collaboration among a wide group of actors – local, national and international – many of whom are progressively increasing their demand for involvement. Enterprises such as IBM, Google and Ikea have been involved in its work. It can be considered an ecosystem (following Vargo *et al.*, 2016), in which service innovation through institutionalization is taking place via a continuously changing dynamic. For those actors who have previously collaborated with the university, Link is perceived as “something different.” Thus, we aim to explore how this process is taking place by adopting a SD logic ecosystem perspective and outlining the role of institutions and network ties in enabling continuous innovation.

*Research design and data collection*

When a research topic is underexplored (as is the case of innovation through institutionalization), a single case study is a good choice (Gummesson, 2017; Yin, 2014; Edvardsson *et al.*, 2014). We made contact with Link, which we knew (through interviews on local and national media) was considered an organization that broke rules and provoked innovation in a university context (with interesting results for many actors). The steps in the research design are described in Table III.

**Table III.**  
Research design

Step 1. Identification actors	Entrepreneur communities	Actors group 1
	Technological Park	Actors group 2
	Incubators	Actors group 3
	Accelerators	Actors group 4
	Public agents	Actors group 5
	Financing actors	Actors group 6
	Small and medium-size enterprises	Actors group 7
	Start-Ups	Actors group 8
	Consultants – mentors	Actors group 9
	Social Change makers	Actors group 10
	University Spinoff	Actors group 11
	Corporations	Actors group 12
	Other universities	Actors group 13
Step 2. Netnography	Analysis of the Link activity in social networks (inside and outside the university context) and their relationships with actors	
Step 2. Interviews	22 in-depth interviews with actors in the Link network. For quotations/transcriptions, Interviewees were labeled Actor A to Actor V, to maintain anonymity. The process was conducted under the supervision of the authors by a research enterprise, in order to guarantee the free expression of participants' opinions	
Step 3. Data codification and analysis	Using NVivo 11, from information gathered on the internet, 2 nodes were created Innovation Rule-breaking	

## Results

A netnographic approach enabled us to confirm the initial informal approach, based on media (local radio and TV), in which Link had a reputation for doing new things in different ways within the university context. The contributions on Twitter and Facebook helped us build on two nodes using NVivo 11: innovation and rule-breaking. Afterwards, personal in-depth interviews with actors related to Link allowed us explore the first research question in depth:

*RQ1.* Development of new institutions in a University can result in the development of new network ties.

The first recognized innovation in both groups referred to the idea of “breaking rules,” because Link is considered an open space where all the institutional norms and rules that characterize the university are transformed into an open, non-structured and modern context. Some quotes from the interviews are especially descriptive in this sense: “I am sure that Link is breaking rules [...] It’s being disruptive, there is more connection among parts [...] they have broken bureaucracy to open marvelously and disruptive to reality. You just have to see how has been designed the link space, it’s open, absolutely collaborative, flexible, facilitating nearness, co-creation, innovation [...] the connection is final.”

In the case of the university, one of the most important means of innovation is network ties. Actors in the network used to see high and complex barriers in both directions, from gatherers to gain access to hunters, and vice versa. In this sense, Link has designed new strategies for network ties. Based on theoretical proposals (O’Shea *et al.*, 2005; Lockett and Wright, 2005; Galán-Muros *et al.*, 2017), Link has introduced a commercial perspective on the new design of relationships among actors and has changed the brokerage exchange perspective (which the literature refers to as “black hole”) into an open innovation perspective, where all actors in the environment can exchange knowledge – value – information – communication without continuous mediation by the university.

The second research question to be addressed was:

*RQ2.* New network ties will result in the attraction of new actors allowing for an innovation structure in the university, based on the needs of users, providers and other involved actors.

One of the main innovations identified by actors in Link is the way in which it breaks down barriers and opens up access to a wide range of actors. Emerging from this, it is the relationships with private enterprises that are being considered by the interviewees as especially disruptive to the status quo, as is the ability of Link to reduce bureaucracy and design a more open space. One corporation's description of Link is particularly relevant: [...] "It's a meeting point among very different actors coming from very different areas or sectors of activity [...] This is the way it should be, and not everyone working on their own. They are very accessible [...] suddenly, with the organization of any event, everything is full of people [...]"

The rules that have been adopted in the design of new network ties are now far more flexible and open to society. These network ties result in radical organizational innovation in the university context: they open the university to many social actors to facilitate connections and value creation.

An actor on the mentor's group posits: "For me, Link is a very singular space. It is a confluence space that does not take place in other environments of the University. In the Faculty, teachers, researchers and students are organized by communities of knowledge. But affinity among link members is not based on disciplines, but on common shared interests and that's why, for me, the 'Link experience' is always enormously enriching, enormously multidisciplinary." In total, 20 out of 22 quotations built on the innovation node related to Link behavior.

*RQ3.* New network ties will result in radical organizational innovation.

To explore in more depth *RQ2* and *RQ3*, the Link projects were analyzed in order to confirm the interrelated nature of the Link philosophy, based on ecosystem development and open innovation as the basis for its growth. The projects developed in Link are always based on one or more of the five lines of innovation described, and always concur with a design that aims to involve as many actors as possible, considering that its success comes from increasing the number of groups of actors who exchange resources (service-for-service) in the context provided by Link.

As a general result and according to the information provided by the actors involved in this case study we can assert that some of the main changes that took place within Link supporting these research questions were:

- (1) Stronger collaboration between the University and enterprises, thus putting together this higher education institution with the future work of students (Link as a bridge).
- (2) Greater accessibility to resources: there are highly qualified resources in both the university and enterprises, the easier they can integrate in the same system the more efficient and valuable the outcome will be (Vargo and Lusch, 2008).
- (3) Establishment of viable networks where multiple actors easily interact with no bureaucratic barriers.
- (4) Consideration of colleagues as partners, being treated as equals within the network reduces pressure and facilitates communication. Although pressure may drive people to work more and get more done, it is considered it causes them to think less creatively and therefore be less innovative (Amabile *et al.*, 2002).
- (5) The adoption of a new philosophy based on the "freedom of thinking and acting." In this case, freedom and autonomy is deemed to be a motivation source for actors and an innovation enabler (Amabile, 1998).

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- (6) Motivation for innovation: according to literature, innovation involves high levels of motivation. Apart from the intellectual effort it also implies an emotional effort from actors (Godin, 2010). Link contributes to foster motivation in the ecosystem by means of openness and flexibility.

## Discussion and implications

### *Theoretical implications*

The theoretical approach of the present paper builds on the SD logic, specifically in the 11th fundamental premise (FP 11/5th axiom), which seeks to better understand how innovation occurs in service ecosystems. The literature highlights the need for research that uses an empirical approach to investigate the ways in which innovation arises and develops in service ecosystems (Vargo *et al.*, 2016).

Following Koskela-Huotari and Vargo (2016), institutions are one of the main channels for introducing innovations into organizations. The present paper analyzes institutions in a highly specific context: the university, which traditionally developed a brokerage (*tertius gaudens*) structure in its relationships with the actors around it, which tended in turn to generate problems such as “black holes” (Obstfeld, 2005) making value co-creation and the development of an open structure more difficult.

From the perspective developed by Vargo and Lusch (2016), our qualitative approach allowed us to identify several institutions that configure “institutional arrangements” related to the specific question of how open the university is to relationships with external agents. Traditionally, the university has had clear rules governing the structure of the relationships with the actors around it (Díaz-Méndez and Gummesson, 2012). The first research question refers to how changing the rules in the sense of lending more flexibility to the relationships with actors in the university context can result in the development of new network ties (*RQ1*).

Analysis of the Link by UMA A-Tech (Link) and the results of 22 in-depth interviews confirmed that in this specific organization, the rules had changed, thus breaking with the traditional bureaucracy that made the university difficult to access making it less attractive to actors around it (investors looking for ideas, large enterprises seeking talent, etc). From this perspective, Link can be considered to be developing what Lawrence and Suddaby (2006) refers to as “institutional work,” which unifies the intentions of individuals and organizations to create, maintain or disrupt institutions. These new institutions are related to the process in which universities are involved in order to adopt an open innovation (Chesborough, 2003), ecosystem perspective (Vargo *et al.*, 2015, 2016). The recent literature highlights the need for changing rules in the university context in order to improve the university “third mission” (Di Bernardino and Corsi, 2018; Arqué-Castells *et al.*, 2016; Capellari and De Stefano, 2014). Scandura (2016, p. 1907) highlights the relevance of the university in this process: “The exchange of knowledge between academia and industry is therefore an essential mechanism to bring science to the market and foster innovation and economic growth.”

In the university context (as in others), innovation is no longer the result of the work of one single organization, but is rather the result of integrating actors in an open collaborative structure. From a network-ties approach, this implies a change to the A2A relationship (B2B and B2C). Following Obstfeld (2005) and Sitaloppi and Vargo (2017), we propose that the institutional change toward an open university proposed in *RQ1* will result in the development of new network ties that will attract new actors in the university sphere (*RQ2*). New network ties will result in the attraction of new actors allowing for an innovation structure in the university, based on the needs of users, providers and other involved actors. For the actors in this research, Link is considered “disruptive” in the university context,

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fostering open and easy exchange of resources (service for service), as the SD logic proposes (FP 1, axiom 1).

Finally, the new institutional arrangements framed in Link, and the new configuration of network ties, give rise to a model that could be considered a “radical organizational innovation,” given that the innovation takes place not in the technical dimension (as is usually the focus in the literature) but in the social dimension (Linton, 2009, p. 731). From the perspective of Leminen *et al.* (2016), Link can be considered as a radical innovation in a living lab, because it is considered a new focal point for multi-organizational collaboration in innovation. The results confirm that the institutional changes that have resulted in the design of new and more collaborative network ties make possible the characterization of Link as a living lab and an example of radical organizational innovation. This way, RQ3 is also confirmed.

#### *Managerial implications*

The theoretical implications described also have a managerial dimension. First, there is a need to analyze which institutions and institutional arrangements are the ones that determine the relationships within the organization (in the university context as in other contexts) and how they determine the kind of network ties developed in it.

From the open economy (Chesborough, 2003), and ecosystem innovation in service (Vargo *et al.*, 2016), there is a need for rule-breaking to engender a more open structure with collaborative easy-access network ties. Although in the entrepreneurial context we can easily find examples in which this process has taken place (such as Amazon or Netflix), the university context is usually less flexible in terms of its structure. Relationships used to be affected by high barriers to communication and bureaucracy, resulting in network ties based on brokerage (*tertius gaudens*), which were unattractive for those interested in the exchange of resources between the university and society.

The present contribution proposes general strategies for reconfiguring the role of the university in a modern open society, starting from the adaptation to the new open economy that demands easier, unstructured relationships. From this perspective, the politics of eliminating bureaucracy and integrating actors from the entrepreneurial environment are considered a rule-breaking and disruptive strategy. The results of the empirical approach are very clear on the greater attractiveness to actors of a new open model with easy access and less bureaucracy.

The process described is perceived as a new organizational model, based on the open service for service exchange model that Luch and Vargo term “innovation in service ecosystems,” and other authors call the viable systems perspective (Polese *et al.*, 2017), which involves actors in the environment to reach equilibrium in the system. The theoretical model proposed is considered in the university context. This model could also be adapted to other business contexts by adapting the actors involved to a particular service ecosystem. In order to allow innovation, creativity and motivation are needed (Jaussi and Randel, 2014). Rigid institutions then constrain the generation of new ideas and projects in part due to the lack of motivation which gives rise to bureaucracy (Godin, 2010), thus, inhibiting the organization from establishing potentially enriching relationships. We have seen that disruption can be beneficial for innovation and rigid institutions usually penalize actors who deviate from the expected behavior pattern. In this regard, according to Kanter (2006, p. 79) “companies should expect deviations from plan: if employees are rewarded simply for doing what they committed to do, rather than acting as circumstances would suggest, their employees will stifle and drive out innovation.”

In this paper, the provider-driven radical innovation network structure of the university living lab can be considered a theoretical model based on a case study. As Gummesson (2017) proposes, the inherent complexity of service networks (Gummesson and Polese, 2009;

Vargo and Lusch, 2011; Verleye *et al.*, 2017) requires the development of the appropriate approach to generate innovation and continuous improvements to the theory-in-use. Our contribution is, from this perspective, a theory-in-use contribution that raises the need for opening universities up to the context and societies in which they are embedded, in order to foster a more collaborative evolution.

This contribution opens up several avenues for future research. There is a primary need in terms of the design of specific strategies of value co-creation for the actors involved. The complexity of the university context demands specific structures, models and institutions depending on the specific area in which value-in-context is to be developed.

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