

AN ANALYSIS OF KNOWLEDGE MANAGEMENT IN A MERGER

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Abstract

Logics of organisational transformation start to be well studied by the literature but relatively little research is interested in the knowledge management in this specific context. The objective of this work is to describe and analyse the factors which support the knowledge management within the framework of a merger. The economic results of these operations seem to be very bad. The statistics show that in, approximately, 60% of the cases, merger fail in the three years which follow the operation. In a first part, we wonder about the place of knowledge management within the framework of a merger. This one can be described like a privileged access to strategic competences. However, the reality of knowledge management seems to follow more a sociocultural logic than to be a simple transfer of assets. Thus, only a careful integration makes it possible to decrease to some extent change resistances and supports knowledge management. Based on the work of Shrivastava (1986) we analyse a knowledge management integration in a merger. This author identifies three functions provided by integration that are coordination, control and conflict resolution. We suggest adding of it a fourth which is knowledge management. In a second part, we undertake an exploratory case study to confront our conceptual framework with the field reality. After having described merger-acquisition support of our empirical investigation as well as the adopted research methodology, we draw the principal lessons from this case. The instauration of knowledge management at the time of the phase of integration thus seems to decrease the losses of know-how and to even contribute to knowledge creation. This integration is declined under three forms : procedural integration (installation of tools and use of ICT), physical integration (reorganization of the buildings and functional reorganization) and sociocultural integration (communication, participative management, heterogeneous communities of experts). The recommendations which are made within this framework should make it possible to improve overall our comprehension of the problems of knowledge management in a context of organizational transformation.

Keywords: Knowledge Management, merger, case study, constructionism, organizational transformations, integration.

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Outsourcing, concentration, diversification, merger, acquisition.... The firms know a significant period of structural reorganizations. Behind the strategic decisions which govern these organizational transformations, one of the main difficulties resides in operational implementation. The literature in strategic management enables us to better understand these organizational phenomena by studying the question of the " why " and by stressing all the importance of the necessary consideration of knowledge and competences management in this type of operations. We wish, in this research, to adopt a complementary vision, of processual nature, by questioning us on the effective implementation of knowledge management within the framework of a merger.

Management of merger and acquisitions is an old question ; that made, indeed, more than two decades that research are regularly published on this set of themes. It remains nevertheless relevant in comparison of the number of operations of this kind occurring each year and with the raised problems. The question of the human resources management is closely related to those of merger-acquisitions (Napier, 1989) ; this one is often regarded as the main problem of this type of operations. For example, Walsh (1988) studies the turn-over which occurs in post-merger management and the linked problems, as loss of knowledge and competences. The recent interest in knowledge management underline the importance of understanding knowledge creation and diffusion in a merger. In the context describes before, the objective of this research is to consider the organizational and human procedures which can sustain knowledge creation and diffusion in a merger, on the basis of a case study.

1 - Knowledge management, impossible bet of the mergers-acquisitions ?

Parallel to the growing number of merger and acquisitions, the daily press shows negative results (Connolly and Klein, 2002). Indeed, the statistics show that, in the large majority of the cases (60 to 75% according to sources), merger fail in the three years which follow the operation. For Napier (1989), more than 50% of the mergers are failures and in 30% of the cases, there is even disengagement. We initially will review quickly the reasons of these failures and will stress the organizational and managerial consequences of it. Then, on the basis of the literature review, we

use the conceptual framework developed by Shrivastava (1986) to propose some thinkings about knowledge management in a merger.

1.1 - Knowledge management in a merger

1.1.1- Merger as an access to strategic competences and knowledge

Academic or managerial literature raises several elements of motivation in merger. Thus, a study of French "Commissariat Général au Plan" (2002, pp.202) stresses that " in the recent period, the majority of merger-acquisitions were justified mainly by considerations of access to the market or, more still, by the search for a best stock exchange value ". This same study describes merger-acquisitions like privileged access mode to strategic competences while showing as a significant and increasing proportion of those is concentrated in the intensive sectors in knowledge, in the objective to take the control of a capacity of preexistent innovation. Rasmus (2000) goes even until arguing that the majority of the successful mergers comes from a recognition of the knowledge in the process.

The nature of knowledge, tacit and explicit, individual and organizational, makes it difficult to understand and to study. So certain authors, who are cognitivist or representationnist (von Krogh and Roos, 1996), consider knowledge as assets or commodity, exchangeable as well as another. Reality tends to go against this positioning. For proof, the example of Alcatel which, after having bought up a series of five American starts-up in 1999, in the aim to gain access to competences, was confronted with the difficulty in keeping inside the American engineers " bought " at the full price (Commissariat Général au Plan, 2002). Thus, we consider, in this work, knowledge as being largely tacit and idiosyncratic. Knowledge is narrowly linked to people and resides in a specific set of organizational routines. The characteristics of this knowledge thus make it difficult to imitate or substitute and the competences supported by this one cannot, consequently, be acquired on the market if it is not by entirely buying the concerned firm.

Knowledge management in mergers was studied in the literature through the question of knowledge transfer within acquisitions (Bresman and al., 1999). On another side, Wilson (2000, pp.32) bases his research on a constructionnist approach of knowledge in an operation of merger and illustrates it with the example of BP : " BP has always seen knowledge management have more about connectivity than capture. So during the mergers, we develop the capability for connecting companies together ". From this point of view, the problems of knowledge management in a merger fit more in a sociocultural logic than in a simple assets transfer. In synthesis, we can say that " a

significant number of merger-acquisitions is explained at the same time by the difficulty of transferring knowledge and competences, which is less technical than of cultural or social, and by the will to acquire them in less time than one would not have any to build them internally " (Commissariat General au Plan, 2002, pp.203). The economic press supports this fact ; the Orange purchase by France Telecom, in May 2000, made it possible to acquire a knowledge concerning management of the interface with the customers. This strategy of knowledge management is also implemented by many great groups of pharmaceutical industry which take the control of small biotechnological firms, in order to secure a fast access to some " blocks " of knowing. If this reasoning is followed, the merger would be part of the response to the problems of knowledge management ; however, reality announces at the very least mitigated synthesis to us.

1.1.2- Knowledge management and merger, utopia or reality ?

Merger should support the exchanges of personnel, the rotation of the stations, the mixing of the ideas by the opening towards other cultures and modes of management. However, there is a considerable risk that the acquiring firm cannot really take the control of knowledge and competences of the bought firm. A great number of merger operations did not develop the hoped results in terms of synergy.

In a general way, the firms are little prepared with the management of merger operations. Most of the time, the merger is lived like a diving in the unknown, generally without possible recourse to a former experiment. Shrivastava (1986) explains that a majority of mergers result in lower performance levels than those awaited, even by failures and a disengagement of the new structure. Generally, the managements underestimate the importance of the overcosts and the losses generated by a badly carried out operation. Among the causes of this phenomenon, the author raises the inappropriate choice of the partner, due to an erroneous former analysis, the lack of care in the design of the merger and the lack of postmerger integration. Moreover, we can highlight the shock and the incompatibility of the organizational cultures of the two entities, the exodus of the key people and a total disablement to integrate the firms. Napier (1989) stresses that the principal reasons of failures lie in the problems involved in human resources. The social problems are often dealt with the second plan. Both entities persist in maintaining their past identity ; the qualified executives pass to competition and the internal competition is exacerbated. Napier specifies that there are no rules on what makes the success of a merger, in particular from the point of view of the human resources management. The majority of research on mergers still remain prescriptive and general. In synthesis, the literature raises two categories of reasons to the apparent failures of the

merger operations : ex-ante reasons and ex-post reasons, with a majority of work devoted to this last question (Shrivastava, 1986 ; Leroy and Ramanantsoa, 1998).

Within the framework of this work, we will try to bring replies to the following question : which factors support knowledge management within the framework of a merger ? For that purpose, we base our work on the conceptual framework developed by Shrivastava (1986) and we illustrate our theoretical findings on the basis of a case study.

1.2 - Knowledge management like element of the merger integration

The processes of merger and/or purchase of firms both constitute external modes of development of the firm. These approaches are more suitable when the firm has an urgent need for new complex resources, which would take too a long time to develop in-house. Leroy (2003) making a review of the literature of the various definitions of the merger notes that this one can all at the same time be regarded as an occasion of organizational transformation which relates to with different degrees at the same time the purchaser and the asset (Buono and Bowditch, 1989) or like the interpenetration from two organizations, with its promises but also its risks of rejection. For Pablo (1994), a merger conducts to an hybrid organization deteriorating the procedures, know-how, the power distribution and the beliefs system. Merger implies in the majority of the cases change resistances because employees often adopt a defensive position to preserve what they did in the past (Connolly and Klein, 2002). Only a careful integration makes it possible to decrease to some extent these resistances and supports change management.

Shrivastava (1986), through various examples, identifies three types of merger integration : procedural integration (information systems, management control), physical integration (product lines, technologies) and sociocultural integration (beliefs, corporate culture) which seems most delicate to realize. This author stresses that, if the first two types of integration were well studied by the literature, sociocultural integration in the context of firms which merger is rather little known. Within this framework of analysis, integration provides three functions which are coordination, control and conflict resolution. If the literature especially stressed on the management of postmerger integration, it shows also the necessary thinking in this type of operation, in which knowledge management must be a concern throughout the merger.

Table 1. Three types of integration in a merger (Shrivastava, 1986)

	Coordination	Control	Conflict resolution
Procedural	Design accounting systems and procedures	Design management controlling system	Eliminate contradictory rules and procedures Rationalize systems
Physical	Encourage sharing of resources	Measure and manage the productivity of resources	Resource allocations Assets redeployment
Managerial and Sociocultural	Establish integrator roles Change organization structure	Design compensation and reward systems Allocate responsibility and authority	Stabilize power sharing

Procedural integration involves combining systems and procedures of the merged companies at the operating, management control, and strategic planning levels. The objective of such integration is to homogenize work procedures. Physical integration of resources usually accompanies procedural integration. It involves the consolidation of product lines, production technologies, R&D projects, plant and equipment, and real estate assets. Lastly, Shrivastava defines managerial and sociocultural integration as implying a complex combination resulting from the transfer of managers, changes in organizational structure and the development of an organizational culture. It is a frame of reference which must guide the strategic decisionmaking, to facilitate the commitment and the motivation from the staff and the establishment of a new leadership. The joint realization of these three levels of integration is necessary in the success of a merger. On this basis, we suggest to add a fourth level of integration which is knowledge management. Knowledge management is based on coordination, control and conflict resolution and the merger can be the occasion to institutionalize knowledge management in the new organization (Connolly and Klein, 2002, among others).

Table 2. Knowledge management as a part of the merger integration

	Coordination	Control	Conflict resolution	Knowledge management
Procedural	Design accounting systems and procedures	Design management controlling system	Eliminate contradictory rules and procedures Rationalize systems	Design tools of knowledge management (shared data bases ...)
Physical	Encourage sharing of resources	Measure and Manage the productivity of resources	Resource allocations Assets redeployment	Encourage knowledge sharing and staff redeployment
Managerial and Sociocultural	Establish integrator roles Change organization structure	Design compensation and reward systems Allocate responsibility and authority	Stabilize power sharing	Develop exchange culture, motivation Establish integrator roles

The literature agrees for saying that individual and collective knowledge resides near multiple agents (Levitt and March, 1988 ; Walsh and Ungson, 1991 ; Argote and Ingram, 2000), among which we can identify : (a) individual members, (b) culture, (c) transformations (i.e., procedures and practical organizational standards of the organization), (d) organizational structures, (e) physical structure. In a merger, these multiple origins, various nature and agents of knowledge are confronted. The three identified levels of integration allow their sharing and to evolve then toward a common knowledge management.

Girod (1995) bases its work concerning the organizational memory on a typology of knowledge on three levels (declaratory knowledge, procedural knowledge and knowledge of judgement). Declaratory knowledge refers to explicit knowledge, stored in data bases, placed at the disposal of the organization. Procedural knowledge relates to the know-how mobilized individually and collectively in the realization of the daily tasks. The knowledge of judgement can be defined as the knowledge of what to do which is based on a comprehension of the context to guide behavior and on common representations of the phenomena and solutions to be brought.

As we will detail it, procedural, physical, sociocultural and managerial integrations will make it possible to manage all the facets of knowledge within each of the merged organizations. Procedural integration makes it possible to provide a function of knowledge management in the global design of the information system and more particularly, the design of knowledge management tools such as documentation data bases or shared knowledge bases which support the pooling of declaratory and procedural knowledge hitherto primarily individual. Physical integration, like the reorganization of the buildings and the allowance of the resources, plays a considerable role by encouraging the division of declaratory and procedural knowledge individual through, for example, the staff redeployment and thus supports the construction of collective knowledge and organizational routines in terms of know-how. Finally, sociocultural and managerial integration make it possible to develop a common culture of exchange, to commit and motivate the actors and thus to support the emergence of a common knowledge of judgement through the presence of integrators.

With the exit of these thinkings, we can stress the complementary role of these three levels of integration in managing all types of knowledge (individual or organizational, declaratory, procedural or of judgement). The following part illustrates this theoretical development on the basis

of a case study of a merger and has a look to the operational implementation of the three levels of integration in knowledge management.

2 - Methodology and case study

This second part enables us to explain the observed operation of merger as well as the research methodology. Thus, we illustrate the operational process of integration deployed and the way in which it makes it possible to manage knowledge. Then, we discuss the limits of this research.

2.1 - Presentation of the case study

2.1.1. ETO, a firm in phase of development

Created in 1986, ETO is a firm specialized in direct marketing. Based in Roubaix (France), this company knew the great stages of the development of the direct marketing of these fifteen last years. With its beginnings, its first customers are the famous “vepecists”, like Redoute and 3 Suisses, for which it leads relational marketing campaigns. Then in 1990, ETO gained new customers with development of distribution activity, like Auchan, Promod or Kiloutou. In 1990, ETO accomodates the software firm Basalt which conceives and lodges customer data bases. Both societies work in close cooperation and develop together many mechanics of consumer loyalty and tools of CRM (Customer Relationship Management). In 2001, ETO managed a wallet customers of 36 firms and generated more than 4 million euros of gross margin. Currently, ETO counts a hundred customers, among whom Orange, the Crédit Lyonnais, Conforama, Wanadoo. Society employs a hundred people and is located in a phase of significant growth. Indeed, it generated, into 2002, a gross margin of 7 million euros in growth of 80% compared to 2001. ETO is established in Paris, Brussels and Roubaix.

ETO management is of participative type, characterized by a hierarchy not very present, an organization of work in network, a significant delegation and a strong responsabilisation. The organizational culture emphasizes innovation, performance, customer satisfaction and development of consumer loyalty. This results in an open spirit and a not very authoritative management which supports the initiatives.

2.1.2. The operations of merger-acquisition within ETO

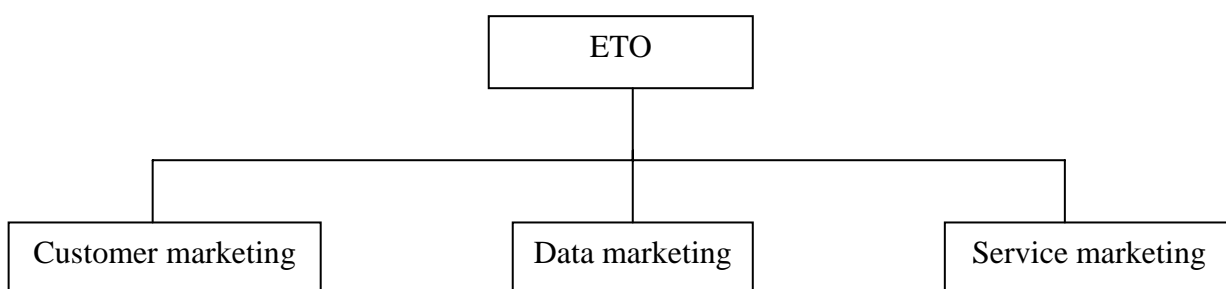
ETO knew these last years one period of significant changes. The firm carried out a merger with Basalt and took a participation in the capital of Artégos, two years ago. The SSI Basalt is

specialized in the marketing customers data bases. This company works in close cooperation with ETO since 1990. Before the merger, Basalt counted ten people. The management of ETO was both shareholders of Basalt.

The literature especially studied the post-integration phase but stresses nevertheless all the benefit to be withdrawn from a careful preparation of the operation of merger. In the case of ETO, this phase of preparation occupied 6 months, during which were studied, with the assistance of an external consultant, capital intensive interests (risks) and personnel (competences of the management). Thereafter, the project was formalized in writing, then the employees were integrated by the means of working groups. These building sites made it possible to lead to the optimal solution was thus defined jointly by the employees, the management of the firm and the consultant. The operation lasted on the whole 18 months (1999-2000). The objective which justified this merger was not a financial one but a will to better answer the customers wishes by linking creativity (ETO) and technology (Basalt) ; it is thus about a search for complementarity.

These various changes were not without consequences on the internal organization of ETO. Relational marketing is more complex each day. ETO made move its organization at the rhythm of the technological projections and the strategies which they make possible and that to satisfy customers. Since summer 2002 and following the merger, ETO reorganized around three poles :

Figure 1. Three poles of ETO



Customer marketing covers the unit with the activities of council and creation in relational marketing. It accompanies the advertisers in their strategy by customer relationship and the creation of dedicated supports. The pole data marketing is specialized in the analysis and the development of technological solutions for relational marketing. It provides to marketing the tools necessary to the management of the prospection campaigns and the programs of development of consumer loyalty. The pole service marketing ensures the management of the entering contacts : reception

and treatment of phone calls and e-mail entering, seized data-processing by the data, follow-up of manufacture or laser personalization and routing. This reorganization makes it possible ETO to optimize the accompaniment of its customers in the instauration of effective programs and profitable campaigns. By supporting the synergy of know-how on the level of its teams and by clearly directing the strategy towards the customer, ETO is able to manage operations mixing all the channels of the customer relationship. Merger of ETO with Basalt can be described as successful ; human and financial indicators show it : departure of only one collaborator, forty recruitings since the merger, significant increase in the number of customers, growth of the gross margin. The management of the firm posts this operation as being a success, without however disavowing the tensions and the interrogations which could exist with the beginning of the merger. For example, both companies have joint customers, it could have conflicts on the name of the publicity director which was going to keep the market. This case seemed to us sufficiently atypical compared to a literature which is mainly made the echo of the mergers failures to consider the managerial, human and organizational implications in terms of knowledge management and to learn the lessons from them.

2.2 – Research methodology

Research methodology is qualitative and inductive. The subject is complex, suffers from many interpretations and requires to be in-depth studied (Wacheux, 1996). In agreement with the objectives specified previously, the data collection by case study allows a whole and deep study of the subject (Girod, 1996). Our methodological step thus proceeds of the case study. We are inspired largely by the work of Yin (1994) on the matter which specifies that the recourse to the case study is justified when : " [...] the questions " how " or " why " arise, when the researcher has only little control on the events, and when the main interest carries on a contemporary phenomenon within a social real context " Yin (1994, p.13). Moreover, the process of knowledge management in a merger is a complex phenomenon that it is by its conditions, the events or the actors, of which the method of the cases allows a spatial and temporal analysis (Wacheux, 1996).

According to Glaser and Strauss (1967), in the logic of theoretical sampling, the respondents were selected in the objective to have variety and heterogeneity. Interviews were carried out with the management and the employees of both firms. Thus, the questioned people were the followings : ETO director, human resources director, communication director, Basalt director, tele-marketers, E-marketing director. The interviews were semi-direct. The average duration of the interviews was

one hour. They were completely recorded and retranscribed, so as to reduce bias relating to data interpretation. The observation comes to supplement the data collection.

The data collection followed the procedure developed by Lincoln and Guba (1985) in the objective to be able to develop theoretical proposals.

Table 3. Description of the data collection process (adapted of Lincoln and Guba, 1985)

data collection process	Data collection implementation
Phase 1 : finding the investigation field	Interview with ETO director to forward the project and to obtain his agreement. First interview made it possible to understand the operation of merger in its main phases. This preliminary interview also made it possible to refine the future interviews
Phase 2 : exploration	<p>The following interviews were carried out near the main interlocutors described above, within the buildings of ETO. The interviews were semi-direct and sought to encourage experiment and knowledge share of the respondents on the merger-acquisition which they lived. Here an example of some of the questions appearing in the interviews :</p> <ul style="list-style-type: none"> - which were the principal difficulties encountered at the time of merger-acquisition ? - how do you define a core competence ? - in your function, how do you work ? - how do you exchange with your colleagues ? - could you qualify the organizational culture ? - are there written procedures ? - is there a person in charge to identify, collect and classify key information in your service ? <p>The interviews were all recorded with the authorization of the interlocutors, then retranscribed for drafting of a report and validation by the interested people.</p>
Phase 3 : complementary collection of information	In addition to the interviews, the data collection was enriched by the reading of the internal documents and Intranet files. This additional collection allows data triangulation and increases the validity of the empirical investigation.

The respondents were informed of the confidentiality of the research and the recording of the interviews was made with their agreement.

3 - Results, discussion and limits

The first part of this section is devoted to the description of the tools installed by ETO to manage the process of merger and knowledge in both organizations. The second part shows the way in which these tools are linked with the conceptual scope of integration on three levels developed previously.

3.1 - Knowledge management during integration related to merger

3.1.1. Objectives of the merger and the various operations of restructuring

Before wondering more in detail about the procedures of knowledge management within the framework of the merger carried out by ETO, it is interesting to look at the motivations which were at the origins of this operation in order to better understand it. Indeed, ETO does not approach by haphazard a firm. The first motivation of the operation is to be able to meet in a more precise way the customer requirements. The merger and the various operations of restructuring of ETO were carried out in the interest of the customer in order to be able to offer a more complete service to him. The offer produced becomes broader, more precise, more coherent and almost single on the market. Thus, ETO director explains : " Following to a merger or an acquisition, one can observe a loss of know-how or a multiplication of know-how. The success depends much on the merger motivation : if the objective is financial, there is more risk of loss of knowledge ; if the objective is related to a will of the customer, product, service, one will observe little loss of know-how. We buy know-how ".

Shrivastava, in his research of 1986, explains the various objectives of a merger : to increase the market share of a product, to reduce competition, to stimulate the purchases, to acquire a technology, to grow fastly, to exploit multiple synergies. It stresses that according to the objective and the motivation, the adequate type of integration will not be the same one. In the case of ETO, it is a question of exploiting multiple synergies and complementary competences in order to increase the market shares in the long term. The objective of the merger was not financial (realization of a short-term profit) but related to the will to better answer to customers.

3.1.2. Characterization of the knowledge within ETO

ETO activity is centered on direct marketing, which implies a considerable mass of information and knowledge circulating within the organization. With the ETO-Basalt merger, the mass of information and knowledge to be swapped made only grow. Like points out it the HRD : " Before the merger, there was no information diffusion and it is because people took part in this merger operation that information began to be exchanged ". The problems of information availability, its actualization and its localization are completely accurate for this firm. Knowledge conveyed within ETO is primarily tacit ; it's procedural knowledge and knowledge of judgement They are regarded as specific knowledge and know-how including customer knowledge (needs), beliefs and organizational culture ...

From the point of view of the merger integration, the activities of the both firms (ETO and Basalt) are complementary what makes it possible to avoid the doubled competences. As the ETO director stresses it : " Problems linked to doubled functions don't exist. Even if there are two sales managers for example, one specializes more in the prospection and the other, more in customer loyalty ". Thus, the firms have different competences and knowledge bases, which will enable them to grow rich mutually, while having a common activity (direct marketing) which forms a base facilitating mutual understanding. ETO and Basalt have the same customers and develop together many mechanics of consumer loyalty and other tools of CRM. The management of Basalt was participative as that of ETO but the profiles of the people working in this firm were different since they are related to data processing. It is in the existence of these specificities that the creation of knowledge takes its origins. As von Krogh and Roos (1996) explain, it is the diversity of the preexistent knowledge bases (technicality for Basalt and creativity for ETO) which allow the creation of new knowledge.

However, the literature points out the need for a similarity between the participants if they wish to capitalize their knowledge, while showing that it is the diversity and the complementarity which allow mutual enrichment (Sargis Roussel, 2002). For Darr *and al.* (2000), the similarity between the organizations increases their will to share assets or knowledge ; the information diffusion is more frequent in organizations with a similar history which is characterized through three dimensions : strategy, customers and geography. We find these three common dimensions at ETO and Basalt, as we stressed before : a common strategy of customer satisfaction based on a participative management, the same customers and a common geographical sector. In synthesis, ETO sales manager speaks about "competences melting pot ".

Various researchers and consultants (Cabrera and Cabrera, 2002 ; Davenport *and al.*, 1998 ; Davenport and Prusak, 1998 ; Gupta and Govindarajan, 2000) stressed that to create a culture which develops creativity, continual improvement and ideas sharing is necessary for the success of the knowledge management initiatives.

3.1.3. A participative management of the merger

ETO and Basalt always had participative management based on two axes which are the priority to communication and little hierarchy.

Whatever the reasons of the organizational changes that ETO knows, the firm encourages communication as vector of change management. Thus, in the merger with Basalt, first of all there

was the organization of a meeting with all the employees, and regular communications to answer employees questions. As Shrivastava (1986) stresses it, the communication is a means of retaining key people. An adequate communication facilitates the construction of a common vision and knowledge sharing within the entity lately created as Connolly and Klein (2002, p.20) illustrate it: " The new organization's management must encourages relationship building, which includes allowing employees to meet with each other early one, to build trust and foster a sense of belonging to " one company " with a common mission and vision ". Hodge (1998) stresses the importance of the vision in the merger success. This one makes it possible to recognize and assimilate the capacities and knowledge brought by each partner.

After the merger, frequent meetings occurred : every week meetings of planning and twice a year general briefing. Communication is very important to ETO. The firm disseminates the clearest and most precise possible information quickly. This participative management help to listen employees and is linked to human resources management. Thus, the HRD is regarded as one of the pillars of the firm by the direction ; even at its beginnings, there was a HRD. This one had a significant role of listening during the merger operation. It is an enough significant fact to be noticed because the HRD is too often missing from knowledge management whereas they have a real contribution to bring (Deltour *and al.*, 2002).

Participative management is characterized by little hierarchy : the employees who work at ETO do not wish to leave because they are feeling well, which results in a very weak turn-over rate during merger into comparison to corresponding operations in other firms. The hierarchy is not very present and the employees are invited to express their ideas and opinions. They have really the impression to take part in the development of their firm what makes it possible to preserve the know-how held by the firm. The population is young and dynamic. The buildings are opened, the meetings are done in open spaces. It reigns a specific atmosphere that the passive observation during the data collection makes it possible to feel.

3.1.4. Heterogeneity of the experts communities

In a general way, there is a high competences turn-over at ETO. Employees do not remain more than 6 years in the same activity. Indeed, beyond this period, it would be much harder for an employee to change function (development of inertia, resistance to change). It seems that the added value of an employee is obtained between the second and the sixth year. Passed to this period, the person realizes a competence assessment and changes activity according to its ability. Know-how

sharing between people is thus encouraged. That makes it possible to avoid losses of knowledge related to staff departures. Each one is holder of the organizational culture and know-how. Moreover, that supports the development of a sharing culture and the diffusion of organizational culture.

Within the specific framework of the merger, the firm set up heterogeneous working groups including the personnel of the both firms, which mixes the services, the functions and knowledge so as to facilitate the exchanges and the different points of view. Thomas *and al.* (2001) stress the need for using organizational experts communities, decentralized and heterogeneous, to facilitate knowledge creation and diffusion.

3.2. Discussion and limits

In this second section, we will consider the operational implementation of the merger set up by ETO in the light of Shrivastava integration model and we will stress the contributions to knowledge management.

3.2.1. Procedural integration

Procedural integration was carried out at ETO primarily through the pooling of ETO and Basalt information systems making it possible to manage all of the customers data. These data bases represent the centralized memories of ETO. They are updated regularly and are essential to the correct operation of the firm which can answer in a more precise way to its customers. Declaratory and procedural individual knowledge held by the staff is shared during procedural integration and allows the development of the organizational memory of the new entity, on the basis of ICT use. The ICT make it possible to update organizational memory via Intranet (newsletter, electronic mail).

The role of ICT in knowledge management starts to be well known in the literature. Thomas *and al.* (2001) show that tacit and explicit organizational knowledge can be stored electronically. Certain sophisticated systems can be higher than certain aspects of human organizational memory. However, the strategic value of the electronic organizational memory depends on how it will be used thereafter. Tacit or procedural knowledge can also be transferred by the medias. In a merger, this role is not confined any more to support knowledge management but constitutes really one of the keys of the success of integration and consequently of the operation.

3.2.2. Physical integration

Physical integration can be defined as resources allocation and assets redeployment. It relates to the reassignment of the buildings as well as the redeployment of the in-house staff in an objective to support knowledge diffusion and sharing. For ETO where the culture is primarily oral, this phase of physical integration is essential. It concentrates on a very rich policy of communication as we described previously. A privileged place is granted to oral communication. ETO tried to set up tools to support know-how diffusion. Working groups mixing people from both firms make it possible to facilitate these exchanges and contributes to the participative characteristic of the merger. The regular meetings help the exchanges between people. On the level of the physical reorganization of the buildings, integration was facilitated because, before even the merger, ETO and Basalt were partially in the same building. Actors changed offices almost every month. The merger between ETO and Basalt thus accelerated the physical integration of the teams by supporting the emergence of procedural and declaratory organizational knowledge.

3.2.3. Sociocultural and managerial integration

Even if ETO and Basalt have a cultural and managerial common base, there are differences, sources of mutual enrichment, that it is necessary to integrate in order to be able to build a strategic vision and a common culture to the new entity. We can base ourselves on the definition of the culture mobilized by Harris (1994, p.309) : " Generally defined as the shared beliefs, values and assumptions that guide sensemaking and action in organizations (Ott, 1989), organizational culture encompasses both individual and group-level phenomena ". This organizational culture is constructed by the work of the heterogeneous experts communities who allow to swap and to build knowledge of judgement, on individual and collective levels. Thus, Hodge (1998, p.19) stresses that : " Successfully merging organizations take a pragmatic approach to the alignment of all the pieces. They chart a clear path by determining how best to integrate their structures, processes, systems and - most important - their cultures. They then bring all these ingredients into alignment with the vision ". It is thus the construction of a vision and a leadership which allow sociocultural and managerial integration.

The following table synthesizes the various elements of the knowledge management with the three levels of merger integration.

Table 3. Knowledge management through the three levels of integration in the case of ETO

	Knowledge management	Objectives	Implementation to ETO
Procedural	Design knowledge management tools (shared data bases)	Create an organizational knowledge	Customers data bases (ICT)
Physical	Encourage knowledge sharing	Share individual knowledge from both firms	Communication policy Common working groups
Sociocultural and managerial	Develop exchange culture, to motivate Establish roles of integrator	Create common culture and vision which facilitate knowledge diffusion	Heterogeneous experts communities

These three modes of integration not only make it possible to preserve the loss of knowledge and competences at the time of the merger but they support, in addition, organizational knowledge creation. The three procedures of integration are supported by a participative management and a hierarchy not very present which make it possible to create a friendly climate.

Conclusion

The majority of the reorganization operations as the merger involve the departure of collaborators and thus a crumbling of the organizational memory through knowledge losses. To manage knowledge and thus to preserve organizational memory, one needs a recognition of the individuals, their interactions and a regular update of the centralized memories, which is made through the three adapted levels of integration (Shrivastava, 1986). Procedural, physical and sociocultural integrations allow a better knowledge management within the framework of a merger while being based on an adequate communication, ICT, physical and functional reorganization and finally heterogeneous experts communities. These various procedures are strengthened as much than a style of participative management contributes to mobilize energies in the process, by implying the actors in the project definition.

Beyond these organizational aspects of implementation, one should not neglect the initial objective of merger. Indeed, it appears that a merger moved by a strategic and organizational aim as it is the case of ETO (customer satisfaction and complementarity of the activities) encounters less difficulties in the realization of its integration, contrary to a merger moved by a purely financial objective.

The answers brought to our research question, namely which factors support the knowledge management in a merger, inevitably suffer from the inherent limits in research methodology and

the single case study. However, this research contribute to improve our understanding of knowledge management within the framework of a merger.

We wish that the few organizational principles and operational commitments brought in comparison with the case study will find echo in the professional practices. Shrivastava (1986) stressed already, soon 20 years ago, all the attention which it was necessary to give to the postmerger management and it seems that this question is always accurate and at the origins of failures.

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