ERP systems introduction and internal auditing legitimacy: an institutional analysis

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Abstract

In this paper, the authors examine how the internal audit function (IAF) maintains its legitimacy when enterprise resource planning (ERP) systems are introduced. This work centers on an in-depth case study of a multinational bank and finds that ERP systems impose an institutional logic of control based on interlinked assumptions. These assumptions motivate changes in the practice and structure of the IAF to become an integrated and comprehensive function to maintain its legitimacy.

Keywords Enterprise Resource Planning, internal auditing, corporate governance, Institutional Theory, content analysis, case study.

1 Introduction

Corporate governance is defined as “the system by which companies are directed and controlled” (Cadbury Report, 1992, p.15). The corporate governance mosaic incorporates four mechanisms, namely, the board of directors, audit committees, external auditors, and internal auditors, with the latter playing a significant role in assuring an effective internal control system. The Institution of Internal Auditors (IIA, 2004) recognizes the role of internal

auditing in corporate governance. It asserts that internal auditing brings “a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes”. The increased interest in better corporate governance practices expanded the opportunities for the IAF (Elbardan, Ali & Ghoneim, 2015; Ebaid, 2011). This claim is supported by real-life cases, which clearly elucidate the implications of underestimating the role that the IAF can and should play (Boyle, Wilkins & Hermanson, 2012).

During the last 15 years, ERP systems were considered to be the most important and substantial IT infrastructure that interacts with the accounting field (Kanellou & Spathis, 2013). Such systems are cross-functional integrated management systems, which consist of software modules that support operational activities (Shehab, Sharp, Supramaniam & Spedding, 2004). Pollock and Williams (2008) argue that numerous tensions arise due to the gap between the system capabilities and the adopting organization’s practices. Because of the socio-technical nature of the organizational change process that arises from the implementation of ERP systems, prominent researchers have identified the need to uncover the dynamics and mechanisms of the organizational change process (Lyytinen, Newman & Al-Muharfi, 2009). According to Grabski, Leech and Schmidt (2011), ERP systems implementation implies new methods of designing functions and leads to new work procedures, changes in job role definitions and restrictions in the flexibility of job tasks. Maheshwari, Kumar and Kumar (2010) assert that the implementation of ERP is a continuous adaptation process that includes the development of norms as well as the acquired knowledge of the organizational members, such as internal auditors. One of the functions affected by ERP systems implementation is internal auditing. More specifically, ERP systems embody new institutional logics for controlling the business and information (Gosain, 2004), which is

the main interest of the IAF. This study focuses on tracing the institutional change in an organization and studying the auditing efforts to establish new governance structures.

Although the literature indicates many indicators of the impact of ERP systems on the control system and the required adaptations in the IAF, the manner in which ERP systems affect the IAF and the appropriate consequent adaptation are unclear. For example, Chen, Huang, Chiu, and Pai (2012) suggest that ERP implementation significantly changes the auditing procedure and internal control, but they did not provide evidence of these changes. More specifically, ERP systems contain implicit assumptions about organizational control (Ignatiadis & Nandhakumar, 2009; Yoo, Lyytinen, & Berente, 2007) that may compromise IAF legitimacy if not suitably adapted.

A number of authors have used institutional analysis in the context of ERP systems implementation and as a framework to identify factors that drive the existence of an internal audit (Elbardan et al., 2015; Al-Twaijry, Brierley, & Gwilliam, 2003; Arena, Arnaboldi, & Azzone, 2006). However, most studies that examined the relationship of action and institutions have focused on the organizational field (Maheshwari et al., 2010). Therefore, this paper aims to identify the control assumptions implicit in ERP systems and examine their effect on the IAF, using institutional theory as an analytical tool. Understanding the new control assumptions and their impact in the IAF will help internal auditors to adopt the proper strategic response in adaptation. This understanding would help to maintain the legitimacy of IAF as an effective corporate governance mechanism.

This paper starts by providing a background to the implementation of ERP systems and the concerns about maintaining the legitimacy of the IAF. Institutional theory is then considered as the suitable lens to address the research problem. The adopted research method and

subsequent analysis are presented. Finally, the paper concludes with a discussion of the main findings and highlights the contributions of this study.

2 Research background

Effective internal controls play an important role in assisting enterprises to avoid risk and to ensure that financial reports are reliable. Internal auditors often understand internal control to an extent is reflected in their assessment and assurance of the internal controls. This understanding guides the assessment of internal controls and results in more comprehensive, reliable and complete assurance. Tsai, Chou, Lee, Lin, and Hwang (2013) asserts that research is needed to guide internal auditors in the conceptualization of internal controls within an IT context in a logically consistent manner in order to achieve these goals in an IT environment. Huang, Hung, Yen Chang and Jiang (2011) suggests that auditors need to understand the assumptions behind IT controls to reduce risk in the complex IT environment.

Lyytinen et al., (2009) suggest that investigators need to probe ERP implementation as a multilevel change process that involves changes in the organizational routines that carry out the organization's functions and conform to the dominant institutional logic. These functions are expected to operate in their current form until the ERP implementation system overcomes the inertia and effects a change (Al-Mudimigh, Zairi & Al-Mashari, 2001). Despite the large volume of research on ERP systems, the impact of ERP systems implementation on the internal control system and subsequently on the IAF remains poorly understood. ERP systems are built from interdependent modules, and their business risks and audit risks significantly differ from those of traditional computer systems (Tsai et al., 2013). ERP systems implementation affects the internal control systems within organizations because the mechanisms of control are changed, while the internal control objectives remain the same.

Therefore, Saharia, Koch & Tucker (2008) argue that ERP systems create new opportunities as well as new challenges for the overall focus of the internal auditing profession.

The effectiveness of the IAF assures an effective internal control system and the quality of information. Tryfonas and Kearney (2008) argue that internal auditing is particularly laborious and the need to automate auditing tasks is maximized after the implementation of ERP systems. ERP systems integration forces auditors to reassess their audit models and move towards a business process and Information Systems (IS) control orientation. Traditional auditing skills are not sufficient in the ERP environment because a high degree of technical knowledge is also required (Hunton, Wright, & Wright, 2004).

The traditional boundaries of internal auditing are clearly challenged because ERP systems complicate the IAF (Saharia et al., 2008), leading to new roles being assumed by internal auditors within their professional community. An overarching problem pertains to the fact that IAF adheres to an institutional model that has undergone important changes resulting from ERP systems implementation. These changes have triggered a revised evaluation of the practices that are considered legitimate, which Suchman defines as follows (1995, p.574):

> *"a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions."*

To date, research has identified the increased importance of the IAF after ERP systems implementation. For example, Spathis and Constantinides (2004) examine the changes resulting from the implementation of ERP systems in the accounting process. Their results have revealed that the most notable change in accounting practice is related to the increased use of the IAF. However, only a few studies have attempted to examine the internal auditing after ERP systems implementation, and this field requires further developments on several fronts (Penini and Caemeli, 2010). .

The effect of ERP systems on the auditing legitimacy has yet to be fully explored because the current insights into ERP implementation feature a number of limitations. First, no previous studies have addressed the internal auditing changes in response to ERP systems implementation (Kanellou and Spathis, 2011). Second, previous research has also ignored the fact that ERP built-in best practices are derived from companies that operate in developed countries and do not necessarily suit the contexts of developing countries (Soh, Kien & Tay-Yap, 2000). However, most studies of the impact on IAF of ERP systems have taken place in the developed countries, such as the US and the UK (Ebaid, 2011; Kholeif, Abdel-Kader & Sherer, 2007), while ignoring developing countries where ERP systems are currently diffusing. Third, banks are widely acknowledged to heavily depend on IT (Chowdhury, 2003), and the longest history of IAF is found in the banking sector (Sarens, Allegrini, D'Onza & Melville, 2011). According to Fuß et al. (2007), no previous academic research has addressed ERP usage in banks, even though banks may represent an important customer for ERP systems. Fourth, auditing researchers have tended avoid trying to understand the social context, particularly in terms of contemporary audit practice (Robson, Humphrey, Khalifa & Jones, 2007). Finally, according to Abdolmohammadi and Boss (2010), research has focused on addressing the changes in external auditing while very few studies are driven by the internal audit view.

IAF adaptation after ERP systems implementation is an under-researched area that requires more attention (Nwankpa & Datta, 2012; Grabski et al., 2011; Kanellou & Spathis, 2011). Moreover, Grabski et al. (2011) suggest that a strong theoretical base for ERP studies is lacking. However, the levels of analysis in the study of ERP systems differ, offering interesting new insights. Hence, Mignerat and Rivard (2009) argue that there is room for contribution at the sub-organizational level, such as groups, departments and functions.

To address these issues, this study draws on and elaborates the conceptualization of ERP institutional logics and assumptions proposed by Yoo et al. (2007). A conceptual framework is proposed claiming that a key enabler of adopting a specific strategic response to maintain the IAF legitimacy is the extent to which auditors perceive the internal control assumptions embedded in the institutional control logic of the ERP system. Therefore, the paper responds to the calls of institutional theorists to understand how IS, which is a collection of material objects, contributes to the change and/or stability of IAF. The present study aims to elucidate how ERP systems motivate adaptation in the IAF to maintain its role as an acceptable and legitimate corporate governance mechanism. Therefore, the following research question is examined in this paper:

How does the IAF respond to ERP systems implementation in order to maintain its legitimacy as a corporate governance tool?

The use of complex IS, such as ERP, is evident in the banking sector (Karagiorgos, Drogalas & Dimou, 2010), and rendered traditional IAF insufficient post-implementation, which resulted in greater importance being given to the adapted IAF (Kanellou & Spathis, 2011; Madani, 2009). Banks feature unique information technology (IT) and business-related motivations for implementing ERP systems, mainly in back-office functionalities (Fuß, Gmeiner, Schiereck & Strahringer, 2007). Focusing on the banking sector, which is highly institutionalized, heavily dependent on IT and subject to many governance pressures to have a sound IAF, affords a unique opportunity to understand how the IAF responds to the new institutional logic of ERP systems.

To help address the research question, Institutional Theory is used as a lens to study the phenomenon of IAF adaptation as a response to ERP systems implementation. This theory is

used to examine how institutions influence organizational actors and provide a means to analyze the results of this study, as discussed in the following section.

3 Institutional Theoretical Perspective

This section aims to generate new insights that can improve the management of the IAF based on an appropriate theoretical perspective. The theoretical foundation of this study is based on institutional theory (Yoo et al., 2007; Gosain, 2004; DiMaggio & Powell, 1991; Friedland & Alford, 1991; Oliver (1991). Institutional theory was adopted as a lens to enhance our understanding of how auditors unfold ERP in organizations in the post-implementation phase. Institutional theory has risen to prominence as a powerful explanation for both individual and organizational actions (Dacin, Goodstein, & Scott, 2002).

Changes due to an institutional change either in technology (such as ERP systems implementation) or in laws and regulations (corporate governance-related) might lead to shifts in organizational structures and practice, as in the case of the IAF. Institutional Theory suggests several routes to interpret the impact of an institutional change on such organizational structures and practice.

Many definitions of an “institution” have been used in the field of institutional theory (Scott, 2008). In this study, an institution was considered to be a body of knowledge and practice (such as those embedded in ERP systems) that is used by individuals who are engaged in a particular body of professional activities (such as the IAF). Thus, institutions are considered patterns of social activity (Scott, 2001) that internal auditors draw upon to guide their practice. Once in place, the new institutional logics change work roles and activities, which require substantial modifications to functions (Barley, 1990) (such as the IAF). In the following subsections, the findings of relevant studies are summarized to support our

theoretical argument. First, ERP systems are considered carriers of new institutional control logic based on some embedded unexplored assumptions. Second, it is argued that the IAF legitimacy is threatened by ERP systems implementation. Third, it is argued that the IAF adopts different responses to maintain its legitimacy.

3.1 ERP Systems as control logic carrier

Information technology has been characterized as a trigger for organizational restructuring (Barley, 1986), a carrier of institutional logics (Scott, 2001) and a form of institution in itself (Orlikowski, 1992). Existing research has mostly studied the process of ERP systems institutionalization, and little attention has been given to the effects of institutional change. The contribution of technology to institutional stability and change has been under-explored (Czarniawska, 2008). Although technology consists of physical objects and IT specifically, it changes social practices. New technologies first alter tasks and skills, and these changes then generate opportunities and pressures for changing the organizational structure (Barley, 1990). ERP systems embody institutional logics that act as a template for performing organizational functions. ERP systems are the "*embodiment of institutional commitments and serve to preserve these rules by constraining the actions of human agents*" (Gosain, 2004, p.151).

The institutional lens is a fruitful way to understand the impacts of ERP implementation (Gosain, 2004). This lens views ERP systems as carriers of institutionalized patterns of organizational action with associated meanings, norms, and rationalities. Carriers at work are routines (Scott, 2001), but their use mobilizes new relations. Gosain (2004) considers ERP systems a carrier of new institutional logics. These logics are institutional patterns of action with associated rationalities that prescribe how best to structure different business activities (Friedland & Alford, 1991), one of which being the IAF. Examining the content of

institutional logic facilitates the understanding and explanation of the nature of social relations between organizations and individuals (ibid). The following text primarily focuses on ERP systems as carriers of institutional control logic.

ERP systems are provided with assumptions inherited from reference industries, countries and managerial interests, which reflect the identity of bureaucratic and hierarchical administrative practices (Yoo *et al.*, 2007). Yoo et al. (2007) theoretically argue that the principle logic most commonly associated with ERP systems is control.

Control institutional logic is founded on assumptions associated with specific causal means-ends relationships (Bacharach, Bamberger & Sonnenstuhl, 1996). ERP systems offer a better governance environment via different assumptions of control. Therefore, this research will explore the assumptions of the control principle embedded in the ERP systems logic.

3.2 ERP impact on Legitimacy of IAF

Three main sources of pressure introduced by Oliver (1996) can lead to the erosion of legitimacy: political, functional and social pressures. According to international trends, the IAF derives its legitimacy from pursuing a functional role in operational control, risk management and corporate governance (IIA, 2004; Spira & Page, 2003). As long as ERP systems introduction affects control, risk and governance within organization, the legitimacy of the IAF is threatened. However, the functional pressure will not automatically lead to the erosion of legitimacy. They are interpreted, given meaning and responded to by individuals within organization (Scott, 2001). Therefore, the IAF is continuously revised, reflecting the attempt to reframe the content of the IAF activities to achieve a higher degree of legitimization with its clients (Arena & Azzone, 2009).

Institutional theory posits that the need for legitimacy drives changes in organizations. It is this drive for legitimacy that makes organizations more similar without necessarily making them more efficient, giving rise to institutional isomorphism (DiMaggio and Powell, 1991). Institutional theory suggests that individuals sustain certain beliefs to conform to the rules conveyed by technology in order to accomplish a legitimate business function (Lyytinen et al., 2009). However, when technologies are poorly understood, goals are ambiguous, or the environment creates uncertainty, organizations may model themselves after other organizations perceived to be legitimate (DiMaggio and Powell, 1991).

The introduction of ERP systems can be viewed as an entrance of a new institutional form, which interacts with existing institutional arrangements. In the form of institutional logic, ERP systems select managerial actions, beliefs, and rationalities (Pollock & Williams, 2008; Gosain, 2004), which may clash with local practice and face major usage problems (Davenport, 2004). ERP introduction builds a system of legitimate behaviors to execute and manage organizational activities (Lyytinen et al., 2009), which generates momentum to adapt functions that translate the general principles of ERP systems (Pollock & Williams, 2008). While these principles are locally transmitted, they often produce divergent outcomes. If ERP systems are viewed as carriers of institutional logics, ERP implementation is expected to result in adaptation in the IAF.

ERP systems can carve a new audit landscape that requires auditors to adapt audit processes. After ERP system introduction, controls and processes shifted from discrete manual interventions to continuous automated propagations (Nwankpa & Datta, 2012). Therefore, failing to be equipped to respond to new challenges threatens the IAF's legitimacy (Power, 2003). According to Suchman (1995), threats to legitimacy cause legitimacy problems for the organization's activities as a whole. Therefore, the institution has a need to gain, maintain and

repair legitimacy. When ERP systems that carry new control logic are introduced, the legitimacy of the practice of the IAF is threatened; therefore, there is a need to adapt in order to maintain this legitimacy. Because the legitimacy of practice (e.g., IAF) is separate from the legitimacy of organizations (Suchman, 1995), this study focuses on the maintenance of the legitimacy of IAF.

Internal auditors draw upon a variety of institutions and their logics, such as those carried by ERP systems, to guide their actions. Failure to assure the effectiveness of internal controls in the new ERP system's working environment would lead to problems in maintaining legitimacy for the IAF. Given the inherent uncertainty of the controlling impacts of ERP introduction, internal auditors adopt some actions to maintain the legitimacy of their function. Therefore, a new managing strategy for the IAF is critical to fulfill its responsibility towards a sound governance system and to maintain its legitimacy. The misalignment of expectations in the ERP systems environment threatens the legitimacy of the IAF, and these threats result in pressure to adapt the IAF. In this case, IAF normative isomorphism may occur as a result of professionalization, which is defined as "the collective struggle of members of an occupation to define the conditions and methods of their work… legitimization for their occupational autonomy" (DiMaggio & Powell 1983, p. 152).

Institutional theory offers theoretical perspectives to analyze goals, values and prescriptions that underlie and legitimate behaviors of groups (DiMaggio & Powell, 1991). While institutional theory predicts institutional isomorphism, in reality, different functions have presented diversity with respect to the degree of adaptation after ERP introduction. To account for this diversity, a perspective is adopted that posits that internal auditors translate institutional influences into actions, such as adapting their functional structure and practice based on their perceptions of institutional practice.

3.3 IAF Legitimacy Maintenance Strategies

A limited but growing body of literature has examined the IAF from an institutional theory perspective both empirically (Al-Twaijry et al., 2003; Arena & Azzone, 2007) and conceptually (Mihret, Mula & James, 2012). These studies mainly focused on explaining internal audit adoption and characteristics. Previous studies essentially investigated whether organizations acquiesce with institutional pressure, which leads to the isomorphism phenomenon. Institutional theory could be extended in the IAF literature by examining the adapted IAF practice and exploring how these practice are legitimized by the delegitimizing of old practices.

The existing auditing literature has paid limited attention to the institutional adaptation perspective as an analytical lens (Dillar, John & Goodman, 2004). Although the IAF literature has established the importance of institutional theory (Mihret et al., 2012), it is chiefly employed to interpret motives for the adoption of IAF by organizations. For instance, Al-Twaijry et al. (2003) use it to explain motives for the adoption of IAF by Saudi companies, and the adoption was mainly found to be a result of coercive regulatory pressure. The IAF literature (Arena & Azzone, 2007; Arena et al., 2006) has also employed this theory to explain similarities and differences in IAF's practice, which originate from the institutional pressure. However, the institutional perspective has not been employed to interpret the adaptation of the IAF practice after the implementation of ERP systems. Therefore, the change process by which traditional IAF's practice is delegitimized and new practice is adopted is yet to be entirely investigated and theorized. An institutional change perspective can facilitate study of how IAF's practice has adapted. Therefore, a useful extension to the growing application of institutional theory in IAF literature would be to examine how it

adapts through institutional change. This institutional change framework is adopted to examine the development of the IAF after introducing ERP systems.

Institutional theory has been extended to encompass a variety of strategic responses to the institutional pressure. Oliver (1991) proposed a whole set of legitimating strategies and tactics. Mignerat and Rivard (2009) suggest that researchers have yet to investigate this range of legitimating strategies, which would help explain how IAF structures and practices may differ among organizations operating in the same institutional environment. This view of adaptation has developed because of the critique of early institutional theory, which failed to address the process by which changes take place. Therefore, a conceptual framework is proposed based on Oliver's (1991) approach, which links the institutional perspective with strategic choices. In this framework, ERP systems are considered carriers of new institutional logics that constitute significant pressure for IAF adaptation. Under new institutional logics and their implicit assumptions, internal auditors might implement strategies to maintain legitimacy. These relations are summarized in the conceptual framework shown in Figure 1.

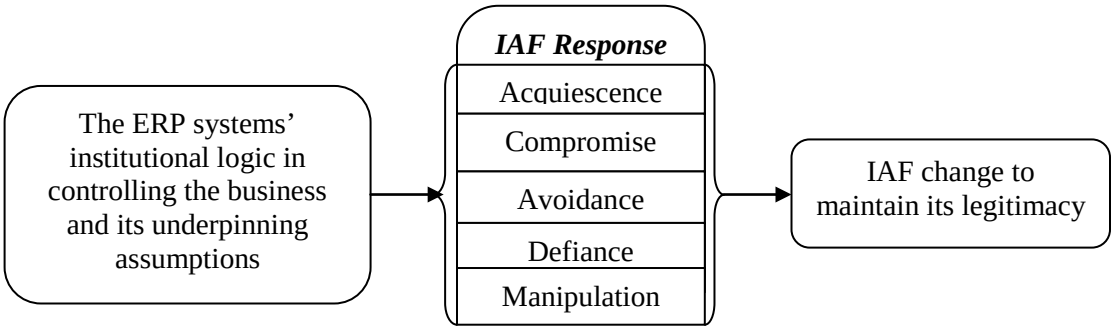

Figure 1. Conceptual framework for the IAF change as a response to institutional logics

Oliver (1991) links the institutional theory to strategic choices (IAF Response) in order to better understand the responses associated with new institutional logics-led pressures. She suggests five generic strategic responses to such pressures, namely *acquiescence, compromise, avoidance, defiance and manipulation.* These strategies are exerted via different

tactics (see Oliver, 1991). The IAF may use these strategies and tactics to manage legitimacy as a response to new institutional logic. Notably, more than one strategy or tactic can be selected to respond to institutional pressures (Mignerat & Rivard, 2009).

4 Methodology

The philosophical perspective for this empirical study is interpretive because it aims to gain knowledge of reality via the study of social constructions (Klein & Myers, 1999). Therefore, the qualitative interpretive in-depth case study method (Yin, 2009) was used to gather relevant data from which to derive the in-depth interpretation. Benbasat et al. (1987, p. 382) suggest that the case-study method is appropriate for IS research because "interest has shifted to organizational rather than technical issues". Therefore, it is especially suitable for our emphasis on the socially constructed meaning and interpretation of technology. The case study is exploratory in character; therefore, our sampling strategy was purposive rather than random. The case study was limited to the banking industry because a preliminary assessment indicated that the IAF has the longest history in this sector.

Walsham (1995) proposed that interviews are the primary data source of interpretive studies, because they provide the best interpretations that interviewees have of their experiences. Therefore, interviews were selected as the primary data collection method. However, additional data were obtained from a comprehensive analysis of archival sources to gain further insights into the research context and verify the interviewees' responses. The archival analysis involved a study of proclamations, ERP control manuals, government directives, and professional association publications pertaining to the IAF in Egypt.

The five criteria developed by Maxwell (1992) were adopted to judge the validity of our qualitative research. Descriptive validity was assured by ensuring that the data in the

transcriptions accurately reflect the responses of the participants. Interpretive validity was assured because the interpretations were not based on our own perspective but on that of the participants. Theoretical validity was assured by providing an accurate explanation of the phenomena and fitting the theory to the existing data. The used sampling technique and the targeted participants provided sufficient expertise on the phenomena to ensure that the achieved understanding is directly related to the phenomena and the findings; therefore, this understanding is transferable to similar situations. Evaluative validity is assured by allowing the participants to assess the evaluations drawn by the researchers based on the correct data rather than drawing from the researchers' understanding of the situation.

The reliability of the case study was assured by using multiple sources of evidence, establishing a chain of evidence and reviewing the case study draft report from the key informants. To demonstrate that the procedures of the research inquiry can be replicated to achieve similar findings, a case protocol was used to ensure that the questions were predetermined. The use of a case study protocol is considered an indicator of the stability and consistency of the procedures and techniques of the study. Developing a case study database provided a characteristic method to organize and document the mass of collected data in order to develop a comprehensive description that help the readers assess the potential transferability. Employing the detailed case protocol and the case study database facilitated the peer debriefing and the self-monitoring of researchers. The data were retained and available for analysis by others for conformability and dependability audits during the data collection and data analysis phases of research. This audit involved the examination and documentation of the process of inquiry to assure that it is well documented, which prevented bias and established reliability.

Threats to the validity of qualitative research that stem from personal biases were minimized by allowing participants to validate the data, the researchers' interpretations, and the conclusions; collecting multiple sources data; and recording interviews and converting them into verbatim transcriptions. This practice helped to prevent potential subjectivity in accordance with the recommendations of Yin (2009). A detailed case protocol was employed and a case study database was maintained to increase the reliability of the case study research. The case protocol contained an overview of the research topic, the interview questions, and the study procedures. The case study database served as a central store of collected data; it consisted of all interview transcripts, interview audio records, documentation, case study notes, and emails.

Due to the exploratory nature of the research, the semi-structured interview method was adopted. The semi-structured interviews were based on a set of questions that served as a guide for the interview process; however, an open discussion was created whenever relevant. Most of the interviews took place at the interviewees' workplace, where they had access to all supporting documents; however, some participants preferred to conduct the interview in a café during non-working hours. The interviews began with an introduction to the purpose of the study. New themes emerged during the interviews; therefore, some follow-up interviews were conducted. The research was based on a series of fifteen interviews and a focus group of all (five) of the IT auditors in a multinational bank in Egypt that has already implemented ERP systems in 2010. Interviews were conducted from July to October 2011 and lasted between 60 to 90 minutes. Table 1 contains a summary of the interviewees' positions and the list of documents that were analyzed. Permission was obtained from the CEO of the bank to interview all of the stakeholders of the ERP systems and the IAF. Using the snowballing technique, the interviewees within the bank and the stakeholders outside the bank were

recommended. Care was taken to ensure that a wide spread of views was canvassed. A focus group was used because of the nature of some of the stakeholder groupings whose views needed to be gained. The members of the focus group engaged in an intense debate and ultimately reached an agreement on most of the discussion points.

The interviews were audio taped and transcribed in 10 to 15 pages. The interviews and written material were reviewed and read several times to reduce the data. This process included the process of sorting, organizing and data focus, as suggested by Miles and Huberman (1994). The formal process of developing the coding scheme began after the initial conceptual framework had been formed. The scheme was revised after the first few interviews. The entire process was an iteration of coding a sample of data and revising the coding scheme. The codes were categorized according to the conceptual framework that guided the study based on directed content analysis (Hsieh & Shannon, 2005). A coding manual was developed, which consisted of category names, definitions and rules for assigning codes with an additional field for taking notes as coding proceeded. Using the constant comparative method (Zhang & Wildemuth, 2009), the coding scheme evolved throughout the process of data analysis. The process of coding and drawing conclusions from the raw data involved a recursive process (Lewins & Silver, 2007). To assure a systematic process for analyzing data, the interview transcripts and documents were coded within the NVivo 9 software, which referred to a list of earlier developed themes. The credibility of the findings was verified by using the data triangulation technique and different sources, and most of the ideas were mentioned by more than one interviewee and in more than one situation. To establish credibility, the researchers prepared an audit trail, and other researchers checked the pathway of decisions made in the data analysis. To assure the credibility, the results were presented to the study subjects, who were asked to verify whether they agreed with them. The repeated reading of interview

transcripts and checking of one theme against others helped ensure the representativeness of the results. This process gradually discovered and resolved distortions, inaccuracies and misinterpretations. A validation process was applied to refine and verify the credibility of themes and categories that emerged in one interview in subsequent interviews.

Data saturation was achieved when evidence became increasingly redundant. Institutional theory provided a means to interpret and understand the responses of the IAF to the pressures of the new assumptions of ERP systems control, which maintained the legitimacy of the IAF as a corporate governance value-adding tool.

Interviewees' Positions
Chief internal auditor (CIA)
Head of the compliance department
Head of the operational risk and control department
Head of the IT department
IT consultant
Focus group of all (five) of the IT auditors
General internal auditor
Senior IT auditor
Senior financial internal auditor
Branch manger
Head of the supervision Dep. at the Central Bank of Egypt
Senior external auditor
External auditor, who is involved in auditing the bank
ERP systems' vendor
Member of the ERP systems' vendor support team
Head of the IIA chapter in Egypt
Sample of the document types: archival documents, internal memos, internal audit reports, external audit reports, internal job descriptions, business instruction manuals, function instruction manuals, ERP vendor materials, informal conversations and consultancy reports.

Table 1. Sources of Data Collection

The case study was conducted in one of the largest multinational banks operating in Egypt that provides a comprehensive range of banking services via more than 160 branches. The bank was selected due to a combination of its accessibility and its representativeness. This Multinational Bank will be referred to as "MB" for confidentiality purposes.

5 The Case Study Findings

MB has relied on the in-house development of IT systems for core-banking operations. These systems were built around the bank's product lines. As a consequence, the IT architecture forced the bank to utilize a number of isolated solutions instead of seamlessly integrating IS. Therefore, the motivation for implementing ERP systems was strong. MB implemented an (Oracle) ERP system at the beginning of 2010. In the banking sector, where the adoption rate of ERP systems is low, the scope of ERP systems is smaller than in the manufacturing sector. Therefore, the ERP systems at the bank embraced only back-office functionalities. Findings related to each construct of the conceptual framework are discussed in the following sections.

5.1 Assumptions of ERP systems' institutional logic in controlling the business

This study found that ERP systems bind different functions to certain choices about how activities should be carried out. ERP systems embody institutional logic and exercise control through rules, which constrained the auditors' actions. This paper explores the assumptions of the control logic embedded in the ERP systems as follows:

- ***Automation****:* Although MB historically used automated front-end business processes, ERP systems were applied in some back-office areas that depended on legacy systems with non-automated controls. As a result, the automation provided by ERP systems implementation reduced the effort burden and non-value adding efforts of internal auditors. Moreover, data reports produced based on automated controls using ERP systems were more reliable for audit purposes. For example, the senior IT auditor stated that

  "ERP automated controls are instrumental in eliminating time-consuming activities. By automatically mapping operational information with financial information, we get detailed

reports to increase productivity and performance through better assurance function. The business process that is automatically controlled gives the internal audit confidence about the internal control and decreases fraud possibilities by a notable amount."

- ***Centralization**:* The centralization offered by ERP systems enhanced the internal control by improving data availability. The control, monitoring and auditing of the bank without centralized systems were very difficult due to the large and expanding network of branches. Therefore, ERP systems eliminated the need to transfer, re-enter or duplicate data for MB. For example, the chief internal auditor stated that

  "ERP systems are offering faster auditing tool via screens that provide centralized access to all needed information without physical visits."

- ***Continuous monitoring**:* ERP systems improved the internal control structure at MB bank, allowing real-time information about the activities of its users. Integrated systems were perceived to offer better real-time automatic continuous monitoring and control. Internal auditors at MB had open access to all needed data for auditing purposes, could access live transactions in progress, and run monitoring queries on the systems. Therefore, the ERP systems provided MB with the infrastructure necessary for the evolution of the IAF to become an on-going process. For example, one of the IT team members in the focus group confirmed that

  "The ERP system enforces a chain of processes reviews that depend on each other. Therefore, we have a new assumption for control, which is the continuous peer review process. It is imperative that no single process moves forward through the system unless each employee reviews the previous work, which is already approved by others and accepted according the criteria, embedded in the systems."

- ***Data consistency**:* ERP systems enhanced the internal control system at MB by communicating consistent information. Previously, internal auditors at MB spent long periods arranging the data gathered from different departments and branches in a consistent format for analysis. The implementation of the ERP systems negated this problem by offering the bank the ability to record and enter very detailed data about each

transaction. The ERP system ensured data consistency by unifying the entire data process starting, from data entry to financial information reporting. This consistency was also sustained via the standardization of ERP systems, which resulted in data consistency across all branches. The auditors confirmed this consistency, as stated by the senior financial internal auditor:

"ERP systems have great impact on the information and communications via reports that provide consistent information that are easily analyzed by any data analysis tool. The data consistency alert for unusual or suspicious data."

- ***Data security**:* The internal auditors at MB generally confirmed that ERP systems maintain high security standards. The complementary documents analysis showed that ERP systems offer data and function security. Considering data security as a component of the internal control systems was a new concept for internal auditors; however, the impact of data security on the internal control system was appreciated. The internet auditors regarded data security as the responsibility of the IT specialists, while the role of function security in their responsibility to monitor the access controls was considered to decrease. One of the IT team members in the focus group confirmed that

  "ERP systems focus on data security via gateways that focus on managing and analyzing a user profile from the sign up, data modification and end phases. Auditors should consider the overall set of security functions..."

- ***Integration**:* MB appreciated the opportunity offered by ERP systems via the integration of both functional and data levels. ERP systems enabled back-office systems integration with the core-banking system and thus improved the accuracy and visibility of data, resulting in more tightly controlled processes. The integration facilitated by the ERP systems provided the integrated infrastructure that allowed the implementation and integration of query software for special investigations that helped the audits. Therefore, the integration was considered very important to the IAF. The integration provided a solid internal control

structure that was considered a key compliance requirement. An integrated system was necessary to review the internal control of a large number of branches by an internal audit department. A member of the ERP systems' vendor support team said:

> *"Before implementing an ERP system, there were many controlling problems on the business processes because they were not linked or integrated. Integration, when needed, has been done on manual basis, which results in many errors. Therefore, MB was looking for improvement via efficiency and integration in all business processes."*

- ***Multiple ways of control**:* ERP systems offered many methods to control the same object by controlling the logistics, controlling its financial results and maintaining consistency. ERP systems closed the control loop. ERP systems integrated the financial view with the operational view and offered many methods to control the same transaction. For example, one of the IT team members in the focus group confirmed that

> *"ERP systems merge operational controls with financial controls. Internal auditors get detailed reports about processes, earnings and performance; therefore, they should use this knowledge to audit and enhance the business performance."*

- ***Preventive controls**:* ERP systems changed the internal control to be preventive rather than detective. Automatic controls were more effective and able to prevent any suspected transaction from passing through the system. The authorization, security and access controls in the system were the new powerful preventive tools that improved the internal control environment. Strict Segregation of Duties (SOD) gave internal auditors the confidence in the accounting figures reported by the system. For example, the ERP systems' vendor stated that

> *"... ERP systems are mainly based on a preventive control principle. Each individual is allowed to perform specific duties and prevented from doing others... This means that the internal control system turned to be preventive. ERP systems have strict security rules that prevent most of fraud opportunities. ERP systems definitely offered better preventive internal control system."*

***Standardization**:* ERP systems standardized the IT infrastructures across functions, which facilitated the sharing of information and integration of business activities. A standardized

database encouraged a change from function-oriented to team-work oriented activities. ERP standardized the back-office functions because all front-office functions were standardized. These systems were implemented around all banks in the group worldwide to standardize all processes. The standard business process allowed the internal audit to confidently rely on the internal controls' ability to notably decrease the possibility of fraud. Having standard process facilitated identifying exceptions. The external auditor of the bank stated

> *"The bank realized the need for an integrated solution to streamline and standardize business processes…Finance and human resources had multiple systems that were not integrated and processes, such as payroll, were not standardized. The bank decided to standardize processes via a single system."*

- ***Transparency and Visibility****:* ERP systems offered information transparency on multi-organizational levels to enhance the accountability, traceability and visibility within the bank. Internal transparency enhanced the internal control, monitoring and auditing. ERP systems offered internal auditors the ability to trace any transaction from the aggregate consolidated level down to the processing level. ERP systems offered the internal auditors a full view of the data entered at different branches and departments by storing data in one integrated database that could be accessed to retrieve data from different positions. For example, an IT consultant stated that

> *"All governance problems were based on the non-availability of data, while ERP systems now offer unprecedented internal transparency. ERP systems enable financial information to be closely tracked regarding assets distribution, accounts changes and cash movement."*

- ***Compensating controls:*** ERP systems do not dictate one control for each type of risk; however, these systems helped to blend more than control to mitigate the same risk. Most interviewees stated that ERP systems offered these compensating controls; for example, the senior external auditor stated

"A more important point than focusing only on the functionality of a list of controls is the compensating controls that are offered by ERP"

The aforementioned findings indicated that the institutional logic of ERP systems in controlling the business is based on new assumptions that pressure the IAF to change, as summarized in figure 2.

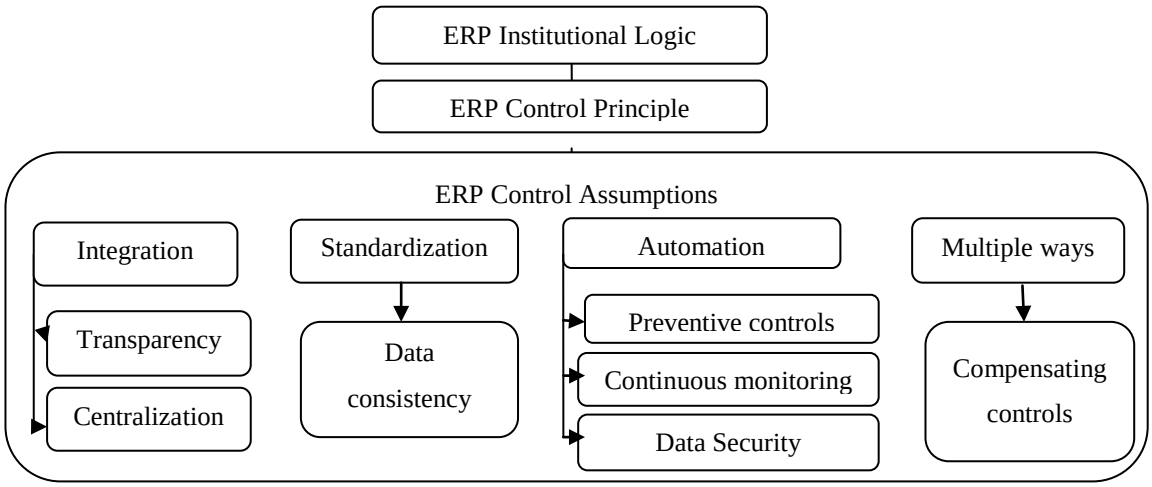

Figure 2. ERP system's institutional logic, principle and assumptions

5.2 The IAF changes to conform ERP systems' controlling assumptions

IAF adaptation was an integral part of remaining a legitimate governance tool after ERP systems implementation. Therefore, the changes in the IAF needed to be explored and analyzed in order to interpret the adopted strategy. The changes in the IAF in response to ERP systems implementation were very difficult to quantify because organizations do not report the added value of this function. Therefore, each aspect of the IAF practice and structure was investigated. This analysis identified the following changes that occurred after ERP systems implementation, which were a response to the new control assumptions:

- ***Practice change:*** ERP systems replaced and consolidated many auditing tasks. ERP standard and integrated systems reduced the time and effort needed to perform audit missions and minimize the investigated samples. Although the IAF at MB was a very

developed function that added value, ERP systems helped to improve and expand all types of audits. The role of internal auditors evolved, and the scope of audits expanded to cover all activities of the bank and encompass the assurance of internal controls, including IT controls and ERP systems management. The IAF became an integrated function that encompassed financial and IT auditing. Internal auditing at MB evolved from entailing traditional inspection work to the more pressing needs of business process optimization and consultation activities. Most of the participants agreed; for example, a general internal auditor stated

"The scope of the IAF evolved to encompass the examination of the effectiveness and efficiency of the entire system of internal control. The internal audit review covers all activities of the bank. It involves the review of all financial and non-financial operations, either manual or computerized. The internal audit extends to manage ERP systems. We can say that the IAF turned to be integrated in order to work in the fully integrated working environment."

- ***The structure of the IAF:*** A balanced internal audit team was crucial to support an integrated business working environment. While IS was considered a domain for specialized IT auditors, it was of interest to all auditors after the implementation of ERP systems. The internal audit team was enhanced to be an integrated audit team. This team gathered general auditors, auditors specialized in each specific business process and IT specialized auditors in each module to support all types of audits. This trend drove sweeping changes that required a redefinition of the auditing departmental outlines. IT auditors became an integrated part of the audit team because they were involved in most types of auditing. An IT auditor stated that

  "The audit team includes different experiences from different areas of business because of centralization and integration brought by the ERP system."

- ***Skills:*** Internal auditors are required by the standards of their profession to possess the knowledge, skills and technical proficiency essential to the performance of internal audits. Therefore, implementing ERP systems did not significantly affect the skill set of the audit

team. According to the Group Audit of MB, each auditor was required to have at least 40 hours of training per year. Internal auditors were required to speak the same language as the users of ERP systems and to be skilled in using some of the software that is used to extract data. The IT consultant stated that

"Internal auditors became flexible to accept the evidence presented to them, even when it took on a new, unusual format. Internal auditors are always updated to be aware of any change taking place within the bank. Otherwise, their knowledge will become obsolete."

- ***Tools:*** The internal auditors best utilized the systems because they used software to extract the data from the database of the ERP systems. The IAF at MB already utilized the latest audit tools and IT-based solutions. For example, the head of the compliance department stated that

  "We have audit software to generate reports, interface with all other departments, and follow up with recommendations. We now depend more on the data analysis tools... We use special auditing software before even implementing ERP systems. We integrated our auditing software with the ERP systems."

- ***The IAF Sourcing:*** The ERP working environment required different competencies in the IAF. MB could choose to develop these broader competencies internally or outsource internal auditing. It decided that all of the auditors must be capable of performing all types of audits, and any specialist needs were provided by the group audit. Therefore, the IAF did not need to be outsourced as a whole or in part.

- ***Relations with IT department:*** However, the IT audit was identified as one of the most difficult specialized tasks; developing a job rotational relationship between internal auditors and the IT team provided great benefits. This rotation assigned internal auditors to the IT departments over a period of time as a learning mechanism to obtain the IT knowledge required for auditing. This practice reduced recruitment and consultation costs while furthering the auditors' understanding of the bank's systems. ERP systems

implementation strengthened the work relationship between the IAF and the IT team. Audit and control functions collaborated with the IT team to generate tailored systems that assisted their monitoring role. For example, the head of the operational risk and control department stated that

"With ERP systems implementation, there is no manual based work whether for monitoring or queries... We and auditors are continuously dealing with IT team. They are enabling us to perform special queries or extracting certain data for controlling or auditing reviews."

- ***The size of the IAF:*** The size of the internal audit department increased because new individuals with new experiences were incorporated. Although ERP systems implementation reduced the effort of and time spent by the internal auditors, an integrated internal audit team that draws on a variety of experience needed to be built. Therefore, the internal audit team increased, especially via the addition of more IT auditors.

- ***The budget assigned to the IAF:*** Despite the increase in the IAF's size and scope, its budget slightly decreased with the implementation of ERP systems. Best utilizing the system features to control and monitor the business process saved a substantial part of the budget. For example, the head of the IT audit stated that

  "The budget of the IAF has decreased. Having IT auditors reduced the number of the financial auditors needed. Instead of making an internal audit team of 30, it can be 15 and 3 IT auditors. Therefore, the budget assigned for the IAF salaries decreased, and many other expenses of doing the audit missions decreased as well."

- ***Relation with external auditor:*** External auditors judge the effectiveness and capability of the IAF to determine the extent of dependability. The decision was affected by the IAF structure, qualifications available, training, audit techniques, experience and history of previous audits. The external and the internal auditors had a long history at MB. Therefore, ERP systems implementation did not change the well-established relationship and accompanying confidence. The external auditor said

"We always depend on the results and reports of the IAF as we are sure that it is a very strong and developed IAF. We ask for detailed assurances about the workings of ERP systems. The ERP systems implementation did not change the relation between the IAF and the external audit; however, these systems helped us in our missions."

The ways in which the IAF changed to maintain legitimacy after implementing ERP systems are summarized in Figure 3:

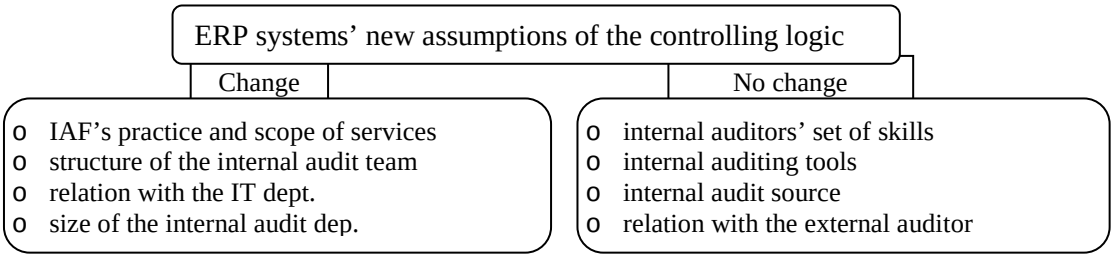

Figure 3. The internal audit change after implementing ERP system

5.3 The IAF strategic response to maintain legitimacy

One way to understand how a profession survives was to focus on its use of specific techniques to control and modify the system of knowledge in response to forces that open and close jurisdictions, provide new models for practice and change the legitimating criteria (Abbott, 1988). Moreover, Meyer and Rowan (1977) argue that the quest for legitimacy is one of the main motives behind the development of new social practices.

The internal auditors' responses to ERP implementation were analyzed by drawing upon Oliver (1991). The responses were more pluralistic and complex than the singular and homogeneous responses that are often characterized in the literature. Internal auditors exploited the implementation and extended their areas of involvement with the aim of adding value. However, the changes they advocated required that the internal audit process, competencies and role were redesigned. Thus, auditors adopted new procedures and responsibilities as part of their professional role.

The internal auditors responded by adopting a compromise strategy based on bargaining and balancing tactics. The internal auditors' involvement in the ERP systems implementation process gave them the opportunity to negotiate their requirements. During the implementation, auditors attempted to customize the systems to be compatible with their needs. The integrated internal audit team facilitated a compromise solution; thus, not all of the internal audit team members directly handled the systems. The IT consultant stated that

> *"The internal auditors were on the top of any change take place within the bank to add their requirement and to refresh their knowledge about the business processes after ERP; otherwise, they will audit based on an old process that has been changed. Internal auditors at MB were flexible, and they adapted quickly and easily to all kinds of changes… After implementing the ERP system, MB has a very integrated internal audit team that contains general auditors, specialized auditors in each area of the business besides IT auditors. This team is able to perform audits across functions."*

Subsequently, the internal auditors responded by adopting an acquiescence strategy based on compliance, habit and imitation tactics. The audit group asked the auditors to comply with the new working environment. Internal auditors managed their new tasks in a manner that served their position. They changed their work habits such that they were based on collaborative efforts within the integrated team as they learned from other banks in their multinational group. The CIA and audit committee searched their professional communities and other successful associates in the group for new ideas and adopted ideas and practices similar to those already adopted by other banks in the MB group. The global approach of MB was to have the same requirement of the IAF in all regions. Therefore, the requirements in Egypt were simply copied from the globally accepted requirements. The CIA stated that

> *"We learned from the successful internal audit models after ERP implementations in other banks in the group in our region via the professional networks within the group."*

Moreover, the use of the same consulting company directed the imitation of the internal audit's successful model from other banks within the group. ERP systems facilitated the IAF to a very large extent; therefore, all internal auditors were eager to use and learn these

systems. The internal auditors decided to follow the new requirements and considered them to be compliant with international standards. Their arguments for introducing a new working style were drawn from their professional contacts and international practitioner communities.

The involvement of the internal auditors in the implementation of decisions and processes motivated them to understand and accept all new assumptions of the ERP system in controlling the business. Internal auditors considered the ERP system a tool that helped them improve their function. Moreover, the constant change at MB stimulated mindfulness among the auditors; they were continuously searching for new strategies to improve auditing.

ERP systems implementation is a socio-technical challenge that required a different approach from technologically driven innovations. Consistent with Oliver (1991), less active strategies, such as compromise and acquiescence, tended to be selected when the institutional pressures were consistent with goals. At MB, the ERP system was considered a corporate governance tool. ERP systems' best practices already aligned with the International Accounting Standards (IAS), and most of the ERP systems' assumptions for controlling the business helped to achieve governance objectives. ERP systems were considered a perfect governance tool that each internal auditor should master; therefore, governance rules and ERP systems were two sides of the same coin.

In accordance with Oliver (1991), pressures imposed at higher levels resulted in the selection of less active strategies. All requirements were set at MB before implementing the ERP systems; a strong change management plan was put in place by the head office in Egypt. The group audit team was strongly pressured to manage the changes in the IAF.

Additionally, the degree of interconnectedness with the business environment is a key element in the context of these pressures. ERP systems were integrated into the business process;

therefore, they could not be audited, nor could their outcomes be separately audited or their impact on the financial, operational or compliance audit isolated. These results are in accordance with the conclusions of Oliver (1991), which stated that the degree of interconnectedness inversely correlated with the likelihood of using active strategies.

6 Discussion

This study has contributed to narrowing an important gap in the previous literature. Kanellou and Spathis (2011) argue that the implementation of ERP systems significantly impacts auditing; however, previous research did not examine the nature of the IAF change. While many studies (e.g., Grabski et al., 2011) highlighted the impact of ERP systems implementation on redesigning functions and changes in job role definitions, this study identified how the IAF adapted after the introduction of ERP systems. While some studies (e.g., Gosain, 2004) confirmed that ERP systems embody new institutional logics for controlling business and information and others (e.g., Yoo, 2007) found that ERP control logic is based on various assumptions, this study dug deeper and investigated these interlinked assumptions. Moreover, while some studies used institutional analysis in the context of ERP systems or internal audit on the country or organizational levels (Al-Twaijry et al., 2003; Arena et al., 2006), this study articulates the theory on a functional level. Consistent with Chen et al. (2012), ERP implementation significantly changes the auditing procedure and internal control.

The findings show that the strategic response of the auditors to the introduction of ERP systems changed. In the first instance, auditors adopted a strategy of compromise because they were able to bargain in order to enable advantageous procedures for them. However, this strategy ultimately changed to acquiescence because internal auditors considered the

adaptation to be compliant with the international auditing standards. This change in strategy was not predicted in the institutional theory literature.

Another reason for the acquiescence of the internal auditors was their involvement in the ERP systems implementation. They raised the importance of implementing ERP systems before the decision was made to implement these systems. They were involved in the process of selecting needed modules and the appropriate vendor. Internal auditors were involved in the implementation for more than one reason: for example, they assured that business conducted via the system complied with the business instruction manuals, understood how these systems affect their audit and ensured that all modifications were auditable. They were considered super-users, especially in the financial module. Therefore, consistent with Nwankpa and Datta (2012), involving internal auditors to play an active role in the ERP implementation phase was prudent.

One of the legitimacy strategies used by the internal auditors focused on enhancing the ability to foresee emerging challenges from ERP systems. In addition to guarding against challenges, they sought to buttress the legitimacy they had already acquired. The IAF at MB had already acquired legitimacy as a governance tool that helped to assess risk and assure internal control. Consistent with Oliver (1991), when conformance was anticipated to enhance legitimacy, acquiescence was the most probable response to institutional influence.

While ERP systems were covering the back-office process, the bank had implemented integrated core-banking systems that covered the front-office process. Therefore, the impact of ERP systems on the IAF was alleviated because the internal auditors were handling the core-banking systems beforehand.

7 Conclusions

This case study intended to explore the assumptions of the controlling logic of ERP systems and explore and interpret the changes in the IAF in response to the introduction of ERP systems in order to maintain IAF legitimacy as a governance tool. This research utilized the Institutional Theory of Oliver (1991) to examine the adaptation in the IAF. The authors of this paper propose that practitioners should approach ERP systems implementations as a broad socio-technological phenomenon instead of a project-based change. The results demonstrate that ERP systems impose new assumptions for the control of the business process and motivate changes in the practice and structure of the IAF. Integrated internal auditing now audits the processes and systems across the bank. Instead of conducting separate audits, the institution should focus on the vertical analysis of different sets of controls over the end-to-end process. Audits depend on horizontal analysis in a way that ensures that all interconnected controls for assessing the business risk are addressed in an integrated fashion. The audits simultaneously focus on the organization's financial, operational and IT controls and processes. Practical and scientific rehabilitation for the internal auditors are necessary in order to assimilate the principles and criteria of governance in the new ERP environment.

This study shows that the strategic response of the auditors to the introduction of the ERP system changed. This change was not predicted by the literature, but this finding suggests that further study of the dynamic nature of Institutional Theory may be warranted. Previous studies have not utilized interpretive case studies to examine the implications for the IAF that arise from the introduction of an ERP system. This study is expected to fill a gap in previous research related to ERP systems.

This study suggests outcomes of other, similar situations and provides recommendations for action. The study has significant implications for understanding the change in terms of institutional strategic adaptation theories. The findings of this study have practical implications for the IAF management strategies. The findings of the study may be considered by organizations that implement ERP systems in order to adapt and improve their IAF.

A limitation of this study is the use of a single case study; however, this study is exploratory in nature and serves as a starting point for further research in this area. This research is anticipated form the basis for further, more specific research and investigation relevant to the issues highlighted in this study. Further research is necessary to explore how these changes can differ in other contexts.

The contribution of this research is threefold. First, it makes a theoretical contribution by demonstrating that the strategic responses of actors may change at the sub-organizational level. Second, it shows how the IAF adapts to maintain its legitimacy when an ERP is implemented. Third, it addresses a gap in the literature that concerns the impact of ERP implementation on the IAF. The findings of this study are beneficial for organizations that plan to implement ERP systems and internal auditors within these organizations.

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