

The ERP's impact on management control within MNCs: Quantitative study

L'impact des systèmes ERP sur le contrôle de gestion au sein des multinationales : Etude quantitative

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Abstract

Since the 2000s, questions about the ERP's impact on management control function have been a central issue for many researchers and practitioners. Some of them consider ERP systems as a key tool and a decisive instrument for improving management control function, by facilitating the standardization of data and, consequently, the consolidation of information. Furthermore, many studies demonstrate that there is no apparent link between information systems and management control.

To effectively evaluate how Enterprise Resource Planning (ERP) systems can affect management control, this paper reviews theories linking these two concepts, resulting from both optimistic and pessimistic approaches. Afterwards, it presents results obtained from a quantitative research, targeting a sample of 100 management controllers exercising their functions within multinational corporations (MNC), based in Morocco. The results of this study demonstrate that ERP systems have a positive impact on the management control function, whether in terms of goal-oriented, organizational and information systems.

Keywords : ERP ; management control ; MNC ; quantitative research ; information systems.

Résumé

Depuis les années 2000, les questionnements autour de l'impact des progiciels de gestion (ERP) sur la fonction contrôle de gestion ont été au centre de préoccupations de nombreux chercheurs et praticiens. Quelques-uns considèrent les systèmes ERP comme un outil clé et un instrument décisif pour faire évoluer la fonction contrôle de gestion, en facilitant la normalisation des données et, par conséquent, la consolidation des informations. En outre, de nombreuses études démontrent l'absence de relation apparente entre les systèmes d'information et le contrôle de gestion.

Pour mieux évaluer l'impact des systèmes ERP sur la fonction contrôle de gestion, cet article passe en revue les théories liant ces deux notions qu'elles résultent d'approches optimistes ou pessimistes. Il présente ensuite les résultats d'une étude quantitative ciblant un échantillon de 100 contrôleurs de gestion exerçant leurs fonctions au sein des sociétés multinationales implantées au Maroc. Il ressort de ces résultats que les systèmes ERP impactent positivement la fonction contrôle de gestion, que ce soit au niveau des systèmes d'objectif, d'organisation ou d'information.

Mots clés : ERP ; contrôle de gestion ; sociétés multinationales ; étude quantitative ; système d'information.

Introduction

In the current context, ERP system has become an instrument for enhancing corporate multinationalization through a global information-sharing structure. It has enabled changes to old organizational practices, particularly in the area of management control.

ERP provides an important source of assistance for management controllers. By using more precise information, the management controllers' tasks have now turned into analyses that allow them to make more reliable, accurate and useful decisions (Rodriguez et al., 2010). In this way, ERP systems enable them to perform a clarifying and coordinating information, while incorporating key issues such as data reliability and accessibility as well as providing strategical contributions and supporting the various costing methods.

In fact, many authors have reviewed the transformations in management control that have occurred after the ERP's implementation. Against this background, we formulate our research question as follows: "To what extent do ERP systems have an impact on management control function?"

To deal in depth with this problematic, we will first review several theories linking ERP systems to changes in management control function. Subsequently, a description of the selected research approach will be provided to finally present empirical results based on data compiled from an on-line questionnaire.

1. Theoretical background

1.1. Entreprise ressource planning

In 2001, O'Leary and Markus defined ERP as "computer-based systems designed to process an organization's transactions and facilitate integrated and real-time planning, production, and customer response". However, the American Production and Inventory Control Society has defined it as "a method for the effective planning and controlling of all the resources needed to take, make, ship and account for customer orders in a manufacturing, distribution or service company" (Chen 2003) .

Recently, Almajali et al. (2016) assert that: "ERP provides an integrated and continuously updated view of core business processes using common databases maintained by a database management system. ERP systems track business resources cash, raw materials, production capacity and the status of business commitments: orders, purchase orders and payroll. The applications that make up the system share data across various departments (manufacturing, purchasing, sales, accounting, etc.) that provide the data".

Furthermore, according to El madrouchi & Lkhoyaali (2019), ERP system provides an important tool for increasing business opportunities. However, it is necessary to focus on some key success factors during the integration of this system, such as the management of change and the accuracy of integrated data.

1.2. Management control

Anthony (1965), founding father of management control discipline, defined it as “the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization’s objectives”.

According to Maciariello et al. (1994), “management control is concerned with coordination, resource allocation, motivation, and performance measurement”. Moreover, Simons (1995) stipulated: “Management control systems are the formal, information-based routines and procedures managers use to maintain or alter patterns in organizational activities”

1.3. Theories about ERP's impact on management control

1.3.1. Optimistic approach

The ICT (information and communication technologies) allowed developing quickly indicators, ensuring the coherence, updating dashboards and transmitting them quickly to various actors of the organization (Combes and Labrousse, 1997). Thus, technological developments (precisely automated integration) contribute to improving management control system’s performance. They facilitate the standardization of data and consequently the consolidation of information (Boitier, 2002).

According to Autissier and Moutot (2003), ERP include cross-functional flows following common references. They also offer unique and shared databases, allowing management controller to guarantee data consistency. Thanks to the information’s traceability and guarantees offered by ERP, management controllers can trace the source of errors and correct them. ERP systems also allow the company to leave the vertical vision and to help management controllers to enhance reliability of their data. Therefore, they can quickly collect the necessary data, easily reach the external information and save time for more analysis and interpretations. In this way, 74% of management controllers attribute the change in their role from technician to consultant, mainly to information technology (Siegel, 1999).

Caglio (2003) asserts that ERP have caused a hybridization in management control function. Now, middle managers have "permanent" and "real-time" access to the information generated by the management control system. Due to the ERP’s implementation, two functions have been emerged: an engineering function based on the management information system and an

analyst function focused on the interpretation and communication of management data (Besson, 2009).

Scapens and Jazayeri (2003) assert that ERP systems influence management control function by eliminating routine tasks, transferring accounting knowledge to managers, using more advanced indicators and expanding management controller's role.

Otherwise, a recent study has approved that ERP have contributed to the performance of management control system by promoting timeliness, reliability and information sharing. Therefrom, management controllers can establish relevant dashboards. By minimizing the time required to process and consolidate data, ERP maximize the availability of management controllers, allowing them to do more analysis and interactions (Bouamama, 2015).

1.3.2. Pessimistic approach

According to Meyssonier and Pourtier (2006), the implementation of ERP does not play a decisive role in the evolution of management control function because it only allowed a form improvement (data automation, rapidity of information...) and not a substance change. Thus, ERP systems place little importance on the strategic dimension. They require top managers to reprocess the information needed for their fundamental choices. As a result, management control is fundamentally transformed neither in its conceptual apparatus nor in its organizational system.

Moreover, the studies conducted by Granlund and Malmi (2002) state that the ERP system does not have a significant impact on management control methods and practices. This finding is justified by the extent of its implementation, the complexity of its operations and the fact that it only plays a stabilizing role in existing management control practices. This system has also reduced the number of management controllers through tasks' automation. Hyvönen (2003) has also asserted that there is no link between the implementation of ERP systems and conceptual innovations in management control (ABC approach, target costing, life-cycle costing, balanced scorecard and beyond budgeting...).

In addition, Willis (2001) states that there is practically no functionality or coding structure to incorporate management control tools into some ERP systems. However, they can eliminate unreliable and incomplete information, therefore the results provided must be carefully checked (Pérotin 2002).

The divergence of theories about ERP's impact on management control has prompted us to formulate the following hypotheses:

Hypothesis 1 : The ERP systems provide a valuable support and have a positive impact on the management control function, whether in terms of goal-oriented, organizational and information systems.

Hypothesis 2: The management controllers are fully satisfied by using ERP's functionalities and can, therefore, perfectly perform their tasks.

Hypothesis 3 : There is no apparent link between information systems and organizational evolution of the management control function.

2. Research methodology

According to Quivy and Campenhoudt (1995), the research methodology must specify which data are relevant to the subject studied. In our case, the aim is to investigate on the existence by analyzing practices used by management controllers working within MNC.

In fact, MNC is normally a large company incorporated in a country that produces or sells goods or services in several countries (Doob, 2013). It is characterized both by its large size and by the fact that its worldwide activities are centrally managed by the parent companies. We have chosen to conduct our study on MNCs because they are able to bear the costs of implementing and monitoring ERP system, unlike other types of companies.

These elements have prompted us to choose a methodological approach for studying ERP's impact on management control function within MNCs. Obviously, the novelty of the topic and the variety of approaches have allowed us both to develop a new scientific approach and to seek originality : a quantitative study on this issue, focusing on multinational corporations as research areas, as far as we know, has never been carried out.

This study was carried out on a nonprobability sample of 100 management controllers, operating within multinational corporations based in Morocco, using an anonymous online questionnaire.

3. Results and discussion

The purpose of management control is to ensure the proper functioning of goal-oriented system, organizational system and information system (Bendriouch, 2004). Consequently, these three systems constitute the basis for us to evaluate ERP's impact on management control.

We have therefore assigned to each system a number of criteria that can provide an objective opinion on the degree of this impact. Table 1 summarizes all of these elements.

Table 1 : The criteria used for evaluating the ERP's impact on management control.

Goal-oriented system	<ul style="list-style-type: none"> - Decision-making; - Monitoring the implementation of strategy; - Performance management; - Definition of action plans; - Budget management; - Establishment of dashboards and indicators; - Implementation of corrective actions; - Improvement of productivity and profitability; - Customer satisfaction.
Organizational system	<ul style="list-style-type: none"> - Analytical accounting; - Costing methods; - Definition of organizational structures; - Operational monitoring of functions; - Process optimization; - Coordination between services; - Task specialization; - Stock management ; - Reduction of procedural delays.
Information system	<ul style="list-style-type: none"> - Information consistency and homogeneity; - Data integrity and traceability; - Information reliability and fluidity; - Research and data collection; - Data extraction; - Data analysis; - Information diffusion; - Optimization of the time required for transactions.

Source : Authors

All the MNCs studied use at least one ERP system, namely SAP (41%), Sage (30%) and Oracle (16%). The main reasons for their implementation are:

- Processes' complexity;
- Decentralization of information;
- Waste of time due to task partitioning.

As high as ERP systems costs are, 85% of management controllers state that they provide a high value for money. They ensure data integrity and unicity while avoiding manual data re-entry. They also offer various functionalities, integrated into a single database, allowing management controllers to perform their tasks, such as:

- Accounting and financial management;
- Supply management;
- Stock management;
- Commercial management;
- Production management.

All respondents state that ERP systems have a positive impact on the management control function. This is mainly because they provide a reliable and instantaneous source of information.

Regarding the goal-oriented system, ERP is a powerful tool for defining action plans and budgets. Thus, data sharing and real-time processing allow management controllers to perform an effective budgetary control while analyzing gaps and proposing corrective actions. Moreover, ERP systems guide decision-making and provide the most appropriate management indicators for timely feedback.

Concerning the organizational system, most of management controllers have reported a very strong impact on analytical accounting. This is due to the automatic allocation of loads and their distribution among the different analysis sections. Thanks to the visibility and traceability provided by ERP, management controllers can easily manage and optimize processes.

Information system is the most influenced by ERP. In fact, ERP systems have enabled management controllers to obtain reliable, fluid and easily shared information. They have also eliminated redundancies that generate errors by entering information into the database only once. In addition, 75% of management controllers associate this high impact level with the traceability and the facility related to data extraction.

On the other hand, ERP systems have a number of disadvantages that may reduce management control performance, such as the complexity of deployment and exploitation, the difficulties in adapting some services and the lack of alternative solutions to deal with the bug.

Furthermore, 82% of management controllers still use classical tools like Excel and Access to accomplish their mission. They cannot be satisfied solely by using an ERP system because of the unavailability of the required information. As a result, ERP does not fully satisfy all management controllers' expectations.

Conclusion

The key success factor in an information-based age is the ability both to find the right information at the right time and to use it as a decision-making tool. ERP systems have therefore become the main instrument used by management controllers to improve performance, ensure information unicity, offer real-time data processing and promote information traceability. They also ensure data consistency, minimize interfaces, facilitate controlling procedures and guarantee data reliability.

Nevertheless, it seems that ERP system is a complex and cumbersome tool to implement. It requires a major investment and entails a considerable risk. In addition, setting up the system is time-consuming and expensive. Thus, ERP's functionalities do not provide sufficient support for management controllers; they will always need to use conventional tools such as Excel and Access to accomplish their tasks. Overall, the results obtained have confirmed hypothesis 1 and rejected hypotheses 2 and 3.

Our first contribution in this research is the choice of MNCs as research field. Despite ERP's shortcomings, their application is crucial for this type of companies. Subsequently, we have detailed the criteria for evaluating the management control function, to finally highlight the ERP's impact on management controllers working within MNCs.

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