Exploring Knowledge Creation and Transfer in the Firm: Context and Leadership*

Explorando la creación y transferencia de Conocimiento en la empresa: Contexto y Liderazgo

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1. INTRODUCTION

Over the past two decades, the study of knowledge creation in organizations has arisen as one of the most extensive and fruitful areas of research (Nonaka et al., 1994; Grant, 1996; von Krogh et al., 2012). Considering that "a firm can be understood as a social community specializing in the speed and efficiency in the creation and transfer of knowledge" (Kogut and Zander, 1996: 503), with tacit knowledge being of particular importance, researchers such as Spender (1996) have advocated that the main goals of organisations are the generation and application of knowledge. Organizational Knowledge Creation Theory (KCT), therefore, identifies knowledge resources and organisational learning capabilities as key drivers of innovation within the firm and of sustained competitive advantages, explaining how the organization creates, develops, shares, absorbs, and applies knowledge, both individually and collectively, and either within or outside the organization. KCT organises three key aspects into a dynamic, explanatory framework (von Krogh, Nonaka and Rechteiner, 2012): i) knowledge assets; ii) leadership in knowledge creation and sharing; and iii) context in which knowledge is created and shared.

EXECUTIVE SUMMARY

Knowledge creation and transfer in the firm are considered key tasks for managers in knowledge-intensive and high-tech industries. In order to understand these dynamic capabilities managers must be aware of the circumstances, in terms of organization and teamwork, under which knowledge is created and transferred, and whether this takes place individually or collectively, or inside or outside the firm. This paper explores some of the most prominent contributions made to this field over the last decade in order to identify and compare organizational circumstances or contexts –also known as *ba*–, distributed leadership, team atmosphere, collaborative community, and social capital, that all facilitate and constitute the 'knowledge arena' in the firm, and to draw conclusions that will help us advance towards a new configurational approach for future research on knowledge creation and transfer.

RESUMEN DEL ARTÍCULO

La creación y transferencia de conocimiento en la empresa son funciones fundamentales de la dirección en industrias intensivas en conocimiento y alta tecnología. Para entender estas capacidades dinámicas, la dirección debe tener en cuenta las circunstancias específicas de su organización y equipos de trabajo donde se crea y transfiere el conocimiento, tanto individual como colectivamente, dentro y fuera de la empresa. Este artículo explora algunas de las contribuciones más importantes realizadas en la última década con el fin de identificar y comparar las circunstancias o el contexto organizativo, conocidos como *ba*, el liderazgo distribuido, ambiente de equipo, comunidad de colaboración, o el capital social, que facilitan y constituyen el 'área del conocimiento' en la empresa, con el fin de exponer conclusiones que permitan avanzar hacia un nuevo enfoque configurativo para futuras investigaciones sobre la creación y transferencia de conocimiento.

Undoubtedly, the analysis of knowledge assets has attracted extensive research that has mainly focussed on their identification and classification. One of the most firmly established knowledge asset classification frameworks is based on their epistemological –explicit and tacit– and ontological –individual, collective– dimensions (Nonaka and Takeuchi, 1995). Nonaka, Toyama and Kono (2000) classified knowledge assets as: i) experiential, which includes tacit knowledge shared through the experiences, skills and know-how of individual people, as well as their passion, tension, trust, love, and so on; ii) routines, including knowledge embedded in actions and practices as part of organisational cultures or routines; iii) conceptual, which includes knowledge articulated through images, concepts and symbols in the form of product design or brand equity, and iv) systemic assets, including systemized and packaged explicit knowledge such as documents, databases, IT, patents, licences, and so on. In this context, Teece (2000) differentiates between personal and organizational and tacit and explicit knowledge assets. Since tacit assets are difficult to buy and sell, they should be built in-house. Traditionally, both the tacit and collective nature of knowledge have been associated with difficulties in knowledge creation, and particularly, knowledge sharing, the former due to its contextual nature and transmission difficulties, and the latter due to the fact that it is embedded in organizational routines, processes and structures. In a meta-analytic review of organizational knowledge transfer, Wijk, Jansen, and Lyles (2008) highlight the ambiguity of knowledge –as derived from knowledge tacitness, specificity and complexity– as being one of the impediments to knowledge transfer. Furthermore, knowledge assets are both the basic input and output of the knowledge creation and transfer processes.

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Knowledge assets have also been widely analysed from a parallel theoretical development perspective, the Intellectual Capital-Based View (ICBV) (Reed et al., 2006). Intellectual capital or knowledge assets can be classified into three main categories (Nahapiet and Ghoshal, 1998; Subramanian and Youndt, 2005): i) human capital, or individual knowledge owned by a firm's employees, including experience, abilities, learning abilities; ii) social capital, as the sum of knowledge assets which are embedded within, available through, and derived from a firm's network of relationships; and iii) organisational capital, as the institutionalized knowledge and

codified experience residing within and utilized through databases, patents, manuals, structures, etc.

Although most of the literature has focused on knowledge assets, the other two elements in the knowledge creation and sharing process, namely leadership and context, are also important. Concepts such as distributed leadership, phronetic or wise leadership, constitute new forms of leadership that promote the creation and distribution of knowledge in the firm. As Nonaka, Toyama and Konno (2000) point out, knowledge, as a primary dynamic human process, needs to be created within a context. From a review of the literature it can be seen that the proliferation of concepts such as 'high care', 'team atmosphere', '*ba*', 'collaborative community' or 'social capital' exemplify the 'terminology jungle' used to describe the contextual circumstances required to create and share knowledge assets in general, and tacit assets in particular. Although the nature and role of leadership and context in the organization has been widely studied in the literature (Nonaka and Takeuchi, 2011; von Krogh et al., 2012; Zárraga and Bonache, 2003), further development and a greater understanding of these concepts are needed in the context of organisational knowledge creation. This paper, therefore, focuses on leadership and context in order to analyse different proposals made in the literature, attempting to integrate and understand the complex circumstances or 'knowledge arena' under which knowledge is created and shared within the firm.

2. LEADERSHIP AND CONTEXT OF KNOWLEDGE CREATION AND TRANSFER: EXPLORING THE 'KNOWLEDGE ARENA'

Organizational knowledge management creation and transfer is the process of making available, amplifying and connecting the knowledge created by individuals within and between organisations (Nonaka et al., 2000). In this section, we focus on the role of leadership and context, discussing the introduction of new leadership models, the different elements involved, the scope of the context, and the role of social capital in knowledge creation and transfer. This review attempts, albeit briefly, to identify the current features of this field of research.

2.1. Distributed and Phronetic Leadership

The main task of a leader in a knowledge management and innovation context is to coordinate and manage the different

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viewpoints found within both organizations and teams, promoting a high care atmosphere –creating trust among team members– as a shared space for individual and group interaction in order to create and share knowledge. In a knowledge-creating company (Nonaka et al., 2000) traditional vertical top-down leadership is displaced by distributed leadership, where leaders 'read' and guide the working situation to build a specific type of shared context or *ba*.

Although leadership in general, and also team leadership, has been widely studied in the organization literature (Zárraga and Bonache, 2005), little emphasis has been given to knowledge management practices. Recently, von Krogh, Nonaka and Rechsteiner (2012) attempted to bridge this gap by offering an updated review of leadership in knowledge creation and transfer. They found that leadership has a significant impact on knowledge creation in the organization, but is usually treated as a marginal variable. Leadership style theory, therefore, which deals with the style or behaviour of top managers of organisations, is one of many theories that could help clarify the dynamic and emergent process of knowledge accumulation, sharing, and creation. In their review of the literature the authors identified several leadership styles that favour knowledge creation and transfer. They highlighted roles such as 'innovator', 'mentor', 'facilitator', or leadership styles that emphasize human interaction, affiliation, morale, and cohesion and workplace harmony. These are leaders who spend time and effort to share their knowledge, who engage openly in role-modelling activities or 'leading by example', and who set aside time for strategic reflection and documenting important insights. Another style is 'transformational vs. transactional leadership', which focussed on motivating and inspiring team members and subordinates to give their best for the organization: to perform beyond expectations. All previous leadership styles, however, involve a centralized leadership, a centralized authority, consisting of an individual –the leader– with his or her followers.

A new type of leadership –distributed leadership– has emerged, and its primary goal in a knowledge-creating company is clear: to promote trust and a shared context for knowledge creation and transfer. Knowledge creation, however, often involves spontaneous collaboration between individuals and teams in organizations, implying that practitioners collectively identify opportunities to rely on each other's knowledge, expectations and efforts, creating

interpersonal relationships. For von Krogh et al. (2012), a distributed leadership –leadership as a group quality that must be developed by the group members– is embedded in daily practice and based on trust, empathy and shared norms. It is characterized by spontaneous and intuitive emerging collaboration, participative decision-making, and actions, which all act as sources of leadership legitimation. Organizational processes are formalized in practice, and individuals exchange authority and co-joint leadership as a shared role in the organization. Leader-follower leadership skills are not separated and are substituted by peer influence, because skills are acquired by individuals exposed to different organizational situations in a here-and-now knowledge management setting. Finally, distributed leadership seeks to spread these skills throughout the peer structure. A parallel development of a new leadership style is the concept of distributed practical wisdom leadership –phronesis– and the wise leader (Nonaka andToyama, 2007; Nonaka and Takeuchi, 2011). Both concepts focus on daily practice as a source of actual leadership in the pursuit of 'common goodness', in direct relationship with the concept of 'ethic of contribution' proposed by Adler, Heckcher and Prusak (2011). Leadership, instead of being static, is determined by the context and is distributed, since effective knowledge management in the firm requires the active commitment of every individual in the organization.

Phronetic leadership, derived from a specific type of knowledge labelled phronesis by the ancient philosopher Aristotle, refers to the ability to determine and undertake the best action in a specific situation to serve the common good. In other words, "a specific type of high-quality tacit knowledge acquired from practical experience that enables one to make prudent decisions and take action that is appropriate to each situation, guided by values and ethics" (Nonaka and Toyama, 2007: 378). Wise leadership (Nonaka and Takeuchi, 2011), therefore, is built or acquired by practical wisdom, and has six key abilities: i) to base decision-making on what is good for the organization and society; ii) to quickly grasp the essence of each specific situation; iii) to provide a shared context in which organizational members can create new meaning; iv) to use metaphors and stories to convert experience into tacit knowledge; v) to exert political power to bring people together; and finally vi) to guide others towards cultivating practical wisdom as distributed leadership.

2.2. Knowledge Context: *Ba*, Collaborative Community and Team Atmosphere

One of the most prominent and widespread contributions to knowledge creation and transfer in the firm has been the well-known concept of '*Ba*' –the Japanese word for 'place' (Nonaka, Toyama and Konno, 2000). *Ba* is a shared space or context in which knowledge is created, shared, and utilized through personal action and interaction. It constitutes the locus of meaning-making and is needed to contextualize information and knowledge. Through personal interaction in place and time, the individual finds the context to create and share knowledge, transforming information into knowledge.

Although face-to-face interaction is a key element in building *ba*, there are different types of *ba*. We could find physical *ba* in business spaces and offices, meetings and events, whereas virtual *ba* could appear in mailing lists, intranets, groupware tools, etc. Finally, mental *ba* could be embedded in ideals and common values shared by the members of an organization. Based on two opposing concepts, face-to-face/virtual, and individual/collective, Nonaka et al (2000) determined four types of *ba*: i) originating *ba*, face-to-face among individuals, is the shared space where individuals pool emotions, feelings and mental models, *ba* emerges through mutual care, trust, love, friendship, and commitment; ii) dialoguing *ba*, as collective face-to-face interactions, is the common place where an individual's mental models are shared and articulated as concepts; iii) systemizing *ba*, as collective virtual interactions, is the place for sharing and exchanging explicit existing knowledge in written form among a large group of individuals; and finally, iv) exercising *ba*, as individual virtual interactions, is the place where individuals embody explicit and written knowledge from virtual sources.

Another interesting approach to contextualizing knowledge creation and transfer in the firm and in teamwork is the concept of '**collaborative community**', analyzed by Adler, Heckscher and Prusak (2011). This type of community, as a powerful organizing principle, encourages people to apply and share their knowledge and skills in a flexible and self-managed teamwork setting. It requires several key elements: the definition of a clearly shared purpose, the cultivation of an ethic of contribution, and the development of a set of principles that enable people to work in flexible but disciplined group-work efforts.

Collaborative communities need to build a shared goal focusing on trust and organizational cohesion, and to position the group in relation to competitors, partners, customers, and society. "It is a description of what everyone in the organization is trying to do. It guides efforts at all levels" (Adler et al., 2011: 5). The second basic element is the ethic of contribution, as a set of values that encourage people to go beyond their roles and responsibilities to solve problems and achieve the shared goal. Ethic of contribution avoids individualisms and seeks the individual's best contributions for the common good. The third element is the development of processes that enable people to work in flexible but disciplined projects through horizontal coordination. Interactive and flexible interdependent process management allows people to build collaborative communities to foster knowledge creation and innovation in a more effective way.

Parallel to the concept of *ba*, more specifically the 'originating and dialoging *ba*', are other interesting concepts such as 'high care', 'high involvement' or 'team atmosphere' that reflect the need to build a specific context for knowledge creation and transfer, especially in face-to-face interactions in daily group work. An effective management of collective knowledge in the firm requires the intensive use of self-managed teams. Individuals, however, are usually reluctance to share their knowledge due to the free-rider effect of sharing knowledge in teams. A solution is proposed by Zárraga and Bonache (2003): team atmosphere, a context, they readily admit, that has been treated as a 'black box'.

Team atmosphere, as a cooperative solution, is based on the concepts of 'high involvement' (Lawler, 1992) or 'high care' (von Krogh, 1998) in knowledge transfer and creation among team members. Von Krogh (1998) explains the characteristics of 'high care' as mutual trust, the belief that the other team members have the ability to absorb and retain, together with active empathy, understanding 'emotionally' the other's particular circumstances. This 'team atmosphere', as the true internal collaboration between team members, could be built through several initiatives taken by the team leader, whose main task is to coordinate and focalize different viewpoints found within the team. As well as guidelines for establishing a reward system linked to knowledge sharing, the leader can provide both real and virtual spaces, or *ba*, teamwork training, and finally, social events for formal and informal interactions among team and organizational members.

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2.3. Social Capital

The concept of 'social capital' as a feature of this 'knowledge arena' could also be discussed in the theoretical framework of the ICBV. As Gooderham, Minbaeva and Pedersen (2011) point out, further analysis of organizational and contextual attributes are needed in order to advance the theory of social capital in the firm. The seminal paper by Nahapiet and Ghoshal (1998) describes the key role of social capital in developing intellectual capital or knowledge assets. According to the authors, a firm, understood as a social community specialized in the creation and transfer of knowledge, has to develop social and intellectual capital as sources of distinctive organizational advantage. According to Levin and Cross (2004), research has shown that relationships, and their effective management, are critical to knowledge creation and transfer. A basic premise is that knowledge transfer occurs through interactions between individuals who are in several social relationships (Yli-Renko et al., 2001).

Nahapiet and Ghoshal (1998) offer, albeit indirectly, an integrative view of the KBV and ICBV frameworks, and define social capital as the sum of the actual as well as potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or organization, including both the network and the assets that may be mobilized. For Adler and Kwon (2002: 23), "social capital is the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor". Goodwill makes organizational resources (information, influence, and solidarity) available for individual use. In their review, definitions of social capital are grouped according to type: internal or external links, or both.

Nahapiet and Ghoshal (1998) describe the dimensions of social capital and how they facilitate the creation and exchange of knowledge: i) Structural or impersonal configurations of links between people or units. Networks configured in terms of density, connectivity, and hierarchy; ii) Relational, referring to assets created and leveraged through the kind of personal relationships, the main facets being: trust and trustworthiness, friendship, norms and sanctions, obligations and expectations, identity and identification; and finally, iii) Cognitive, being resources providing shared representations, interpretations, and systems of meaning among parties; such as shared language, codes, and mental models.

Most of the literature on social capital focuses on demonstrating its role in knowledge transfer and sharing (Wei, Zheng and Zhang, 2011) by analyzing the role of structure and the importance of social actors in forging relationship networks, the quality of these, and the role of trust (Levin and Cross, 2004) or social cohesion (Reagans and McEvily, 2003). This leads Eisenhardt and Santos (2002) to affirm that companies that transfer large quantities of knowledge do so through managers who develop a 'collaborative context' by means of culture and organizational structure.

3. CONCLUSIONS: A CONFIGURATIONAL APPROACH TO KNOWLEDGE MANAGEMENT RESEARCH

Although the study of knowledge creation in organizations has produced a huge amount of theoretical and empirical research over the past two decades, some questions and issues still need more in-depth study and analysis. This aim of this paper has been to clarify further the role of leadership and context in the knowledge creation and transfer process.

In this paper we have first analyzed new types of leadership and contextual factors that currently encompass very soft 'economic elements' such as goodwill, trust, cohesion, commitment, ethic of contribution, high care, atmosphere, wise leadership or even love and friendship. These aspects of the 'knowledge arena' are the focus of a growing number of studies and discussions on Knowledge Creation and Transfer Theory.

We have also, from an empirical research point of view, reviewed key factors involved in exploring the context for knowledge creation and transfer, highlighting the diversity of factors and their multiple connections in the context of creating a platform for knowledge management in the firm. In that sense, most empirical research has focused on a contingency approach where certain factors such as social capital, trust, team atmosphere or leadership have been treated as independent and/or contingent variables, and where these contextual variables promote, reinforce and/or impede the organizational knowledge creation and transfer processes.

Along these lines, we propose a new configurational research approach. On the basic premise that knowledge is context-specific (Nonaka et al. 2000), and depends on a particular time and space, future empirical research should analyze knowledge assets, leadership, and context jointly in a new configurational approach,

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where the integrity of these business phenomena are preserved as complex configurations.

A new technique –fuzzy set Qualitative Comparative Analysis (fsQCA)– is gaining acceptance among management and strategy scholars as a reliable statistical technique that is particularly well suited to investigating configurations (Fiss, 2011; Ragin, 2000). The advantages of this technique and framework are: i) it enables us to test the propositions regarding the influence of knowledge management strategy configurations as complex sets of organizational attributes in knowledge creation and transfer (Ragin, 2000; von Krogh et al., 2012); ii) fsQCA has the advantage of being suited to small sample sizes –with less than 300 cases– and to limited diversity; and iii) as Fiss (2011) points out, some promising applications of QCA to management and strategy research include the Resource-Based View framework, and parallel developments such as the Knowledge-Based View or the Intellectual Capital-Based View of the firm.

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