

**Micro-foundations of dynamic capabilities. The diverse roles of boundary spanners in sensing/shaping and seizing opportunities.**

Aurore Haas

*PSL, Université Paris-Dauphine*

*Management & Organisation*

**Abstract :**

Our article contributes to the understanding of the micro-foundations of dynamic capabilities by showing how middle managers adopting the role of boundary spanners influence the organizational capacities to sense/shape and seize opportunities. Organizations should constantly monitor their environment in order to detect and create opportunities. How such access, detection and creation actually occur still needs to be investigated. Boundary spanners are individuals with rare competencies who link the organization to its environment. They play an important role in knowledge transfer, diffusion and exploitation. They also influence innovation and organizational change. However, not all boundary spanners are equal when it comes to succeeding in these functions, sometimes despite high expertise and individual talent. Research has explored the characteristics and levers of performance of boundary spanners. As few studies have done, we propose to analyze how boundary spanners influence the important dynamic capabilities of sensing/shaping and seizing opportunities. From a qualitative study of a case of an inter-professional association on diversity management, four boundary spanning roles are identified in relation to the shaping/sensing and seizing of opportunities. Our study contributes to the understanding of perceptions and practices which influence the performance of boundary spanners. It also provides insights on how boundary spanners can help their organizations capture and capitalize upon opportunities.

**Keywords :** boundary spanners, gatekeepers, opportunities, dynamic capabilities

## **Introduction**

Organizations depend on the entrepreneurial spirit of their managers to grow (Penrose, 1959). In line with this seminal work, the dynamic capabilities theory states that the survival and competitive advantage of organizations lie in their capacity to "sense and shape opportunities and threats", to "seize opportunities" and to transform the organization as needed (Teece, 2007, p.1320). Teece (2007) observes that firms can detect opportunities thanks to differential access to existing information (Kirzner, 1973) or to new information and new knowledge (Schumpeter, 1934). As such, organizations should constantly monitor their environment to detect, create and seize opportunities (Teece, 2007). As uncertainty and complexity increases, more interpersonal communication, boundary roles and information systems are needed (Galbraith, 1973; Tushman 1977). The purpose of our article is to show how middle managers adopting the role of boundary spanners influence important organizational dynamic capabilities.

Current research on dynamic capabilities has evolved from a macro view to a call to analyze their foundations at the micro level (Ambrosini & Bowman, 2009; Helfat & al., 2007; Regnér, 2008). Micro-foundations are sometimes described as processes and routines underpinning capabilities (Teece, 2007; 2009). For some, it is necessary to go further and study capabilities at the individual level, for example, the habitual, intellectual, and emotional levers determining individual behavior (Winter, 2013). The theory of dynamic capabilities has focused extensively on the role of top management (Teece, 2007; Eisenhardt, Bingham & Furr, 2007). Recent research suggests that middle managers also play an important role in corporate strategy and entrepreneurship (Jones, 2006; Mantere, 2008; Whittington, 2006). In line with this perspective, our article contributes to the understanding of the micro-foundations of dynamic capabilities using the lens of the individual.

This article offers new insights into the contribution of boundary spanners to foundational dynamic capabilities. Boundary spanners are individuals with rare competencies who link the organization to its environment. They play an important role in environment scanning (Huber, 1991) and knowledge transfer (Jemison, 1984). They influence innovation (Hsu & al., 2007; Tushman, 1977) and organizational change. However, not all boundary spanners are equal when it comes to succeeding in these functions, sometimes despite high expertise and individual talent (Katz & Tushman, 1980; Kostova & Roth, 2003; Levina & Vaast, 2005).

Research has explored the characteristics and levers of performance of boundary spanners in information exchange and in environment scanning. Few studies analyze how boundary spanners participate in sensing/shaping and seizing opportunities, which are important dynamic capabilities.

We examine how boundary spanners contribute to the sensing/shaping and seizing of opportunities through evaluation of empirical data from a French inter-professional organization dedicated to the management of diversity. Diversity management is a new topic that can have a strategic impact on organizations, especially on large corporations. In recent years, legal constraints and attention to diversity by consumers and society-at-large have increased (Dameron & Chanlat, 2009; Garner-Moyer, 2006; Point, 2006). Our work focuses on an inter-professional association of diversity managers who meet to share and diffuse knowledge on diversity practices. The empirical findings of this paper result from a series of in-depth interviews with a sample of boundary spanners who participated in an inter-organizational taskforce. We identified 4 types of boundary spanners who play a different role in sensing, shaping and seizing opportunities: ambassadors, experts, problem-solvers and scouts. Evidence is also presented about enablers that can favor boundary spanners' sensing and seizing of opportunities. These findings have important managerial implications, and suggest actions that could be undertaken to foster these key dynamic capabilities.

## **1. Two micro-foundations of dynamic capabilities: sensing/shaping and seizing opportunities**

Organizations need to adapt to changing environments and create new competencies. Exploration and construction of new capabilities have been the focus of the theory of dynamic capabilities (Teece, Pisano & Shuen, 1997; Teece, 2007; 2009). The dynamic capabilities of an organization are the ability of an organization and its management "to integrate, build and reconfigure internal and external competencies to address rapidly changing environments" (Teece, Pisano, & Shuen, 1997). Dynamic capabilities allow firms to adapt to and to shape their environment (Eisenhardt & Martin, 2000; Teece & al., 1997; Wang & Ahmed, 2007). Organizational learning plays a central role in this process (Easterby-Smith, 2008; Eisenhardt & Martin, 2000; Pisano, 2000; Winter, 2003; Zollo & Winter, 2002). Dynamic capabilities rely on learning mechanisms which have been well studied (Eisenhardt & Martin, 2000; Zollo & Winter, 2002). For example, Eisenhardt and Martin (2000) point out that research in psychology permits to understand the learning mechanisms which undergird the evolution of

dynamic capabilities. These mechanisms include repeated practice, codification of knowledge, learning from mistakes or small losses, and pacing of experience. There have been recent calls to understand the micro-foundations of strategy, taking into account the role played by individuals and practices (Johnson & al., 2003; Whittington, 2006). Consistent with this approach, Teece (2007) pointed out the processes and mechanisms which underlie dynamic capabilities. Dynamic capabilities were reframed into three main components: 1. Sensing and shaping opportunities, 2. Seizing opportunities, and 3. Transforming the organization's assets as needed (Teece, 2007), each of them supported by specific processes and systems. Our article focuses on the two first components of dynamic capabilities.

Whereas the definition of what is an opportunity remains vague in strategic management, few research in entrepreneurship attempt to define the concept. Short and co-authors (2009) define an entrepreneurial opportunity as an "idea or dream that is discovered or created by an entrepreneurial entity and that is revealed through analysis over time to be potentially lucrative." (p. 55). They later differentiate three types of opportunities: created, discovered, and recognized. The strategic literature differentiates two visions of opportunities. Kirzner's view of opportunities (1973) demonstrates that entrepreneurs detect opportunities thanks to differential access to information. Thus, opportunities pre-exist in the environment and entrepreneurs have to discover them. On the other hand, Schumpeter (1934) insists on the role of entrepreneurs who use knowledge to create opportunities. In this vision, opportunities are created by individuals. Teece (2007) embraces both visions and suggests that both are relevant depending on circumstances. Bingham and his co-authors (2007) note that "organizational processes put firms in the midst of opportunity flows" (p.28), which include product opportunities, alliance opportunities or geographic opportunities. In dynamic environments, opportunities are numerous and a key issue for organizations is selecting among them. Barney (1991) points out that the first mover advantage arises from the implementation of insights about opportunities which are not possessed by others. In entrepreneurship research, opportunity discovery leads to creation of new businesses or to new venture growth (Short, 2009). In contrast, dynamic capabilities can lead to both breakthrough ventures and more subtle changes such as modifying the resources of the firms or alter its operational capabilities (Helfat & Winter, 2011; Teece, 2007). Helfat and Winter (2011) state: "capabilities that support existing businesses or seemingly non-radical change may have important dynamic attributes" (p.1247).

Sensing and shaping opportunities are important processes which allow organizations to maintain or improve their fit with their environment (Tushman & Romanelli, 1985). Teece (2007) points out that sensing and shaping opportunities are specific organizational capabilities which rely on individual capacities and organizational processes aimed at monitoring the environment. In particular, organizational processes to tap developments in external science and in supplier and complementor innovation and to identify market needs, together with analytical systems to shape and calibrate opportunities, support these dynamic capabilities (Teece, 2007). Learning from the environment has been a topic of interest for research on organizational learning for decades (e.g., Allen, 1969). Activities related to sensing opportunities include environment scanning and exploration. Previous research highlighted the link between environmental scanning and the detection of opportunities. Teams engaged in exchanges with their environment have a better performance than those that do not (Ancona & Caldwell, 1992). Huber (1991) differentiates *scanning*, which relates to wide-range sensing of the environment, from *focused search* on a particular topic and *performance monitoring* based on the expectations of outside stakeholders. *Noticing* is another form of learning from the environment, where learning is unintentional. These four processes can contribute to the sensing and shaping of opportunities. Managerial activities are shaped by the market and also contribute to shaping the market, for example by orchestrating the different assets of the organization (Helfat & al., 2007).

Seizing opportunities relies on the organizational ability to address an opportunity which has been detected (Teece, 2007). For Teece (2007), the capacity to seize opportunities involves deciding in which new technologies to invest and which business models to build. He also points out the importance of developing employee loyalty and commitment to foster the seizing of opportunities. Seizing opportunities can also happen on a different scale. Rather than implying a major change or investment, it can relate to tapping into organizational knowledge or resources to address a specific customer need. Nielsen (2006) proposes that knowledge use is a key dynamic capability which includes knowledge leverage and exploitation. Knowledge leverage refers to the capacity of the firm to look for ways to exploit its base of knowledge and resources (Wang & Ahmed, 2007). Knowledge exploitation includes the capacity of the organization to use existing knowledge in new products and services. Survival of organizations depend on their capacity to apply knowledge (Grant, 1996).

Our article builds on the call of Teece and other researchers in strategy (Johnson & al., 2003) to explore the foundations of strategy at a micro level. So far, few studies articulate the role of individuals in the different types of dynamic capabilities (Eisenhardt, Bingham & Furr, 2007; Salvato, 2003). The Strategy-as-Practice approach, which analyzes strategy at a micro level underlines the roles of practitioners including middle managers (Ambrosini, Bowman & Burton-Taylor, 2007; Jarzabkowski & Balogun, 2009, Regner, 2003; Rouleau, 2005; Whittington, 2006). Our purpose is to contribute to the understanding of the micro-foundations of dynamic capabilities.

## **2. Agency and dynamic capabilities: the roles of boundary spanners in sensing/shaping and seizing opportunities**

Individuals play a major role in sensing and shaping opportunities processes, depending on their previous knowledge, creative capabilities and understanding (Nonaka & Toyama, 2007). How individuals contribute to collecting and diffusing external information has been addressed by research on boundary spanners and gatekeepers (Allen, 1977; Tushman, 1977) and on the behaviors of top managers (e.g., Brown & Eisenhardt, 1997). Cohen & Levinthal (1990), Jones (2006) and Easterby-Smith and his co-authors (2008) have underlined the role of gatekeepers, boundary spanners and change agents in absorptive capacity. Our research builds on their insights and proposes to study the influence of boundary spanners on the foundations of dynamic capabilities.

Boundary spanners are individuals who span frontiers of their groups and organizations, and exchange knowledge with their environment (Adams, 1976; Aldrich & Herker, 1977; Cross & Prusak, 2002; Friedman & Podolny, 1992; Jemison, 1984; Katz & Tushman, 1980; Kusari & al., 2005). They can be supervisors, middle or low level individuals in the organization's hierarchy. Boundary spanners have access to external resources and markets (Adams, 1976; Friedman & Podolny, 1992; Jemison, 1984; Kusari & al., 2005) and can facilitate the adaptation of the organization (Katz & Kahn, 1966; Leifer & Delbecq, 1978). Jones (2006) and Gemünden and co-authors (2007) differentiate gatekeepers and boundary spanners, whose main roles relate to information gathering and diffusion, from promoters or change agents, who exploit existing knowledge. The contribution of boundary spanners to seizing opportunities could be explored. The following figure synthesizes the various contributions that boundary spanners could make to the foundations of dynamic capabilities from a review of the literature.

*Figure 1: Potential contribution of boundary spanners to dynamic capabilities*

<b>Foundations of dynamic capabilities</b>	<b>Potential contribution of boundary spanners</b>	<b>Type of boundary spanner</b>
Sensing opportunities	<ul style="list-style-type: none"> <li>• Knowledge exchange</li> <li>• Access to resources and markets</li> </ul>	<ul style="list-style-type: none"> <li>• Gatekeeper, bridge (e.g., Allen &amp; Cohen, 1969)</li> <li>• Scout (e.g., Ancona &amp; Caldwell, 1992)</li> </ul>
Shaping opportunities	<ul style="list-style-type: none"> <li>• Knowledge exchange</li> <li>• Access to resources and markets</li> </ul>	<ul style="list-style-type: none"> <li>• External representative (e.g., Aldrich &amp; Herker, 1977)</li> <li>• Ambassador (e.g., Ancona &amp; Caldwell, 1992)</li> </ul>
Seizing opportunities	<ul style="list-style-type: none"> <li>• Organizational adaptation</li> </ul>	<ul style="list-style-type: none"> <li>• Change agent, advocate of change (e.g., Leifer &amp; Delbecq, 1978; James, 2006)</li> <li>• Organizational liaison, task coordinator (e.g., Ancona &amp; Caldwell, 1992 Tushman, 1977)</li> </ul>

The role of boundary spanners in knowledge exchange and in accessing resources and markets influence the organization's capacity to sense and shape opportunities. Early research already showed the importance of communicating with the external environment for idea generation (Utterback, 1971). In particular, research on organizational learning and innovation focused on the role played by a particular type of boundary spanners, i.e. gatekeepers, in scanning the environment of the organization and processing information. Gatekeepers play both a filtering role and a facilitating role in information processing (Aldrich & Herker, 1977; Barzilai-Nahon, 2008). They benefit from their network outside of the organization and are sources of knowledge for colleagues (Allen & Cohen, 1969). However, scanning activities can become counterproductive if they are not reined in by precise goals (Ancona & Caldwell, 1992).

Boundary spanners play a role in shaping the organization's environment. Literature on boundary spanners has identified among their functions the role of "representative" (Aldrich & Herker, 1977) or "ambassador" (Ancona & Caldwell, 1992). Individuals playing these roles try to "influence the external environment to suit (their) agenda by shaping the beliefs and behaviors of outsiders" (Ancona & Caldwell, 1992, p.638).

Previous research also showed that boundary spanners contribute to organizational adaptation (Leifer & Delbecq, 1978). Helping the organization adapt to changes in its environment can happen through the seizing of opportunities.

### **3. The study**

The purpose of our work is to test and complete our model of boundary spanners' contribution to dynamic capabilities. In particular, we aim at defining the enablers of such contribution. To do so, we used an exploratory case. Our exploratory research uses a qualitative methodology (Eisenhardt, 1989; Yin, 1994). Our work is based on a multiple-case study in the management of diversity. It is part of a larger research on boundary spanners. We study how participating in inter-professional exchanges can allow boundary spanners to sense/shape and seize new opportunities. We used an abductive approach, starting with the models developed by research on boundary spanners, and examining these in the light of our case study. So far, no research has been undertaken to link these dynamic capabilities to the role played by boundary spanners. Moreover, our study also stands out by its choice of field. Many empirical studies of boundary spanners have focused on acquiring and exploiting new knowledge through acquisition and alliances or in R&D settings (Aldrich & Herker, 1977). Our study proposes to analyze boundary spanners in the context of diversity management, in an inter-professional setting. One of the means used by organizations and individuals to access information from their environment is participation to professional networks (Huber, 1991). Inter-professional associations are forums where members can access professional networks, exchange information on a particular topic and more general information on the context of their organizations. Members share a common language relating to their field of expertise, which facilitates interactions between them.

In France, although the fight against discrimination increased in the 1980s, the concept of diversity in organizations emerged only at the turn of the 21<sup>st</sup> century, following the Anglo-Saxon world (Haas & Shimada, 2014). In recent years, pushed by evolutions of the legislation (Klarsfeld, 2009), many large French companies have undertaken diversity actions and programs, creating diversity managers jobs along the way. Diversity has become a strategic issue for many companies to address their changing markets, to protect their image (Point, 2006), and to access talent (Garner-Moyer, 2006). Few companies had previously developed in-house capacities to deal with diversity. Most collaborators in charge of diversity had to build competencies from scratch and implement new solutions in their companies. To address



this issue, many managers and their teams have chosen to go outside the frontiers of their organizations to find solutions and best practices to implement in-house. Our case study is based on an association of diversity managers that provides such knowledge to members coming from a variety of organizations.

The association was created in the mid-2000s, and includes more than 100 members at present. To become a member, organizations have to pay a fee. The association organizes events year-round on diversity management. Recent topics covered included “Religion” or “How to get the diversity label”, for example. Using the association as a field allowed the identification of individuals who are in a position of boundary spanner. The inter-organizational nature of the association permits the comparison of boundary spanners belonging to different organizations operating in several industries, which enhances the relevance of our findings.

Our present study focuses on a single taskforce dedicated to social and professional integration of long-term unemployed persons. This workgroup took place in 2012 and lasted seven months, with participants meeting once a month. During the meetings, several associations and companies presented their work on professional integration, sharing best practices and insights. Participants in this taskforce also worked together on the organization of an event to facilitate the professional integration of individuals with social difficulties. We observed all 7 meetings, which lasted for 3 hours each. During this taskforce, information was shared on the emergence of new requirements in tender offers worth several hundred thousand Euros. An entire session was subsequently organized to address this topic. We analyzed in particular the consequences that access to this information had on the participants of the taskforce and on their respective organizations. Interestingly, two organizations were later impacted by the market trend identified. In the first case, the knowledge collected during the taskforce allowed the organization to seize the opportunity. In the second case, despite the recognition by boundary spanners that such information was valuable, the organization was unable to capitalize on the new knowledge. The comparison of these two cases allows us to get insights into the levers that support the organizational capability to seize opportunities.

Participants to the taskforce were middle managers holding responsibilities in the management of diversity. We interviewed 13 participants to the workgroup representing 10 different organizations. Interviews ranged from 45 minutes to one hour and a half.

Interviewees received assurance of their anonymity in the disclosure of this research. The following table summarizes key data on the organizations to which interviewees belonged.

*Table 1 : Type of organizations where interviewees worked*

<b>Sector</b>	<b># of collaborators ( in group)</b>
Banking/Insurance	>100 000
Banking/Insurance	5-10 000
Construction/Utilities	>100 000
Construction/Utilities	50-100 000
Education	50-100 000
High tech/Telecoms	>100 000
High tech/Telecoms	5-10 000
Industry	50-100 000
Service	10
Service	5-10 000
Transportation	>100 000

Questions included interviewees' backgrounds, their positions within the business structure, their roles and activities, the management of diversity in their organizations and learning and using knowledge from the association's taskforce. The interview data were transcribed to enable analysis. We coded the interviews using NVivo software and used secondary data (direct observations, meeting reports and records) to complete the information collected. Interviews were coded using multiple themes (Ayache & Dumez, 2011). Several broad categories from the review of the literature were used: opportunity sensing, opportunity shaping, opportunity seizing, roles of boundary spanners. When a phrase related to more than one theme, we decided to include it in both themes, to make sure that some freedom was preserved in the interpretation of data. This first coding allowed the emergence of sub-themes: time, boundary spanner's objectives, managerial practices, organizational practices, organizational context, strategic vision, affect. During the second coding phase, all interviews were coded using these themes. Thus the process of opportunity sensing, shaping and seizing was coded, sub-themes regarding this process were identified, and resemblances and differences were recognized between boundary spanners in this regard (Ayache & Dumez, 2011). Our analysis allowed us to identify several types of boundary spanners within the categories described by previous research. We also extracted boundary spanners' perceptions regarding their roles and managerial and organizational practices that favor or challenge

sensing, shaping and seizing opportunities in the context of established organizations. We use quotes to illustrate the results (Ryan, 2003). Translations have been made by the author.

#### **4. A taxonomy of boundary spanners**

Several types of boundary spanners were identified in our exploratory case study: 1. **Ambassadors** aiming at modifying the environment of their organizations, 2. **Experts** sharing their knowledge with other group members, 3. **Problem-solvers** looking for an answer to a precise issue encountered in their professional practice, 4. **Scouts** who scan their environment to capture general knowledge and best practices.

Problem-solvers and scouts participate in exchanges to learn, whereas ambassadors and experts aim at changing other individuals' perceptions and influencing their learning. Ambassadors and problem-solvers participate to exchanges with a clear objective in mind, whereas experts and scouts participate to get general knowledge or to provide support without expecting an immediate reward. Interestingly, depending on circumstances, boundary spanners can assume different roles over time. For example, ambassadors can become problem-solvers as needed. One boundary spanner we interviewed played the function of ambassador in one workgroup and problem-solver in another, depending on what needed to be done to answer his job's requirements.

The following paragraphs detail each type of boundary spanners.

##### **4.1 Ambassadors**

Ambassadors aim at shaping the environment of their organization. They participate in inter-professional workgroups to increase awareness on a particular topic and eventually mobilize resources to overcome difficulties and pressure public authorities regarding the topic. Their objective is to influence and shape the environment of their organizations. They have previous knowledge of the subject addressed by the taskforce and have generally more experience in their current position than problem-solvers and scouts.

*"We participated because it's an important subject. It's a subject that is currently emerging and becoming structured. It is important at this particular moment I think to play a part or in any case to make our voice heard on this topic."*

These boundary spanners often refer to personal values, beliefs and even vision of the future to explain their action. They perceived that they could act independently to resolve issues faced by their organizations and to promote standards, whether because they had support from their organizations or because they felt that their personal position inside the corporation allowed them to have flexibility. Efficient ambassadors also demonstrate their ability to create a network of contacts, both external and internal.

Ambassadors impact the perception of the environment of other group members. This influence can contribute to lobbying strategies to change their environment. They manipulate the opportunity sensing process of other group members by emphasizing the importance of some information or theme compared to others. For example, one ambassador stated that he joined the workgroup to make sure that a particular topic would be on their agenda. In the end, an entire working session was dedicated to this particular topic. This topic was also cited by most other boundary spanners as something they remembered from participating in the workgroup. Some cited this topic as a key contribution of the workgroup even though they did not expect this issue to be raised when they decided to participate. Ambassadors present in the workgroup had already launched initiatives to seize opportunities internally, and participated to the workgroup to influence the shaping of their environment in favor of the enterprise's objectives. Thus in the case under study, shaping of opportunities followed their seizing by the organization.

#### ***4.2 Experts***

Experts are characterized by their mastery and experience on the topic addressed. More interestingly, they justify their participation to workgroups by motives referring to personal values, such as advancing the diversity topic in the larger community, or answering a solicitation from the association. An expert we interviewed was skilled in social and professional integration, and participated to the taskforce mainly to move the issue forward in other organizations and help organize the event aimed at facilitating professional integration. She was a high contributor to the workforce's project. She connected several organizations to help them deal with social integration. Another senior expert did not expect to learn from interactions with the group or to gain business from his participation to the association, even though he represented his organization. His main motivation was to advance the diversity subject in organizations.

### **4.3 Problem-solvers**

Problem-solvers participate to the association to address a specific challenge or issue they are confronted with in their organization. They need to find support to address social integration, which was a priority of their organization.

*"We wanted to develop this new axis in our Equal opportunities policy, with - if possible - some kind of support on the subject."*

Problem-solvers memorize new knowledge which answers their professional issues at hand, and insist on the necessity to get pragmatic, practical answers from the workgroup. Originality of information gathered also favors memorization of new knowledge.

*« These things are not self evident. So I am...We are happy that we have heard about them.»*

Seizing opportunities reflect the ability of an individual or an organization to act upon new knowledge or information. Sensing an opportunity doesn't always lead to action. Over the course of the taskforce, new information about customer trends emerged. One problem-solver worked in a relatively stable organizational context. A seasoned manager, she had a clear vision of both her individual objectives and of the organization's goals in terms of diversity management and global strategy. She participated in the workgroup to develop knowledge on a new topic which she needed to address. She saw her role as an "internal sales representative" who had to raise awareness on diversity. She also perceived her role as a facilitator between the organization and external parties such as associations. Diversity was an important topic in this organization. Several practices had been put in place to promote the subject. For example, a steering committee on diversity, which included all Human Resources directors from the different departments of the company, was meeting every month. New knowledge on diversity was also shared in team meetings twice a month. By participating in the workgroup, this boundary spanner improved her knowledge and experience of the topic addressed. She was identified as a key repository of knowledge and helped the sales department working on a tender offer which incorporated the new market requirements. She was able to use the social network she had created during the inter-organizational taskforce to answer the business needs of her colleagues.

*" As a company with a developed business, we start to need more and more knowledge on ["the new market requirements"] both for our own tender offers and to respond. And this*

*summer, we were confronted with this subject for [another department] to answer...So all the information that I had in store thanks to this workgroup, it really helped me to support them in this tender offer."*

#### **4.4 Scouts**

Scouts look for general knowledge about diversity management. They seek best practices and monitor their environment. Some emphasize the necessity to proactively look out for information on diversity due to the novelty of the topic in their organization.

Scouts share characteristics with problem-solvers. Both rely on accessing, filtering and interpreting the new information or knowledge. Access to information depends not only on the participation of boundary spanners to the workgroup, but also on their ability to develop personal relations. There are differences between boundary spanners in this respect. Boundary spanners feeling out of place or inadequate in the group have less informal contacts with peers and subsequent information sharing. Filtering and interpreting information depends on the past experience and professional context of the boundary spanner. For example, problem-solvers and scouts are sensitive to best practices when they can find analogies between these and the situation of their firm.

Regarding the seizing of opportunities, in the context of our study, scouts did not contribute much to their organization. One boundary spanner playing the role of scout learned about the emergence of new market requirements regarding a certain type of tender offers thanks to her participation to the taskforce. However, this boundary spanner thought that her organization would not be able to deal properly with this issue. She stated:

*"As usual, they will wake up, they will come in an emergency. I don't care!"*

In this company, social integration was not considered an important business operational issue. The scout suffered from lack of interest from her hierarchy and organization. She pointed out that few persons in her organization were aware of her expertise and many still associated her to her former job. Moreover, at the time of our study, this organization was experiencing an important strategic change. This scout defined her role primarily in terms of functional expertise. Many initiatives were promoted at the organizational level by her hierarchy and depended on her. This point was also underlined by another scout belonging to the same organization and participating to the workgroup. This boundary spanner worked in a

related team, but had less experience. She pointed out that they participated to the workgroup because their organization is a socially responsible and committed company. She recognized that she had learned greatly from her participation to the taskforce. However, she didn't expect to contribute directly as professional integration of long-term unemployed persons didn't fit well with their operational business needs. She became aware of the new market requirements uncovered during the taskforce, but felt that this issue did not apply to her company. Both scouts perceived that they had few connections outside their team in their organization. In the case of the two boundary spanners described above, the knowledge they had acquired externally remained within the boundary of their team in their organization. This was all the more detrimental to the company as their manager was in the process of leaving the organization and could no more play the interfacing role she previously had.

## **5. Discussion**

Our research shows the diverse roles played by boundary spanners in sensing/shaping and seizing opportunities. Cohen and Levinthal (1990) have pointed out the role of gatekeepers and boundary spanners in absorptive capacity. Jones (2006) analyzed the contribution of different types of agents to the absorptive capacity process, differentiating gatekeepers and boundary spanners from change agents and intrapreneurs. Our article allows to examine the internal and external roles played by boundary spanners and how they contribute to organizational dynamic capabilities. It differentiates boundary spanners dedicated to shaping their environment (ambassadors and experts) from those focusing on learning from their environment (scouts and problem-solvers). Moreover, our fine-grained taxonomy suggests different sub-categories regarding the influencing and learning activities of middle managers. These categories relate to different theoretical backgrounds which can enrich our understanding of these roles. Importantly, our case study goes against the conclusions of Friedman and Podolny (1992) which suggested that these two roles be separated. On the contrary, the same individual can play both roles over time. The distinction between these two roles might be useful in a limited number of situations, such as negotiation (Friedman & Podolny, 1992).

Whereas research on lobbyists and power has developed, few focused on differences between the influence of experts and of ambassadors in shaping their environment. Our research points out that experts play an important role in shaping their environment and raising awareness on issues by sharing their knowledge and experiences. Whereas ambassadors participate to

exchanges outside their organizations with a precise objective, the influence of experts is more global in scope. Our findings about these two roles relate to the neo-institutionalist theory, which points out that normative pressures such as emergence of management standards and professionalization of practices thanks to information circulation through social networks play an important part in the shaping of the environment (DiMaggio & Powell, 1983). Our exploratory case study suggests that autonomy and personal values are important for ambassadors and experts agency.

Scouts and problem-solvers can be defined as two sub-categories of gatekeepers who contribute to opportunity sensing and seizing. Gatekeepers are individuals capable of translating information between groups with different coding schemes. They transfer information from outside the organization to colleagues and are characterized by their strong internal and external networks (Allen & Cohen, 1969; Katz & Tushman 1980; McDonald & Williams 1993; Nochur & Allen 1992). We argue that there are two types of gatekeepers: some gatekeepers (problem-solvers) look for external knowledge to resolve an issue at hand, whereas others gather more general background knowledge (scouts). Both are important for strategic intelligence, innovation and organizational learning. However, understanding the latter is particularly relevant for research in strategic intelligence where detection of weak signals is an important challenge (Mendonca, Caroso & Caraca, 2012; Schoemaker & Day, 2009). Our research shows that individuals' social networks inside and outside the organization, support from management and internal communication play an important role in the performance of such boundary spanners. Some boundary spanners lack the relational skills that could allow them to have access to interesting information available through informal exchanges. Moreover, in some situations, access to information is not sufficient to sense and seize opportunities. The information has to be recognized as an opportunity to be exploited. This can happen if the skills and relational network of the boundary spanner together with his organizational context permits it. Few gatekeepers actually become change agents. We recognized three important contextual enablers influencing boundary spanners' contribution to sensing and seizing opportunities.

### *Strategic vision*

Some organizations seem to foster opportunity sensing and seizing, whereas others fail. Strategic vision can help or hinder the organization's capacity to detect and seize opportunities. When new information fits with the goals of the organization, boundary



spanners can identify the value of this information more easily. On the contrary, when the strategic vision of the organization does not fit with the new piece of information, boundary spanners have difficulties detecting the opportunity that lies within the information. Organizational goals can frame their perceptions and make it difficult to sense and seize opportunities. Overcoming this issue is still a challenge. Leonard-Barton (1992) noted that managers should develop an ability to question organizational systems and values to redefine its core capabilities. We argue that managing this paradox and double-loop learning (Argyris & Schön, 1978) is important to be able to sense and seize opportunities.

### *Managerial practices*

Rather than being an entirely individual effort, the sensing and seizing of opportunities implied coordination and cooperation between boundary spanners and colleagues which can be fostered by managerial practices. Some managers of boundary spanners used specific practices to encourage opportunity sensing and seizing at the organizational level, such as asking boundary spanners for a synthesis of what they learned during weekly team meetings. Management can also permit the recognition of team members within the organization by asking them to participate to steering committees, for example. Moreover, they can push or allow team members to cross organizational frontiers. Some boundary spanners we interviewed only abide by a managerial injunction to monitor the environment of the organization. Some managers even integrate boundary spanning activities in the goals of collaborators, which favors this activity. However, these practices must be evaluated against the interest of the inter-professional workgroup and the ability of the collaborator to network and integrate and diffuse new knowledge, all the more as time is a limited resource for these middle managers.

### *Time management*

Time constraints play an important part in the engagement of boundary spanners in external events and relations. On the other hand, boundary spanning can also have a positive effect on the motivation of individuals to accomplish internal tasks, which is valuable for their organization.

## Conclusion

Sensing, shaping and seizing opportunities are key capabilities explaining the survival of organizations and the sustainability of their competitive advantage (Teece 2007, 2009). Our work contributes to the understanding of the foundations of these capabilities at a micro-level. In an exploratory case study, we identified several types of boundary spanners contributing to the sensing, shaping and seizing of opportunities. Three important contextual enablers influencing the performance of boundary spanners were also detailed: strategic vision, managerial practices and time management. This article shows how classical concepts used in organizational learning theory can help the advancement of the study of the micro-foundations of dynamic capabilities. Such linkage has been implicit in recent works (e.g., Eisenhardt, Bingham & Furr, 2007). We used the concept of boundary spanner which is ancient and well-recognized in the organizational learning literature to illustrate how organizational learning theory contributes to the understanding of the foundations of dynamic capabilities. Our work also contributes to research on boundary spanners by identifying two categories which weren't addressed by previous research: problem-solver and expert.

Boundary spanners are precious for organizations. Our research suggests that organizations should dedicate special attention to the management of these profiles. Moreover, managerial practices encouraging boundary spanners to share knowledge with colleagues at any level of the organizational ladder could be put in place more systematically in organizations to foster the sensing/shaping and seizing of opportunities.

### *Limitations and suggestions for further research*

The present study has limitations. This research is an exploratory work. We have focused on the members of a single workgroup in an inter-professional organization. This setting allowed us to identify a variety of situations. In particular, it permitted comparing several cases where information discovery led to very different outcomes in terms of opportunity sensing and seizing. Nevertheless, the generalization of these results still needs to be tested in other settings and possibly using other research methods.

## Bibliography

Allen, T. J. 1977. *Managing the flow of technology: Technology transfer and the dissemination of technological information within the R&D organization*. . Cambridge, MA: MIT Press.

Allen, T. J., & Cohen, S. F. 1969. Information Flow in Research and Development Laboratories. *Administrative Science Quarterly*, 14: 12-19.

Ambrosini, V., & Bowman, C. 2009. What are the dynamic capabilities and are they a useful construct in strategic management ? *International Journal of Management Reviews*, 11(1): 29-49.

Ancona, D., & Caldwell, D. 1992. Bridging the Boundary: External Activity and Performance of Organizational Teams. *Administrative Science Quarterly* 37: 634-665.

Argyris, C., & Schön, D. A. 1978. *Organizational Learning*. Reading, MA: Addison-Wesley.

Ayache, M., & Dumez, H. 2011. Le codage dans la recherche qualitative une nouvelle perspective? *Le Libellio d'Aegis*, 7(2-Eté): 33-46.

Brown, S. L., & Eisenhardt, K. 1997. The Art of Continuous Change: Linking Complexity Theory and Time-paced Evolution in Relentlessly Shifting Organizations. *Administrative Science Quarterly*, 42: 1-34.

Carlile P. R., T., Translating, and Transforming: An Integrative Framework for, Managing Knowledge Across Boundaries”, O. S., vol. 15, n° 5,, & septembre-octobre 2004, p.-.

Dameron, S., & Chanlat, J. F. 2009. Management et Diversité : lignes de tension et perspectives. *4ème rencontres internationales de la diversité, Corse, 2009*.

DiMaggio, P. J., & Powell, W. W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American sociological review*: 147-160.

Easterby-Smith, M., Graça, M., Antonacopoulou, E., & Ferdinand, J. 2008. Absorptive capacity : a process perspective. *Management Learning*, 39(5): 483-501.

Eisenhardt, K. 1989. Building theories from case study research. *Academy of Management Review*, 14: 532–550.

Eisenhardt, K. M., Bingham, C. B., & Furr, N. R. 2007. What makes a process a capability ? Heuristics, strategy, and effective capture of opportunities. *Strategic Entrepreneurship Journal*, 1: 27-47.

Eisenhardt, K. M., & Martin, J. A. 2000. Dynamic capabilities : what are they ? *Strategic Management Journal*, 21: 1105-1121.

Galbraith, J. R. 1973. *Designing complex organizations*: Addison-Wesley Longman Publishing Co., Inc.

Garner-Moyer, H. 2006. Gestion de la diversité et enjeux de GRH. *Revue Management et Avenir*, 7(1): 23-42.

Grant, R. M. 1996. Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(Winter special issue): 109-122.

Haas, A., & Shimada, S. 2010. (Re)définir la diversité: de la représentativité à la gestion de l'altérité. *Cahier de recherche n°1, Chaire Management & Diversité, Université Paris-Dauphine*.

Helfat, C., Finkelstein, S., Mitchell, W., M.A., P., Singh, H., Teece, D. J., & Winter, S. G. 2007. *Dynamic Capabilities: understanding strategic change in organizations*: Blackwell Publishing.

Hsu, S. H., Wang, Y. C., & Tzeng, S. F. 2007. The source of innovation : boundary spanner. *Total Quality Management*, 18(10): 1133-1145.

- Huber, G. P. 1991. Organizational Learning: The Contributing Processes and the Literatures. *Organization Science*, 2(1, Special Issue: Organizational Learning: Papers in Honor of (and by) James G. March.): 88-115.
- Jemison, D. B. 1984. The importance of boundary spanning roles in strategic decision-making. *Journal of Management Studies* 21(2): 131-152.
- Jones, O. 2006. Developing Absorptive Capacity in Mature Organizations The Change Agent's Role. *Management Learning*, 37(3): 355-376.
- Katz, D., & Kahn, R. L. 1966. *The Social Psychology of Organizations*. New York: Wiley Co.
- Katz, R., & Tushman, M. 1980. External communication and project performance : an investigation into the role of gatekeepers. *Management Science*, 26(11, November): 1071-1085.
- Kirzner, I. 1973. *Competition and Entrepreneurship*. Chicago, IL: University of Chicago Press.
- Klarsfeld, A. 2009. The diffusion of diversity management: The case of France. *Scandinavian Journal of Management*, 25(4): 363-373.
- Kostova, T., & Roth, K. 2003. Social capital in multinational corporations and a micro-macro model of its formation. *Academy of Management Journal*, 28(2): 297-317.
- Leifer, R., & Delbecq, A. 1978. Organizational/Environmental interchange : a model of boundary spanning activity. *Academy of Management Review*(January): 40-51.
- Levina, N., & Vaast, E. 2005. The emergence of boundary spanning competence in practice: implications for implementation and use of information systems *MIS Quarterly*, 29(2): 335-363.
- Mantere, S. 2008. Role expectations and middle manager strategic agency. *Journal of Management Studies*, 45(2): 294-316.

Mendonça, S., Cardoso, G., & Caraça, J. 2012. The strategic strength of weak signal analysis. *Futures*, 44(3): 218-228.

Nielsen, A. P. 2006. Understanding dynamic capabilities through knowledge management. *Journal of Knowledge Management*, 10(4): 59-71.

Nonaka, I., & Toyama, R. 2007. Strategic management as distributed practical wisdom (phronesis). *Industrial and Corporate Change*, 16(3): 371-394.

Penrose, E. T. 1959. *The theory of the growth of the firm*. N.Y.: Wiley.

Point, S. 2006. La Charte de la diversité : regard sur les discours des entreprises signataires. *Revue management et avenir*, 2(8): 61-85.

Regnér, P. 2008. Strategy-as-practice and dynamic capabilities: steps towards a dynamic view of strategy. *Human Relations*, 61(4): 565–588.

Ryan, G. W., & H.R., B. 2003. Data management and analysis methods. . In N. K. Denzin, & Y. S. Lincoln (Eds.), *Collecting and interpreting qualitative materials*: 259–292. Thousand Oaks, CA: Sage.

Salvato, C. 2003. The role of micro-strategies in the engineering of firm evolution. *Journal of Management Studies*, 40(83-108).

Schoemaker, P. J., & Day, G. S. 2009. How to make sense of weak signals. *Leading Organizations: Perspectives for a New Era*, 37.

Schultze, U., & Boland, R. (2000). Knowledge management technology and reproduction of knowledge work practices. *Journal of Strategic Information Systems*, 9, 193–212.

Schumpeter, J. A. 1934. *The theory of economic development*. Cambridge, MA: Harvard University Press.

Short, J. C., Ketchen, D. J., Shook, C. L., & Ireland, R. D. 2010. The concept of "opportunity" in entrepreneurship research: Past accomplishments and future challenges. *Journal of Management*, 36(1): 40-65.

Teece, D. J., Pisano, G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7): 509-533.

Tushman, M. 1977. Special boundary roles in the innovation process. *Administrative Science Quarterly*, 22(587-605).

Tushman, M. L., & Romanelli, E. 1985. Organizational evolution: A metamorphosis model of convergence and reorientation. *Research in Organizational Behavior*.

Utterback, J. M. 1971. The Process of Technological Innovation Within the firm. *Academy of Management Journal*, 14: 75-88.

Wang, C. L., & Ahmed, P. K. 2007. Dynamic capabilities: a review and research agenda. *International Journal of Management Reviews*, 9(1): 31-52.

Whittington, R. 2006. Completing the Practice Turn in Strategy Research. *Organization Studies*, 27(5): 613-624.

Winter, S. 2013. Habit, deliberation and action : strengthening the microfoundations of routines and capabilities. *The academy of Management Perspectives*, 27(2): 120-137.

Winter, S. G. 2003. Understanding dynamic capabilities. *Strategic Management Journal*, 24(Special Issue): 991-995.

Woolridge, B. a. F., S. W. (1990) 'The Strategy Process: Middle Management, Involvement and Organizational Performance', S. M. J., & 231-42.

Yin, R. K. 1994. *Case study research : design and methods*. London: Sage.

Zollo, M., & Winter, S. G. 2002. Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13(3): 339-351.

