

Contribution of IT to Performance Management: Exploratory Pilot Case Study

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Abstract:- The objective of this article is to present the results of an exploratory pilot case study that aims at studying the specificities of the use of IT to direct performance in our Moroccan context before proposing a conceptual framework at the end of this paper that can be used to understand the complexities of the topic in the Moroccan context. Characterized by the lack of previous research studies on the topic, (Yin, 2009), this study will start with an analysis of the literature on the impacts of IT on performance so that to properly conceptualize the elements and dimensions of our research. Subsequently, we will present the main theories which will form our theoretical framework mainly the theory of resources based on which we shall conceptualize the characteristics of IT and managerial resources sought to be acquired and developed in each organization during the digital age; behavioral theories will be used to study behavior and perception of IT utilization and contingency theory will be used to understand the impact of contextual factors on IT use. Finally, we will present and discuss the main results after identifying the methodology for data collection, analysis and processing as well as the main characteristics of the case study and the responses of the selected sample.

Keywords:- *Pilotage, Organizational Performance, Skills, Information Technology, Dashboard.*

I. INTRODUCTION

The IT revolution was marked by movements of imitations and instability of investments, which questions its capacity to contribute to the performance of organizations. Various attempts have emerged to conceptualize and theorize this contribution, resulting in mixed and sometimes contradictory results. Moreover, much of the literature on IT impact on performance affirms that appropriating the value of IT investments depends on competent use. Our contribution is to analyze the use of IT in enhancing management performance using a competency-based approach. According to Barney (1991), skills are cumulative and are difficult to imitate in contrast to resources. Two types of skills have been retained in this study: the IT skills of organizations (capabilities –IT) and those of users, particularly managers. Our research question is as follows: To what extent

managerial and IT skills (IT-capabilities) contribute to good governance of Moroccan companies? This research uses an exploratory approach and will use a pilot case study in order to uncover the various theoretical shortcomings that mark previous studies carried out in relation to our Moroccan context.

II. LITERATURE REVIEW

A. IT and management performance guidance

In addition to reviewing models and approaches on the issue of IT and performance, we shall try to conceptualize the elements of our research topic particularly the complementary resources of IT, the concept of management performance and the components of managerial and IT competence.

B. Evaluation of models and approaches:

Previous studies of IT impact on the performance of organizations leads to controversial results despite the abundance of work in this area. Some studies, such as Menon et al. (2000) and Devaraj and Kohli (2003), have advocated the contribution of IT in performance improvement, while others, such as Barua et al. (1995) have rejected any relationship between the them. The following are the most popular approaches:

- **The Economic Approach:** It is an approach that investigate the relationship between IT investment and productivity. Brynjolfsson and Hitt (1996) show the productivity improvement induced by IT investment through the increase of marginal product in the production function.
- **The approach of social psychology:** It aims to integrate psychosocial factors as determining factors in the success of technology integration within the organization (for example: Zmud, 1979; Davis, 1989; DeLone and McLean, 2003), while user's attitudes and their behaviours related to technological innovation have been introduced as explanatory factors with regards to IT acceptance.
- **The Competitive Analysis Approach:** Proponents of this approach propose that the contribution of IT in management performance is assessed by their ability to achieve a competitive advantage to be used as a strategic

weapon (Parsons, 1983). Its role may take various forms, such as changing the life cycle of the product and changing distribution modes and the improvement of organizational practices. Parsons, 1983 ; Ives et Learmonth, 1984 ; Porter et Millar, 1985).

- **Strategic alignment approach :** It is a strategy that seeks a coherence between strategies and links reinforcement within a series of dimensions (structures and organizational processes and IT) proposed by Henderson et Venkatraman (1993).

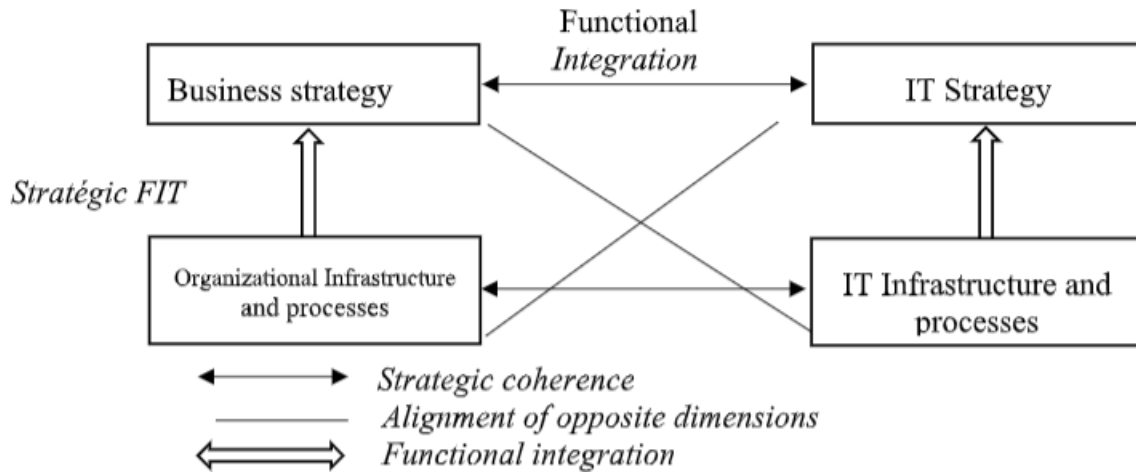


Fig 1 : strategic alignment model (Henderson et Venkatraman, 1993)

➤ *Process-oriented analysis*

This approach considers that the evaluation of the impact of IT must be carried out at the level of organizational processes in order to understand the different uses of IT (Soh and Markus, 1995). The authors have modeled the articulation between IT and organizational process as follows:

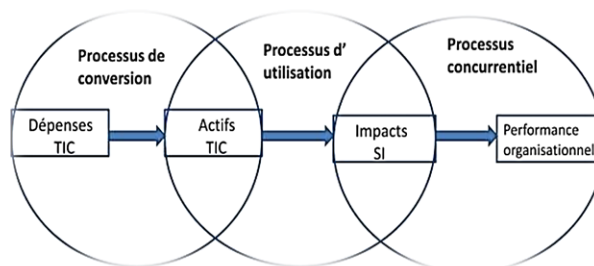


Fig 2 : IT Value Creation Process Model (adapted from Soh and Markus, 1995)

➤ *Resource-Based Analysis:*

This approach starts with an articulation between three resources of the company that complement each other to enhance the value of IT resources and achieve a competitive advantage that guarantees the improvement of the company's performance, namely human resources, business resources and technological resources (Powell and Dent-Micallet, 1997). It remains the most dominant approach in the literature that analyzes the contributions of IT and which constitutes the basis of our theoretical framework.

➤ *Resource complementarity for performance*

According to Melville et al (2004c), resources are everything that can be considered as strength or a weakness of a company. The literature has identified different heterogeneous organizational resources, allowing all azimuths to achieve competitive advantage, such as, entrepreneurship (Rumelt, 1987), culture (Barney ,1986a), routines (Nelson and Winter, 1982), invisible assets (Itami,

1987), human resources (Amit and Schoemaker ,1993) and information technology (Bharadwaj, 2000, 1995).

IT resources are subject to many classifications, such as, Dehning and Richardson (2002), who identified three components of technology resources namely, IT expenditure, IT strategy (type of IT) and IT management/capability and Bharadwaj (2000) who distinguished between IT resources, IT infrastructure, IT human resources and IT related intangible assets such as customer orientation and knowledge as the main IT resources.

Among the multiple classifications of supplementary IT resources, we select the one inspired by the theory of the resources of Barney (1991) which are of three types, the resources in physical capital and human capital: Both of them are not related to IT and the resources in organizational capital. Finally, we conclude that IT does not hold the keys to performance on its own, but only through its use in harmony

with other resources, particularly human resources that the value of IT can be appropriated.

C. Towards performance management through managerial and IT skills

The emergence of the performance management model, following the crisis of the control model, was caused by changes in today's economies characterized by instability and complexity, in addition to the digitalization movements that have imposed the enlargement of managerial skills for performance management in the digital era.

➤ *Digitalization of performance management*

The increasing complexity and instability characterizing today's economies have led to changes in the performance model, the crisis of the control model and the emergence of the management model. Lorino, (2003a) illustrates this transition through the comparison of the main foundations of the two models in the following table:

Paradigme du contrôle	Paradigme du pilotage
Ressources ressources	Modes opératoires et compétences Operating methods and skills
Allocation, transactions allocations and transactions	Diagnostic Diagnostic
Décisions Decisions	Activités activités
Séquences d'évènements discrets Sequence of discret events	Déroulement continu Continuous process
Clivage plan/ contrôle Plan split/control	Changement continu Continuous change
Décomposition hiérarchique Hierarchical breakdown	Intégration integration

Table 1 : Control paradigm via steering paradigms (Lorino, 2003)

Organizational performance management is a loop between strategic and operational management, where information from operational management is given as a feedback and strategic directives are issued using multiple instruments, such as the performance measurement matrix (KMM) (Keegan et al. 1989), the results and drivers framework (Fitzgerald et al. 1991), the balanced scorecard (Kaplan and Norton, 1992), the SMART pyramid (Lynch and Cross, 1995), and the performance management framework (KMM) (Keegan et al. 1989). , the Results and Determinants Framework (Fitzgerald et al. 1991), the balanced scorecard (Kaplan and Norton,1992), the SMART pyramid (Lynch and Cross, 1995; Tangen , 2004), Brown's (1996) macro process model of the organization, the performance prism (Neely et al.1995, 2001), and the Business Excellence performance management system (Kanji, 2002; Jelinkova and Striteska, 2015a).

With the advent of IT, management tools have undergone profound changes both in their use and in the process of their development, especially the dashboard,

which remains the most popular management tool, and which has become automated and more efficient. A computerized dashboard is generally a graphical user interface that contains performance indicators to help managers make decisions. This computerized tool helps alleviate information overload by providing an all-inclusive package for performance management, it incorporates various concepts and applications such as strategy maps, performance maps and BI into a manageable solution (Ogan M et al.2012). The use of computerized dashboards for steering purposes has been expanded as well as their interest for decision makers. Negash and Gray (2008) consider dashboards as one of the most useful analysis tools in BI (business intelligence), while Schulte (2006) found that IBM managers' use of dashboards improved its cash flow through better accounts receivable management.

Finally, the efficiency and information synergies created by IT lead to the production of relevant measures and indicators, dedicated to evaluate, control and improve the processes of steering organizational performance. Information technology alone does not explain the relevance of corporate performance management measures, nor the benefits obtained, but it is through the combination of technological resources and supplementary resources, notably competent human resources (Powell and Dent-Micallef, 1997).

➤ *Competency-based management in the digital age*

The broadening of the notion of performance to include new management measures following the adoption of a global performance notion that includes financial, societal and environmental dimensions, has called into question the instrumental management systems by researchers in favor of theoretical models based on the competent use of high-performance IT. Inspired by the theory of resources, our contribution through the present study consists in examining the contribution of managerial and IT skills of companies to the management of organizational performance.

The managerial skills are the appropriate capacities to be combined with the IT skills for a better appropriation of the IT investments. Different criteria have been provided by the literature trying to categorize them, including the one presented by Andrej Bertonec (2010) who distinguished between cognitive, affective and conative skills. Managerial competencies are conditioned by another component imposed by the generalization of the use of IT in today's companies; its acquisition and development constitute an explanatory variable of the appropriation of the value of IT investments and consequently of organizational performance, namely IT managerial competencies.

IT managerial competencies are closely linked to the IT competencies of employees at all levels (technical and business competencies) and IT management competency due to the various technical changes that focus on IT competencies (Autor et al.1998). The increased digitalization within organizations to establish increased autonomy, flexibility and to form decision makers in IT competence is a complement to their managerial qualities.

Despite the efforts of the literature that have tried to explain the organizational success based on technology, they have become with organizational imitation simple useful tools. IT investments can only be a source of competitive advantage when they are combined with other organizational resources including human resources (An and et al.1998). In the present study, we adopt a resource-based perspective to explore the explanatory variables of the use of IT.

III. THEORETICAL FRAMEWORK AND METHODOLOGY

The development of a theoretical framework allows us to conclude theoretical constructs from the analysis of explanatory models of IT impacts on performance, while we adopt a methodology of data collection based on semi-structured interviews with a sample of ten managers.

A. Theoretical framework of the study

Our theoretical framework includes three theories that we used to examine the different approaches to the impact of

IT on performance: Resource theory, Behavioral theory and Contingency theory. The resource theory, constitutes the backbone of our theoretical framework that we use to study the organizational resources having a synergy and a complementarity with information technologies (Barney, 1991).

➤ *The deployment of the resource theory*

Proponents of Resource theory assume that firms compete on the basis of resources that are unique, valuable, rare, difficult to imitate, and not substitutable by other resources. The basic assumption made is that firms need resources to design, choose, and implement strategies and that these resources are heterogeneously distributed across organizations (Barney, 1991). For the determination of the components of the IT competence, we retained as explanatory variable of the qualities of IT, those proposed by DeLone and McLean (2003), namely, the quality of information, the quality of the system and the quality of the service, as key factors of success of the IS (information system):

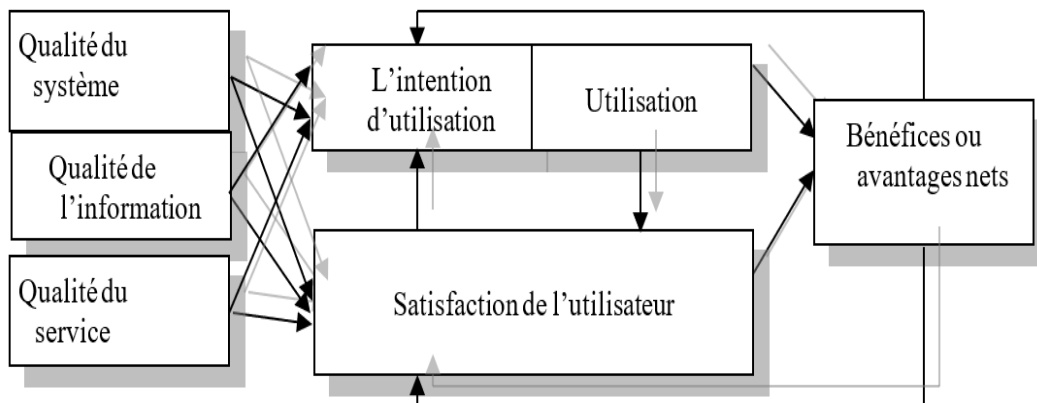


Fig 3 : The IS success model of DeLone and McLean (2003)

Information technology can only generate competitive value if it is deployed in a way that leverages pre-existing business and human resources (Jarvenpaa and Leidner, 1998). From this, it is clear that IT rarely contributes directly and solely to the performance of organizations. While IT investments have become a necessity for companies in today's economies, they do not confer any sustainable and non-substitutable advantage to companies over their rivals in the absence of complementary resources. The complementary resources that we have chosen to characterize IT competencies are those identified by Tippins and Sohi (2003c), namely IT knowledge, IT operations and IT objects. With regard to the competence of the users, we distinguish three dimensions constituting our second independent variable, namely the cognitive, affective and conative competencies (Bassellier et al. 2001c), which form the value system of an individual and which designate a whole behavior, whose acquisition and development are continuous processes:

Compétences (comme caractéristique personnelle mesurable) Competences (as a measurable personal characteristic)	
Knowledge : aptitudes skills	Affective competencies : Flexibility, Emotional
Conative competencies (Pilotage volontaire de l'action vers des objectifs)	

Fig 4: Andrej Bertoneclj's tripartite model of individual competencies (2010)

The cognitive dimension of managerial competencies is learned, unlike the affective dimension that can be acquired and developed through social and professional experiences, while the conative dimension is innate and can only be fostered (Kovac and Bertoneclj, 2008). Managerial competencies in IT skills show two components: one explicit while the other one tacit (Polanyi, 1967). The explicit one reflects the formal knowledge that can be clearly transmitted using a systematic language (Boyatzis 1982), while the tacit one designates the knowledge that allows managers to communicate with IT specialists (Bassellier et al. 2001c). An IT literate manager is the one who possesses both IT

knowledge and IT skills, although his or her main area of expertise maybe in a field other than computer sciences.

➤ Contribution of behavioral theories

Two theories have been used to examine behaviors towards the use of IT, either acceptance or resistance. The

proponents of both theories have developed the famous Technology Acceptance Model (TAM) and its extension TAM 2 (Venkatesh and Davis, 2000) and TAM 3 (UTAUT, 2003) in order to theorize the behavior and perception of IT users.

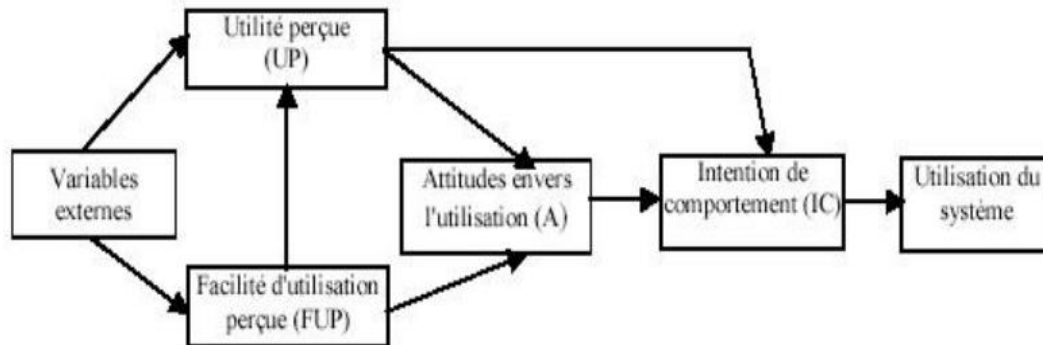


Fig 5 : Modèle d'Acceptation de la Technologie de Davis, Bagozzi et Warshaw (1989)

Davis (1989) states that perceived usefulness was more important than ease of use. In other words the priority of users is perceived usefulness followed by ease of use (Marangunić&Granić, 2015). In our context a manager's use of IT depending mainly on perceived usefulness and ease of use and manager's experience, which we selected as explanatory variables of managers' behavior towards the use of IT.

➤ The contribution of contingency theory

The deployment of contingency theory in the field of information and management systems has undergone a remarkable development in recent decades. The theory assumes that contingency factors influence the performance of information systems and consequently organizational performance (Weill &Olson, 1989). The contingency variables used generally in this context of study are: strategy, structure, size, environment, technology, task and individual characteristics (Vitale et al. (1986), De Davis (1986), Ein-Dor(1978) and Olson (1982), while Olson (1980) Klatzky(1970)).

We have selected four contingency variables as explanatory variables for the use of information technology and the relevance of performance management measures, namely size (Klatzky, 1970; Merchant, 1981; Kalika, 1987), structure and size of the company, and the number of employees; Kalika, 1987), structure (Davis, 1986; Ein-Dor, 1978; Olson, 1982; Kalika, 1987; Bruns and Waterhouse, 1975; Merchant, 1981; Olson, 1980; Ein-Dor and Segev, 1982), environment (Benson and Parker, 1985; Ginzberg, 1979; Chapman, 1997; Fisher,1998; Hartmann,2000) and strategy (Vitale et al. 1986) .

B. Methodology and sample

For data collection, we adopted the technique of semi-structured interviews with a sample of ten managers of an internationally renowned company. The OCP group that we have chosen as a pilot case is endowed with a huge IT infrastructure and highly qualified human resources.

➤ Methodology

Prescott and Soeken, (1989) stresses that the pilot case study as a feasibility study on a reduced version of the intended study, or as an a priori phase of testing methods or miniature versions of the intended research, in order to guide the conduct of the final study. In other words, the pilot case study is a preparatory phase of a main study in the form of a methodological test that ensures the appropriateness of the methods and tools adopted (Jariath et al., 2000; Prescott and Soeken, 1989; van Teijlingen and Hundley, 2002). It allows researchers to make adjustments and revisions to the research protocol of the planned study.

The pilot case study is typically used to test a data collection method, research design or approach. It is also used to assess the feasibility of the proposed research process (Muio et al., 1995; Perry, 2001; van Teijlingen and Hundley, 2002), while one of the limitations of the qualitative pilot study is that it cannot be used to produce results (Watson et al., 2007). The pilot study was a component of qualitative studies, reflecting the exploratory part of the latter. According to Robson (1993), the pilot case study can be explanatory or confirmatory.

The methodology adopted for the collection of data for the pilot case study is based on semi-structured interviews. The interview questions were derived from an interview guide with questions that deduced from the results of the literature review focusing on the impact of IT on organizational performance. The questions are intended to elicit a variety of individual responses, to gain an insider's view of the situation and to strengthen the validity of the results (Walsh, 2001). The interview questions are four; each question comes with several sub-questions. They are as follows:

- Question 1: To what extent do IT solutions and the services related to their implementation in terms of training and administration provide you with information relevant to the management of your business?

- Question 2: How can your training, experience and skills in business and IT help you to appropriate the value of IT solutions for a better management of your activity?
- Question 3: What could be the attitudes and behaviors of users towards the implementation of IT solutions in the company?
- Question 4: What are your recommendations and proposals for a better use of IT solutions to manage the company's performance (organizational performance)?

It should be noted that in order to avoid the interviewees making judgments, we preferred not to communicate the questions in advance (Oza et al., 2004). The answers collected following the interviews are subject to manual processing and coding due to the small size of the sample.

➤ *Presentation of the case study and sample*

The OCP Group, created in 1920, is the world leader in the phosphate and its derivatives industry. With almost a century of experience, OCP integrates in the entire phosphate value chain (extraction, processing and marketing of phosphate rock and its derivatives, acid and fertilizers). The importance of these activities makes it one of the leaders in phosphoric acid and fertilizer production and the world's leading exporter of raw phosphate (Source: internal documentation).

The Group is equipped with a modern and constantly evolving IT infrastructure in order to accompany the evolution and growth of the Group's activities. The organization of the IT department has undergone a change that has given rise to the CDO (Chief Digital Officer) with a view to carrying out the digital transformation of the group. The group's strategy, in parallel with the efforts to digitalize the IT infrastructure, included a plan to develop human resources so that they have the necessary skills to accompany the group's strategies. The development of skills was on two levels: The first one concerns the recruitment policy adopted and the other one concerns the qualification of existing staff.

The sample selected to interview people in this study is non-random following the recommendations of the literature (Yin, 2003), which stipulates the application of some criteria for the selection of people or events that has important information that they can provide, and that allows to strengthen the validity of the results with a sample whose number is reduced (Bickman& Rog, 1998). Some of these criteria used in the study sample take into account personal criteria such as availability, convenience, and cooperation as well as criteria specific to our study and the nature of our research question, namely, occupational category and reputation in the organization. The sample includes managers selected according to the above-mentioned criteria, which we present their main characteristics (age, position held and level of training) in the following table :

Interviewés Interviewees	Grade	Diplôme	Âge	Ville /Site
Maintenance manager	Hors cadre 2 Senior	Engineer	29 years	BENGUERIR
Purchasing manager	Hors cadre 2 Senior	Engineer	46 years	BENGUERIR
Control Management	Hors cadre (Manager) Senior	Master (ISCAE)	42 years	BENGUERIR
Preparation manager	Hors cadre 2	Engineer	29 years	BENGUERIR
Loading and transport manager	Hors cadre 1 Senior	Speciliazed technicien	40 years	BENGUERIR
Social affairs managers	Hors cadre 1 Senior	Master (ISCAE)	28 years	BENGUERIR
IT manager (IS)	Hors cadre1 Senior	Ingénieur Engineer	29 years	EL JADIDA
Technical control manager	Hors cadre1 Senior	Manager	47 years	SAFI
Mechanical installations manager	Hors cadre 2 Senior	Ingénieur Engineer	34 years	BENGUERIR
Electrical Maintenance manager	Hors cadre 1 Senior	Speciliazed technicien	52 years	BENGUERIR

Table 2 : List of individuals interviewed

La collecte des données s’effectuer par des entretiens semi-directifs, qui a était précédée par la formulation des questions sur la base des résultats de notre revue de littérature. Les entretiens sont déroulés face à face et le cas échéant ou pour le besoin d’information complémentaire, nous avons opté à des appels téléphoniques en plus de toute documentation dont nous arriverons à l’obtenir auprès des personnes interviewées, alors que nous avons procédé à la retranscription et le traitement (codage) manuel des données collectées.

IV. RESULTS AND DISCUSSIONS

The results of the interviews confirm the importance of using IT in the performance management process, as a tool for decision making, monitoring and controlling activities, and as a tool for communicating with the top and bottom of the hierarchy. Despite this confirmation, we found that there are many factors that constrain the effective use of IT, both in terms of IT capacity and user skills.

➤ *The performance of the IT used*

Based on all the responses, we found that respondents were moderately satisfied with the use of IT. The majority declares that they do not find difficulties in handling the technological tools available to them because it allows them to obtain information that is easily manageable, understandable and on time, which means the existence of the basic elements of an IT-competence in the company (Tippins and Sohi, 2003a), which help managers in the process of guiding and facilitate the monitoring of objectives initially set, calculate the costs related to their activities in addition to the availability of relevant indicators (Bassellier et al., 2001). The following matrix illustrates the evaluation made by the managers certain qualities proposed in the model of Delone&McLean, (2003) :

Qualités TI IT quality	Non satisfait Not satisfied	Satisfait satisfied	Très satisfait Very satisfied
Qualité de l'information Information quality	0	8	2
Qualité du système system quality	3	6	1
Qualité du service Service quality	0	6	4

Table 3 : Evaluation of IT qualities used

In spite of these results, which prove that the company manages to develop a moderately performing IT-competence, we have noticed the persistence of a certain number of insufficiencies which the respondents of our sample are confronted with and which limit their capacities to appropriate (Lethiais& Smati, 2009) the maximum of the value of the IT-investments made by the company These limitations are grouped as follows:

Functional Deficiencies	Number of Respondents	Percentage
Lack of availability of information	6	60%
Redundancy in IT solutions	7	70%
Continuous IT renewal	3	30%
Complexity of interfaces	4	40%

Table 4 : Reported functional deficiencies

All of these shortcomings are strongly dependent on the implementation process of the solutions used and the alignment of IT strategies with the overall corporate strategy (Melville et al., 2004). Based on the respondents' declarations, we can identify the main shortcomings that constrain a successful implementation, presented in the following table:

Nature of defects	Number of respondents	Pourcentage
Lack of IT culture	8	80%
Top down implementation	10	100%
Lack of rigor among managers	8	80%
Problem of coordination with the job	9	90%

Table 5: IT Solution Implementation Defects

The interviewees insist on the importance of their involvement in the IT solution implementation process (coordination between the IT department and the business managers). For them, it will allow them to express their business and managerial concerns and needs. All the respondents express their disagreement with the imposition (top-down) of the use of certain solutions that do not take into account their business needs. This observation was also checked by the IT department, which confirmed the technical unemployment of many applications, whether acquired or developed by the company's ISD (information systems management), which consequently influences the behavior of users suffering from a limited IT culture (80%) and leading to a lack of exacitude, particularly among managers (80%).

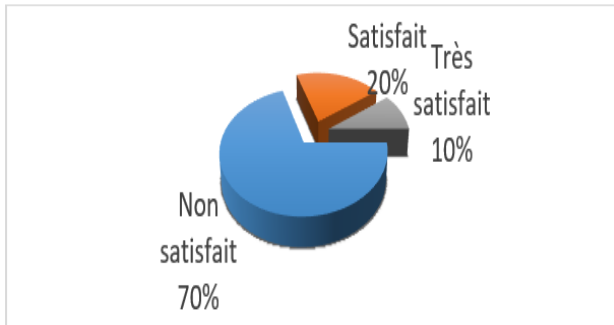
➤ *Determinants of efficient use*

The examination of IT competence of the managers shows that the majority of them have a high level of professional training (engineers, managers) and they are laureate of the Moroccan highly esteemed schools and that they have learned the use of IT solutions outside their training and previous professional experience through the following modes:

Modes	Number of respondents	percentage
basic education	0	0%
In-house training	10	100%
Self-training (certification)	2	20%
Experience feedback (REX)	8	80%

Table 6 : Mode of learning to use IT

Despite the fact that the results show the strong dependence of managers' IT skills on internal learning modes, especially the training organized by the company, we found a low satisfaction of the beneficiaries, whose results of its evaluation are presented as follows:



Graph 1: Satisfaction with internally organized training

According to the declarations of the interviewees, we can identify certain anomalies characterizing the course of the training to which is linked the non-satisfaction expressed, and which can explain the strong resort of the managers to the feedback as an alternative mode more or less to the trainings organized internally, that the company integrated recently in its strategy of organizational learning (Isaac & Josserand, 2002) . The following table presents the main anomalies reported, impacting the effectiveness of in-house training:

Anomaly	Number of respondents	Percentage
the training periods are not suitable	8	80%
Content not needed	6	60%
Absence of evaluation	10	100%

Table 7 : Factors affecting the effectiveness of in-house training

As far as the respondents' professional skills are concerned, we have noted the fruit of the efforts made by the company to develop human resources potential through the recruitment of managers with higher education and the introduction of a training system based on annual plans.

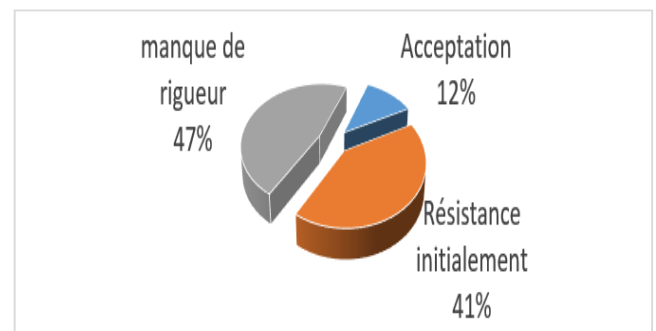
In addition to the computer and business skills of managers, the management skills are influenced by variables related to the hierarchical structure (limited decision-making autonomy) that require them to review the hierarchy in the decision-making process and the weight of unions in the execution of decisions they take, especially at the level of services classified under the production function. The statements of respondents, we can note the following disabilities in the emergence of their cognitive skills (Tippins & Sohi, 2003a) :

Factors	Number of respondents	Percentage
Limited decision-making autonomy	10	100%
Difficulty in implementing decisions	6	60%
Lack of competence of the supervised	8	80%

Table 8 : Factors impacting managers' management skills

In addition to decision-making limitations and union resistance to the execution of managerial decisions, the lack of managerial skills influences the relevance of management indicators set, particularly in terms of errors and delays in the input, which has repercussions on the availability of information in real time and therefore the relevance of the KPIs (key performance indicators).

The other explanatory variable of the use of IT is the behavior towards the use. We encounter difficulty in the identification of those managers, because they declare a positive behavior. The evaluation of the behaviors of the supervised towards the use of IT, brings out three situations that we present them as follows:



Graph 2: Evaluation of the behaviors of the supervised towards the use

All the answers point to a resistance at implementation stage which turns into an acceptance with time and with the intervention of the IT services for their support and their follow-ups. The main causes and characteristics impacting their behavior are:

Causes of resistance and lack of rigor	Number of respondents	Percentage
Age	7	70%
Lack of computer skills	8	80%
Resistance to change	6	60%
IT-related factors	4	40%

Table 9: Explanatory factors of the behavior of the supervised towards the use of IT

This situation was not ignored by the company's managers, who adopted various motivational strategies, especially with regard to providing users with free technological tools (TV, laptops and internet connection, mobile applications ...).

➤ *Discussion of the Results*

The above-mentioned results confirm first of all the dependence of the use of IT on the existence of an efficient IT-capability (Tippins&Sohi, 2003b). This dependence is seen in the functional deficiencies declared by managers, which influence the use of IT solutions throughout the performance management process. The investigation into the origin of this situation will lead us to identify the existence of a coordination problem between the IT managers (developers

of the IT solution) and the business managers (who express the need) due mainly to :

- Poor understanding of the need;
- The change of interlocutor,
- The evolution of the needs over time,
- The widening of the scope during the development phase of the said solutions.

The problem of communication and coordination between business services and IT managers mainly due to the nature of the company's structure (centralized structure and dependence on the hierarchy) as well as its large size, in addition to the defects noted in the alignment of IT strategies (Klatzky, 1970; Olson, 1980; Ein-Dor and Segev, 1982).

These anomalies, as expressed by the interviewees, have a negative impact on the perception and behavior of users and create a lack of confidence in the implemented system and consequently on the willingness of users to develop their computer skills (absentee is during training, lack of self-training, etc.).

In addition to the shortcomings related to the performance of the IT capabilities observed, we also noted multiple obstacles in the development of human resources skills specifically for managers. These shortcomings are based on the trainings organized by the company and on the development of skills through the encouragement of staff to develop their skills, whether they are related to their profession or IT skills.

The management of performance is the action with which managers resort to tools dedicated to the said actions in order to help them to follow, control and take the best decisions relating to the management of their activities in accordance with the strategic objectives of the organization. These tools, of which the dashboard continues to be the most popular, group performance indicators (KPIs) that must be generated by IT solutions for a better contribution to management. During our interviews we found that the dashboards are not automatically generated by the system, and that managers use two categories of indicators, those related to the management of their business and those of performance management. We found that managers do not have autonomy in selecting and identifying key indicators.

According to the above-mentioned results, the difficulties related to the development of management tools (dashboard) and the obtaining of relevant indicators for a better contribution to the management of the company's performance are linked to the multiple dysfunctions related to IT solutions or to the perception and behavior of the users cited below. To summarize the dysfunctions impacting the contribution of IT to the performance of companies, we have categorized them as follows:

- Dysfunction related to the design and implementation of IT solutions;
- Dysfunction related to the IT use;
- Dysfunction related to the rigidity of the structure and size of the company;
- Dysfunction related to the perception and behavior of users;

- Dysfunction related to strategy-IT alignment.

V. CONCLUSION

Finally, based on the findings of the results of this exploratory study, we are able to develop a broader conception of our research problem by uncovering the variables at play in the field which help us to understand some of the specificities of Moroccan companies and the Moroccan context. This allows us to have a conceptual framework with which to view other case studies within the framework of the multiple case study strategy (Yin, 2009).

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