

Managing organizational networks and knowledge transfer in a global service company

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Abstract

The knowledge-based theory of the firm has emphasized the role of organizational capabilities and networks. Based on this idea, some managers in Amadeus, a global services company, have put in place mechanisms to create and transfer knowledge efficiently among professional networks. Due to a lack of support from top management, their strategy built on information systems and technological solutions has fallen short of expectations. Research has been conducted in the past three years in this organization to show that the strategy was mainly based on codification of information instead of creating a collaborative climate outside organizational networks. Today, a human-centric approach is heralded through the launch of communities of practice to structure collaboration and information sharing among organizational networks.

Key Words: Knowledge Transfer, Networks, Communities of Practice, Amadeus

Why are some firms able to enhance and to maximise knowledge residing in the whole organization while others are not? This question has been treated extensively by a number of scholars (Hansen, 2002; Spender, 2000) but has left us with an incomplete understanding in terms of knowledge networks management. This paper takes up a challenge of analysing how firms manage their knowledge networks to leverage positively the management and the creation of organizational knowledge; and what are the new challenges for the Chief Knowledge Officer (CKO) in this new context.

The development of Knowledge Management (KM) as a distinct area has been historically influenced by research undertaken across a broad range of disciplines. These disciplines include sociology, psychology, and philosophy. Since the early 1990s, research in the knowledge management area has been extended through contiguous areas including change management, leadership development, systems theory, organization theory, organizational development, organizational learning and artificial intelligence. Of the many parent disciplines or related fields, organizational learning is arguably the closest 'cousin' to knowledge management "*with knowledge management and organizational learning being considered two sides of the one coin*" (Hackett 2000, p. 16). Knowledge is recognized as a vital source of competitive advantage and the firm's ability to deal efficiently with its own knowledge is a primary source to create value and to develop the organization (Grant, 2000; Spender, 1996). The maximisation of knowledge creation is an organizational challenge for today's companies (Nohria and Ghoshal, 1997; Miles and Snow, 2000; Hansen, 2002).

Simultaneously, over the last decade, the term “*network*” has become the vogue in describing contemporary organizations: “*the networked organization*” (Nohria and Eccles, 1992). It has described a pattern of contemporary firms but also been used to advocate what organizations must become if they are to be competitive (Nohria and Eccles, 1992). The emergence of organizational networks introduces a synergic dilemma in the field of knowledge management. In parallel with the prosperous expansion of knowledge management, this concept of networking has also become a popular topic at individual or group levels of analysis (Brown and Duguid, 1991; Nonaka, 1994; Spender, 1996; Wenger, 1999).

As part of the “new age” of business, we are witness to a definitive shift in the business landscape itself, with important changes that include the dissolution of integrated corporations and a new approach to industrial value networks and to organizational coordination (Grant, 2000). The emergence of these networks introduces an important problem in the management theory but especially in the field of knowledge management with the emergence of the knowledge based view of the firm.

The Knowledge Based View of the firm

The paradigm of the Knowledge Based View (KBV) of the firm has been exposed in a number of articles this last decade. The main learning from this flourish of papers is that knowledge is recognized as a vital source of competitive advantage. A key implication for the firm, therefore, is the critical ability to deal efficiently with its own knowledge to create value and gain a competitive advantage. Nevertheless, the background of this theory is often disconnected from the reality and focus perhaps too much on, the management of “the knowledge” as an independent variable.

We would like to articulate our approach of the KBV around two main points:

- knowledge is not enough but knowledge integration is the key for competitive advantage;
- what managers know is important but what is crucial is how they address uncertainty.

Our vision of the Knowledge Based View of the firm does not only deal with the now classical view of the firm as a collection of knowledge that can be considered as classical asset but it deals with what managers know and do not know and also their experience of uncertainty. The essence of the firm is the mechanisms through which knowledge coordination and knowledge integration are achieved. A Knowledge Based theory suggests that boundaries and the governance structures are determinate by the value to be derived from the deployment of its knowledge. Thus, this paradigm focuses on mechanisms and contexts through which coordination is achieved. The competitive advantage depends on the firm’s ability to continuously configure and integrate knowledge into value-creating strategies: the key for efficiency is not “simply” knowledge creation or knowledge transfer, but it is to achieve effective knowledge integration. This integration needs cooperation, but depends on coordination between individuals and knowledge they retained. The firm must manage the integration of discontinuous types of knowledge into a coherent organizational view (Spender, 2002).

The coordination issue between individuals is fundamental for knowledge integration and knowledge creation. Integration means mechanisms through which “knowledge of many individuals can be deployed in the production of a particular product” (Grant, 2002, p. 137). The literature on coordination mechanisms for knowledge processes emphasizes the role of three critical factors in knowledge integration: shared experiences (Brown and Duguid 1991; Nonaka 1994; Nonaka and Takeuchi 1995;

Nonaka and Konno 1998), shared symbolism captured in metaphors and logos (Nonaka 1994; Leonard and Sensiper 1998), and shared artifacts (Leonard and Sensiper 1998). In order to be efficient, individuals have to specialize and then detain specialist knowledge (Grant, 1996). Coordination process must preserve the knowledge specificity and the efficiencies of specialization but also, implies at the same time, an ability to transfer this knowledge in order to apply it within other activities of the organization. Firms must create conditions in which individuals can integrate and share their knowledge. Indeed, following Spender and Grant, the existence of common knowledge is the key for integration. This common knowledge emerges as the result of interaction around the organization's members.

Nahapiet and Ghoshal (1998) argued that coordination of the social capital facilitates the development of intellectual capital. They identified four conditions necessary for the exchange and combination of intellectual capital:

1. The opportunity to make the exchange and combination must exist. According to the social network theory, it provides access to resources because shared language, codes and narratives developed inside help people to get in touch with each other.

2. Parties involved in the exchange and combination must expect some value from the exchange.

3. Parties involved in the exchange and combination will be able to appropriate or realize some of the new value created by the engagement.

4. The capability to combine information or experience must exist. It will foster knowledge creation.

We can assume that organizations are seen as institutional settings for fostering social capital embodied in networks. This social capital requires coordination from the management in place. The role of the Knowledge Manager or the Chief Knowledge Officer is, indeed, to support this process.

The importance of the management to coordinate knowledge in networks

Previous research undertaken in 92 firms stresses that the role of the CKO depends on the knowledge management strategy implemented. Following Hansen et al.'s research (1999), firms develop three types of Knowledge Management Strategies (KMS) that nurture three different types of knowledge networks: technological networks (supported by technological strategy), social networks (socialization strategy), and individualized networks (personalization strategy). These Knowledge Management Strategies satisfy three functions: knowledge capitalization, innovation, and improving business process.

- **Technological** is also named codification strategy or technocratic school and relies on technology and databases. Individuals have to explicit their knowledge in order to transfer it via the database (Hansen et al, 1999). Knowledge networks are virtual networks and lead to capitalization.
- **Personalisation**, which is also named the spatial school (Earl, 2001), is designed for the emergence of knowledge and relies on face-to-face (Hansen et al., 1999). With this strategy, firms focus on tacit knowledge sharing. These personal networks lead to innovation.
- The purpose of the **Socialization** combines both technological and personalisation and relies on communities of practices. People inhabiting the same knowledge space share knowledge and experience in order to improve

business processes. Knowledge is often shared with the help of the technology (Wenger, 1998).

We observe that each Knowledge Management Strategy designs a specific architecture of knowledge networks and has different impacts on organizational development and then, on the maximisation of knowledge creation and its final use. In fact, if knowledge is created in a part of the organizational network, it will not have the same organizational impact according to the knowledge strategy used. Then, firms have to define and draw knowledge roads for enhancing knowledge “traceability” and “transparency” in knowledge networks. The trends shown in the table below illustrate the evolution of the CKO’s role. From a technological strategy, more and more CKOs are moving to a socialization one. For example, knowledge traceability is quite easy with a technological approach because of the information system management. Knowledge Managers (or CKO) can have access to the information of who use the program, who takes what knowledge or what knowledge is taken by who, etc... Meanwhile, this traceability is difficult when a CKO has to detect what knowledge is reused and in which circumstances.

The following table synthesizes the evolution of KMS in firm over the last five years.

Knowledge Management Strategy	1998	2000	2002
Technological	72 %	66 %	33%
Personalization	6 %	8 %	12%
Socialization	12 %	26 %	55%

This previous research also points out that companies are disappointed with technological strategy. They try hard to build and to sustain knowledge networks or learning communities. Many companies (67%) in our study emphasized the importance of relationships for knowledge creation and sharing and this takes form as community of practices or knowledge networks. With these strategies, the firm maximizes knowledge with a bottom-up approach of social knowledge creation and with self-organized knowledge networks management. Consequently, firms have to ensure that top-managers support these actions and that they are involved in it.

The main role of the Knowledge Manager or Chief Knowledge Officer (CKO) is the responsibility for developing and implementing knowledge management programs. Following the Earl model (1999), “*CKOs have two principal design competencies: they are technologists and environmentalists. They encourage and initiate investments in information technology and also in the social environment*”. They also need to have marketing skills to be known in the organizational structure, financial skills to measure efficiently the impacts of knowledge management programs or practices, project management abilities to lead complex initiatives. Knowledge Managers (or CKOs) have to define how the firm handles its intellectual assets, which include such elements such as creativity communication ability, analytical skill and intuition. One of the main goals is to foster organizational culture to become a learning organization for continuously learning and sharing, creating knowledge. Thus, a CKO has to encourage the social part of knowledge management and knowledge creation in order to enhance knowledge coordination and integration. If knowledge is socially constructed or generated, this underline the role of the CKO to develop social KM practices such as knowledge networks or communities of practice.

The Knowledge Manager also acts as an internal consultant who supports knowledge management projects. Its role is to avoid silos of information, have a transfunctional view of projects and implement the corporate knowledge management standards. Above all, the Knowledge Manager fosters a culture of collaboration among networks of people, especially unrelated knowledge networks.

The role of Communities of Practice to integrate knowledge

The notion of “Communities of Practice” has originally enlightened socialization processes ensuring recruits’ membership to their new occupational group and the collective changes in activities and identities that unfold (Lave & Wenger, 1991). According to Wenger (1998) *“communities of practice were common as far back as ancient times. In classical Greece, for instance, “corporations” of metalworkers, potters, masons, and other craftsmen had both a social purpose (members worshipped the same deities and celebrated holidays together) and a business function (members trained apprentices and spread innovations). In the Middle Ages, guilds played similar roles for artisans throughout Europe. Today’s communities of practice are different in one important respect: instead of being composed primarily of people working on their own, they often exist within large organizations.”*

More generally, groups of agents who experience a common occupational history, who frequently interact, who share knowledge and face similar problems in and among organizations might be labeled Communities of Practice (CoPs). They are organizational forms that encourage individuals to create, refine, share and use knowledge effectively (Mc Dermott, 1999). CoPs help to develop the appropriate relationships and context that allow knowledge to flow between those who have knowledge and those who require it (Lesser and Everest, 2001). They are supported by organizational culture but they also can influence the emergence of a knowledge management culture.

One of the main dimensions that all the authors share is that communities of practice differ from teams or groups that have a task-oriented approach. These communities must have a clear identity to be really effective, mainly because they give individuals opportunities to associate themselves with others who share the same interests, the same functions, and works across the value chain, or work related interests (Lesser and Prusak, 1999). Collective action and social knowledge claims are legitimized in terms of community identity. With co-specialized knowledge and collective expertise, the community can solve business problems and build personal knowledge. Indeed, communities help retain critical expertise and can improve an organization’s responsiveness by enabling the rapid location of knowledge across the organization. Another benefit of these intra-organizational networks is their positive contribution to building a sense of trust, a common language and the mutual commitment critical to the knowledge sharing process.

The role of the CKO is to “draw” knowledge networks together with an architect approach in order to physically represent these networks. The second stage is to create constructive synergies between these different knowledge networks in order to follow the thesis: “the more they are related, the more they are likely (theoretically) to obtain knowledge from other units” (Hansen, 2002). As a difference with the technological strategy, actors of CoPs are related for practical and learning reasons. Firms have to find one mediator in each identified CoP to act on them. They can meet virtually to focus on action principles. Action implies “reusing” knowledge capitalized and also redistributing new knowledge created with the last one. This positive feedback creates a synergic

effect between units. Then, the third stage is to identify mediators in each CoPs to initiate the creation of a CoP mediators community.

As we have seen previously, coordination and integration of knowledge among networks of people can help an organization to be successful. The empirical study we conducted has illustrated the need for managing these networks through communities of practice. That means CKOs need to follow the socialization strategy. A key question for consideration is “How can a global services company such as Amadeus maximize knowledge residing in the whole organization?”

Knowledge transfer in Amadeus: the need for Communities of Practice

The research was conducted exclusively with qualitative research methods (Miles and Hubermann, 1988; Eisenhardt, 1989; Yin, 1990). The method of case study was chosen as we wanted to develop ideas from the induction of data more than propose general conclusions. At the same time, it seemed to be more appropriate to observe knowledge transformation with direct observation and participation, rather than with external questionnaires. The case study site is a European-based, global travel technology company. The principal data-gathering method was a structured interview conducted by telephone with senior staff from within 28 European and Latin American markets. In total, 31 interviews were undertaken. This broad-ranging interview method gathered information and feedback on the processes used for identifying and distributing best practices in sales and marketing. The interview data were supplemented by feedback questionnaires from best practice forums, intranet usage statistics and observations from best practice forums and from interviews with staff in the central organisation. Our study evaluated the effectiveness of a best practice knowledge management program in achieving knowledge transfer in sales and marketing practices throughout the markets of Europe, Middle East, Africa and Latin America. It considered the methods by which knowledge was transferred and their relative effectiveness, and those factors which may have mediated or limited the knowledge transfer processes.

While there was evidence that knowledge transfer had occurred, the results of the study highlighted the difficulties in effectively measuring the knowledge transfer process. From the study it was evident that clear and visible measures of knowledge transfer are not universal or even generic, but rather are to be discerned in a range of indicators across actions, behaviours, attitudes and outcomes in culture-specific settings. A time based knowledge measurement model was developed to assist in this regard.

Other major outcomes from the research included:

- The confirmation of the critical importance of face-to-face communication mechanisms for knowledge transfer to result in knowledge uptake.
- The identification of the role of technology as an enabler of communication and distribution of knowledge, but not as a driver for action or knowledge uptake.
- The recognition of the relationship between the broad factors impacting on knowledge transfer such as organisational factors, external environment and individual characteristics, in a complex and non-linear manner, suggesting that knowledge transfer is a multi-factorial process involving interacting variables to an extent greater than generally accepted hitherto. A tool for use within organisational settings has been developed in this regard.
- The identification of the interplay between different individual specific characteristics or factors such as personal experience of change, experience of working in a different cultural context, ego/personality, and credibility of the person transmitting the practice which influence the decision to adopt or not adopt a practice from another market.

- The identification of the need for cultural similarity and high levels of homogeneity, in terms of market maturity, market size and competitive position for practices to transfer more often between countries.
- The recognition that many factors operate to influence and shape the knowledge or indeed to block the transfer of practices between countries, with resistance to other practices possibly relating to an individual's need for the application of creativity, personal ownership and control.

For example, the Knowledge Manager launched a Best Practice Forum to coordinate the knowledge transfer among networks of NMCs (National Marketing Companies=local sales outlets). The Best Practice (BP) forums run at Amadeus knowledge encouraged knowledge sharing in a more structured manner than those forums typically defined or associated with a Community of Practice (CoP). Of key importance, was the evidence of the creation of more informal sharing mechanisms occurring after more formally structured knowledge exchanges such as BP forums. As we have said, formal knowledge sharing events foster the creation of informal knowledge communities.

Additionally, the Knowledge Manager observed that much of the language within the existing literature describing those factors which block or limit knowledge transfer was negatively framed. We believe that a change in attitude about the positive influence of an individual's filtering processes, together with a change in organisational language describing resistance to knowledge transfer, would yield a positive impact on individuals' attitudes and behaviour with regard to knowledge transfer. Moreover, a recent study made in the team dedicated to airlines services (called *Airline Business Group*) showed a lack of commitment from top management regarding collaboration. Using the Collaborative Climate Index model developed by Karl Erik Sveiby and Roland Simmons (2002), we demonstrate that people collaborate more easily with team-mates and that a top-down strategy is not feasible. Faced with a lack of consideration from the top management, an employee in Great-Britain pinpoints that *"a culture of 'knowledge is power' emanates in our business unit and simple information that would help on strategy, pricing and product priorities are not passed down the line"*. Another one considers that *"individuals other than management get shouted down for their opinion and upward communication seems not to be encouraged"*. The coordination and the integration of knowledge were not clearly articulated outside the networks. The results: islands of knowledge which are disconnected which others. The role of the Knowledge Manager was to re-plugged different networks by identifying people willing to create transfunctional communities.

This lack of commitment has "helped" the development of transfunctional communities. One of them is the Community of Practice for Customer Relationship Management. This business-focus community brings together different services among the organization. Through a unified view of the customers, this community helps to develop, build and manage customer relationships in a more consistent and effective way, resulting in a better level of understanding of customer environment and needs, and thereby increasing customer satisfaction and loyalty. By reducing 'non-selling' time, prioritizing sales efforts, standardizing the sales approach and delivering better forecasts and benchmarking, this CoP aims to cut the sales cycle, improve the close-out rates, win new contracts, increase the customer share and raise the contribution to Amadeus' profitability. According to Amadeus, *"effective CRM is less to do with the automation of systems and more to do with the integration of **customer-focused knowledge**... It*

brings together technology, data and common sense'. This community is also supported by a CRM software, Siebel, that represents a single point of access for information. This case points out how a community of practice has helped to coordinate and integrate knowledge inside the organization. By using the power of networks, Amadeus is able to better understand customer needs, how they use Amadeus services and then increase sales revenues. This knowledge management strategy leads to better learn of "client knowledge" which is a key success factor for a world wide service company.

CONCLUSION

Based on the experience of Amadeus, we can consider that the role of the Knowledge Manager has evolved. He should not only try to establish mechanisms to codify knowledge or to help people socializing if the top management does not clearly back up a top-down knowledge management strategy. The importance of the Knowledge Manager is paradoxical: he or she has to support and animate the flows of information among networks of people without creating formal structures.

Without a Knowledge Management Strategy, networks of people are disconnected from each other with each others. The Knowledge Management role is here to re-plug these networks by creating conditions for building communities of practice.

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