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Attitudes to information technology in health care professions

Regis Meissonier

Montpellier Business School, regis.meissonier@gmail.com

Emmanuel Houze

Montpellier II University, emmanuel.houze@univ-montp2.fr

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“AVOIDING MANAGEMENT” OF RESISTANCES DURING IT PRE-IMPLEMENTATION PHASE: A LONGITUDINAL RESEARCH IN A HIGH TECH CORPORATION

Meissonier, Régis, CEROM, GSCM - Montpellier Business School, 2300 avenue des Moulins, 34185 Montpellier, France, regis.meissonier@gmail.com

Houzé, Emmanuel, CREGOR, IAE, Montpellier II University, place Eugène Bataillon, 34090 Montpellier, France, emmanuel.houze@univ-montp2.fr

Abstract:

Most of empirical research about users' resistance toward IT has been conducted after IT been implemented in organizations surveyed. Few longitudinal research have been done about the way individual and group resistances emerge and evolve during prior stages of projects. This focus on pre-implementation phases is all the more important that IS managers need to anticipate potential conflicts and users' resistances likely to involve project failure. This article delivers the results a two year longitudinal research conducted at Netia corp. (a worldwide leader in video and audio broadcasting) during preliminary phases of its ERP implementation project. As main findings, while conflicts toward IT implemented are often considered as having negative effects and requiring to be actively managed by the hierarchy, the case study delivers an alternative observation: it describes how an affective oriented conflict has been solved while managers adopted an “avoiding management style”. Our observations differ from several prior studies about conflict management styles and support that an avoiding management style can drive team's members to cope efficiently with conflict situations during IT pre-implantation phase. In conclusion, the article presents research perspectives associated to these results.

Keywords: IT implementation, ERP, user's resistance, conflict situations.

1 Introduction

Understanding key factors contributing to IT adoption in organisations is a central concern in information system research. Among key factors associated to IT project failures, users' resistance is one of the most salient because related to human resistance to change (Jiang, Muhanna et coll. 2000). Existing literature on IT resistance provides practical knowledge about underlying conflicts types and conflict management styles' performance (Cramton 2001, Montoya-Weiss et coll. 2001, Barki & Hartwick 2001, Markus et coll. 2000, Miranda & Bostrom 1993). However, most of these researches has been empirically conducted after IT been implemented in organizations surveyed and can be considered as observations made on downstream results of upstream resistance process. As a consequence, a large part of resistances are observed as *task oriented* and related to the non appropriateness of IT users have to cope with. Little empirical investigations were done about the way individual and group resistances emerge and evolve during prior stages of projects (Lapointe & Rivard 2005) while negotiations about IT to implement can raise *affective oriented resistances* if users perceive threats about their values or power relationships because of organisational changes expected. A focus on pre-implementation phases is all the more important that IS managers need to anticipate potential conflicts and users' resistances likely to involve project failure (Marakas & Hornik 1996, Joshi & Lauer 1998, Robey et coll. 2002, McAfee 2007).

Because enterprise systems are considered as ones of most impacting IT on future actions (Jiunn Chieh Lee & Myers 2004) because of their cross-functional perspective (Markus et coll. 2000) and readiness to change (Kwahk & Jae-Nam Lee 2008), we decided to report resistance evolution toward ERP adoption project during pre-implementation phase. To contribute to this issue, the article is structured as follow. The literature analysis reviews conceptual foundations of *resistance, conflict and conflict management styles* associated to IT implementation. The case study analysis delivers the results a two year longitudinal research conducted at Netia corp. (a worldwide leader in video and audio broadcasting for TV and Radio channels). Firstly, our observations revealed that *task oriented conflicts* expressed by users actually hid an *affective oriented conflict*. These resistances required the abortion of the ERP initially considered for a less impacting application on some specific process changes and on underlying power redistribution across group of employees. Secondly, we observed how this conflict between developers and administration employees switched to a solving solution while managers adopted an *avoiding management style*. Whereas conflicts toward IT are often considered as requiring to be actively managed by the CEO (Markus et coll. 2000, Barki et coll. 2001), the case study delivers an alternative observation. In conclusion, the article considers users' resistance toward IT as not a systematic negative behaviours aiming project abortion, and invites researchers to explore how *task oriented* and *affective oriented* conflicts can turns out to be key processes embedded in information system design.

2 Literature review

In management and organisation theories, the political school of thought developed by famous authors like Mintzberg (1998, 2002) or Crozier (1977), considers strategy formation and implementation shaped by power and political ploys. As a consequence, strategical project usually involves shifting coalitions of dominant actors of parochial interests (Jiunn Chieh Lee et coll. 2004). Even if lot of research in IS proposed understanding IT user's resistance toward a deeper approach (Joshi 1990, Krovi 1993, Joshi et coll. 1998) it seems marginal compared to articles published on the subject. Lapointe & Rivard (2005 p.462) revealed among 43 articles published during last 20 year period about user's resistance toward IT, only 4 did not settle for considering resistance as a factual characteristic of the context. The majority of these studies treated users' resistance as a component of an organisational system at individual and group level (Markus et coll. 2000) and only a minor part of these studies were devoted to study the causal conflicts (Jiang, Klein et coll. 2000). While literature stress on "resistance" or "conflict" without making clear differences between both concepts, our analysis, both based on psychology and sociology theories, incites to consider resistance as the behavioural dimension of conflict.

Resistance literature background

User's resistance is defined as a subjective process psychologically based at individual level (Jermier et coll. 1994). It corresponds to behaviours in reaction to a present or ongoing situation perceived as negative (Ang & Pavri 1994), as inequitable (Joshi 1991), as a threat or as a stressing feeling (Marakas et coll. 1996). According to Joshi (1991) resistance appears when user perceives changes involved by an "unfair" project in regard to his/her personal work or in regard to the group he/she belongs to.

Users can express resistance toward IT with an active form (visible and relatively easy to detect) or in a passive form (hard to detect and difficult to deal with) (Tetlock 1999, Tetlock 2000, Jiang, Klein et coll. 2000) Empirical studies shown that resistance is higher at group level than at individual and organisational levels (Lapointe et coll. 2005). In other words, group of persons (depending on their professional category, professional competencies, age, gender, etc.) represents the more likely unit to develop high resistance toward IT. Indeed, at group level, users' resistance is often socio-political whereas at the individual level it is more psychological (Markus 1983). Coetsee (1999) identified 4 types of resistance expressions:

- *apathy* corresponds to attitude of disinterest and inaction of a person toward the situation;
- *passive resistance*: a person adopts some behaviours aiming for slowing down changes and keeping the previous system (examples: voluntary delays in task to do, argumentation in favour of so-called advantages of existing rules and processes);
- *active resistance* is considered as a “constructive form” (examples: expression of different points of views, negotiation about a consensus, accommodation);
- *aggressive resistance*: users can resort to threats, blackmails, boycotts and all other actions whom objective is blocking the situation.

According to the author, these forms are not exclusive and should be considered as part of a continuum encompassing on the other extreme user acceptance and involvement.

Conflict types

Conflict is defined as a disagreement of persons or groups of persons considering a situation as inconsistent with their own interests (Boulding 1963, Robbins 1974, Putnam & Wilson 1982, Hocker & Wilmot 1985). A conflict can oppose somebody to himself or herself (internal conflict), to other persons, groups of persons or to institutions (Thomas 1992). Several definitions synthesis made in organization theories (Putman & Poole 1987), psychology (Thomas 1992) or information systems (Barki et coll. 2001) considers three properties of interpersonal conflicts: *interdependence*, *interference* and *disagreement*. By itself, each property can not be considered as a sufficient condition. Interpersonal conflicts are more dependant of their overlapping.

- *Interdependence* exists when each party reaches a specific goal, at least because of the actions of the other party. In essence, interdependence is a structural condition for conflicts in a professional context because of respective consequences of the way the other party acts.
- *Interference* is a behavioural condition for conflict and occurs when one or several parties opposes the other party's attainment of its interests, objectives, or goals. Interference thus represents the central behavioural node of any conflict (Barki et coll. 2001 p.198).
- *Disagreement* is a cognitive condition for conflict and correspond to divergence of interpretations toward values, objectives, needs, methods, etc. Disagreement refers to disputant behaviours and is considered as the central process associated to conflict (Wall & Callister 1995).

While first and second properties sounds like relational configuration associated to conflict, the last one deals with upward causes. In professional contexts, these causes can be task (or process) oriented *versus* affective (or relational) oriented (Deutsch 1969, Pinkley 1990, Jehn 1995, Jehn & Bendersky 2003). Conflicts about tasks are issue oriented and arising from differences between professional missions to be performed, whereas affective conflicts refer to personalized disagreements or individual disaffections. The first ones can be considered as differences of points of view rarely assorted of negative emotions while the second ones can raise frictions and tensions which can affect team performance (Jehn & Mannix 2001). We distinguished 4 different conflict types drawn from task and affective orientations (see Table 1).

	Conflict types	Key authors
<i>Task oriented</i>	Conflicts about the definition and the execution of tasks that users must fulfil	Robey <i>et al.</i> , 2002 ; Markus & Tanis, 2000
	Conflicts about the new professional skills required	Besson <i>et al.</i> 1999 ; Markus & Tanis, 2000 ; Newman & Westrup, 2005
<i>Affective oriented</i>	Value conflicts	Besson <i>et al.</i> 1999 ; Ménard & Bernier, 2004 ; Kohli & Kettinger, 2004 ; Leidner & Kayworth, 2006
	Conflicts due to a loss of power	Markus, 1983 ; Hart & Saunders 1997; Watson <i>et al.</i> 1999 ; Jaspersen <i>et al.</i> , 2002. ; Bancroft-Truner & Morley, 2002

Table 1: Conflict types associated to IT implementation

Conflicts about task definition and execution are caused by the way organisational processes have to be adapted or transformed to fit with IT process requirements (for examples: how invoices and orders must be established, new data codification, signature validation process). These conflicts can be “internally initiated” when users compare the way they achieve their tasks and perceive organisational inconsistencies (Besson 1999). They can also be “externally initiated” because of the process constraints imposed by information technology to be implemented. For instance, ERP standard modules represents one of the most well known conflict driver because of new “best practices” imposed to employees without too much consideration of organisation specificities (Davenport 1998, Markus et coll. 2000, Lim et coll. 2005). This type of misalignment with organisation processes (Hsiao-Lan et coll. 2005) is all the more important that problems in MIS are more about the ability of users to understand how they must carry out their new tasks than ability of the firm to manage change (Robey et coll. 2002).

Conflicts about new professional skills deal with competences users must develop in order to be qualified to job transformations involved by IT (Markus et coll. 2000, Besson & Rowe 2001). Accountancy is one of the most salient professional illustrations: before ERP implementation during 90's, an important part of daily work of these employees consisted of collecting, aggregating and synthesising a huge quantity of financial data. Enterprise applications change dramatically their assignments: being no more the ones who collect financial data, they are asked to interpret these information's *ex-post*, to make sense and recommendations to top managers (Bernard et coll. 2004).

Value conflicts are psychologically based. They refer to *ideology* by which some people share beliefs and make sense of their worlds (Trice & Beyer 1993). Firm subunits may have their own subculture varying in their ideological content (Stewart & Gosain 2006). In IS, value conflicts may arise on inconsistency between cultural principles of users or group of users and the perceived underlying strategic objectives assigned to IT implementation (Leidner & Kayworth 2006). Several empirical researches (Besson 1999, Kohli & Kettinger 2004, Ménard & Bernier 2004, Bhattacharjee & Hikmet 2007) revealed how these conflicts raised in the hospital sector. For example in his study, Besson (1999) observed that financial control allowed by the ERP over all the hospital activities was perceived by medical employees as an attempt of a market based activity inconsistent with fundamental principles of health public services. The empirical analysis of Wagner & Newell (2004) revealed complementary observations according to which ERP can be problematic for organisation sub-cultures because mandating one epistemological position through the software design based on “best practices”.

Power conflicts concern the way individual autonomies and capabilities of influence are likely to be redistributed among employees after IT implementation. Research in IS challenged understanding of IT development and implementation deviations by pointing out intricacies due to power influence exerted by actors (Markus 1983, Davis et coll. 1984, Markus & Bjorn-Andersen 1987, Jaspersen et coll. 2002, Avgerou & McGrath 2007). On one side, IT can give more power to key users by allowing them to use real time data access functionalities (Davenport 1998). On the other side, IT can reduce the autonomy of employees (Markus 1983). Despite hierarchical monitoring supported by IT, power loses for employees may be caused by more interdependencies with colleagues. For instance, in civil

engineering project management, ERP implementations changed the way main actors (project supervisors, architects, electricians, plumbers, etc.) collaborate (Gilbert & Leclair 2004). Formerly, they did not have to communicate to their colleague the details and calculations on which their analysis and conclusion were based. The integration of processes associated to IT looks like a management of interdependencies (Rockart & Short 1995) by which actor become prescriber of conditions and means of his colleagues. As a consequence the political perspective in terms of power distribution misfit appears to be primarily applicable for cross-functional IS (Markus 1983).

Actually users' resistance forms are not exclusive and can occur simultaneously. However, emotional conflicts are considered as highly contagious (Hatfield et coll. 1993) and likely to overshadow or dominate congruous task oriented conflict (J. Ford et coll. 2008 p.369). Actually, MIS literature based on the interaction theory (Joshi 1992) considered that the fundamental reasons of resistance toward IT systems are not the ones expressed about the system nor persons characteristics, but users' perceived values and social content gain or loss before/after system implementation (Jiang, Klein et coll. 2000, Kendall 1997). Indeed, advocating system inconsistencies or organisational misalignment is probably a more comfortable resistance strategy than the one consisting to express underlying individual socio-political challenges. In this research we assume that users having affective oriented conflicts related to IT project are likely to use a bypassing strategy and to express their resistance only with task oriented conflicts. Following this reasoning, we formulate the following research proposition:

Proposition 1: expressed task oriented conflicts toward IT to be implemented may hidden affective oriented conflict.

Resistance management styles

IT projects can rarely be properly completed without any implication of the CEO. Often, top management ought to appear as “sponsor” of the projects in order to promote their credibility toward employees (Davenport 1998, Markus et coll. 2000). CEO should be able to balance the choice that must be made between satisfaction of individual expectations and the general objectives of IT projects in order to manage efficiently conflict resolutions. There are three common conflict resolution approaches: integrative (solving the problem through collaboration), distributive (solving the problem through assertion), and avoidance (ignoring the problem) (Sillars 1980). The *integrative approach* aims to identify and achieve outcomes perceived as satisfactory to all team members. These approaches support also previous studies that demonstrated the preference of IT users toward participative resistance management methods in opposition to direct management methods imposed by managers (Robey & Taggart 1981, Ives & Olson 1984). The *distributive approach* yields outcomes that favour some team members but not others. The *avoidance approach* consist for managers not intervening in the conflict and relying on the team capability to self resolve the conflict.

Within the conflict domain, many studies have been done to examine the management and resolution of conflicts, identifying a number of conflict management styles and their role in achieving satisfactory outcomes (Barki et coll. 2001, Kankanhalli et coll. 2006). We identified five different management styles using the common conflict resolution approaches: problem-solving, compromising, asserting, accommodating and avoiding (see Table 2).

Integrative approaches	Problem solving	Managers identify conflict causes and solve them looking for optimal solutions. Problem-solving occurs when managers try to fully satisfy the concerns of all parties.
	Compromising	There is no optimal solution to the conflict; managers try to find a satisfactory solution by splitting the difference where each party win some and lose some.
Distributive approaches	Asserting	Authoritarian decisions are made and imposed by managers to users. Conflicts are considered as win/lose situation.
	Accommodating	Managers give up their preferences and satisfy users' claims. Accommodating occurs as managers must adapt, or cooperate with users in an attempt to reduce conflicts.
Avoiding approach		Managers do not intervene in the conflict and hope for the

	situation to resolve by itself. Avoiding occurs when managers refuse to act and to participate in conflict situations.
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Table 2: Management styles of IT resistances

According to Montoya-Weiss *et al.* (2001) *integrative* and *distributive approaches* appear to facilitate team performance whereas the *avoidance approach* seems to hinder. In their empirical analysis conducted on IS staffs and future users of 162 IS projects, Barki and Hartwick (2001 p.218) observed *asserting mode* and *avoiding management* as associated to negative results in terms of interpersonal conflict solving. In others words, the two most opposed styles were considered as inefficient techniques. In the same time, authors considered that negative emotions involved by interpersonal conflicts are not only negative experience, but negatively affect IS project outcome and remain pervasive even when properly resolved (*op.* p. 220). However, resistance management styles can not be considered as exclusive. MIS literature shows that, depending the project budget, the delays, the evolution of employee perspectives, etc., project managers are likely to change their style several times during the project duration. For instance, Gibson (2004) describes how during an ERP implementation project at Dow Corning corporation, resistance management style evolved from an “improvisation approach” to “big bang” assertions. Then, for a large part, information systems literature incites managers to not remain passive (Leidner et coll. 2006 p.381) and to solve users’ resistance by identifying conflict situations in order to prevent a project or an on going situation to evolve negatively toward IT implementation. On an other side, some empirical studies showed that conflict situations managed by team members were linked to conflict reduction (Kankanhalli et coll. 2006) or team performance improvement (Jehn et coll. 2001). In other words there would have no evidence that depending the context a management style relying on teams self ability to resolve resistance can not not be suitable. However, these observations have been only done on *task oriented conflicts* and do not permit to expand the corresponding assumption to *affective oriented conflicts*.

Proposition 2: avoiding management style is not associated to positive results in the case of affective oriented conflict.

This literature review on conflict situations, user’s resistances and management styles toward IT implementation, represents the theoretical background we used to analyze Netia case study. The longitudinal research conducted explores user resistance causes and conflict situations lying behind preliminary phase of ERP implementation while managers decided not to intervene.

3 Case analysis

In general, conflicts in organisations evolve over time which justify the higher adequacy of longitudinal research methodology than the one of static analysis (Jehn et coll. 2001 p.239). This method is often used in IT implementation studies (Molla & Licker 2001) and recommended for Small and Medium Enterprises' analysis (Chetty 1996). There is also an interest for using a single case study which delivers illustrative stories (Benbasat et coll. 1987). So, we adopted a longitudinal research methodology for Netia from the beginning of 2005 until the end of 2006 using standard techniques of case studies analysis (Miles & Huberman 1984, Eisenhardt 1989, Yin 1994).

Case description

Netia corporation (located near Montpellier, France) is one of the worldwide leaders in broadcasting (40 countries covered). Its customers are TV channels and radios like, BBC, ABC, Rai uno, Canal+, France Télévision, etc. Created in 1993, the company employs an hundred of persons spread over two sites in France and subsidiaries abroad (Amsterdam, Liège, Rome and New York). The firm is an IT service agency dealing with development of audio and video data digital solutions. Besides IT development, Netia offers implementation management services (consulting, process analyses, engineering, training, maintenance and evolution of audio and video data digital solutions.). The information system of Netia has been developed progressively by ad-hoc initiatives. These isolated and independent developments have been involving a lack of data coherence as well as an excessive growth of applications. Consequently, a large part of employees' tasks was dedicated to re-entering data in order to feed all of the redundant applications implemented to respond to local needs. For example, the management control service developed a set of Excel macros to partially deal with a divided utilisation of SAGE accountancy software. Each process (order forms, delivery forms, etc.) corresponds to a data entry for one or more shared Excel files (on the server there is a file for the order forms, another for the clients, another for prospects, etc.). The information system was structured

around a huge quantity of office files from which data were manually extracted and aggregated into other files to produce performance indicators required by managers.

Thus, a loss in productivity raised because of repeated data entries and redundant procedures. The lack of IS integration was also highlighted by data access problems. For example, the project coordinator did not know the status of the client order in progress; he had to contact directly the logistic service which browsed the SAGE application. Given that, transaction histories were dispersed throughout several isolated applications and purchases' tracking was hazardous to carry out. Customer invoices were not automatically triggered by a delivery note; the logistic staff had to type corresponding informations in a shared Excel file with the account number in order to edit the invoice. Due to these inconsistencies, administrative employees asked for the implementation of an integrated information system to ensure a more coherent and efficient management of the daily tasks.

Our research has been articulated with two phases aiming to identify explicit and tacit causes lying behind the ERP adoption abortion and, later, the implementation of the Genesys software.

Research design

To reach an appropriate degree of internal validity, we used the same three sources of evidence as the ones used in multilevel analysis of resistance to IT (Lapointe et coll. 2005): interviews (during the first step); direct observation (during the second step); document analysis, informal discussions and records of events (all along the project). These several data sources allowed us to achieve triangulation in order to ensure satisfactory information interpretations (Yin, 1994).

The aim of *the first step analysis* (from January 2005 to November 2005) was to identify explicit and tacit causes explaining why the firm had failed at the ERP implementation preliminary phase. This approach was explorative and consistent with thematic analysis (Boyatzis 1998) where codes must be constructed inductively. To carry out the analysis, 8 semi-directive interviews were conducted over 4 months. Even if the overall activity of the firm was highly technological, an understanding of different levels of culture was important to study IT implementation (Leidner et coll. 2006 p.358). It was relevant to analyse how the co-existence of subcultures had influenced conflict situations which involved the IT project abortion. Interviews were realised with key employees of firm departments (see Table 4 in appendix). The interview grid used had been conceived with reference to the risk factor lists of Markus *et al.* (2000), Akkermans & Van Helden (2002), Besson *et al.* (1999). The interviews were realised in a one-to-one interaction with an anonymous format response gathering. During the first part, the employees interviewed were asked to select on the grid the factors he/she considered as explaining the rejection of the ERP implementation. In a second part, we asked him/her to explain the causes he perceived as associated to ERP implementation project. Interviews lasted around 90 minutes approximately and were audio-tape recorded in order to avoid potential biases of only one interviewer interpretation. We completed this first step analysis by several formal and informal meetings with key actors of Netia in order to perceive users' resistances and conflict situations toward the preliminary phases of the ERP implementation.

A *second step of analysis* (from March 2006 to October 2006) was conducted when, after several invitations to bid, a package editor (Genesys corp.) was asked to present its software. The presentation has been done in front of the Netia employees concerned by the IS implementation (see Table 5 in appendix). We took the advantage of being invited to this meeting to analyse the direct reactions of employees. To avoid any suspicions about our presence, Netia managers presented us as academic researchers interested by IT solutions for firms without any role to play concerning the project. The passive observation method we used was consistent with Yin (1994) who considers this technique like an additional source of data useful to understand the social context of the firm. To control the risk of instrumental biases involved by observational methods (Weick 1968), both authors attended the meeting and aggregated, latter, data collected. The meeting lasted 3 hours and took the form of a presentation and discussion about the software functionalities. Seeing directly on the screen the usability of the product, participants were able to ask questions all along the presentation. This type of interactions allowed us to note verbal and non verbal users' behaviours.

4 Results

Step 1

During the first step analysis, computer department employees expressed an *aggressive resistance* toward the ERP implementation project which was considered as inappropriate to the needs of the organisation. This conflict situation between computer department employees and administration employees was consistent with prior studies which showed that cultural differences within organisations tend to influence contrasted interpretations of IT to be developed (Dubé 1998,

Ngwenyama & Nielsen 2003) or to be adopted (El Sawy 1985, Robey et coll. 1989, A. Cabrera et coll. 2001). In fact, what was perceived as a *task conflict* was hiding a *conflict of power* between computer department employees and administration employees (initiator of the ERP project) (see Table 6 in appendix).

Programmers represent a key competence asset for Netia. In fact, the broadcast software applications developed by the company are in no way standard package applications that can be bought on the market. Consisting of solutions billed for several thousand of euros, these programs ensure storage, management and broadcasting of audio and video programs for TV and radio channels. Therefore, very specific skills are required regarding sound, image, storage (on servers of several terabytes), and data diffusion by hertzian, satellite or GPRS transmissions. The programmers in the company represent a rare workforce on the professional market and this gives them a strong negotiation power towards the hierarchy. Thus, they have gained overtime strong independence in the way they organize their job. *"I decide my own objectives!"* declared a program coordinator. An administration coordinator described for us the example of holiday management: *"The programmers are used to freely organize their work depending on the tasks and on the assignments to be completed. They do not really respect the process for taking holidays. Instead of filling out the holiday sheet and having it validated by managers, the requests (when they are made) usually take the form of an informal conversation"*. The implementation of the ERP was perceived by programmers as inconsistent with their *ad hoc* processes and their autonomy. Considered as a "spy eye", such ERP system was considered as a threat for their own autonomy.

The top managers avoided any risky decision - in the sense of Cyert and March (1963) - and adopted a passive management – in the sense of Cooke and Lafferty (1987). CEO never interfered in the conflict situations and did not decide to impose this unpopular solution to programmers and preferred to let all employees finding a compromising solution by themselves. An administration coordinator stated: *"If we really wanted to impose a standard solution, we could. However, this would mean interfering with the programmers. But they are the makers of the programs sold, so..."* Because there has been no concrete or major prejudice due to the unreliability of the existing applications used, managers were not particularly motivated to settle this situation and to take a decision likely to disturb the social climate. *"Regarding the successful implementation, the management favours the programmers, only the programmers... The rest, such as improving the organization, is not considered as crucial"*. These observations illustrate that IT employees are mainly rewarded for delivering technically sound systems on time and to budget and are not really encouraged to consider organizational issues in IT systems (Hornby et coll. 1992 p.165).

Step 2

Because of the programmers disagreement about the ERP implementation project and the passive attitude of top managers to solve the conflict situation, administrative employees decided to look for less impacting software's from an organisational point of view.

Among the commercial propositions received, administrative employees of accounting service considered Genesys application as an interesting alternative. Its functionalities covered most salient needs of administration employees: customer and potential customer management, sales and procurement management (quotation, order and invoice tracking), treasury, after-sales management, etc. Then, the application was focused on process management of administration employees without implying cross-functional processes. In other words, the software could not be considered as an integrated information system forcing programmers to cope with badly perceived tasks like reporting their daily work or filling out electronic forms to have holiday demands validated by the managers. Moreover, it was interoperable with SAGE application and was not requiring data migration from the existing database.

During the presentation meeting we attended to, both computer and administration representatives found this new solution satisfactory towards the needs previously expressed (during step 1). The application was supposed to be used only by administration employees. Computer department representatives only made remarks and asked questions about technical specificities of the software. Some allusions to the previous recalcitrant behaviours of developers about the ERP solution were expressed with irony and the general laugh reaction allowed us to observe an alleviation of the initial conflict between administration and computer employees.

Despite the general positive impression about the application, an active *form of resistance* appeared few minutes later when conversations converged on the required task reconfigurations. For example, because of his frequent travels abroad, the Asia commercial agent of Netia mentioned some practical problems not treated by Genesys functionalities. This employee was used to type a text file within

which he added complementary information and comments about potential customers. Then, he uploaded the file on Netia server in order to make it available to other employees. But the customer management function of Genesys software did not allow joining complementary files like that. So, he firstly considered this as an annoying limit of the application toward his daily activity. Then, the discussion moved on how to overcome this problem until one programmer noted that it was more related to the task definition than the software appropriateness to user needs. Actually, Netia employees were used to include in “transaction” concept all upstream processes to the order (quotations, bargaining, etc.) whereas in Genesys application those tasks were included in an other functionality than the one talked about. Actually resistances expressed during this step were essentially because of ambiguity in professional jargon between Netia and Genesys corporations.

Few minutes later, another *active resistance* raised while Genesys engineers were presenting the treasury management function. The Finance Director was reluctant to use this function because she explained that it only satisfied a minor part of the activity. According to Netia practices she revealed that on-going payments of invoices sent to customers were included in treasury while not yet cashed. If this practice may sound as inconsistent with accounting classical rules, it sounded consistent with Netia business practices. Indeed, the recovery rate of customer debts is always 100% and paid immediately when the invoice is received. So, any invoice sent to customer are considered as existing cash. However, at the end of the meeting, all employees agreed on the global adequacy of Genesys ERP for Netia needs, only *task-related* oppositions remained and were resolved. As a result, at the end of 2006, the decision was made to implement Genesys solution and the software was bought. Table 3 presents the evolution that has known the user’s resistance, conflict types, and conflict management styles toward the IT implementation project.

	Step 1	Step 2
Employees concerned	Computer dept. employees	Administrative dept. employees
User’s Resistance Types	Aggressive	Active
Conflict Types	Power oriented	Task oriented
Conflict management styles	Avoiding style by top management	Avoiding style by top management / compromising style by administrative employees

Table 3: resistance and conflict evolution observed

5 Discussion

Our research puts the emphasis on longitudinal research, *versus* cross-sectional data collection, to analyse the dynamic nature of conflict and user’s resistance during project steps prior to the IT implementation. We believe that researchers should consider these “upstream resistances” like additional influencing factors of IT adoption to explore in order to expand existing theoretical models.

We use this French corporation case study to observe how user’s resistances and conflict situations associated to an IT implementation project evolved over time. Therefore we can not pretend the same generalisation of the result as if we had used several case studies and quantitative analysis. During the first step of analysis, data were mainly collected through interviews which likely induce some interpretative biases on the feelings expressed by interviewees. However, we tried to reduce these biases by interviewing several employees of each department, using a grid to help respondent to identify and formalize the factors he/she considered as explaining the resistance to the ERP implementation, comparing the data collected, adding informal meetings, etc. During the second step of analysis, data were mainly collected through observation techniques during the Genesys presentation to Netia employees. Our presence might have influenced the way persons behaved and participated during the meeting even if we had been presented as having no role to play on the decision process of the IT project. Moreover, one inherent limit of longitudinal research is that the processes observed continue to evolve after the end of the research investigation (Volkoff et coll. 2004 p.302). Further research should be done in order to study other findings in other cultural, structural (large firms), professional and organisational contexts to give a deeper understanding of user’s resistance and conflict situations during a longer longitudinal research which would cover all the IT project life-cycle.

Nevertheless, by exploring conflict evolution during pre-implementation project phase, our results offer additional contributions to IT users' resistance research. Firstly, *task oriented conflict* expressed during step 1 hindered *affective oriented conflict* related to the autonomy treat perceived by developers (our proposition 1 is confirmed). This observation is consistent with previous studies done on value and power conflicts associated to IT implementation (Markus 1983, Hart & C. Saunders 1997, Jaspersen et coll. 2002, Kohli et coll. 2004, Leidner et coll. 2006) and is in line with recent investigations of Ford *et al.* (2008) who observed that emotional conflicts can dominate task conflicts in organisations.

Secondly, resistances moved from an aggressive form (observed during step 1) to a constructive form (observed during step 2) which led to the implementation of an alternative IT solution. The evolution showed that conflicts are not fixed and our results are in line with observations of Jiang *et al.* (2000 p.32) who observed causes of users' resistance differed according the IT type to be implemented. Our investigation illustrates how an *affective oriented conflict* related to IT has been solved during these preliminary phases while top managers adopted an *avoiding management style* (our proposition 2 is rejected). Netia case study do not support the conclusion of Barki and Hartwick (2001) who observed *avoiding management style* as associated to negative results in terms of conflict solving.

Because our longitudinal observations delivers the story of one conflict management style we can not assume the effects other conflict management styles would have provided and we can not consider any intrinsic superiority of the avoiding style on other styles. However, our results are in line with the attribution theory (Cramton 2001) and some empirical studies which showed that conflict situations managed by team members were linked to conflict reduction (Kankanhalli et coll. 2006) or team performance improvement (Jehn et coll. 2001). However, these studies have been mainly realised on *task oriented conflicts* whereas our observations extend the results to *affective oriented conflicts* which are considered as more difficult situations that managers prefer to avoid to be engaged with (Edmondson & Smith 2006 p.25).

Concerning MIS literature, the article expands the empirical researches which observed the lack of "organizational fit" as a failure cause of ERP implementation (Hong & Kim 2002, Hsiao-Lan et coll. 2005). We could consider our results as a possible extension of these results in the sense we observed the "fit" not limited to the adequacy of IT to business but covering also underlying organisational change consistency with value principles of firm sub-culture units. Indeed, when an organization is composed of several sub-cultures, the use ERP can be problematic because mandating one epistemological position through the software design based on "best practices" (Wagner et coll. 2004).

For IS practitioners, our study suggests a greater attention to issues relating to power, autonomy and professional sub-cultures when implementing IT. The main practical implication of this paper for managers is inciting them not considering task oriented conflicts expressed by users, as sufficient informations to understand whole resistance causes related to IT projects. Discovering and understanding potential underlying affective conflicts about users' values or power losses turns out to be necessary before deciding the IT to implement.

6 Conclusion

The underlying message of this article is being out of considering users' resistance toward IT as a negative behaviour toward the organisation effectiveness. By considering resistance as dysfunctional conflict, IT project managers can disregard its potential contribution to the change and implementation. In organisations with absolutely no resistances, employees would accept all change projects including those detrimental to the organization effectiveness (J. Ford et coll. 2008). Affective oriented conflicts are not necessarily about present change involved by the project but can be related to unresolved issues form previous changes (Reichers et coll. 1997). So they can be interpreted as appeals for some managerial rectifications, like restoring trust or professional recognition of employees, which should be taken into account in the design the IT to implement. As a consequence, decisions made about the implementation without consensus are likely to involve systems' usages very different from the ones expected by managers (Soh & Kien Sia 2004). As future investigations, we incite researchers to explore how both *task oriented* and *affective oriented* conflicts should be considered as consistent with inscription theory (Orlikowski 1992) and assumed as key processes embedded into IT choices and information system design.

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7 Appendix

Genesys corp.	1 management engineer 1 technology engineer
Accountancy service	2 employees
Finance service	2 employees
Computer service	2 employees
Customer service	2 employees

Table 4: Interviews realised during step 1

Initials	Department	Function
VB	Accounting	Management coordinator
AG	Computer Dept.	Computer Dept. Coordinator
PV	Computer Dept.	Software developer
SR	Accounting	Supplier invoicing
SB	Accounting	Client invoicing, salaries
OC	Operations	Project Director
PD	Logistics	Logistics coordinator
XZ	Sales	Sales coordinator

Table 5: Presentation meeting during step 2

A project coordinator statement	<i>“The programmers are really expert regarding computer based applications. So, they develop the tools they like without worrying about coherence. Thus we could not impose the development of collaborative systems despite the overwhelming number of meetings!”</i>
A management controller statement	<i>“When they (the programmers) examined the interfaces and the application functions of ERP presented they were systematically pessimistic:”</i>
A programmer statement	<i>“I prefer non proprietary software’s; however interfaces of such applications are ugly!”</i>
Computer department chief	<i>“Administration employees are totally unaware of what they really need, and top managers do not understand ERP implications to decide what should be done. We have already developed several applications which have never been used. That’s out of question to do the same with an ERP.</i>

Table 6: Most salient statements quoted during step 1