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Relationships between knowledge and power : towards a sociological approach of knowledge creation process

Abstract

Knowledge management is studied in its instrumental aspects but social factors are more rarely integrated in research framework. We question the factors that influence knowledge creation and diffusion process, underlining the role of power. Our reflexion finds its origins in a longitudinal case study in a French bank. This case presents an original organizational context that facilitates knowledge creation and diffusion. Seven establishments belonging to the same banking group work together in the aim to build a new information system. They were structured in a hybrid organizational form between project structure and inter-firms cooperation. With an abductive and qualitative methodology, we analyse the case study and we propose three groups of factors likely to influence knowledge creation : intrinsic characteristics of knowledge, organizational characteristics and inter-organizational characteristics (project). Then, we propose a model of the factors which influence knowledge creation and diffusion process in a project. From this confrontation between theory and empirical study, it comes out that the political factor was relatively little studied whereas it appears structuring for knowledge creation and diffusion process. We consider that the political factor could be at the same time an avoider and a facilitator of knowledge creation. We also analyse the role of coordination and we show the necessity of formal coordination and informal interactions to improve knowledge management. Finally, we wonder about a possible phenomenon of organizational learning in the relationships that conducts to diminish the place of power.

Key words : knowledge management, longitudinal case study, project , power, knowledge creation

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Current research relating to knowledge management is interested in the question of its transfer, its diffusion or its creation from a largely instrumental point of view developed in information systems. Relatively little work integrates social factors in tests of explanation or comprehension of the various phases of knowledge life cycle. We question the links between knowledge and power, analysing factors which influence knowledge creation and diffusion process through a longitudinal case study, according to Ekbia and Kling (2003, p.1) : " What is often missing from such discussions and discourses [...] is the close relation between " knowledge " and " power " as social processes that create and constrain each other in intricate ways ". We can notice that the majority of works referring to the links between knowledge and power only do allusions to the proverb : " knowledge is power ". We would like to study here the relations between knowledge and power inside the organizations and during inter-firms project to show the influence of power on knowledge creation and diffusion process.

Knowledge, understood as the result of dynamic social interactions, doesn't circulate necessarily freely in the organization only because the adequate information systems are available but it can be sticky (Szulanski, 1996) in particular because of power relationships. Our research, in an understanding objective, analyses knowledge creation and diffusion process on two levels ; the first level questions the nature of the factors which influence this process, the second level wonders about the links between knowledge and power in this process.

Our work is divided in three parts. We initially present (1) the longitudinal case study which is at the beginning of our thinking ; we studied a project between several banking establishments belonging to the same French group. This project, named Sitra project, aims at the building of the new information system of the banking group Omega. Seven organizations work together and must, from their existing information systems, to identify the best practices of each one in order to lead the construction of the new system. Within this framework, knowledge creation and diffusion process is very important because of the intensity of the exchanges and the diversity of the involved organizations. Literature review highlights three

levels of factors which influence knowledge creation and diffusion process (2) : those related to intrinsic nature of knowledge, those related to organizational characteristics and those related to project. Among these factors, we notice culture (Alavi and Leidner, 2001) and motivation (Szulanski, 2000 ; Davenport *and al.* 1998), actors similarity (Darr *and al.*, 2000), and complementarity (von Krogh and Roos, 1996), previous experience (von Krogh and Roos, 1996) and communication (Davenport *and al.*, 1998). These factors are confronted with reality through our longitudinal case study, which enables us to show the existence of power relationships. The analysis (3) highlights the role of political factor (power relationships and political will) in knowledge creation and diffusion process. Indeed, power relationships appear in knowledge exchanges inside and between organizations. Crozier and Friedberg (1977) have underlined the relational character of power by showing that this one can develop only through exchanges between actors. Finally, we propose a model (figure 3) of the factors which influence knowledge creation and diffusion process and shows the importance of power relationships.

1. KNOWLEDGE CREATION AND DIFFUSION PROCESS IN A PROJECT

Knowledge creation and diffusion were primarily studied empirically on organizational level, following the example of Szulanski (1996) from an instrumental point of view or Nonaka (1994) for a more processual approach. Other works studied the dynamics of knowledge on an inter-organizational level in specific contexts : joint-ventures (Inkpen and Dinur, 1998), multinationals (Gupta and Govindarajan, 2000) or alliances (Simonin, 1999). This last work follows a representationist approach of knowledge (von Krogh and Roos, 1996). However, few research were interested in project as possible level of analysis of knowledge creation process. Our work initially questions the relevance of this level of analysis (1.1.), and then presents Sitra project, our case study (1.2.) and, finally, exposes our methodology (1.3.).

1.1. KNOWLEDGE CREATION AND PROJECT STRUCTURE

It appears very difficult for a single organization to generate all necessary knowledge. Thus, a continual exchange of information and knowledge is necessary with external sources (Quintas *and al.*, 1997). There are various internal and external sources of knowledge, as organization itself, recruiting new employees but also the various partners of the firm or competitors. The relations between several organizations thus constitute important sources of knowledge ; in

regards to the literature, it even seems that they are particularly favourable with knowledge creation (Argote and Ingram, 2000).

Project structure make it possible to learn by interactions between individuals or groups with specialized knowledge (Tarondeau and Wright, 1995). It constitutes a mean of reaching and diffusing knowledge embedded in the organization. This diffusion depends on the type of knowledge and its characteristics ; thus, explicit knowledge will be easier to transfer. On another side, one of the most effective means to diffuse strongly tacit knowledge is to establish a closer and more interactive relation with people who keep this knowledge (von Krogh and Roos, 1996). Charreire (2003, p.146) also develops this idea : " communication in a project allows the diffusion of tacit knowledge. Knowledge has thus a dynamic character because it is held and mobilized by a network of actors. The project finally allows to have in the same place (the group) all the knowledge even it is distributed among the hierarchical levels ". Project structures crystallize relations in the realization of a common goal which is accompanied by the creation of new knowledge. Thus, the relations developed in a project give, at the same time, the access to complementary resources and, more precisely, knowledge and the achievement of a common objective with creation of new knowledge. For these reasons, it seems interesting to study Sitra project in regards to knowledge creation and diffusion process.

1.2. SITRA PROJECT, CONTEXT AND CHALLENGES

Banking sector has known for a few years significant changes (environmental, technological, competitive). Big banking groups are often favourable for emergent organizational practices. Information system is today the heart of the activity of these companies and constitutes in itself a strategic challenge.

We studied a cooperative French banking group, named Omega. This one is organized in a decentralized way : it is divided into a national organization and several regional establishments. Those are independent and autonomous for their marketing and human resources policies.

The banking group Omega is sensible to environmental changes and engaged significant reorganizations of its information systems. These reorganizations lead to a project, named

Sitra, which is the empirical study of our research. Sitra project began during the year 1999 on the initiative of seven regional establishments of Omega, distributed on the whole French territory. These establishments have their own cultural and historical identities. This project led at the end of 2001 to the installation of a new information system within the seven establishments. The objectives of Sitra are the reduction of the costs and to have a critical size which make it possible to create a new information community. They want to create a new information system common to the seven establishments

Sitra project presents an original organizational form ; it's an hybrid form between project structures and inter-firms cooperation. All the establishments are voluntarily participants to Sitra, with the common objective to create the new information system which will ensure their independence within Omega group. These establishments evolve in a mutual interdependence because each of them holds part of the resources and knowledge necessary to the creation of the new information system. Tsai (2002) stresses that organizations include units which need at the same time to cooperate and are in competition for obtaining internal resources.

The case of Sitra project is particularly interesting for knowledge creation and diffusion by the richness of the exchanges and its atypical organizational structure. Indeed, it is not a question to replace the existing information systems by a standard solution bought on the market. But each organization has to identify the differences with the others, and the organizational and informational impacts of these differences and then try to find the compromise between best of each current solutions. The challenge for the organizations is to realize, in a very short time (18 months), a synthesis of the best practices of each information system and to create a new information system.

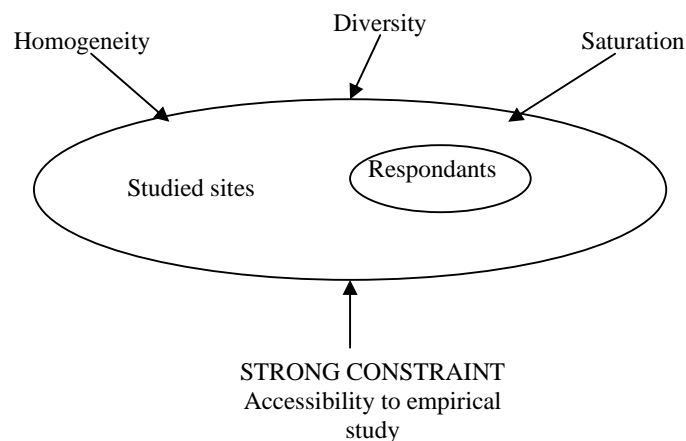
1.3. METHODOLOGY

We question the relation between object of observation and subject as well as the epistemological nature of the reality, then we discuss the strategies of access to reality. Our work is close to anti-representationism (von Krogh and Roos, 1996), by defining organizational knowledge as the result of social interactions, contextualized and processual ; it can help problem solving and decision-making process. We also adopt in our research the perspective of Berger and Luckman (1966) according to which the interactions are often the sources of the social construction of reality. Thus, the perspective ¹ of this research seems

close to a moderated constructivism (David, 2000). We proceed by an abductive ² (Koenig, 1993) methodology with interactions between literature and case study to improve our explanations.

We developed a qualitative methodology in coherence with the exploratory nature of our research and the complex nature of the phenomenon studied (Miles and Huberman, 2003 ; Wacheux, 1996). It's difficult to observe knowledge creation and diffusion process and it takes a long time ; so, we chose to privilege a single case study, in real time, over one long period (18 months). We collect three types of data : semi-directing interviews, paper and electronic documentation, passive observation. We conduct about fifty interviews according to criteria's of homogeneity ³ diversity ⁴ and saturation.

Figure 1. Proposal for construction of a sample in a qualitative methodology



We took the traditional methodological precautions, namely the recording and the integral retranscription of the interviews, the realization of a report for all the interlocutors, the measurement of stability and reproducibility of coding (Miles and Huberman, 2003).

Data analysis use thematic content analysis which makes it possible to make sense with the data. We mobilized some of the tools developed by Miles and Huberman (2003) and used in particular the matrix of the dynamics of the site which makes it possible to highlight the forces of the change. The goal is to reach a more conceptual level and to distinguish the principal tendencies on the whole sites.

the stage of building the new information system. Finally, knowledge evolved toward more tacit and individual knowledge when the actors develop routines in the realization of their daily tasks. It is thus not so much the codifiability of knowledge which influences the process of creation and diffusion but the interactions between the various levels of localization.

Now, we study the characteristics of pre-existent knowledge bases in organizations. Indeed, these bases of pre-existent knowledge condition the extent to which the firms receive new information and create knowledge (Soo *and al.*, 2000). The capacity to use an external knowledge depends largely on pre-existent knowledge. Assimilation of new knowledge is a cumulative phenomenon (Reix, 1995). New knowledge is created at the borders of pre-existent knowledge. The establishments of the Sitra project present common features but also have intrinsic characteristics which constitute their richness and their diversity. The common features can be summarized as the membership to a same banking group, the realization of the same activity and a common managerial culture (no turn-over, average age old, social politics, strong trade-union presence, oral culture). However, the establishments of Omega group are independent and autonomous for their various politics. Each establishment gets its own organization and sometimes ignore the organization of the other establishments. The diversity of the pre-existent knowledge bases increase knowledge creation process (von Krogh and Roos, 1996). We characterize then the organizational context of the process.

2.2. ORGANIZATIONAL CHARACTERISTICS

The literature identifies four topics to characterize organizational context of knowledge creation : motivation, transparency, absorptive capacity and culture.

Motivation is important to understand knowledge creation and diffusion process (Davenport *and al.*, 1998 ; Szulanski, 2000). Lack of motivation can have bad consequences like passivity, a pretended acceptance or quite simply the rejection of the new knowledge. However, if motivation is necessary, it is not sufficient. It is desirable that the organizations present a certain degree of transparency (Hamel, 1991) or an atmosphere favourable with the exchange. All the actors of Sitra project mentioned the motivation as an important topic for knowledge creation. It seems that the implication of actors plays an important role and that the absence of motivation is an avoider of organizational knowledge creation.

Transparency can be defined as the will to collaborate with another organization and to interact in a close way. It is particularly significant when several organizations work together

with a common objective and supports the diffusion of tacit knowledge when organizations want to learn from the others or to create knowledge together (Badaracco, 1991). In Sitra project, actors only refer to transparency in a sporadic manner. It seems that the question of transparency is not very important for them ; in a general way, knowledge is well diffused in the organizations of the project. Thus, we can say that transparency is important to knowledge creation and diffusion process, but actors are not aware of its presence and thus do not evoke it.

The concept of absorptive capacity was developed by Cohen and Levinthal (1990). It can be defined as the aptitude of an organization to absorb external knowledge and to adapt it. Szulanski (1996) showed that the absence of absorptive capacity has a negative effect on knowledge transfer. Absorptive capacity facilitates the internalisation of knowledge, at individual and organizational levels. All the studied establishments seemed to have developed their absorptive capacity, in particular through the participation in working groups or as pilot sites for new practices. Absorptive capacity thus does not seem to be a determining factor in our case study.

Lastly, we study the influence of culture on knowledge creation and diffusion process. According to Davenport and Prusak (1998), the existence of a friendly organizational culture toward knowledge is one of the most significant conditions of knowledge management success. Knowledge creation and diffusion process doesn't intervene in a social vacuum but is culturally and socially embedded. Thus, it is significant to develop a sharing culture (Lubit, 2001) because individuals are often reluctant to use knowledge of the others and to share their knowledge with them. The characterization of the various establishments of the Sitra project shows that many cultures (geographical, informational and organizational) are specific to each establishment. We find here the influence of these specific cultures on knowledge creation, in particular in terms of transparency to the others.

2.3. PROJECT CHARACTERISTICS

Argote and Ingram (2000) underline the influence of the relations between the various organizations on knowledge diffusion. The organizational context of the project is characterized by several dimensions among which we retain : existence of a previous experience, similarity and complementarity of the organizations, communication.

Previous experience is a significant source of individual and collective learning (von Krogh and Roos, 1996). Organizations learn from their previous experiences and transform them into actionable knowledge. Previous experience makes it possible to be more effective because part of initial uncertainty diminishes and, at the same time, there is an increase of shared knowledge. The role of the previous experience is moderated in our research because all the organizations belong to the same banking group, even if there is a certain form of competition between the establishments. We can however notice that the existence of a previous experience makes it possible to accelerate knowledge creation process by identifying more quickly the interlocutors, their competences and their knowledge.

In addition to the shared experience, organizations can present various degrees of similarity. Darr *and al.* (2000) distinguish three dimensions in the similarity : strategic, customers and geographical. Thus, knowledge diffusion is more frequent in organizations with similar experiences. Other research (Hamel, 1991) also highlights the need for having close links between organizations and similar contexts (for example, a common language) to facilitate knowledge sharing. However, similarity of organizational contexts should not erase the need for diversity of the pre-existent knowledge bases, sources of new knowledge creation. Diversity is seen as a solid base for learning because it reinforces the probability that knowledge is connected to the pre-existent bases. Our research enables us to highlight the diversity of the internal structures as well as diversity of the size (sales force, number of customers) and of the geographical positions of each establishment. There is also managerial and cultural diversity. Organizations in Sitra project find that similarity and diversity are very important for knowledge creation.

Finally, knowledge creation and diffusion process cannot exist without adequate channels of communication. An effective communication between the partners is essential and the richness of the medias determine the extent to which knowledge is diffused successfully. Differences in communication systems between organizations represent a challenge when they want to work together, such as the incompatibilities of language, the existence of codes or cultural conventions. Communication plays a major role in organizational learning ; communication must to be transversal and not a functional system to establish links between experts who know and practitioners who do. Communication makes it possible to reinforce the identity of the group and thus to facilitate knowledge diffusion. The role of communication was very important in all the studied organizations. Communication is recognized by all interviewed people as one of the pillars of knowledge creation and diffusion

process inside the organizations and in the project structures. Literature helps us in our understanding of the factors which influence knowledge creation and diffusion process and enriches our comprehension of Sitra project. This first analysis leads us to note that some factors did not have the same importance in the literature.

3. RELATIONSHIPS BETWEEN KNOWLEDGE AND POWER IN KNOWLEDGE CREATION AND DIFFUSION PROCESS

We study here the role of a factor which seems too often neglected, even completely ignored by the literature devoted to knowledge management. Thus, the longitudinal case study helps to understand the role played by the political factor (3.1.). After this, we propose a model (3.2.) factors which influence knowledge creation and diffusion process and we discuss the results (3.3.).

3.1. EMPIRICAL APPROACH OF POWER RELATIONSHIPS IN SITRA PROJECT

In our content analysis, we analysed three codes : POLT STRU, POLT CONN and POLT COMM. The first code makes it possible to locate the existence of power relationships within the various structures whereas the two others identify the vectors of these power relationships, such as written and oral communication about the new information system. We then established a matrix which enabled us to detect the presence of political factor during knowledge creation and diffusion process and to identify the level at which it is located. The concept of political factor refers in particular to power relationships which can exist between individuals or structures and to political will which comes from the headquarters or the leaders of each establishment. Researchers relatively little studied power relationships and political will in knowledge management literature. Thus, it is usually allowed that knowledge and power are closely linked and constitute two fundamental networks of the firm : network of knowledge and network of power.

In the same sense, Quintas *and al.* (1997) define knowledge as a bundle of relations in which power is strongly implied ; power and knowledge are constitutive one of the other. Knowledge is not independent of the individuals who hold it ; it is a product of power relationships. According to Lubit (2001), knowledge is the base of power and respect ; what often lead people to hesitate to share knowledge because they fear a decrease of their power. We study the links between knowledge and power and we stress that these power

relationships are embedded in project structure and communication during all the project but specifically during the stage of exchanges highest intensity.

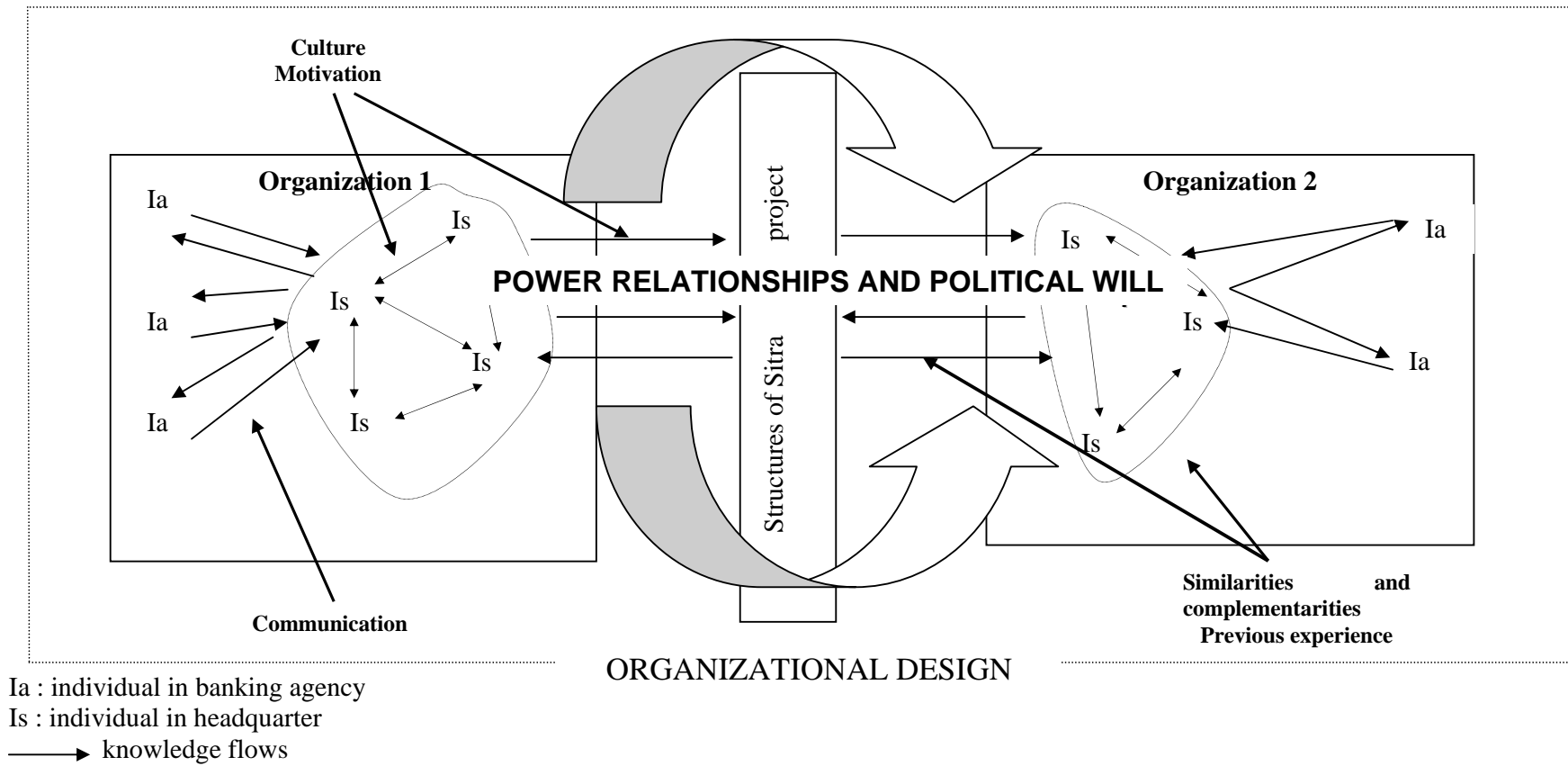
3.2. A MODEL OF FACTORS THAT INFLUENCE KNOWLEDGE CREATION AND DIFFUSION PROCESS

On the basis of our empirical study, it seems that political factor is particularly important in the phase of knowledge creation, during exchanges between establishments. Power relationships occur more in inter-firms exchanges (project structure) than inside the different organizations. It really seems that project structures reinforce power relationships. Our qualitative empirical study shows two levels of the political factor : on one hand, power relationships occur during inter-individual relations and they are, in general, a barrier to knowledge creation and diffusion process ; on the other hand, political will could be a facilitator of the process, by allowing fastest decision-making than at lower hierarchical levels.

Power relationships occurred during all the process but political will was clearly expressed by headquarters at the beginning of the project on the strategic choices. Power relationships are systematic whereas political will is episodic. During interviews, people said that power relationships are essentially situated in project structures because of the difficulty to delegate responsibilities to others and to share their knowledge. Power relationships appear during knowledge exchanges. Thus an intranet data bases, common to all establishments belonging to Sitra project, was created in the aim to share knowledge. Slowness to put information on these data bases is evocative of the difficulty to give its knowledge (or its power) and to leave it at the free disposal of the others. Power relationships exist throughout all stages of knowledge creation and diffusion process but there's a learning phenomenon that conducts to diminish these power relationships. For example, people progressively put information and knowledge on intranet data bases and, in the same time, people search more and more information on these data bases. The evolution towards a learning organization diminishes power relationships. Knowledge exchanges lead to a double learning phenomenon : new knowledge acquisition and relationships management learning.

From our empirical study and with abductive methodology, we propose a model of factors that influence knowledge creation and diffusion process and we reconsider the role of political factor.

Figure 3. A model of knowledge creation and diffusion process



3.3. KNOWLEDGE CREATION AND POWER RELATIONSHIPS

Lack of interest for power relationships and knowledge creation and diffusion process has, at the same time, theoretical and empirical origins ; theoretical origins because research in knowledge management historically found its roots in information systems theories ; empirical origins because it is a phenomenon particularly difficult to apprehend in a pragmatic way. Thus, we could study knowledge relationships in an informal way, after cutting off the interviews recording, by observation. We cannot measure the intensity of these power relationships but simply attest of their presence, the place and the way in which they appear. Observation during meetings allows us to approach in a privileged way these relations.

In a more general way, sociology, on the basis of the research of Crozier and Friedberg (1977), studied the role of power in the organizations : employees generally defend their personal interests in inadequacy with those of the organization. Thus, the difficulty of working together is stressed out by the fact that the members of a project structure are the delegates of their unit near the others ; they can use this structure to put forward their ideas and reinforce their power.

One of the main challenge of knowledge creation and diffusion process within a project stays in the management of power relationships. Political dimension of the organization, understood as a coalition of more or less divergent interests, is very important and it is necessary to find a balance and to preserve it. It appears to us that political factor is strongly structuring for knowledge creation process. It could be in the same time an avoider or a facilitator of this process : power can slow down or accelerate each stage of the process and influence the other factors previously identified, that is to say transparency, motivation, culture or previous experience. However, the two components, political will and power relationships, do not have the same influence. The political will can be conceived as a facilitator which makes it possible to start knowledge creation process, making possible to improve decision making process at the beginning of the project and to resolve conflicts by upper hierarchical levels. Political will can facilitate the process by accelerating the decision-making, thus avoiding a waste of time (Argyris, 1995). On another side, power relationships daily appear in knowledge creation process, for example during exchanges between the various establishments. In this context, power relationships can have a negative influence by slowing down the exchanges of information, in particular by decreasing the transparency and

by increasing informal structure complexity. However, it is the project structure which conditions the majority of the exchanges with an important role to gatekeepers. Gatekeepers link organizations and project structures. Some people use project structures to accomplish personal purposes and strategies. Moreover, according to the definition of organizational knowledge, power relationships inevitably involve the reduction, even disappearance, of the interactions between individuals and diminish knowledge creation in the organization or the project.

These interactions between power, knowledge and political will can also be analyzed on the level of coordination structures. Thus, to sustain knowledge creation and diffusion process, it appears necessary to ensure the coordination of the project at the same time on the basis of a formal hierarchical structure and informal interactions, that are the two generic types of organizational coordination described by the literature. Centralization and formal hierarchical structure facilitate the circulation of knowledge flows whereas informal relations (social interactions) have positive effects on knowledge sharing (Tsai, 2002).

CONCLUSION

The purpose of our research is to identify and to understand factors which influence knowledge creation and diffusion process. We studied a single case study, in a specific project in banking sector. We can question the generalisation of our results and the capacity to extend our research to other sectors. Moreover, the transitory nature of the project structure and its focusing on limitative objectives diminish capacity to store knowledge and to transfer it towards other projects or process.

Our work improves our comprehension of factors that influence knowledge creation and diffusion process and the role of power relationships and political will. Power and knowledge are two processes of social interactions which interact one on the other. The political factor should not be understood only in an negative way, slowing down organizational learning ; political will facilitates knowledge flows and accelerates decision-making process whereas power relationships can block knowledge creation and diffusion. We stress that there is a potential relational learning that conducts to diminish negative effects linked to power relationships even if they do not decrease completely. We can study these

aspects in future research. Lastly, to facilitate this learning and to improve knowledge creation and diffusion process, we considered a mode of coordination which is at the same time formal and leaves place to informal interactions, action of the hierarchy allowing to legitimate organizational learning whereas the informal interactions helps to diminish negative power relationships.

Notes

1. Epistemological choices were jointly made by researcher and main respondent.
2. There's a co-construction of research problems in a way to improve internal validity.
3. There's homogeneity in hierarchical and functional profile of the respondents of the sample.
4. We interviewed actors with different functions.
5. We stopped interviews when we got no new information or explanations from another interview.

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