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Knowledge mobility and appropriability in the context of value co-creation

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Summary. Knowledge is one of the key resources in business development. Critical resources may extend beyond the enterprise's traditional boundaries, with the focal enterprise drawing upon the resources of other firms and institutions. Networks can be classified into two broad categories: market-based networks and localized learning networks. Interfirm learning in networks offers the potential to build competitive advantage. The key issues in the process of learning are: knowledge acquisition, knowledge appropriation and knowledge creation. New forms of governance have had an impact upon creative industries. Value co-creation has been greatly enhanced by the rise of the Internet and its associated interactive media forms. Using the business model approach, one can identify three different models that record labels started to implement since that time: extending value networks, bundling value propositions, and validating new resources and competencies. The purpose of the article is twofold: to identify the key problems related to knowledge mobility and transfer within business networks and to highlight the new developments in the so called value co-creation processes. The methodology applied is literature overview and case study analysis.

Introduction

The information and knowledge have become the critical components of success in the highly competitive environment. The long history and growing interest in the issues of learning in organizations have led to the development of formal theory of organizational learning and knowledge management. As confirmed by recent research enterprise's critical resources may extend beyond the traditional boundaries, with the

focal enterprise drawing upon the resources of other firms and institutions. Such a perspective is reflected in the works of scholars who describe the new knowledge-based economy as more collective. They focus on the importance of non-market mechanism in knowledge creation and appropriation. They suggest that knowledge economy requires new governance mechanisms, such as networks. Forms of collective governance, including networks of both loosely and tightly linked relationships are required to accumulate and create knowledge. The knowledge itself, to meet these requests, must have the feature of mobility. The value is increasingly co-created by the producer and the consumer.

The new forms of governance have had an impact on all industries, including creative ones. Over the past twenty years, the emergence of the Internet and digital technologies significantly reduced physical constraints and facilitated the distribution of music, videos, software, and information. Consumers can therefore easily access creative content available in the digital world. These changes represent a big concern for creative industries involved primarily in the generation and exploitation of creative contents. In this context, the evolution of creative industries requires innovation in two main areas. First, legal institutions have to design new frameworks to preserve intellectual property rights. Second, organizations involved in creative industries have to rethink their business models to remain profitable and competitive in changing environments.

1. Mobility and appropriability of knowledge

It is generally accepted that an enterprise's critical resources may extend beyond the enterprise's traditional boundaries, with the focal enterprise drawing upon the resources of other firms and institutions (Tomlinson, 2010). Enterprises – in particular SMEs – are increasingly accessing additional accessing additional, substitute and/or complementary knowledge, skills and other resources from external agents in order to overcome resource constraints, and enable them to innovate and/or improve innovation performance (Gronum, Verreynne, Kastelle, 2012).

Knowledge **mobility** is recognised as one of the main components of the innovation network organization (Dhanaraj, Parkhe, 2006). Knowledge mobility refers to “the ease with which knowledge is shared, acquired, and deployed within the network (Dhanaraj, Parkhe, 2006, p. 660).

The second main component of the innovation network organisation is **innovation appropriability** which is a mechanism “to ensure value is distributed equitably and perceived as such by network members” (Levén, Holmström, Mathiassen, 2014, p. 159). From this perspective it is important to analyze innovation-related knowledge flows from networks into enterprises and the ability of enterprises protect intellectual property (IP) and appropriate value. It appears that formal mechanisms, such as patents and copyrights, as well as informal IP protection (e.g. secrecy, complexity of product

design) do increase innovativeness. In addition to protecting IP, these practices are product market strategies, enabling enterprise to commercialize innovations and appropriate value. However, we should note that while appropriability mechanisms provide innovation benefits to individual agents, from the perspective of complexity science, IP mechanisms act as barriers to effective knowledge flows (e.g. information sharing).

2. Types of networks

Networking behavior refers to networks formation, change and evolution over time (Chauvet, Chollet, Soda, Huault, 2011). Networking behavior in an innovation context is reflected in motifs for interaction underlying the formation and evolution of different types of complex network structures (Frenken, 2006). Mechanisms of business and learning networks formation as the most crucial in innovations emergence. Firms interact, and establish relationships with external organizations and institutions in order to access resources to facilitate innovation. These resources are typically accessed through the firm's business network (Tomlinson, 2010). Business networks are particularly important conduits for providing access to complementary inputs, exposing firms to novel sources of ideas and facilitating the transfer of tacit knowledge and expertise, and technological opportunity (Tomlinson, 2010). Networks can be classified into two broad categories: market-based networks and localized learning networks.

2.1. Market-based networks

Business networks can be vertical, involving firms at different points of the supply chain (i.e. buyers and suppliers), or horizontal, between competitors or potential competitors (known as co-opetition). Networks based on supply chains, or more generally, market-based networks, are typically closed networks, where network access is restricted to firms engaged in market exchanges with each other. Repeated and exclusive transactions among member firms lead to the development of dense linkages between network firms (Gulati, 1995). Dense linkages, in turn, provide the basis for the development of cooperation and trust between member firms, that facilitate the transfer of knowledge and expertise regarding products, technology and production processes. There is a growing importance of networks based upon direct business to business relationships as firms increasingly seek partners with complementary resources to supply services that cannot be supplied internally by the firm (e.g. expertise in marketing and distribution), or a complete package of products and services.

2.2. Localized learning networks

A second type of business network is a localized learning network. Local learning networks comprise networks of firms and research institutes, colleges and universities. These networks are created to facilitate their members to cooperate in projects to devel-

op new knowledge. They tend to be open with a mix of dense linkages (or “tight connections”) and thin linkages (or “loose connections”) between firms and between firms and research institutes, colleges and universities.

3. Managing knowledge appropriability

From the complex network behavior perspective, appropriability represents a protective mechanism that substitutes for lack of trust and acts as a constraint for uncontrolled knowledge flow within an innovative network. From the firm perspective a key incentive to innovate is to appropriate returns from their innovation activities. This requires that value appropriation mechanisms are available to the firm. The term “appropriability mechanisms” refers to the formal IP rights (such as patent, trademark, or copyright protection) and informal IP mechanisms (e.g. developing high trust relations, lead times/first mover advantages, and lock-ins) that allow a firm to protect its knowledge and intangibles and profit from them (Teece, 1986). The existence of both methods for innovation has been documented in the literature (e.g. Pisano, 2006). However, both these methods work well in the context of large firms. Emphasis on legal appropriability methods provides managers of big companies with the confidence to network external partners, reducing allaying fears of opportunistic behavior from these partners. For SMEs formal methods of IP protection appear to be costly to acquire and enforce and these companies rely to larger extent on non-legal, i.e. informal mechanisms such as secrecy and first-mover advantages. Generally, too much emphasis on appropriability may be associated with reduced efforts to draw in knowledge from networks (Laursen, Salter, 2014). Conversely, if the firm has no strategy in place to realize the value from its innovative efforts, it might choose to go it alone, hereby reducing opportunities to develop and commercialize their innovations.

4. Value co-creation – customer as a source of knowledge

The creation of value is the core purpose and central process of economic exchange. The nature of value has been discussed since Aristotle who first distinguished between “use value” and “exchange value”. Two different meanings of value, “value-in-exchange” and “value-in-use”, reflect different ways of thinking about value and value creation.

Traditional view is referred to as *goods-dominant (G-D) logic* and is based on the value-in-exchange meaning of value (Vargo, Lusch, 2004). In G-D logic, value is created (manufactured) by the firm and distributed in the market. The role of “producers” and “consumers” are distinct. Value creation is understood as a series of activities performed by the firm.

Over the time, a different perspective has evolved. Rather than seek to put protective barriers between themselves and their consumers, competitors and suppliers, firms started to seek to cultivate social knowledge and involve diverse actors in the value creation process (Sawhney, Verona, Prandelli, 2005). A notable example is Microsoft, which in the 1990s began releasing beta versions of its software for its customers to test, debug and improve. Another example of co-creation in the computer industry is the open-source software movement. This is where users have full access to the source code and can make their own changes to a program to meet their personal needs.

This shift in the paradigm of value creation has been given a variety of names, such as ‘co-creation experience’, ‘open innovation’, ‘wikinomics’. However, most frequently it is referred to as ‘service dominant (S-D) logic’ (Vargo, Lush, 2004). S-D logic is linked to the value-in-use meaning of value. *Service* is defined as the application of competencies (knowledge and skills) by one entity for the benefit of another (Vargo, Lusch, 2004). Service system is defined as a configuration of resources connected to other systems by value propositions. In S-D systems the roles of producers and consumers are not distinct. The value is co-created in interactions between the firm and the consumers. The competencies of both are integrated.

S-D logic view of exchange challenges the foundation of economics. In G-D logic view, the purpose of economic exchange is to make and distribute things to be sold. The S-D view is that all exchange is based on service. Goods are service delivery vehicles. In S-D logic, knowledge and skills are the key resources for competitive advantage. The essence of the contrast between S-D and G-D logic lies in the basis of exchange. The first one focuses on the action of *operant resources* (i.e. those that upon other resources), such as knowledge and skills, whereas G-D logic focuses on the exchange of *operand resources* (those that result from operations performed on them, such as goods (Vargo, Lusch, 2004). For S-D logic value results from beneficial application of operant resources and is co-created through combined efforts of firms, employees, customers, and other entities related to the exchange. When value creation is seen from form a service systems perspective, the producer-consumer distinction disappears and all participants contribute to the value creation for themselves and for others. Moving the locus of value creation from exchange to use means transforming the understanding of value from one based on *units* of firm output to one based on *processes* that integrate resources.

5. The music industry and value co-creation

The popular music industry has been dominated by a few major record labels since the end of the nineteenth century. However, while the major labels were very profitable in the 1960s and 1970s, in recent years they have found it much more difficult to make money, with sales falling and rising losses (Jones, 2012). Though classed as a cultural industry, big music companies used to operate in the same manner as other

big businesses, using methods such as portfolio analysis to identify ‘cash cows’ (rock music) and ‘dogs’ (world music). Adorno (1990) argued that the major labels have commoditized music to the extent that music production resembled the assembly-line production of standardized products. The aim was not musical excellence, but profit maximization.

The record industry’s value proposition used to be quite simple. The industry was about selling records, and there were no other revenue sources. In addition to having a single product (records) and a single revenue source (music consumers), the marketing was also very standardized. The traditional business model was composed of several activities. The role of artists, which includes musicians and composers, was to create and perform music. Then labels transformed the artistic creation into a marketable product. Most key resources and competencies of the record industry’s traditional business model were directly related to creativity. Ownership of masters was a fundamental resource because it greatly determined the record companies’ capability to create value and to make profit.

Value co-creation has been greatly enhanced by the rise of the internet and its associated interactive media forms. Co-creation requires direct interaction between producers and consumers. In the music industry, this has been limited by the absence of an enabling technology which would allow fans to surmount obstacles of time and space (Jones, 2002). The advent of the Internet, especially Web 2.0, has offered the potential to overcome these obstacles and open up opportunities for value co-creation. The internet offers new opportunities and challenges to the music industry’s traditional business and management practices, particularly in terms of digital distribution, changing consumer behavior and intellectual property management.

After the introduction of the Internet and MP3 technology, the record industry was facing new opportunities and threats due to the evolution of its environment and its competitive structure. In order to take advantage of these opportunities, the record industry decided to reorganize its value network. However, the emergence of digital channels had a negative impact on record sales, which rapidly decreased after 2002. As a consequence the record industry had to rethink its business model to remain profitable. The purpose was not to significantly transform the business model but to reinforce the traditional value-creation logic in order to make more profits. This required access to a combination of specific resources and competencies (infrastructures, skills related to web development, and technology management). For this reason, the major labels bought several e-business start-ups (MP3.com was taken over by Universal Music for \$372 million, while Bertelsmann bought Napster for \$85 million). Through these big investments, major labels were able to achieve full vertical integration.

Despite these efforts, the major digital music platforms failed to attract music consumers. The digital market did not grow as expected and the adopted strategies appeared to be unsuccessful. Starting in 2006, the record industry adopted completely different approaches to make more substantial changes to its business model. The record

labels tried to take advantage of opportunities that were arising in other industries and developed innovative partnerships with companies operating in the fields of electronics (Apple and Dell) and telecommunications (Orange and Vodafone) and on the Web (Google and YouTube).

Using the business model approach, one can identify three different models that record labels started to implement since that time: extending value networks, bundling value propositions, and validating new resources and competencies. The innovative partnerships were based on complementarities between the record industry's value proposition and that of outsiders. A value proposition is complementary to another when it has a positive impact on consumers' willingness-to-pay. For instance, consumers' willingness to pay for a digital portable device is much higher when they have access to music content. Based on complementarities, the record industry developed innovative partnerships outside its boundaries.

5.1. Extending value networks

The partnership with Apple was one of the first to be established outside of the record industry's boundaries. After the success of the iPod, Apple established a digital retail platform (iTunes) to sell music online. Hence the mobile phone market was rapidly growing, partnerships with telecommunication providers (Vodafone and Orange) also offered the record industry the ability to create new streams of income. Several deals were also signed with ISPs (e.g., AOL, MSN, and Yahoo) to use their platforms to offer on-demand music.

5.2. Bundling value propositions

Starting in 2006, the record industry adopted a different approach toward outsiders. Partnerships more frequently led to a "bundled" value proposition that enabled the record industry to capture some of the revenue resulting from the sales of complementary products or services. For instance, partnerships between record labels and electronics manufacturers were established (e.g., Sony Music and Packard Bell, and Warner Music and Samsung). This helped to capture revenue from sales of electronic products. Also, the record industry established multiple partnerships with content providers on the Internet in order to share their revenue (YouTube and Spotify).

5.3. Validating new resources and competencies

From 2007 on, the record industry, and more specifically the major labels, implemented "360-degree" strategies to capture revenue from every activity in which artists participated. New resources and competencies were required to develop these 360-degree activities. The first step was to extend the scope of the artistic contracts. While contracts traditionally concerned only the production of a master, major labels introduced new types of contracts that covered the artists' live performances and image.

The second step was to acquire competencies that the major labels did not have. To do so, they chose to integrate companies endowed with such capabilities (touring companies, merchandising companies, and even concert halls). With the development of these new activities, the paradigm in the record industry has shifted from a record-oriented business to an artist-oriented one. Labels developed a wide range of services for the artists, which resulted in the diversification of revenue sources.

Conclusions

Access to knowledge has become the critical factor of success in the hypercompetitive environment. Business networks paralleled by technology developments – making knowledge more mobile - facilitate the transfer of knowledge while at the same creating the problems of knowledge protection and appropriability. The dilemma which is not easy to resolve is that the ability of enterprises protect intellectual property (IP) – through both formal and informal mechanisms - and appropriate value may at the same time act as a barrier to effective knowledge flows.

The resolution, already visible in some industries, may be to change governance forms within networks and develop new business models.

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MOBILNOŚĆ WIEDZY I JEJ ZAWŁASZCZANIE W KONTEKŚCIE WSPÓŁTWORZENIA WARTOŚCI

Słowa kluczowe: mobilność wiedzy, ochrona zasobów wiedzy, współtworzenie wiedzy

Streszczenie. Wiedza jest jednym z kluczowych zasobów niezbędnych do rozwoju biznesu. Istotne dla przedsiębiorstwa zasoby mogą znajdować się poza tradycyjnie rozumianymi jego granicami, w sieci współpracujących ze sobą przedsiębiorstw. Z perspektywy pozyskiwania wiedzy, sieci można podzielić na dwie kategorie – oparte na relacjach rynkowych oraz umiejscowione lokalnie. Uczenie się w sieciach stwarza przesłanki do budowy przewagi konkurencyjnej. Trzy najważniejsze zagadnienia w procesie uczenia się to: pozyskiwanie wiedzy, kreowanie wiedzy i zawłaszczanie wiedzy. Nowe modele zarządzania widoczne są także w różnego rodzaju przemyśle kreatywnym. Można wyodrębnić trzy modele wdrażane przez duże wytwórnie muzyczne: rozszerzanie sieci wartości, tworzenie wiązek propozycji wartości, uwiarygodnianie nowych zasobów i kompetencji.

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