

# Community of Practice and Organizational Design

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**Abstract** — In this paper, we pointed out how the form and management of an organization shapes its levels of knowledge transfer and learning. We document the lessons from an ongoing knowledge management program within a major French banking company at its early beginnings. Basically, the purpose of this program is to understand how knowledge sharing and learning can be supported in professionally-oriented communities to reduce business process and improve organizational performance. Through this business case, we illustrated that promoting management initiatives without taking into account organizational structures is a nonsense. Corporate success in today's economy comes from being able to acquire, codify, and transfer knowledge more effectively within the whole organization. From this point of view, organizational design is about enabling a group of people to combine, coordinate, and control resources and activities in order to produce value *i.e.* organizational knowledge. Too many knowledge initiatives undertaken today are disconnected from organizational design. As a result, many executives are unsure of how to translate the goal of becoming a "learning organization" into strategic course of action. Thus, creating the appropriate organizational design can enhance the organization ability to create and exploit knowledge.

**Keywords** — community of practice, organizational design, knowledge management, knowledge mapping

## I. INTRODUCTION

As competition is becoming tougher, it is increasingly apparent that sponsorship and support of groups such as communities of practice is one strategy to increase the value they create and improve organizational performance. From this point of view, community of practice or professionally-oriented communities are gaining momentum since they are recognized as a glue that binds existing and future activities of the firms. These communities, by definition are composed of knowledge workers, who develop and maintain their professional body of knowledge in close relationship with their colleagues. In this sense, they provide the necessary environment for professionals to develop their skills and share the knowledge and experiences of their professions through the whole organization. Thus, these communities are strategic corporate resources that need to be managed to ensure that their goals are well aligned with business strategy. This approach is consistent with the knowledge-based view of

the firm which suggests that the role of the firm and its unique source of competitive advantage rest in its ability to integrate the knowledge of different individuals into the production process of goods and services. This type of approach involves the deliberate integration of knowledge in business processing functions where critical decisions are being made. In fact, it's not only a question of alignment between the objectives of the community with those of the business strategy, but of integration of the knowledge generated by this community into key processes. The article is divided into four parts: section 2 summarises the contributions found in the academic literature on knowledge management, community of practice and organizational design; section 3 presents the study background and the methodological approach we used; section 4 reports the results of our analysis which is still in progress; the conclusion - section 5 - discusses the preliminary results.

## II. ACADEMIC REVIEW

### A. Community of Practice (CoP)

The notion of CoP appeared at the beginning of the 90s, with the development of the Internet and its associated new technologies, which brought into question our relationship both with, and to, knowledge. Several authors, such as John Seely Brown [1], Etienne Wenger and Jane Lave [2], have highlighted the role of tacit knowledge in learning mechanisms and revealed the contextual significance of "*situated learning*", and the importance of this in the acquisition by the novice of knowledge and behavior necessary for his professional life. This approach was pursued in parallel by the work of Thomas Davenport and Larry Prusak [3] [4] in the domain of KM. Their research showed that an organization became collectively more intelligent when it was able to connect all the participants in a given action so that they could manage, share, construct and produce information and knowledge jointly to facilitate problem solving. In this perspective the interactions between members of a network play a fundamental role in the creation of knowledge, questioning the idea that learning is purely an individual problem.

According to Wenger [5], "communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis". Wenger promotes the social aspect of learning, which is part of collective practices at the center of CoP.

For Wenger, these practices develop around doing actions, which in both a historical and social dimension produce structure and meaning. This concept of practice includes both an explicit field and a tacit register. All the same contrary to Nonaka [6], Wenger does not consider it useful to put into opposition the tacit and explicit dimension of practices to the extent that he considers these two aspects to be ever present in all forms of knowledge. According to Wenger, three dimensions allow us to characterize the type of relationship, which makes up a shared practice and constitutes the source of coherence among individuals: mutual engagement, joint enterprise and shared repertoire. Over the course of time participation within a CoP will create resources, which will make sense as it were. These resources form a shared repertoire and include physical artifacts like prototypes and models, routines, tools, and procedures that the community has developed or adopted over the course of its existence and which have become little by little an integral part of its nature. Finally, concerning the creation and make up of these communities, Wenger underlines that they develop in a spontaneous and informal manner. Moreover, one cannot set up a CoP simply by putting people, tools and resources together and establishing objectives the way one constitutes a working group or project. Rather, one can only encourage and foster the development of shared activities by willing participants. Wenger insists that too closely supervised communities, an expectation of early results or trying to direct the development of the community towards narrow or pre-established aims, will end in failure. Today, many firms promote and support such communities to develop new products or services [7] and improve their competitiveness [8] by reducing learning curves. Thus, in many organizations these communities are becoming recognized as valuable organizational assets.

#### *B. Knowledge Management and Community of Practice*

According to Wenger [9], communities are not born in their final state, but go through a natural cycle of birth, growth, and death. As members build connections, exchange information and experiences, they coalesce and go from one stage to another. So, there must be a series of connections that individuals have with others. In other words, individuals must perceive themselves as part of a community. A sense of trust must be developed across these connections. With a critical mass of community participation, effective structuring and repeated experience, community members will improve the way they acquire knowledge and accomplish tasks. In short, at the first stage, the community is just starting to form having common interests. Professional knowledge and experience is then collected and shared amongst the members. The members of the community have to share a common understanding of issues facing the organization. At the second stage, the core team creates value and standards and the organizational structure is set up. To be sustainable over time, this structure must be recognized and supported by the whole organization to stimulate continued adoption, use, and contribution by a critical mass. Members increasingly communicate and collaborate using a large range of ICT

tools, KM technologies and face-to-face meetings, and new members join the community. At the third stage, the community operates in project mode with a proper structure and processes. The community coordinator, who is a community member, helps the community focus on its domain, strengthening relationships and developing its core knowledge. Critical success factors at this stage are clear and visible community purposes, membership benefit, and governance structures and policies which should be in perfect harmony with the business strategy, which involves managing interactions with other organizational entities or departments. At the fourth stage, the community has reached a stable level and it is important to change the community's rhythm to rejuvenate it. It can be done thanks to face-to-face meetings and others seminars aimed at energized members. The community needs to encourage the members to participate in the discussions, seminars, message exchange, etc. It is also important at this stage to think about what kinds of resources are available to set up the community (both human and technical). Indeed, as the community grows, it may run into technological limits and need to re-evaluate the technology and the mode of communication used. Thus, critical factors in this phase are membership rewards, incentives and scalability issues. Finally, the last stage of the community life cycle deals with the evaluation of the community outputs and the value added in terms of knowledge. One of the major issues at this stage is to evaluate the collective knowledge generated by the community and spread it into the whole organization so that it can be reapplied. For this purpose, it is necessary to set up particular devices allowing knowledge to be extracted from documents, discussions, information exchanges and decisions [10].

#### *C. Community of Practice and Organizational Design*

Organizational performance can be seen as the result of interaction of strategy, organizational context, and individual behavior. From this point of view, managers have to choose the right approach according to their markets, create or customize processes to deliver services to those markets and motivate people to act in line with the company's objectives. Due to the competitive nature of the banking industry, these organizations need to leverage knowledge collection and transfer in order to maintain a competitive advantage. In this context, knowledge management means the process, by which an organization creates captures, acquires and uses knowledge to support and improve the performance of the organization.

Regardless of how it is defined, a company that manages its knowledge effectively gets the greatest value from the knowledge it has, whether that value is measured in sales, time-to-market... Thus, organizational design takes into account three critical factors: strategy, organization and motivation. Organizational design interventions deal with modifying elements of an organization's structure, including the division of labour, decision processes, choice of coordinating mechanisms, delineation of organizational boundaries, and networks of informal relationships [11]. The ultimate goal of organizational design is to enable a group of people to combine, coordinate, and control

resources and activities in order to produce value, in all the way appropriate to the environment in which the business compete [12].

CoP have previously been thought of as coming into existence when people interested in a common work-related area feel a need to share what they know and to learn from others. Little empirical evidence has been collected to analyze how a community of practice can be designed and built as part of a specific organizational development project. The organizational design (OD) is a formal, guided process for integrating the people, information and technology of an organization. It is used to match the form of the organization as closely as possible to the purposes the organization seeks to achieve, that is its strategy. However, designing a CoP is very different from most organizational design approaches, which traditionally focused on creating structures, systems, and roles that achieve clear organizational goals and fit well with other structural elements of the organization. According to Wenger [5] the goal of community design is to bring out the community's own internal direction, character, and energy (aliveness). Because a CoP stems from informal processes, designing a CoP can not be understood in the traditional sense of specifying a structure and then implementing it. Basically, the community design elements that are most appropriate depend on the community's stage of development, its environment, member cohesiveness, and the kinds of knowledge it shares. Thus, the ultimate role of design is to catalyze that evolution. In this context, organizational design has to be related to practice. That is, the way community members carry out a set of tasks or activities. In short, the way the work is organized within the community. Indeed, practice evolves with the community as a collective product, becomes integrated into member's work, and organizes knowledge in a way that reflects practitioners' perspectives. From this point of view, successful practice development depends on a balance between the production of outputs (documents, best practices, tools...) and deep learning experiences for community members.

### III. STUDY BACKGROUND AND METHODOLOGICAL APPROACH

#### A. Study Background

In short, at the beginning of the year 2005 this company decided to modify its strategy to improve the effectiveness of its processes. It was mainly a question of time-to-market: reducing the time needed to the request handling of loans by the professional customers, on the national market. Prior to the implementation of this new strategy the top executives we met asked us to carry out a preliminary study. In this connection, the objectives of the project were as follows:

- to identify the business know-how impacted by the new strategic plan in order to prepare the new process-oriented organization,
- to analyze business know-how to appreciate their criticality,
- to set up devices of safeguarding and transfer of the

knowledge the most critical.

The last stage is currently under development.

One business-units has been chosen and was at the core of this project: "Contracts & Guarantees". Our study focussed on the "Loan Servicing Department" within this business unit. This department is in charge with the study and the development of the loan applications for the professional customers. The personnel concerned works mainly in back-office and is responsible for the realization of the requests addressed to the trade agencies. This activity covers, the risk analysis, the establishment of the adequate guarantees according to the amount of the loan and the profile of the customer like secured loans or mortgage loans, the compliance of the loans and agreements with the state and the European laws... Few years ago, this entity has been chosen as a pilot department to test a new work organization which has moved from a bureaucratic one to a process-oriented one. Several employees who worked previously in other departments have been gathered into a professionally-oriented communities in which the main regulation process is based on expertise. At the same time, groupware and workflow tools have been implemented in this business-unit and many training sessions have been proposed to support the work done by these knowledge workers. For technical problems, the company has implemented a sophisticated document management system with direct enquiry and archiving features. With the help of document descriptions and key words, searches and solution entries can be undertaken by all employees.

Within this entity, the employees used to work in two very different ways. One group of employees made up of 10 employees – the oldest employees - was very specialized and the work organization was based on Taylor's principles (sub-group n°1). Each operator is specialized on a particular activity: mortgage loans, risk analysis... This group stems from a reorganization carried out in 2001 following a merger with another national bank. At the same time, groupware and workflow tools (Oxygen) have been implemented in this business-unit and many training sessions have been proposed to support the work done by these knowledge workers. Basically, all these employees were volunteers and have been added to the existing department. The second group was made up of 11 employees and the work organization was much more flexible (sub-group n°2). Each operator was working on a dedicated customer's demand, which covers different type of activities: historical count analysis, business needs, risk analysis, the assembly of the desired type of loan and the associated guarantees. In this case, each operator was dedicated to a specific company which covers the whole activities made by the previous group. In fact, the subgroup n°1 act as an experts group to solve problem faced by subgroup n°2 on specific and technical questions like risk coverage, mortgage rate analysis... Thus, the "Loan Servicing Department" is a big team composed of these two informal subgroups and form a community of practice. Indeed, this community is a group of people who share a concern, a set of problems, and who deepen their knowledge and expertise in this area by interacting on an

ongoing basis.

The project started in November 2005 and is still in progress. All community members are full-time employees, aged between 31 and 54. A senior manager (the sponsor) called Charles A, is the project's representative at the executive level. Charles A then identified two informal leaders for the CoP given their expertise; called Thierry G and Oliver B. These two leaders are the community coordinators responsible for the overall guidance and management of the CoP. They help build and maintain the CoP, encourage participation, help direct attention to important issues and bring in new ideas to energize the CoP if so required. Charles A and the two coordinators interact through e-mail, by phone or at face-to-face meetings on a regular basis, depending upon the ongoing activities of the community. The operators of the communities know each other and had the practice to meet at the time of monthly meetings or to exchange by telephone, email or face to face.

### B. The methodological approach

Our research project is based on a qualitative case study design. The major method of data collection is based on in-depth interviews (26). These interviews lasted from one hour to two hours, and were tape-recorded and transcribed. Each time, we used participant checks for validating the accuracy of research findings. This method has been applied both for analyzing the structuring characteristics of the community, and mapping the knowledge domains.

To describe the community we studied, we use the approach defined by Dubé *et al* [13]-[14] for the Virtual CoPs analysis. Indeed, these metrics seem very suitable with our purpose. The CoP in this study is operational, small (24 members), at the coalescing stage. According to Wenger *et al* [3], at this stage, the key domain issue is to establish the value of sharing domain knowledge. This community has been created on a permanent basis with no definite time in mind, through a top-down approach. Thus, the CoP was coded according to the scale proposed by Dubé *et al* [13]-[14]. The final results are presented in the Table I and underline the most representative characteristics of the CoP.

CoP Identity Card	
Demographics	Results
Orientation	Operational
Life Span	Permanent
Age	Young
Organizational context	Results
Creation process	Intentional
Boundary crossing	Low (same business unit)
Environment	Neutral
Organizational slack	Medium
Degree of Institutionalized formalism	Supported
Leadership	Clearly assigned
Membership	Results
Size	Small
Geographic dispersion	Low
Member selection process	Open
Member enrolment	Compulsory
Member's prior community experience	Extensive
Membership stability	Stable
Members' ICT literacy	Medium
Cultural diversity	Homogeneous
Topic relevance	High
Technological environment	Results
Degree of reliance on ICT	Medium
ICT availability	High variety

TABLE I  
STRUCTURING CHARACTERISTICS

To go further in the analysis, we also check internal documents (annual reports, strategic plan...) that were useful for understanding the critical components of the organizational design and diagnose organizational problems. This analysis involves the collection of information necessary for making design decisions. Another set of structured interviews has been conducted with the executives (6), focusing on the strategy of the organization, the key tasks being performed and current strengths and weaknesses of the organization.

### C. M3C Methodology

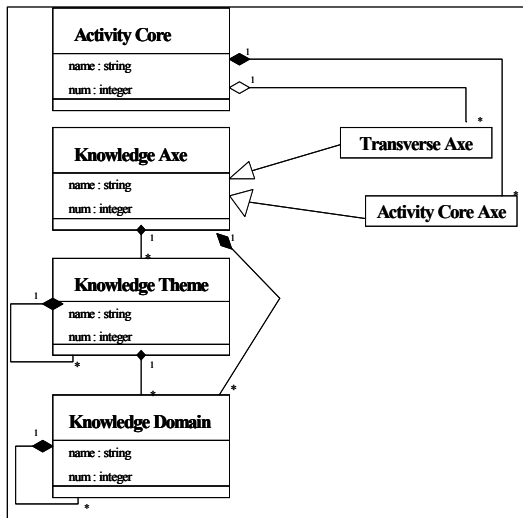
The term "mapping knowledge domains" refers to the process of charting, mining, analyzing, sorting, enabling navigation of, and displaying knowledge. According to Speel *et al* [15]: "knowledge mapping is defined as the process, methods and tools for analyzing knowledge areas in order to discover features or meaning and to visualize them in a comprehensive, transparent form such that the business-relevant features are clearly highlighted". M3C is "domain-oriented" approach [16] [17]. The M3C methodology has been described and illustrated by Ermine *et al* [18]. The cartography and the evaluation of knowledge domains are based on knowledge acquisition from experts. M3C is also a knowledge engineering method which can be used in combination with other methods used for modeling descriptive and operational knowledge of an expert in a particular domain or field of knowledge [19]. M3C is grounded on robust models (formal, graphical and criticality models) we experimented in collaboration with industrial research centers and tested in big firms within different industrial sectors (GTIE group, Schindler, Chrono-Post, PSA Peugeot Citroën, Hydro Quebec...).

1) *The formal model of the cartography*

The formal model described with UML classes diagram (Table 2), is a hierarchical representation that classifies the knowledge domains of the firm in different levels.

A knowledge domain can be defined as a field of activity related to a specific group or team (community) for whom information and knowledge can be gathered. In short, a knowledge domain is the area of knowledge the community agrees to learn about and advance.

TABLE 2  
THE FORMAL MODEL OF THE CARTOGRAPHY



One of the main feature of the cartography is the core activity or “core knowledge” which reflects the strategic knowledge, associated to its fundamental mission. Around this central point, we can find knowledge axes, which define the strategic knowledge domains. Of course, these knowledge domains have to be consider in association with the missions in view within the organization. Finally, the knowledge domains are joined together according to a common objective on the same knowledge theme, along the knowledge axes. For the analysis to be more accurate, both domains and themes can be divided into sub-domains and sub-themes.

2) *The graphic model*

The knowledge cartography gives a global view of knowledge domain in the firm. Different tools can be used to map these domains. The map below has been realized with Mind Manager (Table 3).

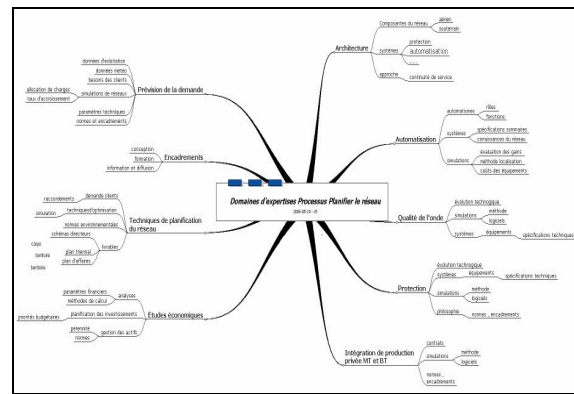


TABLE 3  
KNOWLEDGE MAP

3) *The criticality model*

The criticality of a domain is an evaluation of risks and opportunities associated to this domain. Basically, it looks like a SWOT analysis in strategic management. For example, what will be the consequences of “knowledge drain” within a specific domain ? What type of domain should be developed ? ...However, we have to define what may be “objectively” the criticality of a knowledge domain. For this purpose, we used an analysis tool called CKF(Critical Knowledge Factors) which has been developed in the Knowledge Management Club in France. CKF is an analysis grid which has been performed and validated in many French and Foreign companies. The CKF grid contains 20 criteria gathered in 4 thematic axes (Table 4).

Thematic axes	Criteria
<b>Scarcity</b>	Number and availability of experts Externalization Leadership Originality Confidentiality
<b>Utility</b>	Adequacy with strategic objectives Value creation Emergence Adaptability Use
<b>Difficulty to Capture knowledge</b>	identification of knowledge sources Mobilization of networks Tacit knowledge Importance of tangible knowledge sources Rapidité of obsolescence
<b>Nature of knowledge</b>	Depth Complexity Difficulty of appropriation Importance of past experiences Environment dependency

TABLE 4  
THE CRITICAL KNOWLEDGE FACTOR GRID

Each criterion is evaluated according to a scale composed of 4 different levels, representing the degree of realization of each criterion. The rating of a criterion is based on one question. Each level is expressed by a clear and synthetic sentence to avoid interpretation problems. For each knowledge domain of the map, the result of the criticality analysis, using the CKF grid, is visualized with radar diagrams (by criterion and by thematic axis, Table 5).

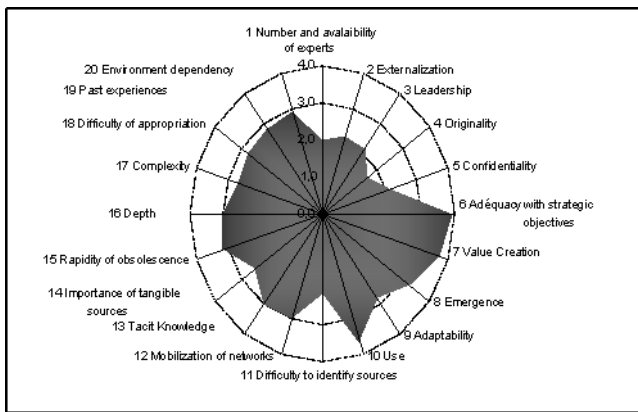


TABLE 5  
RADAR DIAGRAM

#### IV. FINDINGS AND RECOMMENDATIONS

##### A. Change Work Organisation within the Community

###### 1) "Task-based" Organisation versus. "Business-based" Organisation

In terms of work organisation, there is no such thing as "one best way". If the "task-based" organisation (sub-group n°1) may suit some individuals, it is however completely unsuitable to others. From an objective standpoint, the 'business-based' organisation (sub-group n°2) seems much better suited to a competences development and know-how transfer perspective. This approach enables a closer proximity with the customer, the development of a global view of its activities over time. Moreover, at a cognitive level, this approach helps the operator "make sense" by developing the "know how" and the "know why", thus allowing the combination of conceptual knowledge with practical knowledge (competences).

The "task-based" organisation only purports to develop know how, and does not offer the operator an overall view of the operating process. It fits within a logic of specialisation related to productivity improvement projects underway. The manager's role can be summarised as a simple supervision and control task (direct supervision), with limited involvement (*monitoring* costs). The management of a "business-based" organisation requires more commitment, particularly as far as coordination and communication are concerned (coordination costs). A corollary is that a "task-based" organisation limits the development of managerial capabilities.

###### 2) Work Organisation & Related Risks

The "task-based" organisation leads to increased risk in the processing system. The logic of productivity associated to this system leads to the primacy of quantity versus quality. Yet in this respect, the "business-based" organisation contributes to improving "knowledge of the customers", thus limiting their opportunism, *i.e.* the risk borne by the institution.

###### 3) The individual, the team & the community

In a "task-based" organisation, the individual is isolated within a hierarchical structure that he is incapable of

grasping as a whole. In this context, motivational issues may arise and influence the extent of the operators' motivation ("parabola of the cathedral builders"). The transfer of knowledge becomes difficult, as the *modus operandi* forces the operator into isolation. Yet the learning process can only be envisaged within an interaction logic (socio-constructivism) with other actors who possess the knowledge and know-how.

The "business-based" organisation appears to be potentially more interesting from an organisational learning perspective. To manage a "business-based" organisation requires a definition of supervisory tasks (job description, name...). If the team-manager has to assume a coordination role on a daily basis, one should also plan a position dedicated to knowledge management (*Chief Knowledge Officer*, or *Knowledge Manager*) within the team and between teams. In this context, the organisation (at operating level) becomes a networked structure with the team as the basic entity. The bringing together of the various teams within a logic of "business" knowledge sharing may thus serve as the basis for the creation of genuine "communities of practices". Today, these communities make up the foundation of the "cognitive firm".

##### Recommendation n°1

A "Task-based" organisation may only serve as a transitional organisational method, prior to the generalization of a "Business-based" organisation that is more conducive to the development of collective know-how.

##### B. Change Training Processes within the Community

###### 1) Adapting Work Schedules for Tutors

Today, most of the training is delivered by designated tutors, charged with training newly arrived staff within the community. If this approach is fundamentally sound, it remains that tutors need to be given the means to carry out their tutoring. Indeed, no allowance is made today for adapting their work schedule, even though they are requested not only to train new staff but also to carry out their daily processing tasks, without any *quid pro quo*.

Under those circumstances, training becomes a difficult and perilous challenge for the tutor. It is imperative that this anomaly be corrected, especially considering that this is the cornerstone of the training system in the field. In this respect, one should plan to alleviate the tutors' work-load throughout the training period, so that they may commit themselves fully to their tutoring and coaching mission in favour of new staff.

This form of tutoring *in situ* may be completed by the implementation of a real e-learning solution allowing remote delivery of the training if necessary. In addition, it is necessary to update existing sources of documentation and to promote their usefulness and ease of access by reviewing the nature of existing media (digital format, tutorials, self-evaluation tools, forums...). The training delivered and the educational material used should also be adapted to the reality on the ground and to users' expectations.

## 2) *Towards a Recognition of the Tutors' role and status*

As a corollary to the previous point, it is also important to redefine the tutors' role and status in the field. Insofar as they play a fundamental role in the training of business players (the operators), it is important indeed to reconsider their status as trainers and escalate it. This escalation must be concretely reflected in their job description and in clear and specific remuneration formulas that encourage their engagement, especially amongst the more experienced actors who want to share their know-how and experience. In the current environment, involving the unions in this debate might prove worthwhile. It is also important to keep in mind that the tutor's role is not limited to helping new staff acquire knowledge, competences and professional expertise. Through his / her position, he / she also contributes to the welcoming, the support, the information and orientation of those employees who take part in training programmes. To this extent, he / she acts as an extension of the HR Department, and may be able to help the employees develop and implement their professional objective. This dimension is often downplayed or simply ignored by the executives.

## 3) *Role of the Tutor in the Knowledge Transfer System*

The tutor plays the role of a facilitator in the individual knowledge transfer system. In particular, he can contribute to the expression on implementation of work practices thanks to his / her expertise level and unique knowledge he / she possesses, *i.e.* metacognitive knowledge. Metacognitive knowledge includes the knowledge of general strategies that may be used for various tasks (solution modes) as well as the knowledge of the conditions where such strategies may be used. This knowledge about cognitive tasks helps the operators (learners) to identify the nature of the task and to select a strategy to tackle it. There is a metacognitive dimension in all learning strategies. One may distinguish between three types of strategies:

- Declarative knowledge : to know the "what" of a strategy,
- Procedural knowledge: to know the "how" of a strategy,
- Conditional knowledge : to know the "when" of a strategy.

An employee who would only possess a declarative or procedural type of knowledge about a strategy would not be capable of making a transfer between two similar tasks in different contexts. Let us specify that we mean by transfer the process which enables an individual to use formerly acquired knowledge in a new context. It is a phenomenon whereby progress achieved during the process of learning a certain form of activity triggers an improvement in the practice of that activity, or of a different one which is akin to the main activity.

### *Recommendation n°2*

The status of tutor must be recognized and promoted, and the existing training system must be adapted so as to enable tutors to carry out their missions fully.
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## *C. Put in place a Knowledge Capitalisation and Transfer System within the Community*

### *1) A Knowledge Capitalisation and Transfer System*

As mentioned above, there is today a training system which extensively relies on tutoring. This system must be improved, but remains very pertinent within a logic of individual learning. However, there is presently no system in place for the capitalisation and transfer of knowledge that can link the individual and collective levels. Let us recall that the concept of capitalisation has been in existence for a long time in industrial firms: it is expressed in the form of production manuals, guidebooks, checklists.... Yet with the increase in service activities, a need has appeared to capitalise on know-how that is ore intellectual than technical in nature. In general terms, this capitalisation is made necessary by:

- the need to improve productivity in service firms by promoting knowledge capital,
- the retirement within a few years of a large number of experts, which prompts the need to capitalise the knowledge and know-how of those who have them,
- the emergence of new technologies that facilitate the exchange and spreading of knowledge.

Knowledge (both knowledge and know-how) to be capitalised has many angles; it is articulated between tacit and explicit, individual and collective knowledge. Capitalisation consists in promoting implicit individual knowledge so as to transfer it to the collective explicit mode, with the purpose of fostering a collective appropriation (collective implicit). Considering our observations and the results evidenced, it seems necessary to initialize the process, and hence to primarily favour the promotion of implicit individual know-how, resulting from experience, and its transfer to the explicit level. The purpose of capitalisation is to enable the production of explicit documents, describing the action carried out and dealing with practices implemented, so as to enable an appropriation by others: in other words, a transfer. Formalisation is a basis for exchange.

## 2) Sequencing of the Knowledge Management Process to be put in place

The process described below is iterative and includes several stages, which are necessary steps.

<i>Recommendation n°3</i>			
	Objective	Action	Outcome
Stage n°1 <b>Create</b>	<i>Create the knowledge</i>	Discover the knowledge - Invent the knowledge	- Value added within the business process
Stage n°2 <b>Identify &amp; Capitalise</b>	<i>Identify strategic knowledge</i>	- Collect & document strategic know-how so as to preserve it (capitalise)	- Create memory (capitalisation)
Stage n°3 <b>Spread</b>	<i>Spread strategic knowledge</i>	- Transmit, share and distribute knowledge based on : • its importance • its confidentiality • its degree of urgency • its reliability...	- Puts at the disposal of CoP a common and strategic knowledge base
Stage n°4 <b>Leverage &amp; Create anew</b>	<i>Use of the circulated knowledge</i>	- Use and leverage acquired knowledge - Improve and update existing knowledge	- Value creation at the CoP level and path towards a new stage of creation for new knowledge

The study we carried out has clearly enabled initialization of the first two steps in the knowledge management process. Strategic knowledge areas have been clearly identified. What remains to be done is the gathering and recording of strategic know-how after formalising and explaining it. This stage is not part of our specifications, but we may spell out its outline.

## 3) Actors and their Role

Capitalisation calls on different actors, with specific roles for each of them. It relies mainly on four essential actors and functions :

- The promoter of capitalisation : This is most often the manager whom the action's project manager reports to. His / her role is to promote and facilitate production of capitalisation. He / she should also ensure the promotion of those who produce.

- The producer of capitalisation : He / she is the action's project manager, as he / she possesses the know-how implemented, which is what is being capitalised.

- The "facilitator" : It is a person that is selected by the producer (tutor), whose job is to help with the expression of practices implemented.

- The "mirror" team : It gets involved at the feedback stage, during organised exchange sessions, to contribute an external viewpoint, act as a future "consumer" of the capitalisation produced, be a catalyst leading to the "de-contextualisation".

The implementation process is currently underway.

## V. CONCLUSION

The first part of our study enabled us to identify the knowledge domains, to evaluate the criticality of each domain and finally to locate the problems involved in the

organization of work within the community. The community we studied is still relatively young and rather atypical since it does not use homogeneous operating mode. On this point, it appears clearly that a choice has to be made between "task-based" organization and "business-based" organization. The choice of the right organizational design is very important since it influences the knowledge transfer mode and its effectiveness both inside and outside the community. Basically, it seems that the "task-based" organization is unsuited to the aims in view by the business strategy and especially to the development of new competencies into the community. The preliminary results indicate that the organization design must be adapted or aligned with those of the knowledge management project and by the way, with those of the business strategy. This report is not new and comes to confirm a largely widespread opinion in the academic community: the organisational choices can prove to be harmful with the development of knowledge in the company. In this context, the emergence of a learning organization remains a mirage. The executives we met have well understood this problem however they remain rather reticent with the idea to make modifications likely to influence total productivity of the teams they manage. Indeed, that implies to change the executive's state of mind and to evaluate the community on new basis and new indicators that those who usually prevail in such a business.

The indicators of productivity used to appreciate the performance of a team concentrate on the result and seldom on the process which makes it possible to arrive at the result. For years, managers took as a starting point the Taylor's principles, being unaware of the consequences in term of knowledge management. Consequently, one comes thus at a rather paradoxical situation where one wants to produce something new with archaic and obsolete methods.

Another point deserves to be underlined, it clearly appears that the knowledge mapping method is a powerful tool to study the organisational design within a community. If this method makes it possible to identify knowledge domains and their importance, it also an interesting way to locate organizational problems. Indeed, this approach, while isolated from the knowledge domains makes it possible to identify core competencies [20]-[21] and to better understand the work organization. This method makes it possible to supplement the traditional methods used to study the organizational design. While asking an operator what are the main competences it needs in its daily work and how it uses them , one asks him to clarify the procedures that it use to do his job and solve problems. Thus, knowledge mapping is a way to enter the organizational design, focusing on core competencies. This approach is consistent with the resource-based view of the organization and core competence model. Once more, our approach does not have anything exotic and falls under the line of well-known work in management science. In this context, it seems that knowledge mapping methods could be used to highlight and further illuminate the meaning of core competence within organizations. By identifying knowledge domains it becomes possible to locate core

competencies at the operational level and appreciate their criticality. From this point of view, knowledge mapping methods like M3C make it possible to connect knowledge management and strategic management, and thus formalize and operationalize core competence analysis. Thus, through knowledge mapping methods it is a question of improving inside-in approaches or internal diagnosis in the strategic management field.

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