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ERP and organizational change
A case study examining the implementation of accounting modules

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Abstract

Purpose – The study aims to explore the processes of implementing an enterprise resource planning (ERP) system in a public service organization operating in an emerging market economy, namely, the United Arab Emirates (UAE).

Design/methodology/approach – The study draws on Laughlin's (1991) model of organizational change to highlight how the introduction of an ERP system, particularly its accounting modules, disrupted the adopting organization's modes of thinking and its members' practices. It uses a case study methodology. Data collection methods included semistructured interviews, documentary evidence and personal observation.

Findings – The case study findings show that despite implementation and customization problems, the organization's employees were forced to use the ERP system. The findings also highlight how the ERP system was acted upon to mobilize the organization's members toward a new era of information technology. However, the misfit between pre- and post-ERP system accounting practices led to some organizational members to form absorbing groups that questioned accounting-based ERP system organizational changes. The top management's persistent desire to adopt the ERP system through forcing the organization's employees to use the system's modules led the organization to undergo what Laughlin (1991) calls "colonization" organizational change.

Research limitation/implications – The use of a case study methodology inherently limits the generalizability of the study's findings. The case study was carried out over a relatively short timeframe, namely, ten months. Therefore, the use of a longitudinal case study to examine accounting-based ERP organizational change is recommended.

Practical implications – The study provides insights that can assist top management in formulating organizational change strategies. It also provides insights about emerging economies' regulatory particularities that influence ERP system implementation.

Originality/value – The study is one of the first studies that utilizes Laughlin's (1991) model of organizational change to examine accounting-based ERP organizational change in an emerging market economy.

Keywords Organizational change, ERP, Laughlin (1991), Colonization organizational change, Emerging market economy

Paper type Research paper

1. Introduction

The past few years have witnessed numerous organizations implementing different modules of enterprise resource planning (ERP) systems. The underlying objective of

these organizations is to improve their performance in line with other worldwide organizations. The ERP system consists of "a set of integrated applications modules, which span most business functions (including accounting)" (Scapens and Jazayeri, 2003). A module is a computer software program that incorporates the industry's best practice and provides ERP system users with access to real-time data about business functions (Caglio, 2003; Dezdar, 2012). Although each module represents a functionally different business processes, all modules are fully integrated. In ERP systems, integration means that the entry of data in one module affects the data and the operations of some or all other modules included in the system (Dechow and Mouritsen, 2005). Accordingly, the implementation of an ERP system alters the relationships between organizations' different functions (Brignall and Ballantine, 2004; Kanellou and Spathis, 2013; Teittinen et al., 2013; Nwankpa, 2015). It also involves organizational transformational processes that significantly affect the organization's structure, culture, employees and practices that existed prior to the implementation of that system (Caglio, 2003; Scapens and Jazayeri, 2003; Ruivo et al., 2014).

Despite the many advantages of adopting ERP systems, there has been a high rate of implementation failure in developed countries, and emerging economies are no exception (Huang and Palvia, 2001; Hawari and Heeks, 2010; Dezdar, 2012). If there are many cases of ERP system implementation failure in developed countries that have high information technology (IT) maturity, good IT infrastructure and good ERP experience, then ERP implementation in emerging economies and developing countries will encounter as many, if not more, cases of failure. This is because the majority of ERP systems are Western-designed systems for Western businesses, yet ERP systems vendors customize these systems' "built-in" practices to meet the needs of local organizations. Consequently, it is vital to have an in-depth understanding of the processes of implementing ERP systems in emerging economies.

Accordingly, this study aims at examining the processes of implementing an ERP system in a public service organization operating in an emerging market economy – the United Arab Emirates (UAE). The study specifically examines the process of mutual adjustments between the ERP system's "accounting modules" practices and those practices that existed prior to the adoption of these modules. Because the ERP system's modules are based on European or American industry practices, a consequent question worth investigation is:

> […] how do European or Anglo-American accounting and information system practices, embedded in the ERP system, fit or misfit with the existing practices of an organization operating in an emerging economy such as the UAE?

In doing so, the study explains the role of the ERP system during an organizational transformation toward a better, more effective information system. It draws on Laughlin's (1991) model of organizational change to explore how an ERP system has contributed to organizational change in an organization operating in the UAE.

Although several studies have explained how the misalignment between ERP system "built-in" practices and the adopting organization practices affect the implementation of that system (Scapens and Jazayeri, 2003; Brignall and Ballantine, 2004; Soh et al., 2000; Soh and Sia, 2004), none of these studies has focused on examining the processes of mutual adjustments between the ERP system's "accounting modules" and those practices that existed in a public service organization operating in an

emerging market economy, namely, the UAE. Many of the accounting-based ERP organizational change studies have been conducted in Western countries, such as the USA (Scapens and Jazayeri, 2003), Italy (Caglio, 2003), Australia (Booth *et al.*, 2000), Greece (Kanellou and Spathis, 2013) and Finland (Granlund and Malmi, 2002). Yet very few studies have investigated the relationship between ERP systems and changes in organizational practices, including accounting, in less developed countries or emerging economies (El Sayed and Westrup, 2003; Kholeif *et al.*, 2007; Hawari and Heeks, 2010; Dezdar, 2012; Al-Muharfi, 2014). One of the contributions of this study, therefore, is that it addresses this research gap.

The study contributes to the existing literature on emerging economies. Most of the academic literature on emerging economies has focused on the "what" question; that is: What are the implications of ERP systems for the organization's individuals, groups and structures? and What does the organization need to do to meet the challenges and/or opportunities created by the ERP systems? (Albadri and Abdallah, 2009; Gamal, 2009; Dezdar, 2012) This study addresses the "how" question to understand how the members of an organization respond to the structural changes required by the ERP system. The study pursues its aim through discussion of a case study of a medium-sized Emirati public service organization that has implemented an Oracle ERP system's modules. The study reveals how organizational members reinforced their existing practices under the banner of the ERP system.

Furthermore, the use of Laughlin's (1991) model of organizational change adds to the few studies on ERP systems change in emerging economies, such as Kholeif *et al.*'s (2007) study in Egypt, Hawari and Heeks's (2010) study in Jordan, Dezdar's (2012) study in Iran and Al-Muharfi's (2014) study in Saudi Arabia. Kholeif *et al.* (2007) examined how an ERP system project failed in Egypt using a theoretical framework informed by institutional theory to explain their findings. Hawari and Heeks (2010) investigated the same failure in Jordan using a synthesized theoretical framework that considered risk factors associated with the successful implementation of an ERP system. Dezdar (2012) surveyed the Iranian ERP users' perceptions on the importance of strategic and tactical factors associated with the successful implementation of an ERP system. Al-Muharfi (2014) explored lessons learned from implementing accounting-based ERP system in a Saudi petrochemical firm. However, these studies do not examine the enabling character of the ERP system to change organizational practices through triggering a dialogue toward such a change (Dillard *et al.*, 2005; Dillard and Yuthas, 2006). This study addresses this research gap and examines how the ERP system was acted upon to trigger a public service organization operating in an emerging market economy to change.

The above studies show that there is a need for further research in emerging economies and, specifically, in the UAE. Despite being one of the leading emerging countries in utilizing advanced information and communication technology, the UAE has been the subject of relatively little research on ERP systems' implementation (Albadri and Abdallah, 2009; Gamal, 2009; Chen, 2012). The limited number of studies addressing ERP systems in the UAE either used a descriptive case study approach (Albadri and Abdallah, 2009; Chen, 2012) or undertook a survey exploring the ERP system users' perceptions about the benefits and barriers of ERP implementation (Gamal, 2009). Although this study addresses similar concerns, it draws on Laughlin's (1991) model of organizational change to inform the discussion of the case study. The

study draws on concepts such as interpretive scheme, design archetype and subsystem, as well as models of organizational change, to explore how a UAE organization customized its exiting practices in line with the ERP system's "built-in" practices. Special attention is paid to revealing the role of the ERP system during that transformation process.

There are various reasons for choosing Laughlin's (1991) model. In addition to being rarely applied in emerging economies to examine accounting-based ERP organizational change, the model accounts for technical aspects of the ERP system through its concept of "design archetypes" and, at the same time, highlights people's behavior through its concept of "subsystems". The model, Gurd (2008) argues, enables the examination of socio-technical characteristics of accounting and information systems. Laughlin's (1991) model also provides a better understanding of organizational change that takes place over short timeframes at the micro-organizational level, while its theorization of "environmental disturbance" sheds light on change in a wider institutional context (Munir, 2005; Gurd, 2008). Dumay and Guthrie (2007) argue that "Laughlin's (1991) model is specifically designed to view change from within an organization". However, its concept of "environmental disturbance" enables it to be used to interlink micro-organizational change to a wider institutional context in a coherent framework. In contrast, the frameworks that are based on Giddens's (1984) structuration theory or institutional theory pay more attention to the organization's wider/macro changes. Therefore, Laughlin's (1991) model of organizational change is seen as an appropriate framework for our case study.

The remainder of this study is organized in the following fashion. Section 2 reviews prior literature on ERP systems. Section 3 presents the theoretical framework. Section 4 discusses the research methodology and data collection methods. Section 5 presents the case in a narrative form, tracing the history of the main events that shape the implementation of the customized accounting modules. The study interprets this history in an alignment with Laughlin's (1991) model of organizational change. Section 6 provides a discussion of the case, and Section 7 presents the conclusion which highlights some issues regarding accounting-based ERP organizational change in the UAE.

2. Literature review
The academic literature on the impact of ERP systems on organizational and accounting practices has attracted significant attention in various countries. However, the literature has provided puzzling results, showing that ERP systems have limited or no impact on organizational practices in general and accounting practices in particular (Granlund and Malmi, 2002; Scapens and Jazayeri, 2003; Dechow and Mouritsen, 2005; Kanellou and Spathis, 2013; Teittinen et al., 2013; Ruivo et al., 2014; Nwankpa, 2015). Granlund and Malmi (2002) conducted an exploratory field study examining the effect of ERP adoption on accounting and organizational practices in ten Finish firms. They concluded that ERP systems have had no major impact on accounting and control systems practices. They did, however, find that there were many structural changes as a result of adopting the ERP system.

Scapens and Jazayeri (2003) undertook a longitudinal case study examining the implementation of the ERP system at the European division of a large US multinational organization. Although they were mainly investigating management accounting-based

ERP implementation, they found that significant changes occurred at the organization's operational and middle management levels as a result of the ERP implementation. They found that the ERP system mobilized behavioral changes across different departments in the organization. They argued that the work of management accountants shifted toward more analysis and fewer routine tasks; management accountants were provided with more forward-looking information; and, consequently, they played wider roles in supporting the organization's strategic goals.

In the same vein, yet relying on Giddens's (1984) structuration theory, Caglio (2003) undertook a case study to examine the impact of an ERP system on the roles of accountants in an Italian firm. He observed that the centralization created by the ERP system's shared database allowed the accounting department to acquire a more prominent role in the management of the new ERP system. He argued that the introduction of ERP systems led to "hybrid" positions for management accountants. He stated that management accountants started to carry out business consulting tasks and information systems maintenance in addition to management accounting tasks.

Using actor–network theory to understand how a couple of Danish firms pursued integration of management and control through ERP systems, Dechow and Mouritsen (2005) found that the ERP systems caused information use to shift from financial to nonfinancial. Likewise, Spathis and Constantinides's (2004) survey of 26 firms in Greece reported that the main changes relevant to management accounting practices were the introduction of nonfinancial performance indicators and profitability analysis by business segment and product.

Jack and Kholeif (2008) applied elements of Giddens's (1984) structuration theory to analyze the role of management accountants during the implementation of an ERP system that supported the application of performance-based budgeting in Egypt. They found that management accountants were restricted to their traditional role of merely collecting cost information for decision-making. Mattila *et al.* (2009) drew on the neo-institutional theory to investigate the implementation of an enterprise systems (ES) in a company operating in a technology sector. They investigated how the company responded to market and institutional pressures and highlighted the role of the ES during the organizational change process. Their findings showed that the company had undergone a radical organizational change in which the use of the ES was acted upon as an instrument to induce transformation. This is because the ES provided new means for organizational restructuring, controlling, decision-making and performance measuring.

Hawari and Heeks (2010) addressed the question of why ERP projects failed in a Jordanian manufacturing firm. They developed a "design–reality gap" model for understanding the success and failure of ERP system projects. This model tackles the interrelationship between system design and the realities of the organizational context into which that system is being introduced. The model is an attempt to explain the degree of fit between, on the one hand, the requirements and assumptions built into the ERP system and, on the other, the real situation found in the organizational context of implementation.

Hwang and Grant (2011) investigated the influence of cultural orientations, such as power distance and uncertainty avoidance, on the adoption of ERP systems. Their results indicate that low power distance and high uncertainty avoidance influence the ERP system implementation. They also suggested that continuous communication with employees through training programs improves employees' cultural orientations,

which, in turn, eventually enables the success of the ERP implementation processes. Likewise, Dezdar's (2012) survey of 384 ERP users in Iranian firms reported that both strategic and tactical factors are crucial for the successful implementation of the ERP systems. Strategic factors include top management support, project management and business process reengineering, while tactical factors include enterprise-wide communication, user training and education and ERP vendor support.

There are also studies in recent literature which are critical concerning the ERP effect on accounting and organizational practices (Kanellou and Spathis, 2013; Teittinen et al., 2013; Ruivo et al., 2014; Nwankpa, 2015). Wagner et al. (2011) applied a practice theory perspective to examine how accounting is made workable when it is entangled with an ERP system. They found that management accounting is not easily captured by the ERP system packages which are designed to incorporate best accounting and organizational practices. Kanellou and Spathis (2013) examined whether there are differences between accountants and IT professionals concerning the benefits and users' satisfaction of accounting-based ERP system in Greece. They found no difference between the two groups concerning the accounting-based ERP benefits. Teittinen et al. (2013) conducted a case study examining management control practices four years after the implementation of an ERP system in a middle-sized company operating in Europe. They concluded that the financial accounting-based control occupied a privilege preference despite the top management expectation to the emergence of new strategic control practices after the implementation of an ERP system.

Ruivo et al. (2014) and Nwankpa (2015) developed frameworks examining the organizational fit/misfit between ERP system components and the organizational needs. Ruivo et al.'s (2014) framework emphasizes examining the alignment between the ERP system and the organization technological context (compatibility, complexity and efficiency), organizational context (training and best practices) and environmental context (competitive pressure), which affect the ERP system use and benefits by Portuguese firms. Nwankpa's (2015) framework emphasizes examining the level of appropriateness of a standard ERP system to organizational needs in terms of data integration, data standardization, business processes and the user interaction in the USA. Both studies concluded that organizational fit/misfit is the missing piece of the puzzle in understanding and explaining the ERP system implementation success/failure.

The above studies have revealed that ERP system implementation can significantly change the way data are collected, stored, disseminated and used in organizations. However, the very same studies have shown that ERP systems have limited or no impact on organizational practices including accounting practices. In this regard, Markus and Robey (1988) proposed several notions to explain the relationships between IT and organizational change. These notions are applicable for accounting-based ERP organizational change. First, research on accounting and the ERP system has evolved across a number of different research streams. The literature contains works by researchers from several academic disciplines and interdisciplinary specialists, including organizational theory, management science, sociology and computer science, each with its own preferred concepts and theoretical and methodological bases (Rom and Rohde, 2007).

Second, the literature mixes and crosses units and levels of analysis from the individual, the workgroup, the department, the organization and the society. Some

scholars rely on a division of an organization (Scapens and Jazayeri, 2003; Wagner *et al.*, 2011), while others examine the effects of ERP on the entire organization (Granlund and Malmi, 2002; Nicolaou, 2004; Kholeif *et al.*, 2007; Teittinen *et al.*, 2013). Some of these frameworks examine the effects of ERP systems on certain individuals and workgroups, such as accountants (Caglio, 2003; Jack and Kholeif, 2008; Kanellou and Spathis, 2013).

Some accounting and ERP-based organizational change frameworks put heavier emphasis on the impact of the ERP on the organizational structure and managerial processes (Mauldin and Ruchala, 1999; Nwankpa, 2015), while other research streams put emphasis on the emergent social reality of the processes of management accounting and ERP-based organizational change (Granlund and Malmi, 2002; Scapens and Jazayeri, 2003; Teittinen *et al.*, 2013). Some of these studies emphasize the accounting side (Granlund and Malmi, 2002; Caglio, 2003; Ruivo *et al.*, 2014), while others emphasize the IT side (Markus and Robey, 1988; DeLone and McLean, 2003; Nwankpa, 2015). The existing frameworks do not seem to examine the enabling character of the ERP system to act as a force for social change through making things more visible or, as Dillard *et al.* (2005) stated, triggering a dialogue toward such a change (Dillard and Yuthas, 2006). The study addresses this research gap and examines how the ERP system was acted upon to trigger an organizational change in a public service organization operating in an emerging economy – the UAE.

3. Theoretical framework

Laughlin's (1991) model of organizational change provides a skeletal theoretical framework to which empirical findings are fleshed to become "whole beings" (Laughlin, 1991, 1995). The underlying premise of Laughlin's (1991, 2007) model is best understood by analyzing how an environmental disturbance (i.e. jolt or kick) progresses through an organization. Laughlin (1991) conceptualizes organizations as being an amalgam of interpretive schemes, design archetypes and subsystems. The nature and relationships between these spheres are shown in Figure 1 (Laughlin, 1991).

Laughlin (1991) argues that interpretive schemes refer to sets of values and beliefs that create experiences in the world. These schemes, Broadbent and Laughlin (2005) add, contain the accumulated understanding of societal life-world expectations and an interpretation of the context of a particular organization. Although these schemes are intangible, they provide guides for more tangible elements, such as organizational actions and activities. Broadbent *et al.* (1991) argue that interpretive schemes represent reference schema through which people's experiences are framed and interpreted. These experiences are discursively formed through communication among members of the social system, and they represent the context of the design archetypes and subsystems (i.e. communication systems, actions and activities). In other words, they guide the design of particular procedures.

Laughlin (1991) argues that these schemes guide behavior, give the organizational members a common purpose and thus lead to greater coherence in the organization. Laughlin (1991) classifies interpretive schemes into three nested levels (Figure 1). The first level incorporates the beliefs, values and norms that give direction to organizational members. The second level includes the mission or purpose that guides specific functions of the organization, and the third level articulates the organization's participation in society, which Laughlin (1991) calls "metarules".

Figure 1.
This figure is an adaptation from Laughlin's (1991) conceptualization of an organization
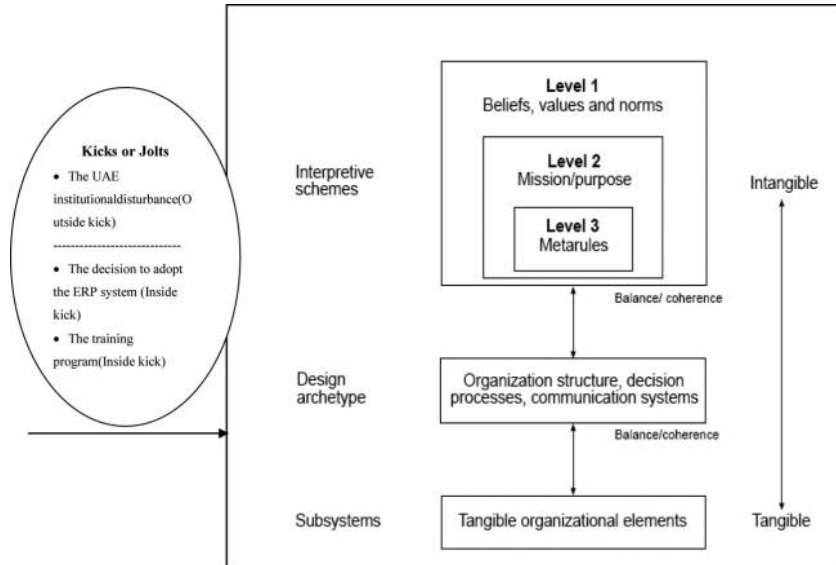
Laughlin (1991) goes on to argue that both design archetypes and interpretive schemes are created and sustained by past and/or current organizational participants. He adds that design archetypes are the "intervening variable between the higher level values and the tangible sub-systems and are intended to guide the design of the latter to express the perspective of the former" (Laughlin, 1991). Design archetypes include elements such as organizational structure, decision processes and communication systems.

Finally, subsystems are the more tangible elements within organizations. They contain the actions and activities of organizational members. The ERP system, as a design archetype, legitimates the social system members' actions in response to the organization's values and beliefs. Therefore, organizational members' actions may be in line with that system while triggering organizational change or, in a different way, cultivating organizational stability. The interactions and interrelations among interpretive schemes, design archetypes and subsystems determine the pathways of organizational change.

According to Laughlin's (1991) model, there is a state of balance and coherence in the organization's interpretive schemes, design archetypes and subsystems at any point in time. This coherence or state of balance is maintained until such time that an environmental disturbance (i.e. jolt or kick introduced from outside or inside the organization) destabilizes the organization and mobilizes change. The underlying premise of Laughlin's (1991) model of organizational change is that the organization attempts to re-stabilize its coherence and balance in response to this environmental disturbance by determining how it influences the organization's existing state of balance.

Although one of the main advantages of Laughlin's (1991) model of organizational change is that it enables the examination of changes at the micro-organizational level, the model's theorization of environmental disturbance does not clearly elucidate the underlying attributes that trigger disturbance. Munir (2005) argues that attributing the

environmental disturbance or jolt to a single event leads to a flawed understanding of the processes of organizational change. He argues that environmental disturbance is brought to the forefront after a series of random events and circumstances in the organization's wider institutional and micro contexts. Following Munir's (2005) suggestion, environmental disturbance fits into Laughlin's (1991) model of organizational change in such a way that captures both the wider organizational institutional context and the micro-organizational context.

According to Laughlin (1991), there are various pathways of organizational change: "rebuttal", "reorientation", "colonization" and "evolution". Broadbent *et al.* (2001) and Broadbent and Laughlin (1998) add that the direction of change depends on the formation of what they term "absorbing groups". Laughlin (2007) adds that the concept of absorbing groups relates to the formation of internal groups that may weaken the effects of the design archetypes and, consequently, direct the path of organizational change. Laughlin (2007) argues that absorbing groups are sponge-like and prevent the perceived core values and concerns of any organization from being colonized.

Laughlin (1991, 2007) argues that rebuttal, as a form of organizational change, primarily involves changes in design archetypes, but it fails to shift the original interpretive schemes and subsystems. By contrast, reorientation, as a form of organizational change, affects not only design archetypes but also subsystems. Although reorientation refers to a situation in which the disturbance effects are accepted and placed in the organization's day-to-day operations, the organization's original interpretive schemes remain unaffected (Laughlin, 1991, 2007). In rebuttal and reorientation organizational change, Laughlin (1991, 2007) states, interpretative schemes are not affected by the disturbance.

In addition, Laughlin (1991, 2007) believes that other pathways of organizational change, namely, evolution and colonization, involve changes in the organization's interpretive schemes. He argues that evolution, as a form of organizational change, involves major shifts in interpretive schemes. This type of change leads to a process of discourse between organizational participants that change the organization's original interpretive schemes. This, in turn, drives changes in design archetypes, which, in this case, leads to shifts in subsystems. In other words, evolutionary change is accepted by all organizational participants without coercion.

Laughlin (1991, 2007) adds that colonization, as a form of organizational change, involves changes in the design archetypes, subsystems and interpretive schemes of the organization through the activities and actions of a small group of organizational participants. This type of change is relevant to a situation in which the disturbance is imposed on the structures and systems of the design archetypes (e.g. through legislation, external regulation or top management decisions) with an intention to shift the organization's tangible subsystems and its original interpretive schemes. Some organizational participants who have power over the organization's design archetypes can lead that change. Those participants who are not in agreement with such a shift either resist or absorb the change to a more acceptable interpretive scheme.

4. Methodology and data collection

This study examines the transformation processes of a UAE organization toward customizing its existing practices in line with an ERP system's "built-in" practices. In addition, the study aims to show the conflict, or what Soh *et al.* (2000) call the "misfit",

between the ERP systems' best practices and the organization's existing practices. It fleshes out Laughlin's (1991) skeletal theoretical framework with empirical findings to create "whole beings". Therefore, a case study methodology seems to be an appropriate approach to follow (Scapens, 1990; Yin, 1994; Hassan, 2008). Furthermore, the complex interactions between organizational members and the ERP system encourage the use of an interpretive case study (Scapens, 1990). These interactions also enable researchers to understand how the ERP system intertwines with the organization's broader issues, such as power, control, trust and values. Because Laughlin's (1991) basic model is expanded with empirical findings, an interpretive research methodology seems to be appropriate, as it enables theory development (Yin, 1994).

One of the researchers had a connection with the CEO/Director of business affairs at "Hope". That connection facilitated gaining access to the organization. It also facilitated earning a high degree of trust from most of the organizational members and, consequently, enabled the researchers to conduct the research. The data collection methods included semistructured interviews, documentary evidence and direct observation. Data were collected purely for academic purposes. Researchers' intervened in the organization's day-to-day business operations during data collection processes mainly to understand events related to the ERP system implementation, with no intention to provide solutions or consultancy opinions regarding the implementation problems. Therefore, this study goes beyond action research in which researchers provide consultancy activities to resolve the host organization problems (Eden and Haxham, 1996; Baker, 2000).

To facilitate access to the organization, permission was requested from top management, who required that we avoid disclosing any information that directly or indirectly reveals the identity of the organization. Thus, a disguised name "Hope" was given to the organization under study. Data were collected during 2009-2010. One of the researchers initially interviewed some of the organizational members, and after reading the notes of the interviews, the other researcher met Hope's employees in follow-up interviews to clarify some points and to allow them to speak in further detail about the implementation of the ERP system. Criteria for selecting interviewees were as follows: first, interviewees were chosen to cover a range of Hope's functions that are associated with the implementation of Hope's ERP system. Second, interviewees either worked at Hope before, or had joined Hope during, the move toward adopting the ERP system. Interviews were initially undertaken with top management and the heads of the finance department (FD) and revenue departments (RD). Next, the heads of departments were asked to name other employees who either were end-users or involved in the implementation of the accounting module of the ERP system.

Semistructured interview questions were used to allow interviewees to provide their views through a free-flowing discussion. Interviews were guided by a set of 13 questions. The interviewer altered the order of questions based on the course of discussion, while keeping the underlying aim of the research in mind. The questions were contextually oriented and used to expand Laughlin's (1991, 2007) organizational change model. Direct observation was undertaken of the managers and staff responsible for ERP-related tasks during normal working hours. Direct observation was used as a data triangulation method and to check the actual use and non-use of the whole and parts of the ERP system.

The researchers successfully conducted 25 interviews with four sets of organizational members, totaling 13 employees. The first set included top management and managers (Vice CEO of finance, Director of business affairs, Head of the FD and Head of the RD). The second set included members of the RD's customer accounts section. The third set included members of the FD. The fourth set included members of the IT management information systems (MIS) department. Each interview lasted between 1 and 2 h, and they were all carried out during normal working hours. In addition, the researchers interviewed the ERP system's manager and the project manager (PM). Although taping the interviews was prohibited, interviewees allowed the researchers to take extensive notes during the sessions. As mentioned earlier, some organizational members had undergone initial interviews. The same members were then subjected to follow-up interviews, and, as a result, we ended up with 25 interviews from 13 employees.

There were, however, some constraints on the data obtained from these interviews. One of these constraints was that we approached Hope after the implementation of the ERP system accounting module had started. What mitigates this constraint is that most interviewees worked for Hope before and during the transition, and they observed the changes between the pre-ERP system and post-ERP system. This study also triangulates data by relying on documentary evidence, direct observation and employees' e-mail correspondence. Documents included materials such as written internal reports, internal memos and training program materials. Some documentary evidence was also provided by interviewees who wanted to illustrate their work and clarify their points of view. The use of multiple sources of evidence is justifiable because it enables researchers to develop a coherent interpretation of a particular case. These various sources of data not only corroborate the study's findings but also enable researchers to sense the emergent social reality (Yin, 1994; Ahrens and Dent, 1998).

5. Case study analysis
5.1 Interpretive schemes at Hope
Hope is a mid-sized, well-known public service organization located in the UAE. Its main headquarter is located in Sharjah, one of the Emirates constituting the federation of the UAE. It has two branches under development. It is a government-owned organization with a total number of 520 employees. Hope operates in the hospitality sector, and it is not listed on the UAE Stock Market. Hope's mission stresses:

- the utilization of modern means of communications technology;
- the promotion of an international outlook; and
- respect for individuals and cultures.

Despite being an Arab organization operating in an Arab country, Hope considers itself as a community of different nationalities. One of its underlying principles is diversity. Therefore, it recruits individuals from European, Asian and African countries. The Director of business affairs summed up Hope's aspirations related to IT utilization in the following words:

> Our vision is to have one system applied across all employees. Our aim is to become an integrated digital organization that has a screen/interface for each employee (Director of business affairs).

Since its inception in 1997, Hope has used accounting software named Delta. Although the Delta system is an off-the-shelf product designed for small commercial organizations, the Delta vendor agreed to customize the software in line with the needs of Hope's users. The software incorporated two modules:

(1) the general ledger module; and

(2) the budgeting module.

In addition to the Delta software, Hope used another software system from a different vendor, named Logsis, which was primarily designed to record accounts receivable. The Logsis system was integrated with the Delta software to keep coherent accounting records for general ledger, budgeting, payables and receivables. One of Hope's managers stated:

> Although Delta and Logsis were not suitable for our organization, they were customized to fit with our needs (Head of the FD).

In the same vein, the system administrator of the MIS Department stated:

> On one hand, Delta and Logsis have an easy user interface and provide users' requirements in a way favored by users. On the other hand, there is no integration between these software programs; there is more than one database – one for accounts receivable, namely Logsis, and another one for accounting, namely Delta. In addition, data security under both programs is very low – almost no security exists. Taking all of these issues together will make Delta and Logsis very slow programs in comparison to the ERP system (System administrator of MIS Department).

The above quote shows that the lack of integration between the two separate software programs, the low security level and the relatively long processing times are some of the issues that could be solved by implementing a fully integrated system like the ERP system. In addition to these advantages, a fundamental reason for adopting the ERP system was cost reduction. Hope's top management believes that the ERP system will reduce manpower and, consequently, reduce the organization's costs. The Vice CEO of finance stated:

> The pre-ERP software systems were simple, easy to use, inexpensive, and did not need too much manpower. We did not expect the new ERP systems to be so costly and labor intensive (Vice CEO of finance).

As indicated by the above quotes, features such as a single large database, online integration and high level of data security are the driving forces behind Hope's decision to adopt a fully integrated system. The ERP system was seen as a technology that could enable Hope to obtain economic gains along three dimensions: operational, managerial and organizational (Spathis and Ananiadis, 2005). In turn, organizational efficiency is increased, costs are minimized and working hours are reduced (Dillard *et al.*, 2005; Dillard and Yuthas, 2006; Kwahk and Ahn, 2010). One can argue, therefore, that economic justifications are intertwined with Hope's norms and values – or what Laughlin (1991) calls interpretive schemes – and together they stimulate the adoption of the ERP system.

5.2 The kick(s)
According to Laughlin's (1991, 2007) model, an organization maintains a state of balance until the occurrence of an environmental disturbance (i.e. a jolt or kick introduced from outside or inside the organization) results in destabilizing the organization and

mobilizing change. Munir (2005) argues that the environmental disturbance is not the result of a single event; instead, it arises after a series of random events and circumstances in the organization's wider institutional and micro contexts. The case study evidence documents that Hope had undergone two sets of kicks: an outside kick and inside kicks. These kicks initiated and mobilized the organization to change (Figure 1). The outside kick arose from the institutional context in which Hope operates. The institutional context of the UAE created a momentum that mobilized various organizations operating in the UAE to adopt the ERP system. The inside kicks took place at Hope's micro-organizational level and contributed to triggering micro-organizational change. The following subsections further explain how Hope underwent the institutional and micro kicks.

5.2.1 Hope's institutional context: outside kick. Hope is located in an Arab country located in the western region of Asia – the UAE. The country consists of seven Emirates, namely, Abu Dhabi, Dubai, Sharjah, Ras Al-Khaimah, Ajman, Umm Al-qaiwain and Fujairah. The UAE's major economic resource is crude oil that constitutes almost 10 per cent of the world's reserves (Aljifri and Khasharmeh, 2006). Its economy has significantly expanded through trade and finance in the past few years (Augustine, 2006). The country actively seeks commercial partnerships with Western and European countries to benchmark international best practices in different fields (Irvine, 2008). As an emerging capital market with ambitious plans to be recognized internationally, the UAE is engaged in huge developments in various sectors.

The UAE's aspiration to establish itself internationally has mobilized the country's different sectors to utilize the latest technology. In line with that aspiration, the UAE has made huge investments in IT. The country's officials consider IT an essential element for rapid development and for benchmarking international best practices. Over the past few years, the Government of the UAE has sponsored various IT projects. One example is the government-funded Dubai Internet City, which is a free trade zone created specifically for e-commerce. The UAE Government also funded Dubai Silicon Oasis, which is a free trade zone and an integrated technology park. These projects helped the UAE rank 24th among 142 countries (World Forum, 2011).

In 2005, the UAE established the Information Communication and Technology (ICT) Fund. The Fund's key objectives are to:

- promote a culture of entrepreneurship through the use of advanced communication technology; and
- strengthen the UAE global leadership position through IT-based investing ideas (UAE ICT Fund, 2011).

Furthermore, in 2005, the Abu Dhabi Government launched a modernization mandate that mobilized a transformation program aimed at implementing IT in the UAE's various sectors. The modernization mandate provided guidelines to aid in setting policies and standards to achieve the highest levels of efficiency, confidentiality and safety in e-government projects.

As was seen in the Indonesian case (Dantes and Hasibuan, 2011), implementation of ERP systems at the micro-organizational level is driven not only by organizations' needs but also by several external factors including governmental policies. The above events were not directly disruptive to Hope at the micro-organizational level; however, they created enough momentum to encourage Hope's top managers to start evolving their

organization toward a new era of IT. These events created a ground for Hope's micro-organizational change. Accordingly, the decision by Hope's top management to implement the ERP system (i.e. the jolt in Laughlin's, 1991 model) was brought to the forefront after a series of events in the wider intuitional context of the UAE. The following subsection discusses how different jolts affected Hope's micro context.

5.2.2 Initiating the change: first inside kick. In 2004, Hope contracted SG, a well-known ERP systems vendor, to implement the ERP system. In 2005, Hope formed a steering committee to monitor the implementation processes of the ERP system. The Director of business affairs stated:

> The steering committee consisted of the CEO, Vice CEO of finance affairs and the Director of business affairs (Director of business affairs).

The Director of business affairs added that:

> Our organization had to restructure the IT Centre through incorporating an MIS department, appoint an ERP PM, and provide training programs to [Hope] employees (Director of business affairs).

In this regard, the Head of the FD stated:

> In 2006, a decision was taken by top management to implement the ERP system module in the FD. FD employees were told that the Delta–Logsis systems were out of date and that [Hope] needs to change these systems to better systems (Head of the FD).

Because of bureaucratic procedures, Hope hired an ERP system PM to oversee the implementation of the ERP system modules by mid-2007 (Table I summarizes ERP system implementation milestones). Because of the particularities of the finance modules, the PM advised Hope's top management to hire an ERP system manager with a specialty in accounting-based ERP problems. The PM assumed that the ERP system manager would work under his supervision. Consequently, the top management

Year	Milestone
2004	Top management contracted SG, a well-known ERP systems vendor, to implement the ERP system
2005	Top management made decision to implement an ERP system at Hope
2005	A steering committee was established to monitor the transitional processes of the ERP system and solve any problems encountered
2006	The Director of business affairs became responsible for supervising the processes of implementing the ERP system at Hope
2006	The registration module was implemented
2006	The ERP vendor (SG) started its training programs aimed at mobilizing employees in the finance department to accept the new system
April 2007	Hope hired a PM to oversee the implementation of its ERP system
2007	The customer accounts module was implemented
2008	The accounts receivable module was implemented
2008	Implementation of the finance module begins
2010	The finance module is still not fully implemented
2010	Human resource module and purchases and inventory module are expected to be implemented

Table I.
Hope's ERP system implementation milestones

decided to hire an ERP system manager to sort out problems related to accounting and finance only. The ERP system manager worked with the FD only, which created the impression that there were two managers of the ERP system implementation. In this regard, the PM stated that:

> Although I highly recommended hiring an ERP system consultant, I was surprised that [Hope] contracted a new employee as the ERP system manager to work in the FD only. I expected that the specialized accounting-based ERP system individual would work in my team (PM).

As a result, Hope had two managers to oversee the implementation of the ERP system: a PM assigned to implement the ERP system's various modules and an ERP systems manager for the FD assigned to resolve problems associated with the ERP system's accounting modules. Because there were different individuals in charge of implementing and customizing the ERP system, accountability for the system's implementation was lost. The PM stated:

> Any successful project needs a single manager in charge of the system implementation until its completion. I lost control over the ERP finance module, and this may have caused a delay in the implementation processes (PM).

The appointment of two PMs created a fragmented leadership despite Hope's top management support for having a successful ERP project. The case analysis confirms prior studies' findings that top management support and implementation team are the most widely cited factors behind the successful implementation of ERP systems (Chen, 2012; Stanciu and Tinca, 2013; Teittinen *et al.*, 2013). Yet our case shows that Hope' top management support was not properly executed and therefore created conflicts among Hope's employees and the implementation team members.

5.2.3 Training programs: second inside kick. In 2006, SG, the ERP system vendor, organized a training program aimed at mobilizing employees to accept the ERP system modules. However, one problem was that trainers were native English speakers and, therefore, some Hope's employees did not understand many parts of the new system. In September 2008, weekly comprehensive training programs were organized by the PM to introduce the underlying aims and functions of the ERP system to Hope's employees. The training programs also aimed at familiarizing employees with the new system's functionalities. The training programs were conducted by trainers who were able to speak Arabic and English. The Director of business affairs stated that:

> Part of falling behind our expected schedule to implement the ERP system is due to offering training programs only in English by English native speakers. Conducting the training program in both Arabic and English languages was useful, as it allows users to better understand various parts of the system (Director of business affairs).

Although the RD employees agreed that SG performed several training sessions, they felt that these training sessions were not useful. The Head of the RD stated that:

> I did not receive proper training. I just had too many arguments and sometimes fights in order to understand the system as well as to enforce the required changes according to my department employees' needs. The ERP system consultants were very much aware that the system will be installed and implemented regardless of the amount of training given; therefore, they did not pay attention to the users' needs nor give any considerations to their requirements. Users were not taken into account (Head of the RD).

The system administrator in the MIS department commented on the issue of training:

> At the beginning, there was resistance from the users simply because the ERP system vendor's [SG] trainers told users that there is no modification to be done on the system, and you should accept the system as it is (System administrator in the MIS department).

Likewise, the FD employees felt that the ERP training sessions were not sufficient. One of the FD members stated that:

> The new system requires qualified and well-trained individual to operate on it. That simply means we will continuously need training programs. We had these programs, yet trainers taught the system in an authoritative manner, such as "you have to do that […] the system requires you to do that […] the system does not accept what you do in that". There was a big problem; particularly, trainers and the project manager are not accountants and do have the sense of what the accounting and FD talk about. This adds pressures on our work (FD employee).

The above quotes show that the introduction of the ERP system, together with its training programs, represents what Laughlin (1991, 2007) calls a "disturbance" that changes the coherent and balanced amalgam of Hope's interpretive schemes, design archetypes and subsystems. Hope's top management introduced the ERP system to implement best practices, cut costs and increase profits. Because of these economic benefits, top managers kicked the coherent amalgam of their organization to trigger the organizational change. The aforementioned quotations also show how top management imposed the ERP system on Hope's organizational members. Being forced to adopt the system led Hope's members to engage in an active discourse about the suitability of the ERP system to their organization.

Consistent with prior studies (Chen, 2012; Stanciu and Tinca, 2013; Nwankpa, 2015), our case confirms that top management commitment, the ability to communicate the need for change and training programs are essential facilitators for an ERP system project to succeed. Our case shows that because of the language barrier, proper communication ensuring the awareness for the need of ERP-based organizational change at different organizational levels does not really exist. Being committed to train Hope's employees, top management was an autocratic one, imposing decisions with little consideration for other employees, particularly the ERP system users. Accordingly, ERP system users felt disconnected from the project and collectively had a resilient attitude to ERP organizational change expressed in terms of work pressures and the misfit between ERP built-in practices and organizational practices. In fact, training programs were perceived as a reflection to the autocratic style of management despite its importance in educating employees how to use the ERP system and what are the benefits of this system.

5.3 Design archetype restructuring: ERP system customization
Laughlin's (1991) concept of design archetypes articulates the organizational interpretive schemes to the organizational subsystems (Figure 1). According to Laughlin (1991, 2007), design archetypes include elements such as organizational structure, decision processes and communication systems. The ERP system redefines the connections between various functional divisions within organizations (such as accounting, finance, marketing, procurement, warehousing and human and material resources planning) and between organizations (such as various suppliers and customers) (Boersma and Kingma, 2005). Therefore, the ERP is seen as the

organization's design archetypes (Dillard *et al.*, 2005; Dillard and Yuthas, 2006). As a fully integrated set of software applications, the ERP system can alter the relationships between organizations' functions and subsequently change organizational practices, including accounting practices (Brignall and Ballantine, 2004).

Regarding the attempt to customize the ERP system practices to reflect local practices, Hope's RD employees had some complaints. One employee commented that:

> The customer accounts module required us […] to perform too many tasks manually. For example, if a customer changes his or her order, we cannot do that transaction [change] directly through the ERP system; we have to do it manually and feed the consequence of change in customer order into the system (RD employee).

Another employee mentioned that:

> Although we have to use several screens to perform a single transaction, the ERP module only allows opening one screen at a time. We also have to memorize the title of each screen we need to use in order to perform the transaction. This issue not only makes the ERP system module very difficult to use, but also makes the system time consuming (RD employee).

SG introduced the finance module, which is based on a Fund Accounting System. The module is currently known among Hope's employees as FOABAL. The FD's employees raised concerns that the new finance module did not match the governmental accounting rules as applied at Hope. In this regard, the Head of the FD commented:

> The finance module has no relation to what we do. It is a governmental accounting system based on the American system. Our governmental accounting system has different rules and regulations that do not fit with the FOABAL system (Head of the FD).

Employees also had concerns about how the new finance module would be linked to the organization's budgeting system. In this regard, the Head of the FD stated:

> The FOABAL system is a difficult one. The system data input is too detailed, has several new concepts, and it does not follow our governmental rules. For example, the module asks about the source of fund [e.g. state allocation, donation and research grants], how each fund has been used, to which unit in [Hope], and which activity has been resourced by that fund. But, our existing budget system classification is based on chapters for salaries, materials, and capital investment. How can we match both systems [the existing and FOABAL]? Despite our concerns and complains, top management refused to change its mind about that new finance module (Head of the FD).

Clearly, there seems to be a mismatch between the ERP finance module's best practice and the way in which accounting procedures are applied at Hope. This mismatch has led to a conflict between the ERP system's trainers/consultants and the FD's employees. The Head of the FD commented:

> We, the accounting and finance members, had too many concerns and opposed too many functions of the new system, yet the IT and system developers clearly stated that we should try to customize our data input in accordance with the system's needs. We were told to try to modify our procedures to match the new system, and this is what is happening now. In other words, the new system was not developed to fit with our users' needs; instead, users customize their needs, the way they do data input and their procedures, to fit with the system needs. This has added too much pressure to the FD since the amount of work has doubled or tripled and, at the same time, it conflicts with certain accounting conventions that we apply (Head of the FD).

Another customization problem was related to checks. According to UAE regulatory policies, post-dated checks are equivalent to either notes payable or receivable depending on whether the organization receives or issues the check. According to the American regulatory system, checks, even post-dated ones, are considered to be cash. The setup of the ERP system module recognizes checks as cash, and, therefore, if Hope receives or issues a check, it is actually receiving or paying cash. The Head of the RD pointed out:

> The ERP system is an American system that does not take into account the local circumstances of organizations operating outside the USA. For example, our organization relies on checks. However, post-dated checks in the UAE are equivalent to notes receivables/payable. Therefore, if we receive a post-dated check, we cannot convert it into cash until the check due date. Therefore, as users, we had to play around with the system to overcome that problem. I had to fight with the ERP system consultancy team until I enforced the new way to account for checks. This new way is through having an intermediate account for a post-dated check until the collection date of that check (Head of RD).

One of the FD's employees offered a similar example of employees working to make the system to fit their needs:

> One of things we have here in [Hope] is the petty cash for employees [i.e. advance payment for custodian employees]. Under the old systems, we used to directly know how much each employee owes [Hope]. Under the new system, this function does not exist. The finance module does not include a petty cash system. The ERP training team suggested treating custodian employees as suppliers, which will enable the finance module to have an invoice and then a payment function. Consequently, we can know how much each custodian employee owes the organization. This is not a suitable solution because in such a way the suppliers list will include external suppliers as well as [Hope] employees (FD employee).

The PM commented on the above, saying that:

> The ERP system vendor [SG] was not able to list users' requests because these requests were going to be costly to [Hope] (PM).

In a discussion, an employee of the FD said:

> The new finance module is not flexible like the Delta system. Under ERP, I only do one part of the transaction. Other parts are done by other individuals (FD employee).

With respect to the above issue, the ERP systems manager commented:

> One of the new finance module's advantages is that it provides higher security and higher levels of authorization and control through the separation of duties. Therefore, internal auditors can trace mistakes and errors and audit all procedures. This will hold employees accountable to their mistakes (ERP systems manager).

One of the FD's employees further commented that:

> Although we understand that the separation of duties is an important controlling principle, assigning too many tasks related to the same transaction among too many members leads to the creation of the perception of total mistrust among members operating on the system. This perception may have a harmful effect in the long run. There is a need to feel that we are trusted, as we used to feel under the old system (FD employee).

The Head of the FD said:

Because of the workload created by the new system, top management had to hire new staff. The ERP system manager explained that the new system does not lead to reducing staff; instead, it required more staff since the system consumes more time to enter data through several screens (Head of the FD).

The above quotes provide insights on how difficult it was for Hope employees to use the ERP system modules, map workflows based on legal requirements and adapt to Hope's needs. Prior empirical studies suggest that the ERP system adopters either customize the ERP package to suit their organizations' needs with high cost or use the standard ERP package built-in best practices without or with minimum deviation from the standard (Stanciu and Tinca, 2013; Ruivo *et al.*, 2014; Nwankpa, 2015). Our case shows that Hope chose to customize the ERP system best practices to Hope's organizational practices. The case findings show that Hope wanted to bring a change in its practices, as the ERP system built-in practices would modernize Hope's practices and consequently lead to better control, better dissemination of information and better resources allocation based on organizational activities introduced under the banner of ERP system's best practices or as Hope's employees say "FOABAL" system.

Similar to a Singaporean case, Nwankpa (2015) argued that the ERP system customization processes might lead to system failure because the underlying process model of an ERP system is guided by European and American industry best practices which are different from Asian business practices. Our case confirms this finding in Hope. Hope's customization processes were very costly, risky because of many reconfigurations in the system and created more workload to employees.

According to Laughlin (1991, 2007), changes in design archetypes, i.e. ERP systems, and subsystems should be grounded in the organization's interpretive schemes. If design archetypes become unmanageable and no longer work in accordance with the discursive and knowledgeable schema of the organization, subsystems start to change in a way that is divorced from the demands of interpretive schemes. As these non-grounded design archetypes and subsystems become established, the directionality of influence is reversed (Figure 1). Instead of supporting the link between interpretive schemes and subsystems and ensuring that the latter work in accordance with the former, design archetypes, i.e. ERP systems, impose their values and norms, which results in the loss of meaning and, ultimately, anomie (Richardson *et al.*, 1996; Dillard and Smith, 1999). Our case findings document that the ERP implementation process involved many risks, testing Hope's ability to resolve conflicts and adapt to change, yet top management was persistent in imposing the ERP built-in practices regardless of Hope's organizational practices. Such imposition led to Hope's employees to absorb and soak up the ERP requirements as discussed in the following section.

5.4 Hope's members' actions: subsystems
Hope's organizational employees came together to form what Laughlin (1991, 2007) calls as "absorption groups". Absorption groups form when individuals within the organization are unwilling to accept the proposed changes. They ensure compliance with post-change requirements but in such a way that has minimal effect on sacred concerns. These groups, Broadbent and Laughlin (1998) argue, "soak up" the design archetypes requirements. One can argue that some of the FD and RD employees came together to form an internal absorption group. These employees had several concerns about workload, trust and their performance as a result of the introduction of the ERP

system. They clearly explained how they carried out much of the customization on their own. For example, one of the FD employees stated that:

> Now we are trying to play around with the ERP system modules. We are adjusting and customizing our requirements according to the ERP system module functions. It should be the other way around (FD employee).

While an employee in the RD mentioned that:

> Instead of directly entering and charging fine transactions to the customer's account, as it should be, we have had to create a dummy transaction to an intermediate account and increase our revenues. Later, we charge the customer's account and close that intermediate account (RD employee).

Furthermore, because of the conflict between the ERP PM and the ERP system manager, they both worked to oversee the accounting-based ERP system changes. For example, the PM took several steps to install a new version of the ERP without providing proper training program to members in the FD. Accordingly, the ERP systems manager, working at the FD, sent the following proposition to the Head of the FD via e-mail:

> Since FD members are not aware of the main features and functions of the new version of the ERP system, I would like to conduct a series of seminars about that new version (ERP systems manager).

As a result of this conflict, the Head of the FD sent a memo to the Vice CEO of finance, explaining the problems facing members of the FD. In his memo, the Head of the FD highlighted the mismatch between the ERP accounting modules' best practice and the way in which accounting procedures were being applied at Hope. The Head of the FD wrote:

> Any computerized accounting system must work according to the general accepted accounting principles, and these principles must not be changed to fit the computerized system.

> We hope that the ERP system implementation team acknowledges our expertise and knowledge in conducting [Hope's] accounting and finance functions. We also hope that they [the team] work toward customizing the ERP system to fit the accounting principles we apply, not the other way around (Head of the FD).

The above quotes show that Hope's users are dissatisfied with the ERP system. Prior studies document that users' satisfaction is a critical factor for a successful implementation to the ERP system (Stanciu and Tinca, 2013; Ruivo *et al.*, 2014; Nwankpa, 2015). In Hope, users' dissatisfaction led to Hope's employees to form absorption groups to soak up the changes. Nevertheless, Hope's top management was keen to implement the ERP system while paying little attention to users' needs and satisfaction. Nwankpa (2015) argued that organizations are required to have knowledge base to be able to absorb and apply new technology such as the ERP system. Our case shows that Hope's employees absorbed the new technology to scheme of knowledge, or what Laughlin (1991) calls interpretive schemes, existed prior to the ERP system.

6. Discussion
The empirical findings show that the rapid introduction of the ERP system combined with top management's imposition of this system to replace Hope's old practices in a

short period of time did not involve mutual understanding or consultation with Hope's employees, who were affected by the ERP system's "built-in" practices. As mentioned earlier, interviewees stated that the ERP system was implemented without regard for their preferences or needs. The ERP system, as a design archetype, seems to impose its values, norms and working philosophy on Hope's organizational members. For example, some employees raised concerns about the relevancy of international practices to their local organization circumstances. The ERP system, therefore, attempted to colonize the organization's mode of thinking to trigger it to change (Broadbent *et al.*, 1991; Broadbent, 1992).

An important question here is whether the accounting-based organizational change is an evolution or a colonization change. Evolution-type change is incremental and involves shifts in the organization's interpretive schemes followed by changes in the organization's design archetypes and subsystems. Colonization-type change involves a fundamental disruption of the existing design archetypes followed by changes in subsystems and interpretive schemes. It does not occur as a result of a mutual consultation process among organizational participants in a way that makes those participants accept the change without the use of coercion (Laughlin, 1991, 2007). Instead, colonization occurs as a result of the imposition of certain values through legislation and without prior consultation with organizational participants.

Because of number of obstacles encountered during the processes of the ERP system implementation, Hope's top management had no other option except enforcing the adoption of system. To recall, Hope encountered an obstacle as a result of the mismatch between the ERP built-in FOBAL accounting practices and the UAE governmental accounting rules. Laughlin (1991) argues that colonization is led by organizational participants who have power over the organization's design archetypes (e.g. top management). He also adds that those participants who are not in agreement with the design archetype either resist these archetypes or absorb them into a more acceptable interpretive scheme (Laughlin, 1991, 2007).

The empirical findings suggest that Hope underwent the form of organizational change known as colonization, as top management continuously and persistently imposed the ERP system on stakeholders. According to Laughlin's (1991) model of organizational change, top management's decision to install the ERP system can be identified as the "kick" that provided the impetus for the appointment of an ERP system PM for the whole project, as well as an ERP system manager in the FD. Those two appointments, together with introducing the ERP system, created changes in the organizational structure, control systems and decision-making processes (design archetypes), as well as changes in the employees' actions in the organization (subsystems). However, the key question that has remained unresolved is whether the interpretive schemes of the organization have changed. Hope's top management's justification for adopting the ERP system was economic efficiency. As mentioned earlier, the ERP system was promoted as a technology that would enable Hope to obtain economic gains expressed as reduced costs and working hours. Apart from these gains in economic efficiency, the findings imply that changes in the organization's design archetypes (the ERP system) and subsystems (employees' actions) were not grounded in the organization's post-change interpretive schemes. Hope's employees benchmarked the ERP system's practices against the pre-ERP system practices.

The introduction of the ERP system's accounting modules and the subsequent changes in Hope's organizational structure and processes created a discourse across Hope's employees. This discourse inspired Hope's interpretive schemes by a new economic climate that addressed issues such as international best practices, globalization, cost reduction and the difference between local practices and Western and European practices. This discourse gradually introduced a new mode of thinking alongside the interpretive schemes that existed at Hope prior to the introduction of the ERP system. Hope's accountants now seem to be working based on two sets of interpretive schemes. First, they are working according to those schemes that existed prior to the ERP system. Second, these schemes seem to have become more of a reflection of the new design archetypes (i.e. the ERP modules), as accountants and other users were not consulted before introducing the ERP system.

The empirical findings show that the ERP system practices are not rooted in solid post-change interpretive schemes; instead, they are the product of the efforts of top management to impose the ERP system on organizational members whose knowledge is still rooted in the pre-change interpretive schemes. Although Hope's top management forced the implementation of the ERP systems to trigger organizational change, on some occasions, the ERP system customization processes reinforced the pre-ERP system's interpretive schemes and practices. For instance, interviewees had to customize their work procedures and develop workarounds for the ERP system. In other words, they aimed to keep pre-ERP system procedures while allowing the ERP system to function.

The difficulties faced during the ERP system's implementation led to Hope's top management to use its authoritarian power to enforce the adoption and use of the ERP system's modules. These difficulties, together with top management's imposition, led to a form of colonization. The ERP system's implementation fragmented the organization's interpretive schemes, design archetypes and subsystems. As mentioned earlier, Hope's top management created two positions to oversee the ERP project: an ERP PM and an ERP system manager in the FD. At Hope, the governmental accounting regulations co-existed with the ERP system accounting modules' requirements. Furthermore, there were different ways of dealing with checks that co-existed at Hope. These forms of duality, as Broadbent (1992) suggests, cause fragmentation that is likely to lead to disintegration at Hope.

The overall conclusion is that the ERP system not only restructured work procedures but also triggered discussions of issues related to accounting conventions, best practices and the UAE regulatory framework. These discussions, as Laughlin (1991, 2007) points out, could have led to an evolutionary change if the implementation of the ERP system had been extended over a longer period. The empirical analysis suggests that the ERP system is acted upon to mobilize Hope toward a new era of IT. However, some employees formed what Laughlin (2007) calls "absorption groups" who wanted to soak up the ERP-based changes and prevent them from taking over the ongoing work of the transformed organization and its interpretive schemes. This leads us to suggest that Hope was going through a kind of organizational change known as colonization, which created an organizational fragmentation.

7. Conclusions

The study provides an objective account of the ERP implementation processes in an emerging market economy, the UAE, where the institutional context is different from

that where the system originated. This objective account highlights not only issues related to ERP systems technicalities but also the implications of the host country's regulatory framework on the design and implementation of the ERP system's modules. The case study findings show that UAE financial regulations and the treatment of checks have made the customization of the ERP system difficult and costly. These findings have theoretical and practical implications.

Theoretically, the findings highlight the gap between the ERP system's "built-in" practices and the organization's institutional practices. This gap suggests that there are deep institutional values in the UAE, and generally in other Arab countries with emerging economies, that run counter to the values embedded in ERP system practices. To explore this issue further, we attempt to contest our case study in the UAE with some aspects of Hofstede's (2003) views on culture. For example, his view of "uncertainty avoidance", which is higher in Arab culture than in the Western culture, is documented in our findings. Hope's employees had a lot of uncertainty and anxiety regarding the ERP system project and they absorbed the accounting-based ERP changes to an acceptable level as a way to protect their jobs. They felt threatened by having the ERP system modules forced upon them, and, therefore, they tried to avoid using these modules or, as they claim, to work around these modules' requirements.

"Power distance" is another aspect of Hofestede's view on culture. The case study findings show that the ERP system created inequality of power distribution instead of allowing organizational members to share the same informational recourse. The findings document that the PM and some other employees asked for restricted access to information. This restriction put these organizational members in a privileged (i.e. powerful) position compared to other members. This runs against the ERP-embedded value of equality in which organizational members access similar information through the ERP system's shared database. Hofstede's view on culture also incorporates "individualism/collectivism" and "professionalism/regulatory", and these aspects can be explored in further research.

The empirical findings also add to Laughlin's (1991) concept of "interpretive schemes". Despite the changes in Hope's organizational practices and processes, Hope's interpretive schemes remained unchanged or at best are fragmented. This finding can be attributable to what Nwankpa (2015) calls an organization capacity to absorb and learn new knowledge. The gap between Hope's pre-ERP knowledge and that one required for a successful implementation of the ERP system suggests that Hope had a weak knowledge base to absorb the new technology. Accordingly, interpretive schemes not only refer to sets of values and beliefs that create experiences in the world (Laughlin, 1991), but also indicate an organization's "knowledge base" that facilitate the adoption of new practices (Nwankpa, 2015). Once more the integration between the concept of "interpretive schemes" and the concept of "knowledge base" can be explored in future research.

Practically, the empirical findings provide insights that are of great interest to:

• ERP vendors and consultancy firms;
• organizations implementing ERP systems; and
• accounting information system researchers.

ERP system vendors and consultancy firms should consider the implications of host country regulations and institutional practices to ease the implementation and customization of the ERP system's modules. The case study casts doubts on the assumption that the best practices embedded in foreign ERP applications will necessarily apply for emerging economies. Therefore, it would be better for ERP vendors to develop different strategies to overcome the misalignment between their ERP "built-in" practices and the practices of ERP-adopting companies in emerging markets. The case study findings can be useful to emerging economies with similar institutional contexts.

The findings of this study also reveal the role of training programs in triggering and mobilizing the organization to change. On the one hand, the training programs were designed to reduce the level of uncertainty regarding the ERP system (Hwang and Grant, 2011). On the other hand, they were acted upon to change employees' attitudes toward the ERP system (Amoako-Gyampah and Salam, 2004). Ultimately, these programs made the necessary level of customization visible to organizational members, which contributed to the creation of what Laughlin (1991) calls absorption groups. This finding is consistent with O'Mahony and Doran's (2008) study, which found that a high level of customization is one of the main drawbacks identified with ERP system implementation.

The study also highlights some research implications that represent opportunities for future research. First, researchers are recommended to revalidate the findings of this study by carrying out comparable case studies. Second, researchers are recommended to refine Laughlin's (1991) model of organizational change in light of the style of organizational leadership that is attributable to organizational culture. Third, despite enabling the examination of accounting-based ERP organizational change at the micro-organizational level, Laughlin's (1991) model theorization of environmental disturbance does not elucidate the attributes underlying macro-organizational level change. In this regard, Munir (2005) argues that environmental disturbance is brought to the forefront after a series of random events and circumstances in the organization's wider and micro-contexts. Our case study mitigates that concern because it has examined a series of wider and micro-events (i.e. jolts) that triggered the organization to change. As mentioned earlier, Hope's environmental disturbance was triggered by the UAE's aspiration to be internationally recognized for its use of IT and top management's views regarding the use of ERP systems and training programs.

Managing the implementation of ERP systems is a complex and sophisticated task. This task becomes even harder when organizations that are operating in an emerging market seek to install the ERP system's "built-in" best practices, as these practices may not be in alignment with the adopting organization's institutional practices. The findings have shown that the customization processes were characterized by many obstacles, such as a lack of specialized IT knowledge, the contradiction between the ERP system's practices and the host country's regulatory framework and the organization's members' anxiety about increased workload after the installation of the ERP system. These challenges caused organizational members to form absorption groups to prevent changes from taking place. Organizations that plan to implement an ERP system are recommended to carefully consider the aforementioned issues before making a commitment to adopt an ERP system. Otherwise, the ERP system may need to be redesigned to make its modules adhere to the organization's existing processes and

practices. The risk here is that the more approximation to the existing processes and practices, the more the modules become a set of separate systems that are not integrated and not truly an ERP system (Hawari and Heeks, 2010).

The study has some limitations. First, this paper relies on a case study methodology, and, therefore, generalization is not possible (Scapens, 1990). Second, the paper analyses organizational change over a short period of time, namely, ten months. Other theories, such as structuration theory and/or institutional theory, can be used to investigate the process of organizational change over longer timeframes. The use of structuration theory enables researchers to unpack the concept of agency while revealing issues related to organizational power and politics during the process of organizational change. These limitations suggest the need for future research to investigate the influence of organizational power in implementing accounting-based ERP systems in emerging markets.

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