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UNDERSTANDING HOW MIDDLE MANAGERS PROMOTE IT CHANGE: A STRATEGIC ACTOR AND CULTURAL APPROACH

Social, Behavioral and Organizational Aspects of Information Systems

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Abstract

This article in progress aims to understand the role of culture in the way middle managers promote Information Technologies (IT) and technological change. To gain new insights, this paper presents an approach of change and of culture based on the theory of the strategic actor of Crozier and Friedberg (1977). In this view, how and to what extent middle managers promote IT in the workplace is assimilated into a strategy of actors motivated by their interests and having to take into account the constraints they face, opportunities, and their capacity. An approach around the notion of "cultural tools" and "cultural capacity" is suggested in order to take into account cultural heterogeneity and organizational change. We suggest a multiple cases design *qualitative methodology* in one large organization in order to conduct this study.

Keywords: Middle managers, culture, technological change, promotion of IT, strategic actor theory, Crozier and Friedberg

Introduction

Information technologies (IT) contribute to change in organizations as well as to the work and roles of middle managers. It is important to understand how these roles evolve in post IT-implementation environments. This is especially true in large organizations that exhibit increasing pressure in more demanding contexts and having to take into account the increasing cultural heterogeneity of their personnel. Middle managers are often cited as among those mostly affected by these change (Pinsonneault et al. 1993).

This paper aims to understand the contribution of middle managers in the promotion and usage of IT and of technological change in large organizations. We also consider cultural influences and their effects. The construct of culture has often been employed in the sense of "national identity" (Myers et al. 2002). For Hofstede, "*culture is the collective programming of the mind that distinguishes the members of one human group from another*" (Hofstede 1980, p.260). Several studies in IS pointed out the deficiencies of such deterministic approaches to culture that do not sufficiently take into account the individual, the possible heterogeneity of culture, and/or the possibility of taking change into consideration (Crozier et al. 1977; Gallivan et al. 2005; McCoy et al. 2005; Straub et al. 2002; Walsham 2002). Moreover, some authors point out that although many studies rely on Hofstede's (1980) cultural indices, these indices are becoming increasingly less reliable and inconsistent due to the dated nature of the findings (Baskerville 2003; McCoy et al. 2005). Therefore, aside from the important contributions of the many the studies following the Hofstede tradition, much remains to be done in order to better understand how culture can be taken into account in the understanding of individual's behaviours in the context of IT change.

The specific word "cadres", equivalent to "white collars", is used to characterize French managers. But as shown in some studies, while the title of manager was formerly a sign of prestige, nowadays managers are more and more on par with regular employees, and have lost many of their former privileges (Grey 1999). In this context,

while middle managers can potentially help their organization to evolve, they are often preoccupied with establishing a new professional identity and business function (Grey 1999).

While many researchers have investigated what happens during and soon after the implementation of an IT, little is known about how employee perceptions and behaviours evolve over time in the post-adoption phase (Jasperson et al. 2005). It is therefore important to analyze how actors structure their relationships together, both with existing IT and with new IT as they are implemented. Indeed, IT can reconfigure the ways individuals work and work together, offering new opportunities and potentialities, but introducing new constraints and changing the game theory of actors. Therefore, the decision to promote the use of a particular technology is likely to depend upon the strategies of actors. At the same time, an attitude favourable to change by those who are concerned with these changes is an important determinant of the success of an innovation (Zmud 1984). To promote this outcome, it has been shown that managers can play an influential role in encouraging their co-workers to adopt an IT (Leonard-Barton et al. 1988). Our Study will investigate two main research questions:

- How and to what extent can middle managers promote IT change initiatives? Can the promotion of IT in the workplace be understood as an actor's strategy? What strategies do the actors use in order to influence the behaviour in-use of their co-workers?

- What cultural tools are used when middle managers promote IT?

These two research questions can be decomposed as follows:

- What characteristics of IT can be used to understand strategies-in-use of the actors?

- What strategies do the actors use to influence their co-workers' IT usage and practices?

- What cultural tools, best practices, and capabilities can organizations develop in order to facilitate the change and usage of IT in the post-adoption phase?

- How should culture be conceptualized, and what is the role of culture relative to the above questions?

In this study we rely upon the theoretical and analytical lens of the strategic actor theory (Crozier et al. 1977). According to this theory, we consider actors as having bounded rationality and to make choices given their particular objectives (March et al. 1958). This theory has hardly ever been employed in IS literature. However, it seems to provide some opportunities for IS researchers for the analysis of actors' strategies in using IT and promoting IT change. It also provides a non-deterministic approach to culture. This study will further contribute to other studies that more readily consider the individual as an actor rather than as a user, which is considered to be insufficient by some authors in IS (Lamb et al. 2003). Lamb & King (2003) assert that "*by adopting research models that reflect the user concept, researchers implicitly agree to model an artificially constrained set of contextual factors in controlled experimental settings, or to leave context outside the study entirely*" (Lamb et al. 2003, p.199). Rather, the behaviour of the individual is not always determined by external constraints. The actor has also been defined as "*an entity that has an interest in the situation under examination and has the ability to play a role in its evolution*" (Bendahan et al. 2005, p.140).

Theoretical development

The Reconfiguration of Managerial Roles with IT

While impacts of IT on individuals in general have been extensively studied, few studies focus explicitly on how these technologies can cause work practices, roles, and the competences of middle managers in organizations to evolve. Some studies initially focus on the influence of IT on the number of middle managers but found no definitive conclusion as to how IT affects the number, the influence and the roles of middle managers (Millman et al. 1987; Pinsonneault et al. 1993; Pinsonneault et al. 1998) Further, understanding the way managers behave during and after IT implementation and their potential contribution to the change process needs to be better understood. Studying middle managers behaviours with IT is therefore important. Indeed, while managers have long been said to be fated to disappear, they still have potential act as key agents in the promotion of IT in the workplace (Larsen 1993). While some studies agree on the roles of middle managers in the elaboration and implementation of strategic decisions (Burgelman 1983), few have said if and how these managers contribute to IS adoption decisions.

For numerous authors, IT is considered to be a potential threat as well as an opportunity for middle managers. Middle managers formerly dominated the access, interpretation, and communication of information (Zuboff 1988). However, because their activity is mainly informational and structured around decision making, they are at risk of being replaced by computers (Simon 1960).

IT implementations are also said to contribute to change in hierarchical structure. Foster & Flynn (1984) argue that the hierarchy is changed in two dimensions (Foster et al. 1984). First, the hierarchy is based more on the competencies of the individuals than on the formal power given by their relative position in the hierarchy. This may allow those who are more competent to become more visible in their organization with the implementation of a system (Vaast et al. 2005). Second, the hierarchical protocols are lighter with more direct electronic communication, while human physical relationships should not change significantly (Foster et al. 1984). Other studies, suggest that IT have contradictory effects on the number of middle managers (Pinsonneault et al. 1993). These technologies require greater competencies, judgement, and experience from these managers, and permit them to add value in the activities they perform (Jackson et al. 1994). It also helps to decentralize decision authority to the level of middle managers and grants greater autonomy (Bartlett et al. 1998; Grey 1999). IT provide them with better tools for control and monitoring, and the performances of their co-workers become more visible (Currie et al. 2002). Curie and Procter (2002) also suggest that the interpretation of raw data from the field may be complicated and that middle managers are in better position because of their competences and knowledge to exploit these data. Given the indeterminacy of IT outcomes on middle managers (Pinsonneault et al. 1993) and the ambiguity concerning what middle managers can expect from IT implementations, we may assume that they feel even more concern ed by these implementations. It is little wonder that managers view new IT implementations with some suspicion and anxiety.

Understanding the role of middle managers in the promotion of IT is therefore important at many levels. Further, it is of interest to take into account the potential cultural heterogeneity and what they imply while faced to similar changes.

Social Actor Approaches and Individual Strategies

Strategic Actor theories hold that the actions of individuals can be explained by both logics of action and situations of actions (Bernoux 2004). These theories can be opposed to behavioural theories that consider that actions can only be explained only by their antecedents (Bernoux 2004). Giddens (1984) reconciles the two traditionally opposed views of the sociology of action and functionalism or structuralism stating respectively the prevalence of the individual actor or of social structures. The notions of action and of structure are dialectically related (Giddens 1984).

Some researchers consider the concept of the social actor to be more appropriate than such concepts as the concept of user in IS research (Lamb et al. 2003). They therefore suggest that using the notion of actor would provide a better understanding on how organizational contexts contribute to the evolution of IT practices and of the complex roles played by people "*while adopting, adapting and using information systems*" (p.197). Indeed, they point out that the "user" is frequently presented in IS research as an "*atomic individual with well-articulated preferences and the ability to exercise discretion in ICT choice and use, within certain cognitive limits*" (p.199). These researchers further consider that while focusing on the individual, these conceptions cannot permit a complete understanding of the complexity of social environments and offer too few details on the context that shape IT use. Lamb and Kling define the "social actor" as an "*organization member, representing the interests of the organization or subunit (and her own interests) in the exchange of various forms of capital, and who uses ITs to facilitate these exchanges and to service these affiliations*" (Lamb et al. 2003, p.212). They then suggest a "*multidimentional view*" (p.213) of social actors that considers affiliations, environments, interactions, and identities.

Many studies mention in some extents the strategies of the individuals in a context of IT implementation. Among theoretical approaches we can for example identify human agency perspectives (Boudreau et al. 2005; Cousins et al. 2005) or cognitive and sociological approaches (Vaast et al. 2005). However, few analyze systematically actor's strategies as a central aspect of individual behaviour in the context of IT implementation. Beaudry and Pinsonneault (2005) rely on the theory of coping and showed that managers adopted different strategies of adaptation to the technology for the choice of their change approaches. The authors identified four strategies named "benefits maximizing", "benefits satisficing", "disturbance handling", and "self preservation" strategy (Beaudry et al. 2005). However, there appears that these strategies give little importance to the potentially unconsciousness and unpredictability of the strategies actors can adopt in a given situation (Crozier et al. 1977). Also, most of these studies adopt a retrospective approach rather than a prospective one, looking for the

determinants of present behaviours mainly in the past social history and learning of individuals (Crozier et al. 1977). Rather, the strategic analysis of Crozier and Friedberg (1977) considers the behaviour of the individuals can be apprehended by what their expectation of the future, and by the capacities and constraints each individual faces.

Boudreau and Robey (2005) suggest the conceptual lens of Human Agency (Emirbayer et al. 1998) to understand the behaviour of the individuals in the context of the implementation of an integrated information system. The authors showed that regardless of the constraining nature of the enterprise resource planning (ERP) system implemented and even constrained, the actors could still exert their margin of manoeuvring within boundaries. ERP systems are often depicted as designed to avoid discretion from individuals and to discourage alternative uses (Boudreau et al. 1996; Davenport et al. 1994; Hammer 1990). Boudreau and Robey (2005) point out what they called "inertia" and "reinvention" behaviours, with respects to the initial behaviour of avoiding using the technology and the later behaviour that consisted in adopting selected patterns of use of the technology (Boudreau et al. 2005). This is evidence that even constrained, the actors can still exercise their margin of manoeuvring (Boudreau et al. 2005; Crozier et al. 1977).

Cousins and Robey (2005) suggest that three dimensions of nomadic computing can help to explain certain types of behaviours with IT. These dimensions are the temporal, spatial, and contextual dimension. Past experiences, future projections, and the dilemmas the individual faces can explain difference in practices with the same technologies and organizational settings, thus giving rise to individual actors' strategies (Cousins et al. 2005).

The strategies of the actors regarding the use of a technology have also been studied through the lens of cognitivist theories. Vaast and Walsham (2004) suggested that the reluctance to use technology may be the result of initial dissonance between the representation of the technology by the individuals and their representation of their work environment. Consequently, dissonant demands from the top management to the users may invoke user resistance to change until these demands become consonant. The authors suggest that "*practices changes with IT use if agents perceive a dissonance between their context, actions and prevalent representations and practices. Agents then gradually adjust how they represent their environment as well as how they routinely act in order to experience consonance again*" (Vaast et al. 2005, p.86).

A Social Actor Approach of Culture

This study aims to discover how the strategies of middle managers' promotion of IT can be understood through the lens of their cultural capacity in their organization. Doing so, national culture is not central in our analyses. Rather, national culture is considered as one of the aspects of a more broadly defined conceptualization of culture.

Many studies in IS adopt a structuralist view of culture. In the structuralist approach, the researcher considers structure as constraining the behaviour of the individual. Structuralism has emerged principally from the "course of general linguistics" of Saussure (Saussure 1916). Saussure showed that language is formed by elements that are imposed by those who use it. Further, Saussure reports that "*among all the individuals linked by language, a mean will be established: all will reproduce – albeit approximately – the same signs linked to the same concepts*" (Saussure 1916, p.29). Therefore, laws can be found from the structure which strongly constrains culture. Such an approach is said to allow mainly static conceptualizations of culture that allow neither change, nor diversity (Crozier et al. 1977; Walsham 2002).

Bourdieu (1980) further adopted a structuralist approach for understanding the behaviours of individuals but went beyond some initial limitations mentioned above. Bourdieu considers in a structuralist, holistic point of view that the behaviour of the individual is determined by social structures. Further, with the concept of "habitus", culture is central in Bourdieu's analyses. The notion of "habitus" refers to the unconscious representations and practices reproduced by homogeneous groups of individuals (Bourdieu 1980). The concept of "habitus" refers to the group or class culture of individuals and permits considering other levels of analysis besides the national culture level.

Structuration theory (Giddens 1984) suggests ways to go beyond the traditional and opposed views that suggest either the prevalence of social structures or the prevalence of the actor. It suggests that the notions of action as well as of structure are interrelated. This theory can thus contribute to studies on IS and culture, responding to several limitations highlighted in works relying on the work of Hofstede (1980), which is often criticized for being too simplistic and deterministic (Baskerville 2003; Gallivan et al. 2005; Myers et al. 2002; Walsham 2002). For Walsham (2002), structuration analysis (Giddens 1984) permits going beyond the mentioned

limitations and extending the consistency of cultural analysis in IS. A structural analysis allows taking into account "*cross cultural contradictions and conflict; cultural heterogeneity; detailed work patterns in different cultures; and the dynamic emergent nature of culture*" (Walsham 2002, p.360). The author argues that Hofstede's indices can be considered as reflecting contradictions between cultures. However, they do not provide tools that would permit understanding how conflict may arise, as a result of these contradictions. In Hofstede's analyses, countries are treated as unit of analysis, what can be considered as too simplistic (Baskerville 2003). Also, an underlying assumption of the use of indices is that culture is homogeneous, while in fact there is important cultural diversity inside a country (Walsham 2002). Such a conception of culture reduces this notion to the nation-state concept, while in fact several cultures may exist in the same country (Baskerville 2003; Bourdieu 1980; Myers et al. 2002; Walsham 2002). Advantageously, Walsham argues that a structuration analysis may permit analysing "*heterogeneous systems of meaning, power relations, and norm of different social grouping within the same national culture*" (Walsham 2002, p.375).

Other authors such as Crozier and Friedberg (1977) adopt a point of view partly from the methodological individualism (Boudon 1973; Weber 1949). Through multiple experiences of social and affective life, the actors develop and acquire conceptual means and frames of reference that Crozier & Friedberg (1977) defined as "cultural tools". They suggest that the solutions that can permit solving the problems arising from the collective action emanate from the cultural capacities of the individuals, acquired by social and familial learning. According to Crozier and Friedberg (1977), the cultural analysis would permit to "*understand the effective use by actors of the potentialities and opportunities of a situation and the resulting different structuration of similar contextual problems*" (p.224). For these authors, culture is constituted from "*elements of the psychic and mental life, with affective, cognitive, intellectual, and relational components; it is an instrument, a capacity that individuals acquire, use, and transform, building their relationships and their exchanges with others*"(Crozier et al. 1977, 210)

Following the approach of Crozier and Friedberg (1977) this study does not aim at elaborating organizational or national culture models. The Crozieran approach and analysis of culture would permit the answering of why some situations prevail in the context of managerial behaviour and action toward IT change. A structuralist and deterministic approach of culture cannot permit understanding the organizational or social change problem (Crozier et al. 1977), nor learning over time (D'Iribarne 1994). Therefore, Crozier and Friedberg define human action as a process in which the actors learn to use material and cultural instruments in order to cope with their problems when they arise.

The Actors' Strategies at the Center of IT Change Initiatives

Investigating how managers promote IT is linked to the question of the promotion of change in the current work practices of individuals. With an emergent view, we consider that the uses and consequences of IT are not determined and instead emanate from complex social interactions (Markus et al. 1988). Given the complexity of the phenomenon to investigate, an emergent view of change for that study appears more appropriate than technological imperative and organizational imperative (Markus et al. 1988). Following an emergent perspective, the outcomes of an IT can be different depending on the organizational context of its implementation (Markus et al. 1988; Orlikowski 1993; Robey et al. 1996) In our case, middle managers have not necessarily predetermined formal roles of promoting of IT.

According to Crozier and Friedberg (1977), accepting and promoting change can be risky for an individual if it is likely to involve loss of power and increased uncertainty. Conversely, an individual can find opportunities to reinforce his/her power by developing more visible competencies. In such conditions, the individual may find an opportunity to promote and use the system, and thus contribute to an increased visibility of his competencies through the system (Vaast et al. 2005). Therefore, following the strategic analysis, this study considers that change is fundamental to the transformation of a system of action. Change implies that the actors have to insert in new forms of social control and regulation and have to learn new types of games. For Crozier and Friedberg (1977), the actors, who act according to their own objectives and interests, can readily accept change. What is important for these actors is that they can find their self-interest in the implemented changes and have an accurate estimation of the risks of any change initiative on them.

The way middle managers will behave with IT will therefore depend upon how they will perceive technology will impact their work routines. Indeed, change in general and IT change in particular reconfigure the sources of power, the zones of uncertainty and involve evolutions in the games of the actors. Change can therefore be considered to be dangerous as the actors do not know whether the situation that will result from change will be more or less favourable to them. Consequently, consistent with the strategic analysis of Crozier and Friedberg,

we may consider that while middle-managers can in the same time accept the objectives of a particular system, they may refuse to contribute to its promotion as they should have to renounce to what permit them to affirm themselves in the workplace. Consciously or unconsciously, they will oppose their resistance to such a change that should threaten their autonomy and will try to orientate the change in such ways that they should maintain or reinforce the zone of uncertainty they control through the existing system.). Crozier and Friedberg, define the central concept of "power" as a relation rather than as an attribute. It appears similar to the notion of "behavioural power" that has been identified in prior IS literature (Jasperson et al. 2002).), the concept of "power" is defined as a relation rather than as an attribute. It is similar to the notion of "behavioural power" that has been identified in prior IS literature (Jasperson et al. 2002)

The literature in IS provides many conceptual frameworks permitting understanding why and how the individuals accept IT change or resist to IT implementation. For example (Martinko et al. 1996) suggest a model to explain why and how the individuals behave in particular ways during the implementation of IT. These authors rely onto the lens provided by attribution theory, which posits that the behaviours of the individuals are mainly influenced by their beliefs about their outcomes. With an "emergent" view, Orlikowski (Orlikowski 1996) suggests that the consequences of a particular technology emerge with the use of that technology and are not embedded in the IT artifact. Boudreau and Robey (2005) consider the process of change at an individual level is mostly improvised and encouraged by influences emanating from the social context (Boudreau et al. 2005). A similar conceptualization of change is suggested by Crozier and Friedberg (1977) who also consider change as a process of learning of new forms of collective action. They define change as "*the result of a collective process through which the resources and capacities of participants are mobilized or created for the constitution of new games. These flexible and emergent games will then permit the reorientation of the system as a human ensemble as opposed to a mechanistic routine*" (Crozier et al. 1977, p.391)

Research Methodology

Data Collection and Analysis

This study aims to understand 1) how middle managers promote IT and 2) cultural tools permit characterizing their behaviours when promoting IT. Cases studies are recommended for an in-depth understanding of a phenomenon, and when several sources are necessary in order to investigate the phenomenon of interest (Yin 1994). In order to conduct the research, we therefore selected a case study approach in two distinct countries. We intend to follow an inductive process as suggested by Crozier and Friedberg (1977). These authors suggest an hypothetico-inductive, iterative approach through the observation, comparison and interpretation of interactive processes that shape the system of action of the actor. Therefore, given the similarities between the inductive approach suggested by Crozier and Friedberg and a grounded theoretical approach (Glaser et al. 1967) we also rely on some principles of Glaser and Strauss (1967). The rich description expected will be about to provide an appropriate understanding of social contexts in which the actors are inserted. We rely on the strategic analysis of Crozier and Friedberg (1977). For these authors, the researchers task *"will always consist in discovering the characteristics, the nature and the rules of the games that structurate the relationships among actors that are involved in these games and that condition their strategies. Then the researcher will have to try to discover the underlying modes of regulation by which these games articulate one another and are maintained in a system of action"* (Crozier et al. 1977, p.452).

We intend to use structured and unstructured interviews as primary sources of evidence. Indeed, the understanding of life experience and of actor's frames of reference is necessary to understand their rationale. These interviews will aim at providing insights from the interiority of the actors, on their daily life, and on what is implicit within their frame of reference. They will try to discover to what objectives the behaviours toward the promotion of IT of middle managers are linked. They will also try to identify the cultural tools linked to the behaviours of the individuals, their objectives and to their underlying strategies. Following the strategic analysis, we aim at understanding to what extent middle managers promote IT change while pursuing objectives of their own, and having to cope with constraints. Further, the strategic analysis does not consider the behaviours as determined by the past experiences of the actors but rather by their objectives, expectations and anticipations, taking into account their resources and the constraints they face (Crozier et al. 1977). Championing IT has sometimes been related to personality characteristics behaviours (Howell et al. 1990; Leonard-Barton et al. 1988). Rather, consistently with the strategic analysis, we consider championing attitudes with IT are not necessarily related to the personality characteristics of middle managers. We consider middle managers attitude towards promotion of IT change as related to what they believe their current situation is, regarding their capacities and the games in which they are inserted. Other sources of information will include non participant

observations recorded by field notes in order to improve our understanding of the phenomenon. We intend interviewing mostly middle managers but also their superiors, their subordinates, and any key informants.

Epistemologically, we intend to follow a critical realist interpretation approach (Mingers 2004), rather than a purely interpretivist (Klein et al. 1999) or a positivist approach. Mingers (2004) suggests that one important advantage of a critical realist approach is that it "*maintains reality whilst still recognizing the inherent meaningfulness of social interaction*" (Mingers 2004, p.99). With a critical realist approach we make assumptions drawing from both interpretivist and positivist traditions. Consistently with an interpretivist perspective we consider the social reality is interpreted by actors (Klein et al. 1999; Orlikowski et al. 1991). However, we also assume that there may in some extent exist an objectively knowable reality (Mingers 2004).

Site Selection

Glaser and Strauss (1967) suggested a theoretical sampling approach for the selection of the organizations to be investigated. Organizations can be selected for there similarities and differences, having in mind theoretical relevance and the purpose of the study (Orlikowski 1993). We will select a company with a presence in two contrastive countries and in which the same IT are implemented and used. Studying two different countries will permit us putting our outcomes in perspective with other studies for example. However, this choice is not made mandatory by underlying requirements of the theory we use. We intend to focus on an IT such an Enterprise Resource Planning (ERP) often considered as a constraining technology.

Conclusion

This research in progress suggests the use of the theory of strategic actors for understanding the promotion of IT by middle managers. This study will contribute to other studies relying on social actor approaches, focusing on the strategies of these actors. This study will also contribute to the diversification of the approaches of culture used in the IS literature, dominated by Hofstede-type analyses. We intend to conduct a qualitative case study methodology with a critical realist approach, using the theoretical lens of the strategic actor of Crozier and Friedberg (1977).

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