INFORMATION SYSTEMS INTEGRATION DURING MERGERS: INTEGRATION MODES TYPOLOGY AND INTEGRATION PATHS

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Keywords: Information system, integration, mergers, acquisitions.

Abstract: Today Information Systems (IS) integration constitutes one of the major success factors of mergers and acquisitions. This article draws on two case studies of firms having realized more than 10 mergers and acquisitions between 1990 and 2000. This paper shows the importance of carrying out an approach to understand IS integration process. This approach represents the necessity of using organizational configuration to define possible IS integration modes. Thus we show the importance of organizational, strategic and technological contingencies within the elaboration of integration mode.

1 INTRODUCTION

Currently, mergers and acquisitions are increasing in numbers and values. The carrying out of mergers and acquisitions result in an economic and organizationnal failure for more than 50% of mergers (Cartwright & Cooper 1993 ; McKinsey 2000 ; Mercer Consulting 2001). The reasons for explaining mergers failures have been largely put forward and acknowledged. Strategic fit, although necessary, is not enough to realize expected synergy. Informational, cultural and human aspects are now more and more evoked to account for the result (Marks 1982 ; Shrivastava 1986 ; Buono, Bowditch & Lewis 1988 ; Schweiger & Weber 1989 ; Schweiger & Walsh 1990). It is now largely established that a major part of mergers failures can be explain by difficulties with methods, management processes and information systems (IS) integration.

Then, once the merger or acquisition made official, integration process is the true key to the success of this project (Haspelagh et Jemison 1991, Shrivastava 1986). The 2001 Mercer Consulting study, about 159 transatlantic mergers between 1994 and 1999, mentions five central factors for the post-merger integration. In addition to the importance of human ressources and business preservation problems, the need to integrate information systems seems to be on of the main issues to settle in order to achieve general post-merger integration.

"At the level of mergers, information systems integration is an organisationnal and technical issue largely underestimated. It's not a matter of administration detail but rather that of a key success factor considering the way firms are operating today" as informed a listed big French company CEO (dec 2004). Hence, the particular integration of information systems plays a crucial role in the integration process. Nevertheless the failures regarding information systems are numerous and have serious effects on the operating and financial results of merged firms. Information system management and its staff are usually pushed aside from negociation and assessment of the target firm (Walton 1989).

Consequently, these actors and managers are in charge of settling all the merging incompatibilities only at the beginning of the integration process, which generates several malfunctioning and blocking situation: one of the argument used to counteract the merger between Société Générale and Paribas (two French banks) was the time necessary to integrate the information systems. At Axa, in 2000, then three years after the merger with UAP, we rated that information systems merger had just been finished and had overcost the expected amounts. At Total-Fina-Elf, six months after the

merger, one of the source of staff demotivation lies in the difficulties in information exchanges (data, mail, ...). This prevented a well functioning of the firm. The human factor is also often alluded to as a problematic point. At Aventis, an executive tells that the delay in the achievement of the information system integration schedule was due to the fact that it took 47 work council meetings to have the integration project accepted. All these examples lead one to wonder about the IS integration modes and their implementation.

Nevertheless, literature on mergers and acquisitions focuses primarily on financial aspects of the acquisition process, the culture and communication issues (Mirvis & Marks 1992), the different general integration strategies (Haspelagh & Jemison 1991) or also on the analysis of the general organisational and strategic fit between merger firms (Jemison & Sitkin 1986). If the latter research benefits are fundamental to perceive and understand the post-merger integration process in general, they call for other specific researches regarding post-mergers integration of IS. But, when IS integration is dealt with, it remains mentioned only in professional and industrial journals, where it focuses on technical aspects of integration and deals them apart from strategic and organizational contingencies (Rubin 1992). In this literature, integration issues are usually considered as technical incompatibilities (Rosenberg 1987 ; Johnson 1989 ; Kubilus 1991).

Recent research provides us with elements on post-merger information systems integration issues. Part of this research gives priority to a technological and computer approach of the IS integration process (Giacommazzi, Panella et Pernici 1997, Pareek 2004), by proposing a classification which considers the final configuration of the applications (software) and the final configuration of the architecture of the new IS. Another part of the research seeks to identify key factors of success relative to the process (Stylianou, Robbins, Jeffries 1996, Stylianou Robbins 1999). These authors have developped a research model explaining the variables that determine the success of the IS integration process during mergers and acquisitions as well as variables which enable to measure this success. Another approach consists in examining the role of information systems in merger and acquisition process (Stylianou et Robbins 1999, McKiernan Merali 1995, Alaranta 2004). This work shows that IS function has a reactive or a proactive role in mergers and acquisitions, and asks the question of IS strategic planning regarding merger process seen as

a whole and integration process in particular. If the latter research applies to determining variables of the IS integration process and their key factors of success, nowhere can we see studies about the process in progress as such.

Hence, the aim of this article is to provide a description and a model of the IS post-merger integration process from a holistic point of view, that is to seek which are the possible IS integration modes and how are they implemented in merged companies.

2 CHARACTERIZATION OF IS INTEGRATION PROCESS: ANALYSES FRAMEWORK

IS post-merger integration consists of two complementary and sequential aspects that we should consider together in order to propose a characterization of the process: the first one concerns possible integration modes, the second one deal with the implementation of the chosen integration mode. Then, in this research, we define IS integration process as an integration mode choice and as an implementation of the chosen integration mode in a same time.

We examine the IS integration process through the theory of fit, enabling us to take into account technological, orgnizational and strategic dimensions in a congruent perspective (Buck Lew, Wardle and Pliskin 1992). If we want to try and understand how the (emerging or deliberate) choice of the IS integration mode is made, three dimensions must be integrated by firms into their integration vision: a business strategy dimension, an organizational dimension and an information technology dimension.

Walton (1989) makes clear that "it's essential for a firm to incorporate these three perspectives into a single vision and to consider each of these perspectives during the merger process". This type of gestalt fit gives opportunity to supply with ideal profile so as to better comprehend choices of IS integration modes and to be able to build up a multidimensional analysis frame. Then, we select a fit configurational approach drawn from organizational theories literature. We try to apply and adapt it in order to analyse IS in mergers and acquisitions contexts.

From this angle, organization tries to maintain the consistency of its gestalt and, among acquisitions, this maintaining attempt is diluted because of the number of firms involved. Although rarely used and capitalized in IS research (Iivari 1992), this fit configurational approach is considered as the most appropriate way to analyse complex organizations (Van de Ven & Drazin 1985 ; Miller 1987 ; Meyer & al 1993), which is perfectly the case of mergers and acquisitions. Thus, merged firms must choose and implement an IS integration process allowing them to make consistent their organizational, strategic and technological configuration. This compatibility of these three dimensions, as we showed previously, should be understood and examined as a single vision (Walton 1989 ; Weber et Pliskin 1996). So, the configurational approach leads us to keep as a theoretical framework the MIT works (Scott Morton 1991).
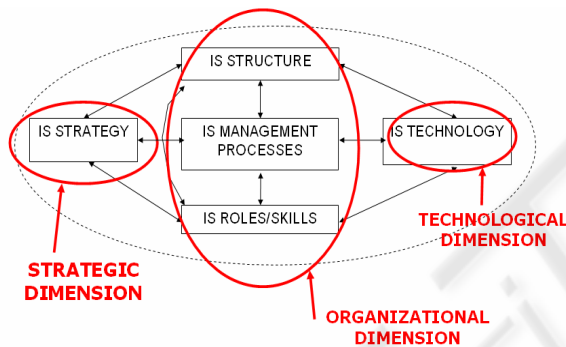

Figure A: Analysis framework from MIT works (Scott Morton 1991).

The term "configuration" is usually employed in computer science in a technological perspective, considering that it constitutes a type profile of equipement and software designed for a predefined and definite use. In our analysis framework, "IS configuration" designates a configurational representation of the IS dimension. This IS configuration includes structural contingencies, management processes and roles of people and actors belonging to or users of IS function in the organization. This cares for both organization (structure and roles definition), technology, strategy and above all the importance of actors (employees, managers, consultants) in a reactive and proactive dimension, makes it possible to present a theoretical analysis framework of IS configuration of integration process during the merger, and to understand the already or emerge integration choices according to compatibilies or incompatibilities

between the firm's IS involved. We postulate indeed that the existing or no compatibility between the two firms IS involved in merger results from the similarities of their respective IS configurations.

3 METHODOLOGY AND CASE PRESENTATION

3.1 Methodology

The chosen method to construct cases is that of retrospective stories. We chose a technique close to Yin's (1990) to reconstruct IS integration and mergers stories. The latter calls for primary data as main data source (interviews in total with many varied actors from 2002 to 2005) and secondary data to complete it (internal documents, records, press). We chose to carry out a process analysis by exploring IS integration process development phases.

3.2 Data and Results

3.2.1 Data

Our work relies on the analysis of two big French companies specialized in real estate construction industry which both engaged in mergers and acquisitions between 1990 and 2004 (10 in total). These cases recount IS integration process stories among both studied mergers. This choice is based, on the one hand, the will to make comparable regularities emerge in different post-mergers IS integration situations and, on the other hand, the wish to determine the similarities and divergences between the different studied cases as to elaborate a generic model putting emphasis on behaviour patterns adopted within the IS integration process.

3.2.2 Results

The two firms examined, MFC and Geoxia, work in a fragmented industry. This triggered off external growth wave which allowed these two firms to buy up their business rivals. Geoxia started to apply this policy from the early 90's, that is, in the middle of the industry crisis in order to reach the critical size and continued it up to now. MFC has launched in acquisitions after its finance listing at the Paris stock exchange in july 2000. So, the two groups have competing acquisitions policies during the same periods (2000-2005).

MFC acquisitions serve a market strategy, i.e. an increase in profitability, market shares and economies of scales. Concerning IS function, the strategic aim is clear: cost rationalization and reduction. MFC adopts a steady integration mode and applied in a uniform manner for each acquisition : MFC information system is applied to the acquired firm in order to establish a centralized control and to improve the financial situation. IS configurations of MFC and other acquired firms are very far away from each other in terms of technology, management process, structure and culture. We sum up these operations characteristics in the following table 1.

Table 1: Mergers and acquisitions realized by the two groups between 1990 and 2004.

Acquisition Date	Purchaser	Acquired
07/2000	MFC	OCR
06/2001	MFC	Berval
07/2002	MFC	GHPA
07/2003	MFC	Bruno Petit
10/2004	MFC	Horizons
12/1989	GEOXIA	H-France
03/1991	GEOXIA	MFamiliales
10/1992	GEOXIA	MBouygues
02/2002	GEOXIA	DCA
04/2002	GEOXIA	Stylgit

Geoxia group begins its purchasing policy in following a market strategy as well. Geoxia configurations and those of its first acquisitions are quite similar: same structure, same management process, close technologies. Contrary to MFC, Geoxia experiences an integration mode based on setting up a simple link between technologies and conversion procedures. The merged firms IS are kept as they are and must cohabit. Then, Geoxia is aiming at the cheapest IS integration in an industry crisis context.

The merger with Maisons Bouygues in 1992 marks a change of integration mode. Their IS configurations are incompatible due to the structures in place, the formalization level, the technologies employed and the different cultures in the computer departments. In addition, this merger aims at other strategic goals based on synergies seeking and a market leader group identity creation leading to value creation for customers and shareholders. This results in an integration which finds expression in a radical overhaul of IS. It takes three years for the new set to take shape. Business processes are rethought, structures are modified, previous systems are given up to the benefit of a new architecture.

New IS will act as an integration catalyst during the last group acquisitions in the 2000's.

New integration mode: since its new IS implementation at the end of 1999, Geoxia holds an atypical configuration compared with other market actors, which remain less formalized, less structured and technologically less equiped. The studied IS configurations are witnessing strong incompatibilities, coupled with an integration strategy turned to integration cost cutting and rationalization. IS integration mode corresponds to absorption: Geoxia IS is applied to acquired firms. Geoxia relies on its IS to accelerate the general integration phase: better financial consolidation, building sites management centralization, accelerated reporting, ... Thus, in the space of 14 merging years, three integration modes have succeeded as regards IS.

4 DISCUSSION

4.1 An Emerging IS Integration Modes Typology

Exploration of these firms, having each experienced more than 5 mergers during a long period, enable us to propose a typology presenting several combinations within a matrix built up on two axes : the degree of IS configurations compatibility, and the strategic goals assigned to IS function.

Overhaul. In incompatible IS configurations cases, overhaul process constitutes the hardest process to implement. It requires management process reconstruction of each firm to integrate, architecture and IS structures conception, an overhaul of technological elements. This process led by Geoxia illustrates the organization will to create synergies and value in spite of initial disparities presented by each firm IS configuration. However, a major risk is inherent in this approach : attempting to adopt individual components stemming from each of the present configuration, and trying to merge them into a new configuration may lead to failure because of the discrepancy inside entities interdependents components to integrate and because of the discrepancy between the two underlying organization schemes.
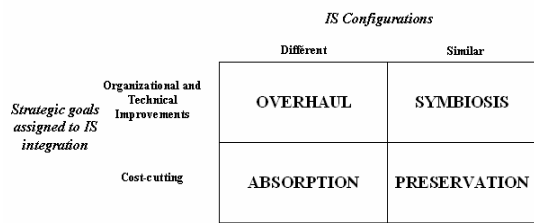
Figure 1: IS integration modes typology.

Absorption. Resolving different IS incompatibility occurs through an absorption process as well. So, integration issue is largely simplified to the extent that one configuration absorbs the other one. Present risks in the overhaul process are strongly reduced making migration the preferred process in an incompatibility context (process immediately chosen by MFC from 2000 at the time of its acquisitions, then by Geoxia in 2002 to make its new IS pay). Neverthless other risks of different kinds are emerging : risks of destroying acquired firm initial value, change reluctance, no-acknowledgement of acquired firm IS specificities.

Symbiosis. In the case of IS configurations compatibility synergies can be achieved more easily. The symbiosis process appears to be as the process to be preferred to take advantage IS configurations proximities offered by the connection established between the firms. Here IS acts as a synergies catalyst and makes it possible to turn strategy to value. Firms examined here didn't allow us to observe such a case.

Preservation. In the case where goals declared by the acquired firm depend upon cost-rationalization or cutting, preservation process permits to answer positively to this situation. Indeed, configurations compatibility allows the possibility to minimize integration costs and to establish a minimal technological, structural and organizational coherence in the merger of the two firms concerned (Geoxia case). Basic technical or procedural links are then set up (two front offices, two back offices) in order to fulfil these objectives.

The longitudinal study of these two groups reveals several integration paths leading from one mode to another one. We strive to identify and explain them.

Path n°1: A strategy change turn toward integration to symbiosis. Merged firms make the most of their configurational compatibilities in order to generate value and synergies
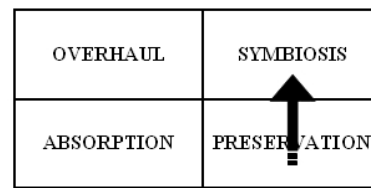

Figure 2: Path n°1.

Path n°2: Merged companies configurational compatibility moves with time to an incompatibility due to technological initiatives, process changes or structures done separetly by firms. The Geoxia case from 1993 illustrates this transition. The sliding move to these configurations and the change in strategy decided by the new management enforced in 1994 explain the IS overhaul giving a new character to integration process.
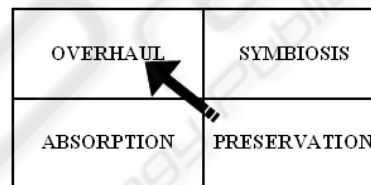

Figure 3: Path n°2.

Path n°3: Same sliding move as for path n°2, but the strategy assigned to IS remains focused on observed when purchaser and acquired firm have similar configurations. The fact that the acquired firm commits to a change in its IS (for instance an ERP implementation) leads to an automatic alignement of the acquired firm's configuration.
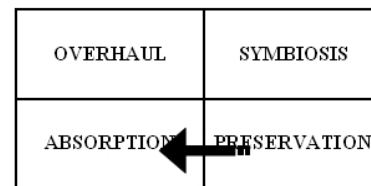

Figure 4: Path n°3.

Path n°4: Purchaser strategy is modified in order to make the investments undertaken in IS overhaul pay. The latter is then assessed as an integration catalyst. The new acquisitions whose configuration is close to that of the purchaser find themselves forced to apply purchaser IS in the perspective of "copy-pasting" style. Integration process led by Geoxia between 1999 and 2002 follows this path.
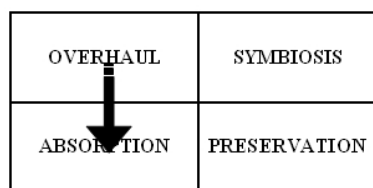
Figure 5: Path n°4.

5 CONCLUSION

Our research doesn't focus on the integration failures reasons. It aims to offer an understanding of the construction, implementation and issues related to IS integration process by integrating strategic, organizational and technological contingencies. So this research aims to make clear which integration type should be set up related to the IS getting merged, and to define the pooling of the different IS during this integration process. Similarly, this research is about the degrees of this integration and the actors characterization, their role in the participation in the process as well as the interactions between the same actors.

We carried out two case-studies reflecting different IS integration process approaches. We considered temporality each of these actions and their intervention levels in the process. The research results enable us to identify the determinants of the possible IS integration modes. We suggest an approach insisting on contingencies leading to absorption, preservation, symbiosis and overhaul modes. For this purpose, we put forward the necessity to take into account a vision based on organizational, strategic and technological levels. So configurational approach allows to show the importance of fit between two merged firms within the IS integration process. This fit between these 3 levels makes it possible to understand IS integration process and to characterize it according to two perspectives : chosen or emergent integration mode and dynamics implementation of this mode.

If mergers and acquisitions are two of the main focuses of media attention at the announcement time, they constitute operations hard to study due to their strategic and confidential nature, namely at the integration phase. In order to consolidate our results, we advocate to extend our study field to other firms belonging to different industry sectors. This perspective would permit to refine our analysis and more particulary one integration mode (symbiosis) that we couldn't observe in our field and which

remains a theoritical conclusion in our research. Similarly, it ought to enhance the possible complementarities between the two dynamics noticed in our study in other case studies.

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