Abstract

Upon the supremacy of the functionalist ideology in management (Alvesson, 2002), many researches concerned for the Information and Communication Technology (ICT) treat the project success in terms of costs and profitability (Murray & Willmott, 2001) with disregard for human aspects of a management seeking a better reorganization of processes and social structures in organizations (Davila-Gomez, 2004). Consequently, there is a need for theoretical frameworks more adapted to the organisational realities; it is imperative to take into account the persons as subjects with acceptation or rejection of using the ICT. For this aim, we have conducted an explorative qualitative research in 21 PME (“petites et moyenes entreprises”) in Quebec seeking to identify some experienced difficulties and solutions while implementing ICT. We have chosen PME’s because, among other reasons, the few studies made about PME’s (e.g. Poussart, 2001; Cefrio,
2000; Julien et coll., 1996) show only percentages of implanted ICT and enounce the supported organizational processes.

Our findings show us as difficulties (and also challenges) for the managers: (1) the need to a quick resolution of problems with the collaboration of the personnel, which demands a subjective approval from this personnel – for which, the ICT utilisation need to represent a meaning; (2) support to the promise of performance of ICT, given that this promise is constantly questioned because of the additional efforts needed to do in order to well integrate those ICT with the processes and social structures of the organization; (3) patience and optimism when in reality, even if ICT procure productivity, they require more personnel. Even though ICT furnish the operation and internal procedures with accuracy, additional to the speed in communications, it demands, as a counterpart, more personnel like technical experts, who require training while using the new ICT. In this thought, we have identified that what enables to face the aforementioned challenges is the exercise of human qualities of mangers towards their personnel and causes anxiety and anguish in the personnel involved while processes reorganizations take place. Among others, some qualities are openness, support to people’s training, support to people’s creativity in order to carry out solutions that are original, unprecedented, recursive and immediate; the support to the persons and the cohesion with the personnel, the patience and the “believing” in a better future to benefit from the ICT advantages.

In a functionalist logic, the non-considered latter difficulties should not occur, because they are not even acknowledged as possible realities in the planned project frameworks. Consequently, the identified challenges and qualities do not make part of the actual dominant organizational theories. On the contrary, in our humanistic approach, we consider that these challenges constitute an intrinsic part of the daily experienced reality while implanting ICT. That is also pertinent not only for the PME case (because of time, budget and size constraints), but also for organization of bigger size (which we confirmed when we conciliated the findings of this research with a previous one we had conducted – Davila –Gomez, 2003). We propose, therefore, a theoretical frame that integrates some of our findings.
As the dominant organizational theory is concentrated in increasing financial growth with disregard of social and human consideration inside organizations, ICT implementations follow mostly the seeking of productivity with no integration of organization’s social factors. Since more than two decades, few authors (e.g. Vincente, 2002; Béguin, 1984) have begun to denounce some disastrous consequences while implementing ICT and not asking people about their perceptions and needs resulting in grave social consequences. In this reality, as pointed out by Alvesson and Willmott (1996), the functionalist paradigm is privileged as management teaching and practice, and critical and humanistic considerations are left apart. Upon the basis of this paradigm, people inside organizations are more conceived as resources that can be aligned all along a value chain of production and therefore there is no need to include psychological or social factors (Davila-Gomez, 2005). As dominant theory, it drives organizations in an utilitarian perspective of the human being (as it is denounced by Alvesson (2002) and Chanlat (1998)). Here, inside a value chain (as conceived by the neo-liberal approaches of Porter (1980), or more recently by Hammer and Champy (1993) and Childe et al. (1994) inside the business process reengineering boom), each part is connected perfectly and it is operational with each other. Hence, there is little room to malfunction or moreover, to disagree, because naturally every part has to be assembled in an indivisible chain. The question here is that people are more than merely things; they have ideas, agreements and disagreements, feelings, emotions and social attachments.

Inside this reality, even though sophisticated functionalist and pragmatic approaches are used to implement ICT solutions in organizations, in many cases (if not the majority of them, as pointed out by Kuruppuarachchi et al. (2001) and also by Gagnon et al. (2001)) there is a need to execute post ICT projects accommodation, reorganization and new investments not taken into account on the original project plan. Furthermore, our literature review shows us that in the fields of ICT and organizational change, very few authors are concerned by the human implications involved (e.g. Bernier et al., 2003; Bareil et Savoie, 1999; Fabi et al., 1999; Rivard et al., 1999). There is a need to present
empirical evidence that helps to develop more accurate theoretical frames which include human considerations and that are valuable for managers (the practitioners). That is the aim of our paper.

In this thought, as our previous and actual research shows us (Davila-Gomez, 2004, 2003), the aforementioned difficulties generate not only more financial expenses (in terms of time and money) for the organizations, but also go against the working climate. As ICT projects end and the new ICT do not resolve entirely the problems for which ICT was introduced, people do not accept it or do not use it freely, unless it is mandatory. Concurrently, people are demanded to accept workloads because during the transition made between the former way of operating and the new one, numerous problems must be resolved due to gaps and gadgets of technology and its process of accommodation.

Thus, in this paper we present some of these difficulties, some of its causes, as well as some of the solutions that actual managers must introduce, in order to elucidate some causes for acceptance or rejection of ICT implementations. That allows us at the same time to propose some guidelines when seeking organization productivity with a concern for human and social development. Our paper discussion is sustained in two empirical fields. The first one refers some findings of the doctoral thesis of Davila-Gomez (2003), in which the empirical field is two distance learning graduate management programs sustained with ICT (one in the province of Québec, and the other in Mexico). The second one refers to 21 manufacturing PME in the province of Quebec. The variety of the cases enriches our analysis as they are diverse representations of the same phenomena while doing qualitative research (Grawitz, 1986). We follow a hermeneutic and interpretative orientation (Gusdorf, 1988; Husserl, 1925). This qualitative research orientation is recognized in the discipline of management as necessary if we as academicians want to contribute to have more socially concerned organizations (see for this how Alvesson & Willmott (2003) and Crowther (2002) and claim as imperative the need for doing critical research in organization studies).
2. ICT novelty generates new needs

The analysis of our empirical data allows us to identify that once ICT are already installed (in other words, when the ICT implementation project ends as such) new needs, not always contemplated in the project plan appear, and in the few cases where those are projected, it has always been done in an underdimensioned scope. Hereby, we sustain our analysis and discussion in the fact that actual ICT implementation frameworks do not include the human and social factors we consider as essentials (as it is also stated by Davila-Gomez (2004) and Murray & Willmott (2001)). Following Orlikowskly (2001), who presents the improvisation and the rearrangement processes followed by ICT implementations as normal and necessary phenomena, we identified in our field research many processes, activities, decisions and several vacant post arrangements that are rarely included in the ICT project plan. Among those, we refer some major challenges: the need to manage new simultaneous structures, the need to implement and rearrange new processes for attending new activities which generates the need for new job openings, and the need to alleviate the continuous anxiety experienced on a daily basis by the personnel confronted to the needs formerly exposed. We discuss them as follows.

2.1 Simultaneity and complexity of structures

Following Taksin (2003) and Brown & Gioia (2002), new ICT adds ambiguity and complexity to organizational structures and hierarchical management lines. In this thought, our field research shown us that there is a need for the manager of the project, or the manager of the division responsible for the departments in which the ICT is being implemented, to learn by himself how to operate in multiple simultaneous structures others than the traditional thought and practice (that of the functional hierarchy). We refer as additional structures the one of the matrix and the one related to permanent oncoming projects.

Since many ICT solutions are conceived to answer the concept of value chain, the flux of activities and information goes through the organization in a horizontal direction (transversal) and not in a vertical one (hierarchical). Thus, a project manager responsible
for an ICT implementation and operation has to obtain the collaboration of personnel that
do not answer hierarchically to him, because these people report to other managers.
However, at the same time, this project manager is most of the time the actual director of
one department and he does not leave his actual job to take charge of the project. A
manager obtains hence a double responsibility, one with hierarchical power (his
department) and the other with no much authority, because the personnel of other
departments (who are involved in the project) answer to other bosses. At the same time,
that authority upon others is influenced by the quality of relationships a manager has with
his peers (the other managers). Hereby, as human beings, when occupying jobs with
similar levels of authority, we become competitive (even in a healthy manner and
frequently in an unconscious of its effects – see for example some critical reflections
about the psyche of managers in Carr (1998)) to demonstrate to our superiors our
performance. Hence, we posses and develop towards others, emotions regarding envies,
frustrations, friendships, support and even negligence. It is here where human
considerations are fundamental if we want to elucidate why, many times, ICT project
implementations do not achieve the goal that was set to accomplish.

2.2 The ICT solutions paradox: aimed long term productivity vs. instantaneous non
forecasted investments

The paradox occurs when, seeking productivity with ICT solutions, it appears, on the
contrary the need to introduce more skilled personnel who consequently earns higher
salaries, and consequently, there is a need to invest in more formation and development
of the actual personnel. Moreover, alongside with the conflict of authority among the
members of a team charged with the responsibility to execute projects, come the
difficulties for the manager to obtain the acceptation of the objective and purpose of the
ICT solution by the personnel. Many times this acceptation transforms in rejection if
actual personnel are not trained for doing the transformed traditional job. This needs,
then, investment in time and money. It is not only a question of telling people how to
operate a new machine. It also includes a process of accommodation to the new ways of
doing. Even though in many cases some of the new ways of doing may procure more
exact data in terms of precision and fidelity (e.g. financial reports) in less time, it is
implied a higher amount of time and patience for the personnel to learn, to develop and to adjust themselves to the new specification of the procedure.

In this accommodation process, or acclimatization/assimilation, people feel in numerous occasions, that all the efforts they are doing to customizing and making the ICT solution profitable are meaningless. Some personnel, and even managers, refer the complexity of this assimilation as a cognitive and learning individual process. For some, this process was grateful and procured new knowledge, and even new nets of colleagues (given the matrix and transversal project structures). For others, this process was experienced as an obligation of their superiors, and a painful process in both ways: psychological (stress, and autocratic) and technical (skill development and solution creation). Whereas positive or negative perceptions during this assimilation, there are persons who do not identify a meaning in what they are doing or participating. Those cases are aggravated when they see that, regardless of idea propositions, additional workload and team effort, and moreover, technical and very sophisticated advising and support of the new ICT experts, the results are many times not the expected. This allows us to discuss the third challenge (difficulty/need) we referred as follows

2.3  Anxiety and rejection experienced by personnel involved

Our field research allows us to identify that there is a need for directors to alleviate the anxiety that personnel experience daily while accommodating their former way of operating to the new modified one. It is no longer the question of starting to use an ICT when the project is finished, nor the question to have training for machines operation. Here, we refer mostly to the need to accommodate, create and eliminate procedures, formats, accounting detailed activities, new systematized services for customers, inter-departmental communications, information fluxes, accommodation to new procedures necessary with the ICT solution, which many times did not exist before (e.g. checking points, balance, inter-departmental inventories confrontation, among others). As new processes are created, new decisions need to be made, thus changing functions in personnel and in many cases workload increases not only for operative personnel but also for the board of directors.
Furthermore, the former implies a time to learn by trial and error and in occasions after repetitive efforts, frustration arrives when the solution to a problem is not easily found. Here, personnel confidence, not only in ICT performance, but also in themselves as creativity agents, may be in peril. There is then a need to encourage and to accompany personnel all along the process of reorganization and recreation of new ways of doing. Thus, more than ever, manager’s personality is essential to preserve a comfortable work climate. Our field research showed us that frequently, when there is no support to the personnel, it produces distrust in people, not only in the possibilities of the ICT, but also in the capacity of their manager to hold his position. When a manager does not solve the issues that are the most important for his personnel (e.g. the anxiety experienced), there is a lot of rejection to utilizing the ICT, simply non-acceptance, or in some cases (when personnel is forced) acceptance with total disbelief.

On the one hand, it produces as consequence a subutilization of a high investment (the ICT solution), and therefore a situation of lack of productivity that aggravates with time. On the other hand, it generates personnel’s discomfort and negligence because their inner needs were rejected. Here, we align the former with the fact that the “sense of things” is being questioned by the subjects (for us, personnel as judges and users of the utility, purpose and meaning of something – as explored by Sartre, 1970). When many difficulties arrive with few solution and with few management support, to the majority of the personnel, ICT becomes senseless, meaningless, even though many times managers might had applied the dominant organizational change prerogatives of communicating to the personnel the objectives of the ICT (see for example these critics in Chanal, 2000; Bareil et Savoie, 1999). The problem of those theoretical frameworks is that they demand personnel participation only in the final phases of the project (when the result must be implemented), and assumes that the finality (the why) of the project is only a concern of the managers and owners. Here, people are not consulted, only “informed” of what will be done. In prospective, communication is made only to obtain people’s collaboration, but when the time of ICT implementation arrives (and moreover, the time of solving difficulties is undesirable), the reality is that people do not longer believe in previous discourses of collaboration. Thus, a management that involves people from the
beginning is necessary, where the “meaning” of the action (the thing to do) might be discussed and treated by all.

2. New challenges for managers: conciliation and consciousness about meanings

With the aforementioned challenges, it is evident that the introduction of ICT does not imply that all personnel will neither accepted it, nor appropriate it. For that, as our analysis highlighted, there is a need to represent a meaning, a sense. It is also a factor of a management counting with consultation and participation. Among the process, we see how a time for acclimatising is needed, to confront and solve difficulties, moreover, to create an appropriate work climate in which personnel might explore, propose and find a meaning of what they are doing as well as hope for exiting the actual anguish and anxiety produced by a new instrument and a new world of operation. Depending on the way of managing, even though at the end, and after many post-project reorganization activities, enables the ICT to become productive, functional and operative, its final use might be taken by personnel as an obligation and accepted, but not necessarily as something apprehended. In worse cases, as it occurred frequently, the ICT is not used, it is rejected; or when used, it results in a continuous cascade of insatisfactions and difficulties. In this case, the project risks of never getting to term; drastic measures should be taken, as for example, decision to abandon the solution and begin again with another idea, or to preserve the initial operation accepting losses of time, money and personnel efforts. That critical case procures for the future an enormous majority of persons who will not easily believe again in the ICT advantages. With the aforementioned realities, risk and needs, we propose and discuss as follows some guidelines that contribute to a new more appropriate management.

We evidenced that the needs presented in the previous points are confronted by managers with extra time, extra money, moreover with extra personnel. We observed as well that those managers who were able to face the difficulties and to answer the needs, did it not because they followed an ICT framework project theory, but because they have understood that is through people that things may be done. Thus, even though they have
invested more than planned, they have learned through experience that regardless the fact that they are implementing an ICT solution, the key is not the technique but the way of managing the accommodation and the transformation processes with the aid of the personnel.

For instance, as the ICT demanded more and more of knowledge and abilities of the personnel, human interactions began being less frequent and consequently the impersonality of interactions began to occur. Increasingly, as communications are made through email (for example), less and less people are needed in a face-to-face interaction in order to follow simple or normalized orders and activities. However, as direct communications and interactions diminish, their quality diminishes also because mediated interaction (ICT based learning, or ICT email) are for the most asynchronic (because they are less expensive), where the sender of a message does not know when his interlocutor will reply him, even less if he will indeed reply his message. At the same time, the tone of the voice is not established in an asynchronic interaction, nor the complete facial gesture that are integral components of human communication (see Habermas, 1987; Gusdorf, 1968).

On the other hand, as anxiety increases because of the ICT gadgets and the need to sustain two simultaneous operations (while the new one is perfectly synchronized), there is a need for the managers to show and to sustain the advantages of ICT solution in a very, very near future. Managers have to regain the confidence of their personnel. This is very difficult because as human beings, we are very easily affected emotionally (see Freud, 1975), and for a person that has experienced a false promise, it is very difficult to trust again the same person that made that promise. The problem here is that the manager made the promise of a better future to his personnel with the best of intentions because he was promised as well by someone else (e.g. the ICT solution provider, or worse, the theoreticians in ICT project implementation). Thus, when reality arrives, and the theoretical frames do not answer the actual needs, it is the managers who must confront and face personnel in order to ask them to believe again, to obtain one more chance, to have another possibility for the ICT to finally accomplish the aim for which it was
installed. Therefore, even though a manager might have been well intentioned, he now has a conflict to resolve with his personnel. He has the challenge to resolve all the non-contemplated difficulties that may arise. In addition, for that, there is no theoretical recipe in management, or in project management. The manager starts to innovate, to create, and to resolve in a unique way the difficulties. There is only creativity, enthusiasm and human qualities to obtain and to regain his personnel confidence, collaboration and a sense of demonstration in actions.

Moreover, as we have shown before, the functioning and maintenance of ICT demand more specialized personnel, which many times are new (because of the novelty of the ICT solution) and has to integrate them with the actual personnel who will be the final ICT user. In this integration, at least two worlds start to interact. One is expert in the ICT techniques (mostly the new personnel, or sometimes some personnel of other companies that offers implementation support acting as consultation firms). The other one is the expert in the organization process (the actual employees of each one of the departments modified in its activities and structures by the ICT introduction). In both of our empirical cases, we saw how two different conceptual worlds have to work together but it is not always smooth.

In fact, when we talk about means of communication and interaction necessary for the functioning of ICT, most of the times we find the synchronic and face-to-face means as the privileged ones by people. Here we identify that even though ICT introduce automatization in organizations, they do not eliminate actual interactions but instead create new ones and reinforce the need for social contact and development of human qualities such as conciliation, agreement, discussion and openness, because of the different points of view of all the participants. In this sense, we evidenced that personnel capable of adjusting, and willing to develop some of this conciliation process is the one counting with a manager that exercises himself those qualities within his employees. Hence, we claim the necessity for managers to become example of action, and in doing so, contributing to the continual experiential learning (as explained by Dewey, 1963) of the personnel.
This is extremely important given that personnel is asked to adopt attitudes of patience, crisis management and creativity for the solution of problems as a consequence of the permanent post-project reorganization process of ICT. The developing of those attitudes by the personnel is directly linked with their practice and utilization by managers. Hereby, we refer the patience, tolerance, listening and support that managers are called to exercise towards their personnel when problems and difficulties arise. More than an autocratic figure, personnel need management support, open to consultation and an ally for ICT problems solution. Managers need to grant confidence in their personnel, in their judgment, in their ideas, but also, accompany them when conflicting moments become continuous, as it is the case of ICT solutions implementation.

In this way of managing, we identify that a manager who does that, does it as a consequence of decision and a conscious willing of considering the other persons as equal and as important as himself. In this view, as we observed, those managers who succeed to face the difficulties and to implement solutions with a meaning to the members, are those who practice human qualities of listening and bidirectional communication. Hereby we refer a sort of intersubjectivity (Husserl, 1925; Gusdorf, 1968), in order to link the purpose of an ICT solution and elucidate the sense given by the personnel – either acceptance or rejection, in order to treat the difficulties). The previous implies for the manager the exercise of the respect for others, conciliation, ethics on his behaviour toward employees, training support, openness to diversity.

**Conclusion**

Upon the analysis and discussion presented in the previous points, we identify that ICT frameworks should be open to include human characteristics of acceptance, modification of rules and ways of doing, as well as perception of ICT utility. ICT should not only be concerned by the best way of assuring project success in terms of costs and time, as it is sold by the dominant pragmatic line (see this for example in the privileged project management approaches PMI, 2000; or in Davenport, 2000).
At the same time, we saw how ICT solutions acceptance is not only a question of technical work, but also a very complex process of authority structures all along the organization, as well as a human and social issue regarding feelings, emotions, training, skill development, and furthermore, management’s integrative and supporting leadership. For this, we presented some of the qualities that allow some managers to rearrange the new transformed way of operating as well to obtain personnel collaboration. ICT novelty procures not only middle term productivity growth, but also non-planned investments, moreover, social and human rearrangement that are constant.

Finally, as academics of the discipline of management and administration, we are called to be more open to human and social issues regarding the contents, theories and practices we are teaching to future managers. Upon this perspective, we are also called to conduct researches that are more critical. It is imperative to continue develop frameworks more fitted with social organizational reality, as it was the aim of our paper. Our perspective claims as imperative the consideration of people as subjects with meanings and senses. We align hereby our precepts with what Chanlat (2002) stated about the necessity of including human and social sciences in Management as imperative.

References


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