

**Introduction to the thematic file**  
**Knowledge Sharing in Geographically Dispersed Communities**  
**Introduction au dossier thématique**  
**Partage de connaissances dans des communautés dispersées géographiquement**  
**Introducción al dossier temático**  
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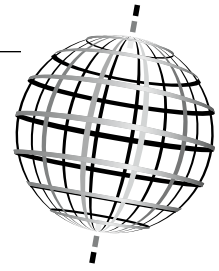
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# Knowledge Sharing in Geographically Dispersed Communities

## Partage de connaissances dans des communautés dispersées géographiquement

## Intercambio de conocimiento en comunidades dispersas geográficamente

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### ABSTRACT

This chapter aims at a better understanding of the dynamics leading firms to create Networks of practice (NoP) to transfer knowledge and know-how between its geographically dispersed business units. In this introduction we focus on the complementarity between communities of practice (CoP) and networks of practice (NoP) inside firms to share knowledge and consolidate organizational learning. We show that informal settings where people interact around their practices, such as CoP facilitate and consolidate knowledge sharing inside firms and enable them to create a larger network. After a literature review on CoP and NoP, the chapter will highlight the role of CoP and boundaries processes (brokers, boundary objects) in the development of NoP.

**Keywords:** Networks of practice, communities of practice, knowledge sharing, brokers, boundary objects

### RÉSUMÉ

Ce chapitre a pour objectif une meilleure compréhension des dynamiques conduisant les entreprises à créer des réseaux de pratique pour transférer des connaissances et du savoir-faire entre leurs unités dispersées géographiquement. Dans cette introduction, nous insistons sur la complémentarité entre les communautés de pratique et les réseaux de pratique à l'intérieur des entreprises pour partager les connaissances et consolider l'apprentissage organisationnel. Nous montrons que les lieux informels où les gens interagissent autour de leur pratiques, telles que les communautés de pratique, facilitent et consolident le partage de connaissances dans les entreprises et leur permettent de créer des réseaux plus larges. Après une revue de la littérature sur les communautés de pratique et les réseaux de pratique, le chapitre éclairera le rôle des communautés et des processus de frontières (intermédiaires, objets-frontière) dans le développement des réseaux de pratique.

**Mots-Clés :** Réseaux de pratique, communautés de pratique, partage de connaissances, intermédiaires, objets-frontière

### RESUMEN

Este capítulo tiene como objetivo una mejor comprensión de las dinámicas de las empresas para crear redes de práctica para transferir conocimiento y know-how entre sus unidades de negocio geográficamente dispersas. En esta introducción nos centramos en la complementariedad entre las comunidades de práctica y las redes de práctica dentro de las empresas para compartir conocimiento y consolidar el aprendizaje organizacional. Mostramos que los entornos informales en los que las personas interactúan en torno a sus prácticas, como en las comunidades de práctica, facilitan y consolidan el intercambio de conocimientos dentro de las empresas y les permiten crear una red más amplia. Después de una revisión de la literatura sobre comunidades de práctica y redes de práctica, el capítulo destacará el rol de las comunidades y los procesos frontera (intermediarios, objetos frontera) en el desarrollo de las redes de práctica.

**Palabras Clave:** Redes de práctica, comunidades de práctica, intercambio de conocimientos, intermediarios, objetos frontera

### CoP and NoP in organizations

Communities of Practice “are defined as groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 1998; Wenger et al. 2002; Amin and Roberts, 2008). According to Wenger (1998), communities of practice (CoP) are formed by people who engage in a process of collective learning in a shared domain of human endeavor (Jacob et al. 2009). Several scholars and practitioners have discussed the communities’ concept to explain learning and knowledge sharing across a variety of work as insurance claim processing, photocopy machine repair, corporate research, healthcare, and public policy (Lave and Wenger, 1991; Wenger, 1998; Orr 1996; Brown

and Duguid, 1991, Bate and Robert, 2002; Creplet et al. 2001; Lindkvist 2005; Schiavonne et al. 2015).

Communities of practice emerge and are cultivated in international organizations (Cohendet et al. 2010). In this type of CoP, social interactions are developed between members. The Community is the social body of the practice.

From a social perspective, Etienne Wenger-Trayner et al. (2015) define the “body of knowledge as a community of people who contributes to the evolution and continued application of the practice. From professional perspective, the social body of knowledge is not a single community of practice, it’s a landscape of practice consisting of a complex system of communities of practice and the boundaries between them” (p. 13). Members

are acknowledged by the CoP for their competences. In this complex system, actors can't be competent in all the practices in a landscape but they can be knowledgeable about them and about their interest for their local practices (ibid. p.19).

Wenger et al. (2011, p. 10-11) present community and network as two aspects of the social fabric of learning. The network refers to the relationships, connections and personal interactions among participants who have reasons to connect to solve problems and create knowledge together. The community refers to the development of a shared identity around a topic and a collective intention.

As noted by Wenger et al. (2011, p. 12), these two aspects can be combined. They develop together: "A community involves a network of relationships and networks exist because members are committed to joint enterprise" (ibid. p.12).

When a network lacks collective intentionality, members consolidate their shared identity through community-building processes. In the same way, when a community has become closed with a boundary that become an obstacle to outsiders, new learning, and innovation, network-building processes can be a solution to reopen the boundaries of the CoP ( ibid. p. 14-15).

The concept of network of practice (NoPs) is often analyzed to overlap CoP boundaries and consolidate interactions and effective knowledge sharing around local and national practices (Agterberg et al. 2010). As defined by Agterberg et al (2008, 2010), NoP is a group of people who engage in joint enterprise, mutual commitment and common practices. The concept of NoP is thus relevant in professional, epistemic/creative and virtual activities.

In a globalization context, knowledge is often dispersed across different locations (Doz and Wilson, 2012). Organizations are therefore facing the challenge of how to organize knowledge sharing between business units (Becker, 2001). Agterberg et al. (2008 p. 26; 2010) identify three levels of embeddedness that seem to be required for the effective sharing of knowledge between geographically dispersed communities:

1. Embeddedness of NoP in local practice: the more knowledge shared in networks is perceived as relevant by the members for their local practice, the more network members are motivated to share knowledge.
2. Social embeddedness of NoP by strong social ties, whose emergence or stabilization are facilitated by tools (database, discussion forums, guide ...). These tools enable members to identify who knows what in the network and their localization.
3. Organizational embeddedness of NoP in giving a legitimacy to the NoP actors. The involvement of organizations in the network enables members to learn from what is being shared and guarantee the quality of knowledge posted in the network.

### CoP and NoP in cities

The positive action of these CoP and NoP are not confined to multinationals firms. It's very interesting to analyze the role of CoP and NoP in multi-cultural geographical areas with different social embeddedness and local practices: the cities. In 2030, two inhabitants out of three will live in a city. This concentration of

people in the city creates at the same time opportunities and problems in the urban life (urban management). Divay and Charbonneau (2014) note that the development of Smart Cities requires the use of social networks and networks of practice.

Indeed, information and communications technologies (ICT) have given rise to several urban management projects with users (citizens) who played an important role in these actions. The development of these projects seeks to improve and to simplify the life of citizens. Therefore, to become smart communities, the current municipalities must develop efficient new services in all areas: energy saving, transport and smart mobility, smart home, infrastructure networks, urban creativity (Cohendet et al. 2011). Attour and Burger-Helmchen (2015) present cities as specific ecosystems which influence the business models of firms located inside.

Intelligence is the ability to develop new services throughout the collaboration of different actors. The municipalities are working more and more like smart communities even like NoP linking geographically dispersed actors. In the creation of these smart cities, the city is a locus of social interactions between various actors (institutions, energy networks operators, transport networks operators, architects, IT services companies...). Scholars have explored the potential of CoP to develop integrated models of e-government (eGov) services (Curwell, et.al, 2005; Lombardi and Curwell, 2005).

Organizations, cities and countries must mutualize their efforts to identify opportunities and to develop Open Innovation processes (Penin et al. 2013). Learning and innovation needs beyond organizations', cities' and countries' boundaries develop: inter-organizational partnership, inter-cities partnership, inter-countries partnership. The impact of community approaches have increased the number and the variety of people who belong to CoP and NoP.

Some members also play the role of catalyst and federative broker to consolidate trust and facilitate knowledge sharing within and between CoPs (Goglio-Primard and Crespín-Mazet, 2011) belonging to different organizations. Open Innovation (Chesbrough, 2003) is favored by the preexistence of Communities of Practice in partner firms as well as collective brokering relations (boundary objects, brokers). Two types of brokers can be distinguished: knowledge brokers and qualification brokers whose role is conditioned by their network legitimacy (Goglio-Primard and Crespín-Mazet, 2015). This dynamic approach of innovation is based on the capability of firms to innovate with partnerships networks. In this way, inter-organizations' communities or networks of people are created. The development of interactive internet tools enables the creation of CoP outside of an organization. These phenomena are characteristic of the innovation by users (von Hippel, 2005) and more recently of Crowdsourcing (Pénin and Burger-Helmchen, 2012; Schenk and Guittard, 2012; Boudreau and Lakhani, 2013).

As noted by these authors, the growing of CoP and NoP inside firms are also deemed to favor the co-creation of value with other communities and networks outside (Wenger, 1998, 2002). This has led corresponding authors to introduce the notion of boundary relations. For Wenger (1998, p 113-114), CoP are the source of their own boundary: "Participants form close relationships and develop idiosyncratic ways of engaging

with one another, which outsiders cannot easily enter". However, "in addition to being a source of boundary for outsiders and insiders, practice can also become a form of connection". This connection relies on two processes: participation and reification. As noted by Wenger (1998), the products of reification (boundary objects) can cross boundaries and enter different practices. Wenger (1998) presents different types of connections enabling to create links or "continuities" between CoPs. These connections are described through boundary relations and are developed through boundary objects, brokering and boundary practices.

### The creation of NoP: CoP and Brokers

The existence of CoP among organizations plays a specific role in the creation of NoP.

The first steps of the creation of NoP are greatly facilitated by the existence of CoP inside business units on the different areas of expertise. In CoP, sharing, diffusion, combination of internal and external knowledge requires interaction and informal learning processes such as storytelling, conversation, coaching and apprenticeship (Wenger, 2002). A CoP is characterized by 3 key elements (Wenger, 1998; Chanal, 2000):

- The mutual engagement of its members. A community of practice is not merely a network of connections between people. It has an identity defined by a shared domain of interest. Membership therefore implies a commitment to the domain and a shared competence that distinguishes members from other people.
- A joint enterprise (common objective). In pursuing their interest in their domain, members engage in joint activities and discussions, help each other and share information. They negotiate common actions which create ties of mutual responsibility between actors. They build relationships that enable them to learn from each other. Wenger refers to this process as a "participation process".
- A shared repertoire of resources (practice): members of a CoP are practitioners. They develop a shared repertoire of resources: experiences, stories, tools and ways of addressing recurring problems. In short a shared practice. This takes time and sustained interaction. The development of a shared practice may be more or less self-conscious. Wenger refers to this process as a "reification process": reification process in the form of technical documents, commercial documents, CRM, customers' opportunities management system. Because of the dispersion of their Business Units in the world, firms usually decide to develop online knowledge networks to support knowledge sharing between Business Units throughout their organization.

Members of CoP have the sharing culture and mix direct contact (participation) and formalized practices (reification). The existence of CoP in organizations enables them to consolidate a social network linking individuals and a dual process of collective learning: participation and reification which transform tacit into explicit knowledge. The actors of organizations can belong to communities of practice but usually have difficulties in sharing their knowledge with their peers belonging to others

business units. They lack an efficient system enabling them to easily transfer, codify and capitalize their knowledge.

The managers-facilitators play a key role in fostering the development of trust and commitment between the business units. Wenger (1998) calls this use of multiple membership to transfer some element of one practice into another brokering: "brokers are able to make new connections across communities of practice, enable coordination, and – if they are good brokers – open new possibilities for meaning" (1998, p.109). As recognized members of Business units' CoP managers-facilitators are legitimated by their peers for their expertise and integrity. They play the role of broker. They are well positioned to be involved in the resource allocation necessary to the online networks process and to play this essential coordinating role over time. They actually organize the resource storing in the networks by identifying the expertise available in each business units and approving the technical content posted in community repositories (Hildreth et al. 2000; Kimble and Hildreth, 2005). They supervise knowledge available in the discussion forums. Thanks to this control, knowledge is easily understood and can be readily exploited by the actors of each business units for their own project purposes.

Firstly, the managers-facilitators help people identify the networks relevant to their work.

Secondly, the managers-facilitators foster inter-business units' trust: Their expertise enhance the development of competence-based trust (Boersma et al, 2003). They organize the networks and help the business units assess the interest of working together. They control and validate the quality of messages posted on the discussion forums of networks. The business units realize that they can both benefits from the online Knowledge networks to solve problems in daily local work processes and that it is costlier and much longer to develop that knowledge alone.

Thirdly, the managers-facilitators publish the KPI to congratulate the members who use the online knowledge networks and who bring the best answers to solve problems on discussion forums.

The organization of NoP is greatly facilitated by the existence of brokers (managersfacilitators) and boundary objects (discussion forums). Both the boundary objects and the brokers travel together between the different business units. The complementarity of participation (managers-facilitators) and reification (discussion forums) processes enable to consolidate knowledge sharing.

The creation of NoP increases the organization's performance in several ways. Firstly, it increases their market legitimacy through a more global and integrated offer and reinforces their competitive advantage. Secondly, it reduces their time to market and costs to answer customer needs (through mutualisation) as their engineers can easily access codified knowledge and to its founding experts. Thirdly, it reinforces their relationships with key-customers accounts. Due to this increased proximity (collective brokering), organization has a unique opportunity to better understand, anticipate and even shape the customer's needs and to reduce the impact of project discontinuity. Several actors from business units inside organizations and even key customers contribute to Discussion Forums in storing and

capitalizing their knowledge inside: a boundary practice i.e. a collective brokering practice is developing. NoP enable members to create virtual links with colleagues working in other Business Units. The NoP have managers-facilitators - the brokers of the networks. Agterberg et al. (2011, p. 5) call them “moderators” whose role is “to stimulate discussion in the networks, organize the networks, transfer and valid relevant knowledge in the networks”. As noted by these authors, the benefits of NoP are “extending social network in the organization, quicker or better problem solving and improving organizational processes” (ibid. p. 5). The managers-facilitators act as knowledge brokers. They are responsible for the functioning of the networks. The NoP facilitates knowledge sharing between business units and with the customers through different media: e-mails, forum, skype and telephone. It becomes possible through the online knowledge networks to get to know colleagues working on similar issues in the region, in other regions or in the world and to find out who knows what and where they are located (Agterberg et al. 2010). These specific conditions directly impact the performance of organizations for customers.

### The development of successful NoP

- The managers-facilitators act as brokers to organize coordination during the development of the NoP (fostering trust, enforcing rules, defining a common language, approving content...). They play the role of moderators of the technological NoP. They validate the knowledge capitalized in the discussion forums by the various geographically dispersed units of organizations
- Hence, a form of collective brokering around brokers (managers-facilitators) and boundary objects (discussion forums) enable to organizations to solve customers’ problems more quickly.

Managers-facilitators must be legitimated by their peers to play this brokering role. They are legitimated to act as brokers due to their central position in the local CoP. This central position is obtained through a strategy of communication and local CoP animation (regular meetings, seminars and awards). The managers-facilitators have a recognized expertise and competence and share a common goal of innovation. As such, they have defined internal criteria for fostering and assessing knowledge.

The dynamics of three level of embeddedness of the NoP help to understand the success of organizing NoP in organizations:

- Embeddedness of the NoP in local practices: A lot of actors in organizations refer to the degree in which the technological knowledge capitalized in the discussion forums are perceived as relevant to their daily practice, as an important condition for organizing knowledge sharing. As noted by the members of CoP in business units, the more relevant the knowledge shared within the network is for members’ local work, the more they are inclined to contribute to knowledge sharing. The managers-facilitators who play the role of brokers – moderators – of the NoP validate the content of discussion forums, the quality of knowledge capitalized in the systems. The knowledge capitalized in the discussion forums are renewed and validated each day by the managers-facilitators moderators.

- Social Embeddedness of the NoP: the tools of technological NoP (Forum, E-mail, Skype) enable actors of organizations to identify their peers working on similar projects and to find who knows what and where they are located.
- Organizational Embeddedness of the NoP: organization’s managers support the networks’ activities. The managers-facilitators are formally identified to coordinate the NoP between business units. They exert a control over the content of the networks. The use of NoP and their coordination practically enable participants to reduce the distance between knowledge creation and action (Creplet et al., 2001) i.e. to optimize the time-to-market between the design of a new (common) offer, its sales and implementation.

### Conclusion

This chapter has investigated the organizational mechanisms enabling to favor the emergence of NoPs in organizations. Four mechanisms have been identified:

- Create the NoP on existing CoP. The preliminary existence of CoP in the organizations’ Business units facilitates knowledge sharing between geographically dispersed actors. The actors in Business units have already sharing culture and a shared joint enterprise.
- Embed the NoP in local practices. The link of NoP with local practices of actors is very relevant to engage them to share their knowledge. The use of NoP must be viewed as an opportunity to access good information quickly.
- Supervize the NoP. The definition of roles and responsibilities is very important for a successful NoP. The managers-facilitators must be formally identified to coordinate the NoP between business units. They must exert a control over the content of the networks to ensure the quality of knowledge.
- Dedicate resources for the NoP. The managers-facilitators must receive additional time to organize the networks and play the role of moderators.

Our chapter focused on the 4 success key factors NoP:

- Member understanding of the meaning of networks (Why? What value for local work?).
- Engagement of managers (Promote the NoP).
- Engagement and trust (quality of content)
- Creation of KPI (Tools to evaluate the NoP value).

Across geographically dispersed organizations, the challenge of maintaining effective NoP is increased.

NoPs is increased. A lot of IT systems integrator think that Gamification can address this challenge (Cap Gemini Consulting, enterprise gamification study). Gamification is the use of game elements in non game applications to improve users’ commitment and experiences (Deterding et al. 2011). The process of implementing a Gamification program involves understanding users’ behaviors. The KPI created by the managers-facilitators of Networks enable to identify the activities in which members perform, and to leverage those behaviors to motivate them.

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