



Social dimension in ERP adoption and implementation

The evolution of Organizational Identity after an M&A

Luigi De Bernardis

CeRSI, LUISS Guido Carli University, Rome, Italy

Abstract

Purpose – The purpose of this study is to illustrate how the adoption of new enterprise resource planning (ERP) systems affects sensemaking in the process of Organizational Identity (OI) integration after a Merger and Acquisition (M&A).

Design/methodology/approach – Within a wider case study about an acquisition in chemical/pharmaceutical industry, the paper describes the effects of SAP adoption and implementation on the organizational identity. This methodology, based on semi-structured interviews to project leaders and to team members, has allowed a deep comprehension of the context, even if results cannot provide statistical evidence of relationships.

Findings – Using the Swanson and Ramiller's approach to innovation, the paper argues that ERP adoption and implementation support sensemaking process if innovation takes place with mindfulness and because, in that case, people interact on symbolic meanings sharing retrospective knowledge and cognitive causal maps. After an M&A there are conditions for a mindful innovation with IT and therefore innovating with IT can be an effective way to enforce sensemaking process and, as a consequence, to influence the Organizational Identity evolution. In a constructionist approach, the evolution of organizational identity requires a social negotiation among members where sensemaking has a primary role. So, the integration process following acquisitions can be facilitated by adopting, implementing and assimilating common IT solutions with mindfulness.

Research limitations/implications – The first limitation of this study is referred to timing. The author entered into the company within a year after the acquisition and went out at the beginning of SAP assimilation phase. Therefore, some perceptions could still evolve in different ways. The second limitation depends on the fact that the author analyzed a single case. By focusing on one case of acquisition – an acquisition that gives value to acquired company – the author might be limiting the transferability of the findings.

Practical implications – These results can be useful for both scholars and practitioners. Managers who face organizational change can consider the adoption and implementation of ERP as an opportunity to influence the evolution of Organizational Identity according to strategic priorities.

Originality/value – The value of this study is in its approach that links a strategic level (the new organizational identity expected by managers) with a social level (the new organizational identity that comes from interaction among people). This link is realized not using the ERP as an artefact but using the process of its adoption and implementation.

Keywords Organizational identity, Sensemaking, IT adoption, Acquisitions and mergers, Information technology, Organizational change

Paper type Case study



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Theoretical background

In this study, we try to explain how an enterprise resource planning (ERP) implementation project can support the effectiveness of a sensemaking process after an acquisition. In this section, after a review of merger and acquisition (M&A) literature focused on cultural aspects, we analyze studies on ERP implementation trying to understand its role in supporting organizational change.

Many studies consider M&As as synonymous even if there are differences in normative regulation and in accounting. From a strategic and organizational point of view, these differences have a lower relevance. While in a “merger” two or more firms are joined in order to “create” a new entity, an acquisition is the result of a take-over. According to Cartwright and Cooper (1996) there are three typologies of take-over (friendly, debated or hostile) depending on the level of conflict between bidder and target firms. When the focus of the study is on the integration process following the M&A, it is possible to consider M&A in the same way because the phases of the integration process are similar (Hussey, 1999). M&As have been studied by financial, strategic and organizational scholars with different goals and points of view. Financial researchers have examined returns to acquirers and targets and are interested in the market for corporate control: if a present management team underperforms, then a more competent team takes its place (Manne, 1965; Jensen and Ruback, 1983). There is empirical evidence that there are positive gains (most of which as advantage for acquired firm) from the combination of the acquiring and acquired firms’ assets. Most of these financial studies are focused on the performance of corporate acquisitions. Even if conclusions are heterogeneous (for instance about the definition of performance or its measurement), evidence shows a positive returns for stockholders of the acquired firms and no acquirers’ abnormal returns. Scholars agree about the average of value created, not about the explanation of the variance around the mean. Some authors argued that average abnormal returns to the acquiring firm are zero (Jarrell *et al.*, 1988; Franks *et al.*, 1991; Loderer and Martin, 1992; Shleifer and Vishny, 1994; Agrawal and Jaffe, 2000) or negative (Agrawal *et al.*, 1992). Scholars in the field of strategic management analyzed M&A as linked to diversification of business portfolio (Ansoff *et al.*, 1971; Walter and Barney, 1990). Other studies are focused on market share as target of M&A decisions (Ravenscraft and Scherer, 1987). Strategic researchers have used the resource-based view of the firm (Wernerfelt, 1984; Rumelt, 1984; Barney, 1988; Dierickx and Cool, 1989) to verify the impact of resource relatedness on performance (Chatterjee, 1986; Singh and Montgomery, 1987; Lubatkin, 1987; Shelton, 1988; Healy *et al.*, 1992; Chatterjee *et al.*, 1992). Their results suggest that there are no clear relationships between resource relatedness and performance. Organizational studies analyzed psychological effects (Asrtachan, 1990; Marks, 1982), communication (Sweiger and Denisi, 1991; Sinetar, 1981) and HR development (Hambrick and Cannella, 1993; Walsh, 1988). An M&A re-defines the psychological contract between people and organization and generates cares about job security and future (Hubbard and Purcell, 2001). An early involvement of HR management with a task of human due diligence has been underlined (Hardling and Rouse, 2007) and some authors have identified the phases in which HR involvement is important (Antila, 2006). Some studies have analyzed the fit between HR management and strategy and identified a “double fit”: a horizontal fit among HR tools and a vertical fit between HR tools and strategy (Youndt *et al.*, 1996; Delery and Doty, 1996). For these reasons, a strategic scenario following an M&A could be considered

as an alignment problem. In innovative industry M&A could be a strategic way to achieve innovation and a solution for the reducing life cycle of products (an example is CISCO that did 62 acquisitions). In these contexts retention policy and talent management are the main people issues (Aguilera and Dencker, 2004). Most of these studies are focused on *ex post* performances. In order to analyze the organizational identity evolution, studies about the post-merger integration seem to be more useful.

Even if ambiguity about organizational identity begins before the date of merger, its evolution pertains the cultural side of integration process that takes place after the merger. Therefore, in this paragraph I focus on the strategies of management of the integration process following the merger or the acquisitions. These studies (about integration process) use both strategic and organizational approach (Pablo, 1994). In these approaches, the success of mergers is linked with the concept of relatedness among business in order to obtain sameness economies (common management of same activities) and fitness economies (complementarity in other resources). Relatedness has three degree of intensity: constrained (the same set of resources), linked (different but related resources) and unrelated (Rumelt, 1984). The success of post-merger integration process depends on the capability to manage the tradeoff between level of integration and the disruption of acquired firm's resources (Zollo and Singh, 2004). Shared activities can be a source of competitive advantage if the combined resources are relevant in value chains of merged companies (Porter and Millar, 2001). Other studies underline the risk of cost of coordination post-merger that can arise if the merger was not accurately planned (Porter, 1987). Relatedness has been analyzed not only from this point of view. Organizational variables like leadership, culture, evaluation systems have been studied (Chatterjee *et al.*, 1992). A critical view to relatedness came from resource-based view scholars. They argued that companies have to share related resources but also valuable, rare, inimitable and not substitutable (Barney, 1998). In this approach M&A are the way (for the bidder company) to achieve idiosyncratic resources. Among several sources of competitive advantage, many M&A researchers have argued that acquisition failures depends on the problems of combining the different cultures during the integration process. Opportunities for inter-unit learning can be lost if different organizational values and practices in the merging organizations cause an "us vs them" war among the employees (Cartwright and Cooper, 1996). In cross border M&A problems can be higher for language problems, different legal systems and national cultural barriers (Vaara, 2003; Aguilera and Dencker, 2004; Shimizu *et al.*, 2004). Not all empirical findings about the effects of cultural differences on post-acquisition integration have the same results. A positive relationship between cultural differences and performance post-integration has sometimes been reported (Weber *et al.*, 1996; Larsson and Risberg, 1998; Morosini *et al.*, 1998). A recent analysis of previous research (Stahl and Voigt, 2008) suggests that cultural differences account for only a small proportion of the variance in post-acquisition integration outcomes. According to Vaara *et al.*, the mechanisms through which cultural differences affect the transfer of the merging companies' capabilities and destroy or create value in acquisitions is related to "social integration" and "potential absorptive capacity" both mediated by two dynamic variables (the use of social integration mechanisms and the degree of operational integration of acquired unit). They started with a focus on acquirer-target cultural differences, which encompass differences in beliefs, values, and practices between the combining organizations or units (Vaara *et al.*, 2007).

Also according to Zollo and Singh (2004), the level of integration has a significant effect on performance while replacing top management has negative effects on it. The level of integration is defined according to Thompson (1967) as “the extent to which the functions of acquired unit are linked to, aligned with, or centralized in, the equivalent function of the acquiring organization”. Evidence of positive relationship between performance and level of integration (in terms of resources redeployment and knowledge transfer) has been reported by Capron (1999). Recently, Kim and Finkelstein (2009) investigate in the context of all 2,204 acquisitions made by publicly traded US commercial banks during the 12-year period from 1989 to 2001 and found that complementarity is an important antecedent of acquisition performance. Many authors argued that the degree of acquired firm’s top managers replace has effects on integration process’ success. Hambrick and Cannella (1993) found evidence of a negative relationship between top managers turn over and performance. Studies about the role of the experience in M&A have ambiguous results finding a positive relationship (Bruton *et al.*, 1994), no relationship (Baum and Ginsberg, 1997) or a U-shaped relationship (Gick and Holyoak, 1987). Zollo and Singh proposed a knowledge-based perspective on managing acquisitions showing that:

[...] the lack of consistency in empirical tests of the learning curve hypothesis might be due to incomplete theoretical treatment of the underlying organizational learning processes, rather than to anomalies of the M&A context or broader unobserved heterogeneity.

They found that the level of knowledge codification has a strong and positive influence on acquisition performance. Firms can codify more or less knowledge (given a level codifiability for each business) and a high degree of codified knowledge helps learning process (Zollo and Singh, 2004).

In sum, we can say that performance of acquisition depends on capability to manage the integration process and that this capability is related to the following variables: cultural differences (evidence of negative effects), level of integration (evidence of positive effects), degree of managers replacement (evidence of negative effects at certain conditions), experience in dealing M&A (ambiguous evidence), knowledge codification (evidence of positive effects).

Among these variables, cultural differences are related to organizational identities existing in merging companies. Studies about organizational identity evolution underline the relevance of sensemaking process that follows an event and produces ambiguity (Ravasi and Schultz, 2006). Corley and Gioia defined identity ambiguity, as:

[...] a collective state wherein organization members found themselves without a good sense of who they were [...] or a sense of what the future held for them as an organization.

In their case study, new identity was the independent organization that arises during and after the spin-off. In their framework, the organizational identity change process describes how pre-spin-off identity becomes post-spin-off identity. It happens in three phases:

- (1) triggers of identity ambiguity;
- (2) identity change context; and
- (3) leaders’ responses to sensegiving imperative.

The central phase describes the way of transformation of an ambiguous situation in a sensegiving one (Corley and Gioia, 2004). In order to clarify the differences between

sensemaking and “sensegiving”, we need to define it, for example as: “the deliberate attempt to shape the interpretations of others” (Gioia and Chittipeddi, 1991). These authors proposed a framework to analyze strategic change initiation in a paper that reports an ethnographic study in a large public university. A four-phases process emerges from the study:

[. . .] whereby the CEO and top management team first tried to figure out and ascribe meaning to strategy relevant events, threats, opportunities, etc. and then to construct and disseminate a vision that stakeholders and constituents could be influenced to comprehend, accept, and act upon to initiate desire changes.

The four phases (envisioning, signaling, re-visioning and energizing) show that a sensegiving phase follows each sensemaking phase. In the first phase (envisioning), the new president collects information about the university that he was going to lead, in the second phase (signaling) the new president produced ambiguity and inspiring a positive vision for the future (became a top-ten university), in the third phase the president is “a vivid symbol for the change effort” and make sense of different realities of the university, in the last “energizing” phase a wider commitment for the strategic change take place and this is the moment when the initiation stage ends and change starts. Recently, the evolution of organizational identity after a merger has been defined as transitional identity (an interim sense held by members about what their organizations were becoming) (Clark *et al.*, 2010). Authors adopted a grounded theory approach to study the merger between two rival healthcare organizations. Their investigation revealed that the emergence of a transitional identity was critical to moving the change process forward. The transitional identity allowed suspending preexisting organizational identities and work toward creating a new identity. The transitional identity was ambiguous enough to allow multiple interpretations, but not so ambiguous as to be threateningly unfamiliar. This social process cannot be completely forced by management (sensegiving) because it takes place among people during social interaction (sensemaking). Nevertheless, managers can create favourable conditions and use tools in order to accelerate that process. Within an approach that considers IT as modern cultural artefacts, we studied the possibility to considerate their implementation as a way to lead sensemaking process.

The innovation process, that takes place with IT adoption and implementation, has been articulated in two steps (Rogers, 1995) and better specified in four phases: comprehension, adoption, implementation and assimilation (Swanson and Ramiller, 1997). In recent studies, authors analyze what happen when those phases are developed in a mindful way (Swanson and Ramiller, 2004). The concept of mindfulness has been analyzed referred to individual (Langer and Moldoveanu, 2000) and referred to organizations (Weick and Sutcliffe, 2000). Weick and Sutcliffe identify five attributes of mindfulness: preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience and reliance on expertise over formal authority. This concept of mindfulness has been analyzed by Swanson and Ramiller (2004) in its relationships with innovating with IT with a focus on how those attributes of mindfulness change. We argue that, among IT solutions, ERP's implementations emphasize social effects for reasons that we will analyze in this study. ERP systems are integrated systems that increase the integration between the functions of the company and support cooperation among groups, teamwork and knowledge sharing (Hammer, 1999). Since their early diffusion, ERP systems have been studied

with a professional approach. In a Benchmarking Partners (1998) study, companies declared to realize both tangible and intangible benefits from the implementation of those systems. From an academic point of view, scholars underline an unusually high failure rate and try to identify conditions with a positive relationship with project success (Hong and Kim, 2002). Authors examine the effects of organizational fit and implementation contingencies. Other studies have the same aim of identifying determinants of implementation success. For instance, the perception of CIOs has been studied and change management program and culture is among the most five critical factors in addition to top management support, project champion, ERP teamwork and composition and project management (Fui-Hoon Nah *et al.*, 2003). Different studies are focused on ERP adoption as determinant of other dependent variables, for instance, the effect on firm performance have been studied and it shows a significantly higher differential performance during the two years following the completion of the system than the control group of firms (Nicolaou and Bajor, 2011).

While these studies are focused on implementation success or implementation consequences, recently scholars analyzed social conditions related to a favourable organizational environment for implementation success. For instance, the effects of cultural dimensions on knowledge sharing capability (Jones *et al.*, 2006) and the effects of willingness to participate and commitment to learning on group cohesion (Wanga *et al.*, 2006) have been studied. Recently, Liu *et al.* (2011) highlight a potential relationship between individual level and organizational level ERP assimilations and the importance of individual level assimilation in the post-implementation phase. They revealed four key drivers: influence of supervisors, performance evaluation schemes, intrinsic motivation and perceived usefulness, as well as two significant moderators: job specifications and individual absorptive capacity. Among these cultural and social effects, some studies are more specifically focused on the organizational identity even if they deal generally IT and not ERP. These existing studies illustrate how new IT bring about changes in group identity (Walsham, 1998; Lamb and Davidson, 2005), and how existing identities can be challenged by new IT (Barrett and Walsham, 1999). More recently, how the established patterns of identity enactment and inter-organisational practices are influenced by the appropriation of new IT has been studied (Gal and Jensen, 2008). They underline the practice-based nature of organizational identity and the symbolic significance of IT, demonstrating that changes in identity are enacted as organizational practices and interaction patterns are transformed. This symbolic significance has a clear relationship with some aspects of sensemaking process but this analysis can be completed.

Research question

The literary review shows an effort to understand conditions for ERP implementation success and the relevance of change management capability. Nevertheless, while the relationships between information systems and organizational identity have been studied in recent years, the role of ERP implementation as a mean and not as a result received less attention. This gap has a higher interest in a context of change as M&A (where social and cultural aspects seem to be relevant) and when a social process as sensemaking is the object of research. In order to give a contribution in reducing this gap, this study is focused on the following research question:

RQ1. How ERP adoption and implementation contribute to sensemaking in organizational identity evolution process following an M&A?

Model

The aim to explain how ERP adoption and implementation contribute to sensemaking in organizational identity evolution process following an M&A has been achieved linking in a model three different concepts: ERP adoption and implementation, sensemaking in OI evolution and mindful innovation. In the following paragraphs, in the first step, we analyse how ERP adoption and implementation can affect sensemaking effectiveness. Then, we describe how a mindful innovation (based on Swanson and Ramiller's (2004) approach) is the condition for that effectiveness. These considerations are based on some ERP specificities as modern cultural artefacts but are focused on the implementation process more than on ERP as a product (Figure 1).

ERP adoption and implementation as a source of sensemaking

The concept of sensemaking has been analyzed as a process of continuous social negotiation (Weick, 1995). According to Weick (1995), sensemaking is "the act of constructing interpretations of ambiguous environmental stimuli". People need to reduce ambiguity and they socially look for a new equilibrium that is in continuous progress (Figure 2).

Justification: a symbolic linkage among single interacts and underlying pattern

Weick (2001) considers that sensemaking in organizations means "small structures with large consequences". In this sense, he elaborates the concept of "committed interpretation" that is also used in the process shown above. Committed actions can be justified as macro necessities that, if invoked as justifications, are materialized (Weick, 2001). Reification is the clearest aspect of linkage between micro events (interact) and macro entities that is the theoretical background of Weick's vision of sensemaking. This linkage can be helped by symbols that are "signs connected to meanings". A classification of verbal tools to invest experience to meaning uses three categories: labels, metaphors and platitudes (Czarniawska Jeorges, 1992). These symbols become

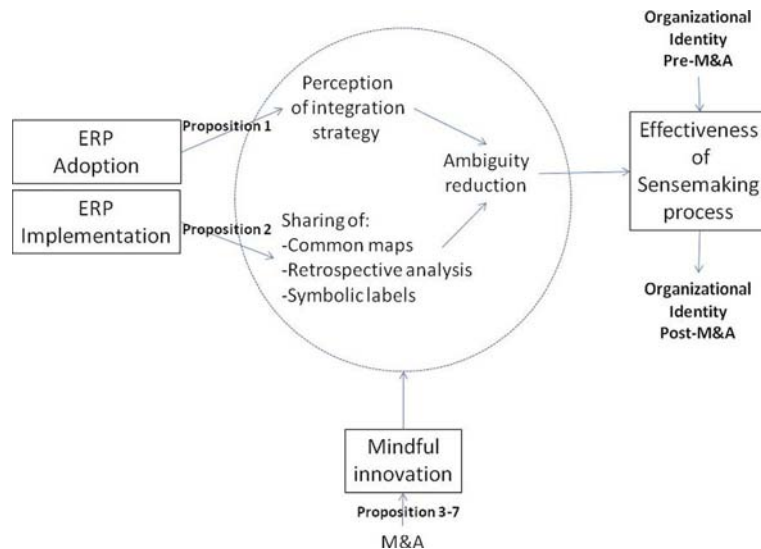


Figure 1.
The model

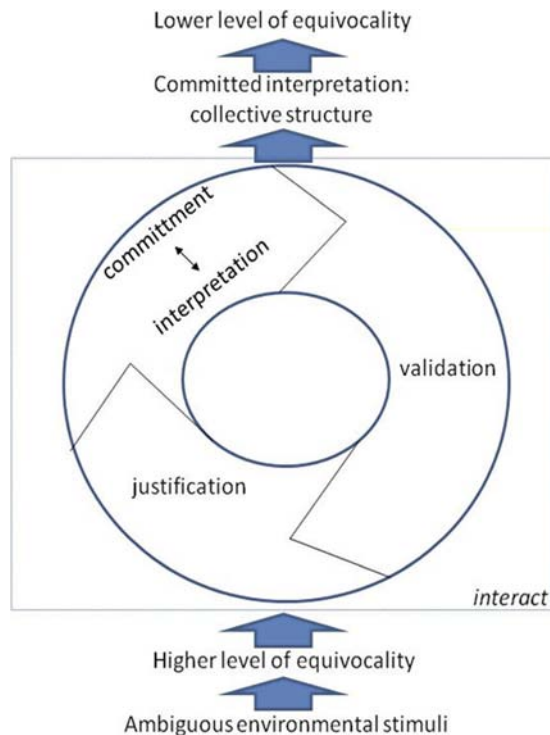


Figure 2.
Sensemaking process

also “the language of justification” (Garfinkel, 1967). According to Weick (2001) “committed interact is the equivalent of the actual appearance or the document”.

Commitment

Human actions “may become binding if [...] occur in a context of high choice, high irreversibility, and high visibility” (Weick, 1995). In this case subsequent events “may be enacted in the service of justification”. Therefore, “justification can become an important source of social structure, culture and norms” (Weick, 1995).

When justification is transformed from a self-justification to a collective intention, it may become organizational goals. These goals are so important that they are part of the definition of “organization” (see Daft and the definition of goal-directed organizations (Daft and Lengel, 1986)). So, “commitment helps us to understand organizational life” (Weick, 1995).

Interact as the “object of commitment”

Justification becomes a collective intention only after we interact. We can define interact as an action of person “A” that evokes a specific action of another person “B” and, if A’s reaction to that action takes place, it is a “double interact”. This double interact is “itself a committing context, because it contains all four variables that bind a person to action” (Weick, 1995). These four variables are volition, public action, explicit action and irrevocable action. Weick argues that interact is the “object of commitment”. To do that, he refers to concept of collective structure that, according to Allport (1962) forms

whenever there is a pluralistic situation in which in order for an individual (or class of individuals) to perform some act (or have some experience) that he desires to perform, it is necessary that another person perform certain acts. Including interacts, and not only acts, in justification, increases the possibility that justifications invoke roles and other social forms as the explanation of commitment.

Interpretation

Anyway, this effort to build a collective structure and to achieve a shared interpretation does not mean to look for “the” solution. Instead it means socially negotiating for finding some common points among the different interpretations (maps) that everyone continuously builds. Weick tries to explain the sense of sensemaking using two analogies. First with the game of Mastermind; Weick suggests that “Mastermind is precisely what sensemaking is not”. In sensemaking, people cannot be sure there is a master code to be discovered (Weick, 1995). Weick (1995) suggests that an analogy that better describes sensemaking is the activity of cartography (Table I).

Validation

The end, and the new beginning, of sensemaking cyclic process is the validation phase. The post-decision validation is necessary because, also after that the decision is made, equivocality can be high. It depends on how many justifications the decision maker has given to that action. So, we makes decisions basing on rationality and analyzing our informational system but also “on the non-rational basis of our motivational

Phase	Source for meaning	Output (intermediate and final)	Role of IS adoption and implementation
Justification	Interacts (public, irrevocable, explicit, etc.) Symbols (labels, metaphors, platitudes) Underlying patterns (including organizational identities) Past events	Common points on cognitive (causal) maps	IS implementation team members interact in a public way ISs define common labels that are common symbols for justifications In case of multiple organizational identities, a shared hierarchy of that OI helps decision maker IS implementation team members share justification for past choices
Interpretation	Reification of social and organizational roles and causal relationships Common points on cognitive maps Motivations to act Interacts (public, irrevocable, explicit, etc.)	Collective structure	IS solutions (especially ERP) defines roles' authority and causal relationships (see above)
Validation	Interacts (public, irrevocable, explicit, etc.)	Post decision justification Shared underlying patterns	Agreement of powerful members help post decision justifications

Table I.
Phases of sensemaking process

commitment to them” (Brickman, 1987). A justification with little intrinsic validity comes to be seen as more valid because powerful people believe in it and act on these beliefs (Snyder, 1984). The decision maker finds cues for new justification of future action in validation of past actions. So the cycle starts again.

The output of the process: a collective structure as a cognitive map

Weick suggests that the resulting images of reality will be social images because interacts – and not only acts – are rationalized. Social entities, like roles, are reified in justifications of interacts. Then interact is the object of commitment and reification is the content of interpretation. Weick defines “committed interpretation” the combination of interpretation and commitment. Interpretation is a social justification shared by group of people that build collective structures where social entities are reified. Anyway, this plurality of maps produces equivocality (Weick, 1995). Richness pertains to the learning capacity of a communication (Daft and Lengel, 1986, p. 560). This collective structure can be considered a cognitive map. A cognitive map is a representation of our own knowledge that we edit from our organizational experience. It consists of “the concepts and the relations a participant uses to understand organizational situations” (Weick, 2001). A specific form of cognitive map is represented by the causality maps. A pattern of causality occurs when two events have different classifications and happen at different times. According to Weick (2001), other epistemological primitives are identity, correlation and seriality. Causal maps link concepts with cause-effect relations. Tolman contrasted cognitive maps with strip maps that are sequences of information where each choice has an appropriate response. Differently, a cognitive map allows flexible behavior (Tolman, 1948). Cognitive maps can become a collective cause map in three different ways: assemblage (Hall, 1984), composite (Eden *et al.*, 1981) and average (Bougon *et al.*, 1977). This continuous and symbolic process of sensemaking has the goal to reduce equivocality and it can be more or less effective. We suggest that innovating mindfully with IT (as in the case of M&A) can improve the effectiveness of sensemaking process for at least four reasons. We argue that ERP affects sensemaking process at least because they are:

- source of public interpretation;
- they allow a retrospective elaboration;
- they contribute to elaborate a collective structure defining roles; and
- they contribute to define a common set of labels.

Information systems have characteristics that give them a high symbolic value in peoples perception of change. They are based on procedures that describe daily work, they build a specific “language” in the company and sometime they give priorities that influence time management. For these reasons, a managerial choice to use the same application in the group has a high effect on people perception of how change will happen. If managers decide it mindlessly (immediately, as an imposition and without contextualization) people perceived that new owners want to delete their identity. On the contrary, a mindful choice (not immediate and contextualized) has the meaning of a rational change, that recognizes the value of people and creates opportunities:

- Pl.* After an M&A, the mindful adoption of common IT solutions is perceived, by people working in the organization, as a will of identity integration and it reduces ambiguity and helps sensemaking process.

After an acquisition, new threats generate ambiguity and new people are involved in social interaction. During implementation, people give justifications of their past action regarding IT tools. These justifications are public (within the project team) and irrevocable. ERP implementation pertains the definition of roles and their levels of authority.

Sensemaking is also a retrospective process. According to Weick, "Remembering and looking back are a primary source of meaning". A mindful adoption of IT after an M&A forces people to share past events and reasons that justified some choices. In order to obtain a committed interpretation, people search for a social justification of their action and make decisions basing on commitment (Weick, 1995). The effort to validate those justifications is spread on other actors. So, after acquisition people can find new social justification of their actions working with other and sharing retrospective analysis of reality.

After an acquisition, the implementation of common software is a source of common symbolic representation of reality. A classification of verbal symbols includes labels, metaphors and platitudes. Zollo and Singh (2004), within their knowledge-based perspective on managing acquisitions, found that the level of knowledge codification has a strong and positive influence on acquisition performance. Translating tacit in explicit knowledge is also a way to create knowledge if it is followed by an "internalization" phase (Nonaka and Konno, 1998):

- P2. After an M&A, in firms that innovate mindfully with IT, implementation team members, sharing casual maps, retrospective knowledge and symbolic labels, reduce ambiguity, improve sensemaking and create linkages among daily activities and general patterns (including organizational identity).

An M&A produces what Corley and Gioia (2004) call "identity ambiguity." In this condition, managers are stimulated to resolve the confusion about multiple possible interpretations of core and distinctive organizational features. Indeed, this ambiguity requires members to construct new shared interpretations (Gioia, 1986; Weick, 1979, 1995). Managers' initial response to identity threats is a sensemaking phase that takes to a revision of central and distinctive features of the organization (Ravasi and Schultz, 2006). During the integration after the acquisition people engaged in innovating with IT have the opportunity to reflect on these artifacts and share new interpretations of past events. The outcome of this sensemaking process was a revision of the official identity claims that can be supported in the following phase of sensegiving in the organizational identity evolution process (Ravasi and Schultz, 2006).

Mindful innovation as a condition for the effectiveness of sensemaking generated by IT adoption and implementation

It is possible to draw some propositions about mindful innovation during the integration process following the acquisition. As argued above, a mindful innovation has a higher sensemaking as a consequence and has a deliberate strategy as a premise. Based on these findings, it is possible to state that after an M&A, firms have organizational conditions that help a mindful innovation. This kind of innovation has positive influence on sensemaking process within the firm. So, innovating with IT after an M&A can support a positive evolution of organizational identity in the companies involved in.

In the following pages, we describe what happen in M&A context to each of the five mindfulness attributes of innovating with IT (Swanson and Ramiller, 2004) and the relationship between mindful innovation and OI evolution.

First, when a firm is involved in a M&A it is concerned with the possibility of failure, because the difficulties of integration process are well known. With regard to IT innovation, preoccupation with failure can aid both acquiring and target companies to be selective in adoption also to underline its own organizational specificity. Managers of acquired company would have an opportunity to demonstrate their professionalism. During the integration period after an acquisition, firms face organizational conditions similar to those that, according to Weick, are specific for the so said high reliability organizations (HRO) (Weick and Quinn, 1999):

P3. Firms engaged in innovation with IT after an M&A have a higher preoccupation with failure.

As the mindful organization is interested in insignificant details in day-to-day operations (Swanson and Ramiller, 2004), after an M&A an acquiring company has a high interest in achieving some performance improvement in business processes of target company. New managers need to prove that their way to manage the target company will produce value. Innovators in both acquiring and target company have, respectively, the possibility to discuss their present procedures and to innovate them:

P4. Firms engaged in innovation with IT after an M&A have a higher sensitivity to operations.

Third, a firm involved in an M&A is resilient and tries to achieve an adaptation to new reality more than to maintain routines. Managers of acquired company recognize that their routines can be discussed. A new way to prepare budget (or a new procedure to evaluate investments) modifies primary routines and opens to a more general review. Acquiring company's managers reported their experienced without risk of opportunistic behavior as it is instead possible for consultants. So, acquired company's managers can have an higher commitment to resilience because risk is lower and trust is higher:

P5. Firms engaged in innovation with IT after an M&A have a higher commitment to resilience.

Fourth, as mindful organizations, firms involved in M&A resist the temptation to use simplified interpretation of events. Managers in target-company are open to new and conflicting interpretations. The prevention of the "not-invented-here syndrome" in period following to an M&A is easier because the companies' boundaries have been modified. If they are engaged in innovating with IT, especially in implementation phase, they will put a high attention to context. Innovation with IT during this period can stimulate them to be open to new implementations of their systems:

P6. Firms engaged in innovation with IT after an M&A have a higher richness of interpretation.

Fifth, as mindfulness organizations, firms involved in an M&A redesign the formal structure and the distribution of authority among its members. Each person is evaluated for its own experience and those experiences that have been underutilized can find new opportunities. Anyway, mindful organizations "attend to the innovation with reasoning grounded in the firm's own facts and specifics" (Swanson and Ramiller, 2004). So, during an integration process after M&A, people's experiences can find new opportunities but they will be evaluated and compared with human resources working in acquiring company:

P7. Firms engaged in innovation with IT after an M&A develop better expertise of people.

Table II summarizes relationship between attributes of mindfulness and organizational identity after an M&A.

These considerations suggest that after an M&A companies have a higher mindfulness in innovating with IT. We suggest that this mindfulness is a condition that improves effectiveness of sensemaking process and, therefore, it helps the evolution of organizational identity.

Attribute of mindfulness	Reasons to be mindful after an M&A
Preoccupation with failure	<p>Firm involved in a M&A are concerned with the possibility of failure, because the difficulties of integration process are well known</p> <p>With regard to IT innovation, preoccupation with failure can aid both acquiring and target companies to be selective also to underline its own organizational specificity</p> <p>Managers of acquired company would have an opportunity to demonstrate their professionalism</p> <p>The acquisition is perceived as a result of companies' capability to success in the market, so oppositions to innovation is less strong because also who disagrees with innovation recognizes that the solutions adopted by acquiring company allowed to it to have better performance</p> <p>Firms live, during the integration period, a situation similar to HRO' normal environment that "operate, in environment [. . .], where to avoid failures in the face of shifting sources of vulnerability, complex processes are used to manage complex technology"</p>
Sensitivity to operations	<p>An acquiring company has a high interest in achieving some performance improvement in business processes of target company</p> <p>New managers need to proof that their way to manage the target company will produce value</p>
Commitment to resilience	<p>Managers of acquired company open a period in which they are disposal to recognize that their routines can be discussed</p> <p>A new way to prepare budget a new procedures to evaluate investments modify primary routines and open to a more general review</p> <p>The acquired company has the opportunity to innovate with IT as a follower of others (the acquiring) that have a grounded experience</p>
Richness of interpretation	<p>Managers in target company are opened to new and conflicting interpretations</p> <p>The prevention of the "not-invented-here syndrome" in period following to an M&A is easier because the companies' boundaries has been modified</p> <p>If managers are engaged in innovating with IT, especially in implementation phase, they will put a high attention to context</p> <p>During the integration process, acquiring managers make a comprehension effort about the acquired company</p> <p>Innovation with IT during this period can stimulate managers to be opened to new implementations of their systems</p>
Development of expertise	<p>Firms involved in an M&A redesign the formal structure and the distribution of authority among its members</p> <p>Each person is evaluated for its own experience and those experiences that have been underutilized can find new opportunities</p>

Table II.
Attributes of mindfulness

Methodology

The aim of this paper is to describe how ERP adoption contributes to sensemaking in integration process after an M&A. In order to provide an answer to “how-typology” research questions, a case study seems to be the more useful methodology. So, we analyzed the integration process in a pharmaceutical multinational that acquired an Italian company, focusing on the adoption of SAP (already adopted in acquiring company) in target company. According to Yin’s (2003) approach, we prepared a case study protocol containing a detailed planning of research activities and tools.

Case study protocol

In order to find empirical evidence of theoretical propositions elaborated in the paper, a semi-structured interview has been designed. From each proposition, main concepts have been selected, described and one or more questions have been formulated.

These questions will be used during interviews to members of SAP implementing team or to users in two different periods: the first one during the implementation project phase, the second one after the start up of SAP.

Data collection

In order to verify the model, we realized five interviews to project team members, 20 interviews to SAP users and nine interviews to top managers. We used a software application for qualitative research to collect and analyze data (Nvivo sw). We upload all transcripts of interviews and linked each sentences or paragraph to a “node”. A node is a sort of concept and a paragraph can be linked to one or more nodes. The model has been uploaded into the software using the concepts included in it. Then each node has been linked to a concept of the model, if it made sense. When some node did not find linkages in the model, I tried to understand if new concept can be added to the model (Tables III-V).

Research context

In this case-study, a German multinational group acquires an Italian-Swiss company in order to develop its pharmaceutical business unit without effects on its chemical business. After the acquisition, the Italian pharmaceutical subsidiary was integrated in the target company. At international level, it became the pharmaceutical business unit using the two brands together. From the point of view of organizational identity, as described in findings section, we can recognize an “aggregation” strategy at corporate level. According to Pratt and Foreman (2000) framework an “aggregation” managerial response means an effort in maintaining old identities creating at the same time a deliberate link between them. This kind of response is appropriate when appropriateness of both identity plurality and synergy between identities of merging companies are high. During the integration process following the acquisition, management decided to extend in the whole group a SAP application. We will study how this process had effects on creating a new organizational identity.

Description of SAP implementation project in Merck Serono

The SAP implementation project has been a complete ERP project. Merck-Serono adopted the full SAP suite. The start up of SAP took place in October 2010 after about 15 months of team-work. The project was shared in two programs: *Leonardo* program and *Da Vinci* program. With the *Leonardo* program each country choose one ERP

Proposition Concept	Meaning	Questions
	After an M&A, the mindful adoption of common IT solutions is perceived by people working in the organization as a will of identity integration and it reduces ambiguity and helps sensemaking process	
Mindful adoption	“An organization is mindful in innovating with IT when it attends to an innovation with reasoning grounded in its own organizational facts and specifics.” “[...] for true mindfulness such alertness must be joined to contextually differentiated reasoning”	Were decisions about IT innovation made considering Serono specificity? Were decisions about IT innovation made with rationality? How the decision to innovate IT has been taken?
Identity integration	The organizational identity is “what we are as an organization”. It is what is distinctive, endurance and central for the company	How do you define the way of merging identities used after the acquisition? In what Merck was rigid and in what resilient with respect to identities? How the choice regarding the SAP adoption change your opinion about Merck management?
Ambiguity	After an M&A ambiguity increases because of new roles, new labels and new processes. The revision of collective structure is most heavy than usual	After the acquisition, how did you perceive that something was changing? Working in the SAP implementation team, did you clarify something about new company reality? The adoption of SAP happened some months after the acquisition. What does it mean in your opinion?
Sensemaking	Sensemaking is a social process that provides a committed interpretation as output. Understanding macro reasons to act, people reduce ambiguity in organization comprehension. So, they act not only basing on rationality or time, but also on commitment	Working in the SAP implementation team, did your preoccupation about future improve or decrease? After team work, do you feel the choices made by the team as yours? How team work has changed your vision of the company?

Table III.
Design of questions
about the *PI*

system if they used more than one. In the *Da Vinci* program a complete SAP suite replaced systems worldwide.

The organizational structure of this project had a high complexity with a global manager at corporate level, a local manager for each country, a change manager for each country, training coordinators in each site and several key users. A change advisor board had the responsibility to solve conflicts.

A “template” was defined at corporate level and it has been customized at country level if necessary for specific regulatory rules or business specificities.

Findings

In this paragraph, we describe how the adoption and implementation of an ERP helped sensemaking process among people. According to the model, we describe findings using data from interviews, in order to provide an empirical example with respect to propositions elaborated in previous paragraphs. As explained in the

Proposition	Meaning	Questions
Proposition	After an M&A, in firms that innovate mindfully with IT, implementation team members, sharing casual maps, retrospective knowledge and symbolic labels, reduce ambiguity and improve sensemaking creating linkages among daily activities and general patterns (including organizational identity)	
Causal map	A causal map is a sort of “net” that is not individual but socially negotiated. This structure has nodes and ties. Nodes are organizational roles, cultural artifacts, concepts. Ties are processes, hierarchy, weak links, cause-effects links, etc.	Working in the SAP implementation team, did you understand the content of activities and organizational roles? Working in the SAP implementation team, did you understand relationship among activities and organizational roles? Which criteria were used in order to justify those relationships? Did identity ever recall?
Retrospective	Sensemaking is retrospective because it concerns the possibility to locate simple daily acts in more general pattern and justify them in order to achieve a collective structure. These possibilities are higher if people share past events and justifications for past acts	Working in the SAP implementation team, did you better understand reasons of past choices? Did you have the opportunity to clarify to other members your past choices? Listening to tales of past events about Merck, did you feel it “closer”?
Symbolic labels	The possibility to link daily activities to general patterns can be helped by symbols. They are classified as labels, metaphors and platitudes	Working in the SAP implementation team, what difference did you note between your and others’ languages? Are some of new labels that you learned linked to organizational identity? Do you feel closer to Merck identity using its “language”?
Sharing	The social negotiation of collective structure can derive from an assemblage of different maps, from explicit team work or from an average of individual maps	Working in the SAP implementation team, did you justify your opinion in a public way? When a conflict between different opinions has rose within the team how does the team solve it? How much have the choices been contextualized to Serono reality?
Ambiguity	After an M&A ambiguity increases because of new roles, new labels and new processes. The revision of collective structure is most heavy than usual	After the acquisition, how did you perceive that something was changing? Working in the SAP implementation team, did you clarify something about new company reality? The adoption of SAP happened some months after the acquisition. What does it mean in your opinion?
Sensemaking	Sensemaking is a social process that provides a committed interpretation as output. Understanding macro reasons to act, people reduce ambiguity in organization comprehension. So, they act not only basing on rationality or time, but also on commitment	Working in the SAP implementation team, did your preoccupation about future improve or decrease? After team work, do you feel the choices made by the team as yours? How team work has changed your vision of the company?

(continued)

Table IV.
Design of questions about
the P2

Proposition	After an M&A, in firms that innovate mindfully with IT, implementation team members, sharing casual maps, retrospective knowledge and symbolic labels, reduce ambiguity and improve sensemaking creating linkages among daily activities and general patterns (including organizational identity)	
Concept	Meaning	Questions
Daily activities	Sensemaking in organizations helps people to adopt behaviors coherent with strategic goals. These behaviors are concrete when people act. According to Weick, sensemaking concerns “small structure with large consequences”	Working in the SAP implementation team, did you deal specific activities that are part of your job? Working in the SAP implementation team, did you better understand activities of other jobs? Has the project of SAP implementation been the main opportunity that you had to deeply share your responsibility with others?
Linkages to general patterns	Behavior in organizations is led by rationality, conformity to rules, time (“garbage can model”) but also by committed interpretations. These interpretations required to link daily activities to general patterns. Organizational identity can be considered as one of these patterns. They provide justifications for action	Working in the SAP implementation team, did you better understand general objectives that inspired the design of processes? Does organizational identity used in team work to justify some choices? Working in the SAP implementation team, did you better understand reasons of same activities (how they are linked to general objectives?)

Table IV.

methodology section, we used a software application for qualitative research where we uploaded the macro variables of the model (adoption, implementation, attributes of mindfulness, sensemaking process phases and components. Each transcripts of interviews has been uploaded and tagged with a “node” that is a first order concept. Different nodes have been aggregated in second order concepts and linked to macro variables of model when it was possible. Before discussing finding in details, it is possible to underline how the effects hypothesized in the model seem to be verified in this specific case of acquisition. The adoption of an ERP contributes to reduce ambiguity generated after the acquisition and the implementation of an ERP helps sensemaking because it forces people to interact and to share a cognitive map of new reality. Mindfulness has been described by people starting from its attributes and it has been considered as an evidence of rational behavior of acquiring managers. Nevertheless, people underline that both adoption effects and implementation effects give a contribution to ambiguity reduction and sensemaking effectiveness.

Evidence explaining how SAP adoption and implementation affect sensemaking process effectiveness

Relationships between SAP adoption and sensemaking process

The choice of adopting the same ERP system in the whole group has been perceived by people as a clear strategy of integration among identities and not as a must. The *PI* states that after an M&A, the mindful adoption (of common IT solutions) is perceived, by people working in the organization, as a will of identity integration and it

Concept	Meaning	Questions
Preoccupation with failure	When a firm is involved in an M&A it is concerned with the possibility of failure, because the difficulties of integration process are well known	Was this project different because of acquisition? Did your participation to implementation team an opportunity to demonstrate your value to new owners? At the end of teamwork, did you feel to be more confident about the new reality?
Sensitivity to operations	As the mindful organization is interested in insignificant details in day-to-day operations, after an M&A an acquiring company has a high interest in achieving some performance improvement in business processes of target company	Working to this project, what did you understand of Merck routines? Working on SAP implementation did your team modify any routine of Serono? In which sense team work helped context comprehension?
Commitment to resilience	Managers of acquired company open a period in which they are disposal to recognize that their routines can be discussed	Did you plan to change IT application before the acquisition? Did people within the team more resilient in changing than before the acquisition? In case of different routines which criteria did team adopt to solve the problem?
Richness of interpretation	Managers in target company are opened to new and conflicting interpretations. The prevention of the “not-invented-here syndrome” in period following to an M&A is easier because the companies’ boundaries have been modified	Did people in the team accept some Merck solution also because those solutions had success? Did people in the team accept to use some Serono routines because they fit with specificity of Serono products? Did you change some idea about project during the team work?
Developing of expertise	Firms involved in an M&A redesign the formal structure and the distribution of authority among its members. Each person is evaluated for its own experience and those experiences that have been underutilized can find new opportunities	Had someone the opportunity to demonstrate some new skills in the team? Which criteria were used in assigning roles in the team? Were some organizational role or routine modify by project’s decisions?
Mindfulness	“An organization is mindful in innovating with IT when it attends to an innovation with reasoning grounded in its own organizational facts and specifics.” “[...] for true mindfulness such alertness must be joined to contextually differentiated reasoning”	Were decisions about IT innovation made considering Serono specificity? Were decisions about IT innovation made with rationality? How the decision to innovate IT has been taken?

Table V.
Design of questions about the five propositions that link concepts with mindfulness in innovating with IT

reduces ambiguity and helps sensemaking process. It has been partially confirmed by data. Some narratives explain why people agree or disagree with this statement.

People perceived the identity management after the acquisition as a success:

The way of merging identities used after the acquisition was a success, with an high level of engagement. MERCK was rigid with respect to identities in the use of co-branding

in any publication. The choice regarding the SAP adoption changed my opinion about MERCK management because I had better understood a strong respect for employees even if with a high performance requirement.

On the contrary, people felt that ambiguity was not so high because of the good integration management:

After the acquisition, I perceive that something was changing because we use more procedure, monitoring, structures.

The adoption of SAP happened some months after the acquisition because the project was shared in 2 programs: it was planned since the beginning. Ambiguity was already decreased before project.

Sensemaking was helped by adoption because it created a common language. Anyway, there are different positions about the role of people and ERP in integration process:

There were not so many different opinions: regulatory constrains was strong. I appreciate the attention to communication: redundant messages in order to reduce ambiguity.

I think that it is a way to improve integration within the Group Merck. I'm sure that a great effort will be needed but we'll obtain high advantages.

Someone underlines the role of people . . . : "The adoption of SAP will help integration but people make difference" and "IT can help but people are the real resource of our company.

On the contrary, other people underline "hard" issues: "I think that information systems help to organize activities flows and play an important role in the integration process" and "IT integration (SAP, . . .) has a role in the integration process, also from a psychological point of view".

As argued in the next section, about mindfulness, there are different perceptions between implementation members ("they already decided that SAP was the solution") and other people (that consider it as a rational and contextualized choice):

[. . .] maybe the choice of SAP was already decided but for example other sw (for web sites) have been choose from Serono experience and they do that considering SERONO specificity because the regulatory environment is a strong constrain. It was a decision made with rationality but, according to Merck's culture, giving high attention to transparency of decision making communication.

Other people did not know the two phases of project:

Merck decided to adopt SAP only two years later the acquisition because Italy is complex. Data migration will take place in June 2010. I think that they didn't say: this is my system, you must use it. The process was slow and rational.

Not only SAP project helped the integration process:

First, we aligned compensation and grading. Data migration from Oracle to SAP is planned for July. It was "un bagno di sangue". Within the group Merck each country had a different ERP. So, they use this opportunity to choose only one system. We created task forces. This project will help weekly activities.

This project was at international level, not only for Serono: "We had different systems: Oracle and SAP. Actually, Merck had different systems in each country [. . .]

with clear difficulties. With acquisition they change all system in SAP, including Serono.”

About the relationships between SAP adoption and sensemaking process (*P1*), I can conclude that people perceived the choice to implement SAP solution as a will to integration between Merck and Serono. People underlined how that choice was taken with mindfulness because Merck managers paid attention to transparency and communication. At the same time they noted that Merck manage in a professional way all other issues linked to integration.

Relationships between SAP implementation and sensemaking process

The organizational responsibilities of SAP implementation project had a high complexity. Project team was composed by a project manager for each country and two sub-teams (a technical team and an “organizational” team). So, I classified different points of view in two groups (the opinion of technical team members and the opinion of “organizational” team members).

Team members involved in implementation tasks had the opportunity to work side-by-side with new colleagues. In this way, the interaction (that is the condition for sensemaking according to Weick) helps the sensemaking process. A specific value is generated by this interaction because it happen working on an IT system. In the *P2* we stated that after an M&A, in firms that innovate mindfully with IT, implementation team members, sharing casual maps, retrospective knowledge and symbolic labels, reduce ambiguity, improve sensemaking and create linkages among daily activities and general patterns (including organizational identity). Narratives from interviews can be useful in order to verify if and how that theoretical proposition has been confirmed after this acquisition.

As first evidence, team members had an opportunity of sharing their knowledge. The change manager said about justification of choices and conflict resolution:

The knowledge sharing has been important in order to build a team. Also social events were important. When a conflict between different opinions has rose within the team Global Advisor Board solved it.

About conflicts, Local Project Technical Manager describes an example: “In case of conflict, you gave your effort to achieve the best solution. For instance, in Bari we needed a specific interface, so we argue about this idea.”

Second, the interaction helps the “construction” of “casual maps”. The change manager agrees with the building of a cognitive map: “Working in the SAP implementation team, I understood the content of activities and organizational roles, because I worked in communication before this role, especially for medical environment”. Local Project Technical Manager describes his experience in Germany as an example of activities comprehension:

I better understood new organizational roles. I went in Germany 3 weeks in order to know project structure. Project team is large, not only in terms of IT professionals but also in terms of business professionals. Sure! We were lucky! If the acquiring company was a larger multinational company, everything was different. This acquisition seems to be a merge.

Third, this interaction pertains a retrospective knowledge. The change manager agreed with the opportunity to share past events but underlined the presence of a high integration before the beginning of the project:

Working in the SAP implementation team, I better understood reasons of past choices because, during the explication of template even if key users must define requirement before knowing it and I had the opportunity to clarify to other members your past choices because a business alignment was planned. [...] but, the integration was already high before the project.

Local Project Technical Manager underlines constraints coming from the corporate (template) and from the regulatory environment:

They explained to us template and methodology. Reasons of those choices were not useful to know, because template and methodology were decided. Italy runs a different business, so we discuss about it and they allowed to us to customize SAP.

Fourth, team members underline positive effects about symbolic labels. The change manager underlined the role of language and he clarified how the project changed the meaning given to "Italian" country:

At the beginning, they use too many acronyms. Also the language generated difficulties because of German colleagues and Indian consultants with bad English. And I felt closer to MERCK identity using their acronyms. The common sense that German colleges gave to "Italian" has been replaced with a more respectable.

Local Project Technical Manager describes an example of words that can make easier the communication:

This project helped us to achieve a common language. We daily use word like "lot of production" that in Oracle is called "batch" and in SAP "lot". Now, we have a common language.

Fifth, people partially disagree with the effect of interaction on ambiguity. The change manager confirmed an ambiguity increase after the acquisition but also a quick reduction of it:

After the acquisition, I perceived that something was changing when some German people were sent to "understand" Serono. Working in the SAP implementation team, I clarified something more about both other departments and Corporate staff. The adoption of SAP happened some months after the acquisition also because Merck had respect for Serono and they wanted to understand us and ambiguity was already reduced.

Ambiguity has been confirmed also by Local Project Technical Manager. He disagree on the impact of project on that:

After the acquisition we perceived ambiguity. When project started, ambiguity was already decreased. The project helped this process. Now, ambiguity is low. Project worked as a confirmation. When you work on software, you deal daily activities.

Sixth, people perceived to be helped in making sense of new reality. The change manager speaks about his experience:

Working in the SAP implementation team I felt choices made by the team as mine even if template and regulatory constraints are strong. Anyway, Now, I'm sure about their respect of people.

Local Project Technical Manager describes changes in his perception:

My vision of Group after this project is different: we feel closer to Merck. You think about owners: you keep in touch with German people (and no more Swiss . . .), you listen people speak German language (and no more French . . .). Bertarelli was a well-known manager and he was very involved in management. Now, people begin gradually to forget his role.

Seventh, working on ERP forced people to link daily activities and general patterns. The change manager said was already involved in cross-project: “My role was already “cross” so I already knew others’ activities. Anyway, working in the SAP implementation team, I better understood especially medical activities.” Local Project Technical Manager describes the impact on his colleagues’ working life:

Now, people use SAP and if they call me to notice some problem. I try to explain the reasons why our choices were the best solutions. Anyway, some improvements are possible. We better understood cross processes: for instance, quality assurance module.

The change manager disagrees about identity recall and he said that the comprehension of new reality depends on the organizational role:

I believe that identity has never been recall. Working in the SAP implementation team, I better understood general objectives that inspired the design of processes. That’s true for a cross role like mine. For others it’s true within the boundary of their business area and their supplier and customer (internal and external). Also other common tools like balanced scorecard were useful to share general pattern aim.

Instead, Local Project Technical Manager describes some effects on Serono perception:

This project allowed to us to question the myth that Italians “are always in late” and under-staffed. They were surprised that we respected all final deadlines even if intermediate deadline weren’t respected. About identity, they were cooperative but the impact on people has been heavy. They used various tools to merge identities. The governance in Darmstadt is stronger than Geneve’s one in Serono. It wasn’t easy. Bertarelli was the owner and CEO. In Merck managers and owners are different. The former CEO remembered when Bertarelli played here. Bertarelli had a special relationship with this company.

In sum, we can say that *P2* is verified in this case of acquisition. More specifically, people agree about the improved effectiveness of sensemaking even if they underline how ambiguity was already reduced by a good integration strategy. Interviewed people agree with the important role of language in order to make collaboration easier. A lower level of agreement was shown regarding sharing causal maps and retrospective analysis. People indicated a pre-defined template and regulatory environment as two important constrains for sharing activities. Project team members received a lot of information but had little opportunity to negotiate. Finally, the opportunity to link daily activities to general patterns was perceived in different ways by “cross” role and key user member of implementation team.

Evidence explaining how mindfulness in SAP adoption and implementation mediate their effects on sensemaking process

The effects described above have been possible not because of ERP adoption and implementation but because that innovation has been made in a mindful way. Merck’s management was able to decide the adoption and implementation not as a must, but in a rational and contextualized way.

P3-P7 are referred to verify organizational conditions for mindfulness in innovating with IT. I collected interviews from members of implementation team in order to understand which of the five propositions are verified in this case.

The opinion of change manager about mindfulness in innovating was the following:

[...] maybe the choice of SAP was already decided but for example other sw applications (for web sites) have been chosen from Serono experience and they do that considering SERONO specificity because the regulatory environment is a strong constrain. It was a decision made with rationality but, according to Merck's culture, giving high attention to transparency of decision making communication.

Also the Local Project Technical Manager confirmed that the implementation began after two years from acquisition but as a planned decision:

Merck decided that the project was shared in two programs: Leonardo program and Da Vinci program. They started immediately with the Leonardo program and each country choose one ERP system if they used more than one. Then, in the Da Vinci program a complete SAP suite replaced systems worldwide.

P3 states that firms engaged in innovation with IT after an M&A have a higher preoccupation with failure. The change manager of the project said that:

[...] this project was different because it was based on Merck culture with a constant reporting of activities [...] I didn't perceive it as an opportunity to demonstrate my value [...] even if I felt to be more confident about the new reality at the end of teamwork because my skills are in communication field and in this project I knew all other process.

Also Local Project Technical Manager confirmed that this project has been felt as a part of integration process: "This project is a direct consequence of acquisition."

The *P4* states that firms engaged in innovation with IT after an M&A have a higher sensitivity to operations. The change manager of the project said that:

Working to this project, I understand better MERCK's routines and their way of working even if the regulatory environment has a strong role [...] I worked with German colleagues for several weeks and I directly knew their way of working.

According to Local Project Technical Manager:

My activity in the project team was an opportunity for me to know new management because I had a position at corporate level. I reported directly to Darmstadt. I learned new things about production. We implemented a complete ERP system that is validated on international standards, all thing followed procedures, so I knew better activities.

P5 states that firms engaged in innovation with IT after an M&A have a higher commitment to resilience. The change manager of the project said that:

Even if we didn't plan to change IT application before the acquisition (because Oracle was a good ERP system), people in Serono were strongly engaged so they were resistant to change their belief. Anyway the appropriate management of acquisition contributed to make people resilient and again engaged with new reality.

and:

[...] in case of different routines each Local team analyzed the group template and then the Global Advisor Board decided on some conflicts.

According to Local Project Technical Manager, people in Serono were already disposal to change but Oracle system was a good system:

From a technical point of view, also in Serono we had only an ERP system but we had not the IT organization that we have now. Now, many people that work on SAP system. We never planned to change Oracle because it was a good system. People that were reliable in Serono, are still reliable now. Anyway, after the acquisition there was a change and a higher reliability.

P6 states that firms engaged in innovation with IT after an M&A have a higher richness of interpretation. The change manager and the Local Project Technical Manager partially confirmed a higher richness of interpretation even if regulatory constrains are very pervasive and both acquired and acquiring company consider themselves a leading company:

People in the team accept some MERCK solution only on rational bases, because both Serono and Merck people have a high self confidence. Our specificity of SERONO was respected for the main reason that regulatory system is very pervasive in this business.

I changed some idea about project during the team work: for example how to prepare training material or the steps to share with management.

And, again ...:

Italian sites had their autonomy, now SAP system helped to make processes similar. For instance, purchase process, in which each site had different procedure. After this project they use the same procedure. Requirement of Ivrea team, Bari team and Roma team were different. The adoption of SAP formally arrived some months after acquisition but it was sure also because Merck headquarter is close to SAP office in Germany.

P7 states that firms engaged in innovation with IT after an M&A develop better expertise of people. According to the change manager that is true more for key users because cross-roles that work by projects have usually opportunity to be appreciate. "The choice of roles in the team has been shared between people and management and so especially key users were appreciated for their high skills." Local Project Technical Manager describes a high structured project structure defined at corporate level:

Roles in project structure were assigned at corporate level: in each country a PM, a technical PM (my role), a local PM and a change Manager. When Group proposed this project to us we identified people that better can take each position.

In sum, I can say that Merck innovated with mindfulness even if the choice of SAP as ERP seem to be partially a pre-determined decision and a so regulated industry forced a customization of application at national level.

Discussion

A revelation of this study is the importance of interrelationships between organizational identity evolution and implementation and adoption of ERP systems: the ways in which the implementation team members studied here share knowledge, affected and were affected by their collective notion of who they were as an organization before and after the acquisition.

In explaining how adoption and implementation of an ERP system can help sensemaking process, it can be useful to distinguish between adoption and implementation.

The adoption of the same ERP system is perceived by people as a managerial choice that contribute to integrate both acquired and acquiring companies. People of acquired company had this perception because that choice was not an order received from the group headquarter but a rational and contextualized choice. People who worked in ERP implementation team were helped in making sense of their new organizational identity for three main reasons. First, the implementation of the same system help to share a “company-language” and the same symbolic signs. Second, team members were forced to understand past choices of the acquiring company and in this way build a retrospective knowledge as a base for sensemaking. Third, the ERP structure (based on a high integration among different systems and databases) forces people to modify their own cognitive map and to build a new cognitive causal map. These maps are the results of the “committed interpretation” as a phase of sensemaking process. Thus, this study demonstrates that ERP systems are modern artifacts and that their adoption and implementation – not the system – help the sensemaking process.

As explained above, people underline that both adoption effects and implementation effects give a contribution to ambiguity reduction and sensemaking effectiveness. Other effects have the same role after an acquisition. Therefore, we explained how the adoption and the implementation of an ERP help sensemaking process more than which are the determinants of that process.

Limitations and suggestions for future research

No empirical study is free of limitations, and the effort to understand the experience of Merck Serono is no exception. I identify two main limitations that can serve as suggestions for future studies in this area. The first is referred to timing. I entered into Merck Serono within a year after the acquisition and I got out at beginning of SAP assimilation phase. Therefore, some perceptions could still evolve in different ways. The second limitation depends on the fact that I analyzed a single case. By focusing on one case of acquisition – an acquisition that gives value to acquired company – I might be limiting the transferability of my findings. I believe, however, that the specific findings are applicable to many acquisitions that are generated by the same strategic reasons. Future research could complete the analysis covering different typologies of acquisition that have been classified in managerial literature (Walter and Barney, 1990).

Conclusions

In this paper, I explain how the evolution of organizational identity after an M&A can be supported by the adoption and implementation of an ERP. Studies about organizational identity evolution are based on frameworks that include sensemaking and sensegiving. Evidence from this case study helps to explain how the adoption and implementation of an ERP support sensemaking. They facilitate the sensemaking process because team members involved in the implementation, working on an ERP system, share a “collective structure” of new reality, a retrospective of the past events and a symbolic representation of new reality. In this way, a “committed interpretation” of new reality is possible because of interaction among team members. Anyway, this interpretation needs an organizational condition that is facilitated by acquisition: mindfulness in innovating. After an M&A, firms use mindfulness in innovating with IT, because its attributes are verified. Indeed, I suggest that firms engaged in innovation with IT after

an M&A have a higher preoccupation with failure, have a higher sensitivity to operations, have a higher commitment to resilience, have a higher richness of interpretation, have a higher richness of interpretation.

Social dimension
in ERP adoption

181

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About the author

Luigi De Bernardis, PhD in Management, works in the Research Department of Consob (the Italian independent financial authority). Luigi De Bernardis can be contacted at: ldebernardis@luiss.it

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