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ERP Customization Failure: Institutionalized Accounting Practices, Power Relations and Market Forces

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ABSTRACT

Purpose: This paper examines a detailed case study of Enterprise Resource Planning (ERP) customization failure in an Egyptian state-owned company (AML) by drawing on new institutional sociology and its extensions. It explains how ERP customization failure is shaped by the interplay between institutionalised accounting practices, conflicting institutions, power relations and market forces.
Methodology/Approach: The research methodology is based on using an intensive case study informed by new institutional sociology, especially the interplay between conflicting institutions, power relations and market forces. Data were collected from multiple sources, including interviews, observations, discussions and documentary analysis.
Findings: The findings revealed that the inability of the ERP system to meet the core accounting requirements of the control authorities (the Central Agency for Accountability) was the explicit reason cited for the ERP failure. The externally imposed requirements of the Uniform Accounting System and planning budgets were used to resist both other institutional pressures (from the Holding Company for Engineering Industries) and market and competitive pressures.
Research limitations: There are some limitations associated with the use of the case study method, including the inability to generalize from the findings of a single case

study, some selectivity in the individuals interviewed, and the subjective interpretation by the researchers of the empirical data.
Practical implications: The paper identifies that the interplay between institutional pressures, institutionalised accounting practices, intra-organizational power relations, and market forces contributed to the failure to embed ERP in a major company. Understanding such relationships can help other organisations to become more aware of the factors affecting successful implementation of new ERP systems and provide a better basis for planning the introduction of new technologies.
Originality/value of paper: This paper draws on recent research and thinking in sociology, especially the development and application of new institutional sociology. In addition, the paper is concerned with ERP implementation and use and management accounting in a transitional economy, Egypt, and hence contributes to debate about exporting Western accounting practices and other technologies to countries with different cultures and different stages of economic and political development.
Classification: Research paper/ case study

Key words: Enterprise Resource Planning, Institutionalised Accounting Practices, Egypt, New Institutional Sociology.

1. Introduction
It is often observed that accounting systems and practices are difficult or slow to change (Scapens and Roberts, 1993; Burns, 2000; Granlund, 2001; Burns et al., 2003; Lukka, 2007). It was expected that the introduction of Enterprise Resource Planning (ERP) systems in 1990s would radically change accounting systems and practices (Chapman and Chua, 2000; Sutton, 1999). However, the available evidence is disappointing. It was found that ERP systems reinforce rather than change existing accounting systems and practices (Granlund and Malmi, 2002; Scapens and Jazayeri, 2003; Quattrone and Hopper, 2005). Then, what is the problem with ERP systems?

ERP systems have been criticised for being inflexible and not meeting specific organization and industry requirements (Davenport, 1998; Scapens et al., 1998; Booth et al., 2000). For instance, Scapens et al. (1998: 48) observed that '…the British subsidiary of a US multinational, which was implementing SAP world-wide, found considerable difficulty in adapting SAP to its operating needs…SAP was configured for the US operations and this led to inflexibility for the British subsidiary'. Unlike in-house developed legacy systems, ERP systems require the organization to adapt to the software rather than modify the software to fit the organization's established practices (Granlund and Malmi, 2002). Davenport (1998: 122), for example, argues that 'an enterprise system, by its very nature, imposes its own logic on a company's strategy, organization and culture'. Thus, it is expected that the implementation and use of ERP systems are associated with a problem of misfit, i.e. the gaps between the functionality offered by the package and that required by the adopting organization (Soh et al., 2000).

As packaged software, ERP is designed by vendor organizations but used by customer organizations, two sets of players who are independent of each other (Soh and Sia, 2004). ERP creators inscribe their view of the world in the technology that they create (Latour, 1992; Orlikowski, 1992). For instance, Hedberg and Jonsson (1978: 56) argue that '[t]he way in which organizations' information (and accounting) systems reflect the world depends on the designers' assumptions about important characteristics of organizations and their environments'. The institutional conditions and human actors involved in technology design are different from those involved in technology use. As a consequence, ERP embodies at least some of the institutional properties of vendor organizations, which could be from a different country with different meanings, norms and powers to the customer organization. When there are major misfits between the assumptions and rules embedded in the ERP and the actual usage, organizations can respond through package customization or organizational adaptation. In some cases, both solutions might be difficult to implement which then results in the failure of the ERP project, see Figure 1. The failure of ERP customization or organizational adaptation means that customer organizations continue following their existing (old) systems and practices, where stability in organizational systems and practices refers to 'continuity over time' (Giddens, 1979: 199).

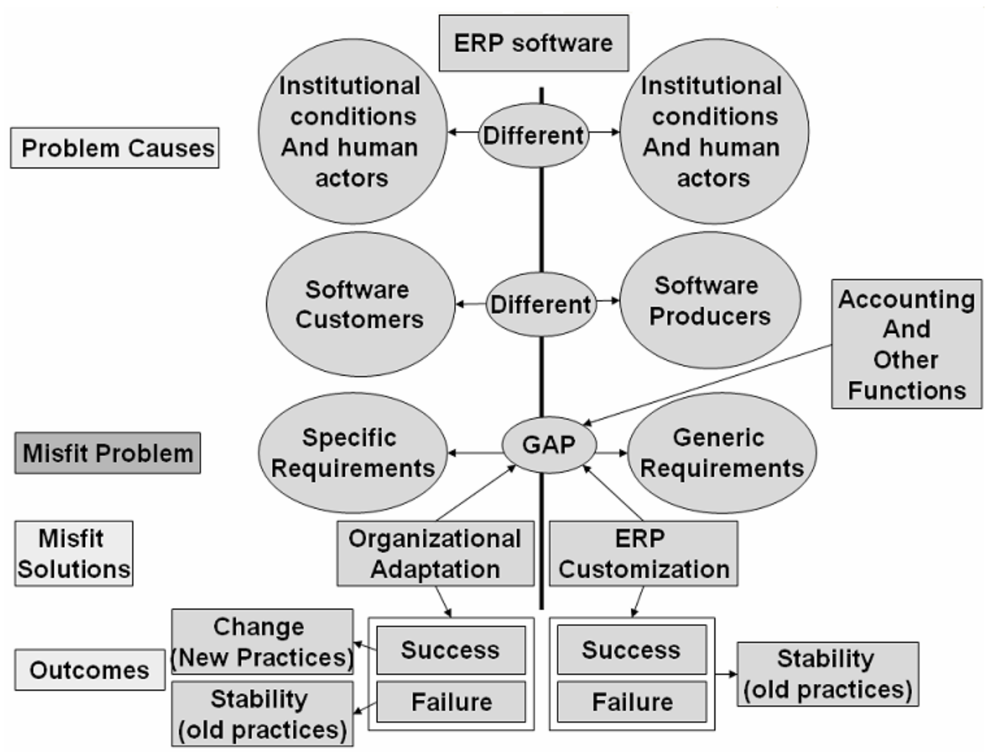

Figure 1: ERP software and the misfit problem

Our case organization (AML) is an Egyptian state-owned company that demonstrates a failed attempt to customize an ERP system. In Egypt, a comprehensive economic and structural adjustment programme, including a privatisation programme, was started by the Egyptian government in the early 1990s. This programme resulted in changes in the regulatory environment and created market pressures on our case organization. The company was confronted with an organizational change as a result of institutional change and market competition that contributed to the ERP customization failure. Given the role of the regulatory environment and market competition in driving the organizational change in our case organization, new institutional sociology (NIS) theory and its extensions (DiMaggio and Powell, 1983; Modell, 2002) are adopted in this paper to explain and understand the ERP customization failure in AML.

The NIS perspective explores the role of macro economic, political and social institutions in shaping organizational structures, policies and procedures (Scott, 2001). Organizations respond to such external, macro pressures in order to receive support and legitimacy (Modell, 2002). NIS has been adopted to explain homogeneity and persistence (Granlund and Lukka, 1998; Dacin et al., 2002), ERP package-organization misalignments (Soh and Sia, 2004), conflicting institutional pressures (Meyer and Rowan, 1977; D' Aunno et al., 1991), the interplay between institutional and market forces (Gupta et al., 1994; Modell, 2002), and the interplay between institutional pressures and intra-organizational power relations (Burns and Scapens, 2000; Modell, 2002; Tsamenyi et al., 2006). This paper draws on these recent developments in NIS in the accounting and information systems literatures to address the following research question: how is the ERP customization failure shaped by the interplay between institutionalized accounting practices, conflicting institutions, power relations and market forces?

The remainder of this paper is organised in five sections. In the next section, we articulate the theoretical framework based on NIS and its extensions. This is followed by details of the research method employed in this study. The paper then discusses how ERP customization failure is shaped by the interplay between, institutionalised accounting practices, conflicting institutions, power relations and market forces. The final section provides a summary of the paper and some conclusions.

2. Theoretical Framework: New Institutional Sociology and its Extensions

In this section, we propose new institutional sociology and its extensions as the theoretical framework informing our analysis of the case study. Initially, the concept of institutional isomorphism and its relationship with the misfit problem is discussed. Then we examine the implications of the interplay between conflicting institutions and intra-organizational power relations on the one hand, and institutional and market pressures on the other hand, for ERP customization failure. As mentioned in the previous section, this examination is necessary because ERP customization failure was shaped by the institutional forces (institutionalized accounting practices), conflicting institutions, intra-organizational power relations and market forces.

2.1 Institutional Pressures, the Problem of Misfit and Institutionalised Accounting Practices

DiMaggio and Powell (1983) introduce the concept of organizational fields and define it as the organizations that constitute a recognized area of institutional life such as suppliers, customers and regulatory agencies. They argue that the organizations within the field tend to make organizational changes that make them very similar to each other. There are three mechanisms through which institutional isomorphic change occurs: coercive isomorphism, normative isomorphism and mimetic isomorphism. *Coercive isomorphism* is primarily related to the political influence exerted by institutions on which organizations depend for critical resources and long-term survival, such as the state's laws and regulations. *Normative isomorphism* is the institutionalisation of social practices as a result of professionalisation by means of professional groups. *Mimetic isomorphism* stems from the tendency of organizations to imitate each other in response to symbolic uncertainty.

As stated earlier, ERP is packaged software that is designed by vendor organizations and is used by customer organizations, two sets of players independently of each other (Soh and Sia, 2004). The institutional conditions and human actors involved in technology design are different from those involved in technology use. As a consequence, ERP, as a semi-finished product[1], tends to embody the institutional properties of vendor organizations, which might be from a different country with different meanings, norms and powers. However, ERP can be configured during implementation to match the wishes of the customer organizations. This adaptation process encodes the institutional properties of the customer organizations into the software. After the configuration process, if there is still a gap between the business processes embedded in the software and the existing organizational processes, a decision could be made to change the organizational processes to handle certain processes outside the software or to change the base code of the software.

Drawing on the work of DiMaggio and Powell (1983), Soh & Sia (2004) identify two potential institutional sources of misalignments: externally imposed organizational structures and voluntarily acquired organizational structures. Imposed organizational structures are institutional structures dictated by authoritative sources in the organization's environment, especially the coercive authority of nation-states such as laws and regulations and the more normative authority of professions such as professional and industry institutions. Voluntarily acquired organizational structures are adopted because of reasons such as the organization's particular experience and history, as well as management preferences. Soh and Sia (2004) argue that organizations operating in different countries face different institutional pressures, and will evolve different structures. So, if the customer organization of the ERP package is from a different country than that of the ERP package's main markets, there are potential misalignments that should be considered. When misalignments exist, organizations can respond through package customization or organizational adaptation. The organizational responses to these misalignments are the result of a process of interaction and negotiation among various parties, including management, users, IS personnel, and consultants.

Soh and Sia's (2004) framework relates ERP packages to (extra-organizational) macro institutional pressures to explain differences in embedded structures in ERP packages and organizations. However, the organizational responses to the potential misalignments refer to intra-organizational dynamics and processes of change and stability. Burns and Scapens' (2000) institutional framework is primarily concerned with such dynamics and processes. This framework overcomes a major limitation of NIS, i.e., the minimal

[1] ERP is a semi-finished product with tables and parameters that user organizations and their implementation partners configure to their business needs.

attention paid to the role of interest and agency in shaping human action. In addition, it explains the institutionalization processes of accounting practices.

Our case company, AML, is an Egyptian state-owned enterprise that has adopted imposed organizational structures (the Uniform Accounting System and planning budgets) in response to the coercive authority of the Egyptian laws and regulations and control authorities since 1966 to present. These structures have been institutionalized and became potential sources of ERP package – organization misalignments. These misalignments contributed to the failure of the ERP project introduced by the company in response to the privatization programme in Egypt in the 1990s.

2.2 Institutional Pressures, Conflicting Institutions and Intra-Organizational Power Relations

A major criticism of NIS is related to its relative inattention to the role of pro-active agency in constructing institutions (Carruthers, 1995). For example, Barley and Tolbert (1997) argue that NIS has largely focused on the role of institutions in shaping and constraining the actions of actors. This criticism has been addressed in recent institutional studies that focus on the ability of actors to respond to institutional pressures (Oliver, 1991; Greenwood and Hinings, 1996; Barley and Tolbert, 1997; Burns and Scapens, 2000; Collier, 2001; Modell, 2002; Tsamenyi et al., 2006). These studies have broadened NIS to include power relations.

In this paper, we draw on the work of Burns and Scapens (2000) to study how institutions interact with the actions of organizational actors and the role of power relations in their interaction. Based on Giddens' (1984) structuration theory, Burns and Scapens (2000) describe the relationship between actions and institutions as the agency-structure relationship. They argue that although institutions constrain and shape action at a specific point in time, actions produce and reproduce institutions through their cumulative influence over time.

Burns and Scapens (2000) adopted the concept of power as articulated by Giddens (1984). In this regard, there are two main perspectives of power (Macintosh and Scapens, 1990). The first perspective is that power is best conceptualised as the transformative capacity of an actor to achieve his or her will, even at the expense of others who might resist him or her (power in the broad sense). It can be used to introduce new organizational rules or may be mobilised to resist such new rules. The second perspective is that power should be seen as a property of the society or social institutions or the medium for domination (power in the narrow sense). It is the power embedded in the institutionalised routines, which shape the actions and thoughts of organizational members. In Burns and Scapens' framework, the two perspectives of power are connected together as features of the duality of structure.

Both perspectives of power are of particular interest to this paper. In our case organization the decision to adopt an ERP system was mainly taken by the Holding Company for Engineering Industries, which has been established according to the Public Enterprise Law No. 203 of 1991. Organizational members of AML, especially accountants, resisted this order through mobilizing another power. This refers to the first perspective of power. Accountants draw on the power embedded in institutionalized accounting practices (the Uniform Accounting Systems and planning budgets). This refers to the second perspective of power.

This use of power in our case organization is related to the issue of conflicting institutions. When organizations face conflicting extra-organizational institutional demands, how they should respond? Meyer and Rowan (1977) argue that organizations adopt inconsistent, even conflicting, practice to gain legitimacy. However, D' Aunno et al. (1991) argue that organizations have limited ability to respond to conflicting institutional demands and thus will confirm to them only partially. Our case company faced such conflicting institutional demands from the holding company to implement the ERP system and the Central Agency for Accountability to use the Uniform Accounting System and planning budgets. As will be explained later, the company used the requirements of one institution to resist the requirement of the other.

2.3 Institutional Pressures and Market and Competitive Pressures

The early work of DiMaggio and Powell (1983) de-emphasized the role of market and competitive pressures in influencing organizations and explaining organizational activities and practices. However, recent institutional studies have recognized this role (Greenwood and Hinings, 1996; Oliver, 1992; Powell, 1991; Scott, 1991) but have not agreed on the relation between institutional and market pressures. Some institutional studies argue that institutional and market pressures may be in opposition (e.g. Oliver, 1992). So, gaining legitimacy is in conflict with achieving efficiency. This view is adopted by a few accounting scholars (e.g. Hoque and Hopper, 1997; Modell, 2002). Other institutional studies argue that both institutional and market pressures are exerted on organizations, which must respond to both pressures (e.g. Powell, 1991). This means that organizations can simultaneously demonstrate both institutional conformity and technical efficiency. There are a few examples of accounting studies adopting this view (e.g. Gupta et al., 1994; Hossain and Hoque, 2002; Tsamenyi et al., 2006). In this paper, we adopt the view that both institutional and market pressures may have negative effects on adopting efficient accounting systems when there is coercive isomorphism. This means that market pressures lose their positive role under greater levels of coercive pressures.

In terms of the interplay between the institutional and market forces in Egypt, a comprehensive economic and structural adjustment programme funded by the World Bank and IMF was adopted in 1990s. This programme aimed to move the Egyptian economy from a state-controlled economy to a free market-oriented economy. As a result of this programme, a number of laws were enacted to establish competitive markets with freedom of entry and free market prices. For example, Egypt started to implement GATT Agreement. This resulted in removing the protection policy for local products by reducing or eliminating custom duties imposed on imported foreign products. In addition, the General Sales Tax and the Global Income Tax were enacted to replace tax laws that discriminated against foreign competition. Also, most of state-owned enterprises were privatised according to Law No. 203 of 1991. This law was designed to eliminate the difference in treatment between public and private enterprises. In this paper, we examine how the interplay between institutional and market forces negatively affects the adoption of the ERP system in AML, our case organization.

3. Research Method

The case study method was used to obtain a rich set of data surrounding the specific research issues and to capture the contextual complexity (Yin, 1994). Case study materials were gathered during 2003-2004, and included semi-structured interviews carried out by one of the authors, site visits and the collection of documentary evidence spanning the life of the ERP project. To facilitate access to some confidential information, a formal written permission was obtained from the Central Agency for Public Mobilization and Statistics, the official source of providing and authorizing the collection of data from state-owned enterprises in Egypt.

Semi-structured interviews were the main data collection method to find out what participants do, think or feel. The interviews were conducted with some members of the ERP project team (ERP sponsor, some key users and end users). These members included cost and financial accountants, IT staff and line-managers. Eight face-to-face interviews[2] were conducted. They lasted up to 2 hours. The ERP sponsor (the ex-CEO of the company) was interviewed twice to overcome the absence of the ERP project manager, who retired before conducting the interviews. Also, the extensive interviews carried out with other project team and documentary evidence were valuable in identifying the role of the ERP project manager in the ERP implementation process.

In addition to the interviews, other data collection methods were used. These methods include background questionnaires, documentary evidence, direct observations, published accounts and budgets. These multiple methods are deliberately selected as one method can complement others. This triangulation tends to improve the validity of evidence (Scapens, 1990). In interpretive research the validity of evidence can be assessed only in the context of the particular case, what Scapens (1990) calls ‘contextual validity’. In this regard, Scapens (1990) suggests the triangulation of evidence by collecting different pieces of evidence on the same research issue, collecting other evidence from the same source and working in teams in order to reach an agreed interpretation of a particular case. As a consequence, the use of multiple sources of evidence in this case study is justifiable on the grounds of increasing the contextual validity of research evidence.

The case study materials were collected from AML Company, previously known as NOUR Company, a state-owned company. AML Company was chosen because it demonstrates a failed attempt to customize an ERP system in a highly institutionalized environment (a state-owned company) in a developing country (Egypt). There is a lack of research on the impact of highly institutionalized environments on ERP implementations and the possible failure of ERP projects as a result of these circumstances. In addition, by comparison with previous research in developed countries research on ERP in developing

[2] Interviews were not tape-recorded because the interviewees preferred to talk in a more confidential way. However, extensive notes were taken during the interviews.

countries can aid our understanding of the contextual and national differences on ERP implementations and their impact on adopting or rejecting accounting systems and practices built into the software (Huang and Palvia, 2001; El-Sayed and Westrup, 2003).

There were some limitations associated with the case study reported in this paper. One limitation of this case study was the fact that the ERP project manager was not interviewed because she retired before conducting the interviews. Another limitation was that the case expressed the views of customer organization personnel not vendor organization staff. Also, there are some other limitations associated with the use of case study method in general such as the limited generalization of the findings of a single case study and the possibility of the researchers' bias.

4. Institutional Interpretation of ERP Customization Failure

In this section we analyse the failure of ERP customization in AML. Based on the theoretical framework, we identify three separate, but related, reasons for this failure, knitting them together through the new institutional perspective of the paper. We first focus on coercive pressures exerted on AML from the regulatory environment and the holding company, as well as the intra-organizational power relations. Then, we address the impact of the interplay between institutional and market forces on AML.

4.1 Institutionalised Accounting Practices as Sources of ERP Package-Organization Misalignments in AML

The defining period of modern Egypt is still the revolutionary socialist regime under President Nasser (1952-1970). After the revolution of 1952, the Egyptian Government made a break with the past and moved the Egyptian economy from a free market-oriented economy to a massively state-controlled economy in few years. The nationalisation laws and expropriation of various private enterprises became the expression of change in Egypt after the July Revolution in 1952. A series of nationalisation decrees was issued in 1956, 1961, and 1963 to eliminate the dominant role of both foreign and large-scale, local private capital. In 1952, the private sector made about 76% of the total investment in the economy. The public sector very quickly established its dominance in the economy and for the next three decades was making between 80-90% of the investment in the economy and constituted around 37% of GDP annually (PCSU, 2002).

In view of the state's dependence on accounting information to prepare the National Plan, the Uniform Accounting System was introduced by the Central Agency for Accountancy[3] in 1966. It was compulsory for all State-Owned Enterprises (SOEs) in the public sector, with the exception of banks and insurance companies. In such accounting system, accounts are classified in homogeneous classes in a manner that assists in preparing national accounts, as well as satisfying the needs of the traditional financial and cost accounting[4].

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[3] The Central Agency for Accountability is a control authority that reports to the Egyptian People's Assembly on the performance of all state-owned enterprises and government ministries and agencies.
[4] For more details about the Uniform Accounting System, see, for example, Briston and El-Ashker (1984).

NOUR Company, currently known as AML, is one of the companies that were subject to partial nationalization. NOUR Company[5], a leading international company in the electronics industry based in the Netherlands, established its branch in Egypt under the name of 'NOUR-orient' in 1930. Initially, the activities of the NOUR branch in Egypt were just importing and marketing some electrical finished products such as televisions, refrigerators and light bulbs. In 1944, the local production of these electrical products was launched for the first time. In the 1960s, the Egyptian branch of NOUR was 50% nationalised by the Egyptian Government and by Law No. 118 of 1961, it became a 50% public sector company. However, its products continued to have the brand name of 'NOUR'.

As a state-owned enterprise, the company has applied the Uniform Accounting System to serve both financial accounting and cost accounting since 1966. It also prepares traditional planning budgets such as a sales budget, a production budget and a commodity and service requirements budget. The Dutch partner had not affected the accounting system used. However, reports prepared were affected. Certain reports were requested to be prepared by the Finance Department. These reports were specially designed to satisfy the Dutch partner's needs. The use of the Uniform Accounting System and planning budgets in AML has been routinized and institutionalised. They became part of day-to-day life and the way of doing things (Burns and Scapens, 2000). Accountants use the account codes as a way of communication with other organizational members in day-to-day interactions.

In Soh and Sia's (2004) terms, the Uniform Accounting System and planning budgets are imposed organisational structures. They are imposed and monitored by the coercive authority of the state agencies (the Central Agency for Accountancy). Soh and Sia (2004) argue that where the misalignment between embedded structures in ERP packages and organizations arises from an imposed structure, the decision will usually be to modify the ERP packages to support the existing institutional structure. This is because the organization is usually unable to change government regulations. Modifying the ERP package was the action taken by AML. However, ERP customization failed to solve the misfit problem and led to the failure of the ERP project in AML.

The Financial Accounts Department and the Budgeting and Costing Department insisted that the Uniform Accounting System had to be built into the ERP software and the reports must be prepared in the same normal format. MIS General Manager explained:

> Customisation was the main reason for ERP failure. Finance Department is required to apply the Uniform Accounting System. This system is like the constitution. It has to be followed. Accountants have certain reports that have to be prepared…We were extremely inflexible and we have not had an ability to change business processes.

The General Manager of Planning gave an example of the inflexibility of accountants:

[5] The real name is disguised.

> If we used the software as it is, we would complete the project. This would solve a lot of problems. A lot of modifications and customisations were done. There was no flexibility on the part of accountants at all. They even insisted on using four decimal numbers as they did manually… They wanted the ERP to be customised to reflect the Uniform Accounting System. It took a lot of efforts to customise the ERP to be in conformity with the Uniform Accounting System…The same document should be prepared by the ERP system as the manual document. Otherwise, the software was not suitable.

For example, the Uniform Accounting System dictates the account chart in terms of eight digit numbers. It took two months to customize the ERP system to accept the account chart. However, the ERP system required changing the documents, procedures and documentary cycles between the company's departments. Accountants rejected this type of change as it contradicted existing routines and institutions. The General Manager of Financial Accounts gave the following reason:

> We found that we should prepare and change the documentary cycles to fit the ERP system before starting to implement it. There are control authorities that accepted and recognised the procedures a lot of years ago. So it was difficult to replace and change these procedures.

He added:

> I cannot violate the rules of the Uniform Accounting System. The Central Agency for Accountability audits our compliance with these rules and disagrees with any differences. I cannot violate the rules in order to adopt the ERP system. There will be legal responsibility. If the ERP Company were able to customise the ERP system to be in conformity with the Uniform Accounting System the ERP system would operate.

Furthermore, the division of one invoice into a number of screens led to difficulty in using the ERP system in AML. There were a lot of documents that were difficult to be entered into the ERP system using the screens designed in the system. The division of a single document into a lot of screens was seen by accountants as impossible. For instance, there were six screens to record the fixed assets' depreciation. The General Manager for Financial Accounts explained:

> Any system opens a single screen that leads to other screens. However, in BAAN, if I have not entered a screen, the system would not accept the others… We prepare depreciation reserve for fully depreciated assets in books. This reserve requires re-evaluation of assets. For two years, we were unable to customise the ERP system to record this reserve. To prepare a compound entry (from two or more accounts to two or more accounts), the system required using intermediate accounts. The system consumed our time in preparing intermediate accounts and entries without any necessity.

Accordingly, there were tensions in the process of customizing the ERP package to be in conformity with existing institutions, rules and routines. According to Burns and Scapens (2000: 16 & 17), it is likely to be much easier to introduce changes that do not challenge existing ways of thinking and norms of behavior. However, a change that conflicts with existing routines and institutions is likely to be much difficult to implement. In AML, the embedded structures in the ERP system were incompatible with the established ways of thinking and norms of behavior embedded in the existing routines and institutions, especially the Uniform Accounting System. The General Manager of Financial Accounts pointed out:

> The BAAN system was not suitable for the nature of our business and our work systems. Would we change the state systems such…the Uniform Accounting System in order to implement the BAAN system?

He added:

> The ERP offered solutions but they were not suitable for us. The software is not suitable for the Egyptian environment. It might be useful for Europe. There was a will to make the ERP system succeeds; however, the system was not in conformity with our systems. The problem was that it was non-customisable software. It was inflexible software like a train has to be pulled alone a railway line. Tailored (custom-developed) systems would satisfy our needs.

A cost accountant agreed with the above comment:

> The user needs for financial data… should be determined and satisfied. The computerised system should be tailored rather than imposed as a software package.

He continued:

> There were a lot of difficulties in implementing BAAN software. This system is not suitable for our reality, our life and our systems that we are used to use. The software does not satisfy our needs. I personally prefer custom software to packaged software.

In sum, ERP consultants tried to customize the software. However, the software has challenged established accounting rules and routines. It contradicted the Uniform Accounting System, which has been used by public sector enterprises since 1966 and continually monitored by the Central Agency for Accountability during the customization process. This conclusion is consistent with Soh and Sia (2004) that when there is a misalignment between imposed organizational structures and embedded structures in ERP packages, it is difficult to change the government regulations and the ERP packages have to be modified to support the existing institutional structures. Sometimes, the customization process is difficult to implement and the ERP project will fail. This was what happened in the AML case.

4.2 The Holding Company as a Conflicting Institution and Intra-Organizational Power Relations

In the early 1990s, a privatisation programme was undertaken because of the Government of Egypt's (GOE) dissatisfaction with the failure and loses of public sector enterprises and the external pressures from international donors (World Bank and IMF) in favour of privatisation. The GOE launched the privatisation programme with the Public Enterprise Law No. 203 of 1991 and its regulations, establishing the legal framework for sale of 314 public enterprises that earmarked for privatisation. This law marked the start of public enterprise reform. It was designed to eliminate the difference in treatment between public and private enterprises.

Public holding companies were established in 1991. The ownership and management of 314 public enterprises, subjected to Law 203 of 1991, were transferred from the various ministries to 17 holding companies, which are held accountable to the Ministry of Public Enterprises. Holding companies are primarily responsible for organising the sale of their constituent SOEs known as affiliated companies, with a mandate to maximise the present value of their affiliated companies on behalf of the state.

According to Law No. 203 of 1991, the ownership and management of the Government's share in NOUR Company were transferred to the Holding Company for Engineering Industries to organise its sale. In December 1997, the Egyptian Government tried to privatise the company by selling it to the Dutch company, NOUR. However, negotiations failed and the Egyptian Government decided to buy the share of the Dutch partner. The company's name was changed to AML, which became a 100% public sector company. Furthermore, AML Company reduced its activities to the manufacturing and marketing of lamps. The General Manager for Budgeting and Costing described this situation as follows:

> During the negotiations on selling the company at the end of 1997, it was re-evaluated. NOUR Company assessed that its brand name was worth 60% of the company's value and was willing to pay the Government the remaining value. However, the Egyptian side rejected this deal and bought the Dutch partner's share. A new brand name, 'AML', was introduced.

As a result of the privatization, there was some change in the institutions governing the public sector such as the introduction of Law No. 203 of 1991 and the holding companies. However, the old institutions such as the Central Agency for Accountability continued to govern the public sector as well. Following the failure of privatisation process of AML Company, the company is still applying the Uniform Accounting System and planning budgets that are monitored by the Central Agency for Accountancy. Also, the company has to obey the orders of the Holding Company for Engineering Industries. This situation created conflicting institutions. Organizational members in AML used one institution (the requirements of the Central Agency for Accountability) to resist the other (the requirements of the holding company).

The decision to implement an ERP system at AML was related to its privatization attempt at the end of 1997. Following the withdrawal of NOUR Company, a decision to adopt an ERP system in AML was mainly taken by the Egyptian Holding Company for Engineering Industries, which started implementing an ERP system at the same time. The General Manager of the MIS Department described this decision as follows:

> The ERP project came as a compulsory order from the holding company. It has not expressed our needs. We have not initiated this project. As a decision-maker, you are not able to make a decision… People, I mean financial accountants and cost accountants, rejected the project. They have not co-operated with the top management in implementing the project as they felt that it was imposed on them and they were not in need for it…The holding company itself failed to implement the ERP software.

The General Manager of Planning emphasized this fact by saying:

> The ERP project was a recommendation from the holding company to implement a good information system. The objective was the existence of a common integrated database for the whole company to facilitate communications and the availability of information to decision-makers in real time. However, I think that because there was a complete collapse in the company, the ERP project failed… The holding company wanted to modernise information systems. It implemented the same system and failed.

The General Manager of Planning described the feelings of employees towards the ERP by saying ‘people (accountants) resisted the ERP system and implemented it against their will. It was like doing your job without liking it’. So, ERP was perceived as a major threat to the survival of the organization as a whole and its constituent organizational members. The General Manager of Planning commented that ‘there was a fear from privatization. Would we stay working in the company or would we leave the company?’ Thus, AML’s organizational members challenged the holding company’s decision to implement BAAN software. They resisted ERP implementation as they felt that this software was a threat to the existence of the company as a whole and to their secured jobs. The General Manager of Financial Accounts added ‘the number of employees has been reduced because of early retirement’[6]. The use of the ERP system would accelerate the retirement process as it would require skills that are not available in the existing employees. Furthermore, the failure of ERP implementation in the holding company legitimized the failure of the same ERP package in AML. The ERP failure in AML became a logical outcome and self-explained result as a result of its failure in the holding company.

According to Burns and Scapens (2000), if those responsible for implementing the new system possess sufficient power, they may be able to impose change, albeit with some difficulty. However, if other key individuals or groups have sufficient power, they may be able to resist or subvert the change process. That was what happened in AML. The holding company and top management wanted to make AML attractive to investors by imposing the ERP project. For that reason, the ERP caused a lot of anxiety as it was seen as a necessary step towards privatization and, subsequently, early retirement. To prevent this from happening, other organizational members, especially accountants, resisted the ERP project through their control of resources[7] required in the implementation process. Accountants used their knowledge with the requirements of the Uniform Accounting System as a way to resist the ERP implementation. Burns and Scapens (2000: 10) state that ‘…[institutionalized] routines may become somewhat resistant to change’. And in another instance, they state ‘…the power embedded in the institutionalized routines, which shape the actions and thoughts of members of the organizations…’ (p. 23). Institutionalized routines such as the requirements of the Uniform Accounting System provide accountants with sufficient power to resist the implementation of the ERP project.

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[6] In the planning budgets for 1998/99, the number of employees was 3630 on 31/12/1997. This number was planned to be reduced to 3360 employees due to the use of early retirement policy.

[7] The exercise of power in social relations depends on both formal sources (hierarchy of authority and responsibility) and informal sources (knowledge, mobilization of authority, experience, significance of the institution, personal relations or connections with power holders).

These findings provide a possible answer to the question of ‘how organizations respond to new extra-organizational institutional demands that conflict with their traditional practices?’ Our case company used one institutional demand to resist the other because both the holding company and AML have to comply with the requirements of the Central Agency for Accountability. They cannot violate these requirements. These findings differ from other observed responses in previous studies (Meyer and Rowan, 1977; D’ Aunno et al. 1991).

4.3 Market and Competitive Pressures

In the 1990s the changes in the regulatory environment in Egypt created market and competitive pressures on AML. The privatization programme launched by Law No. 203 of 1991 and the implementation of the GATT agreement opened up the Egyptian market and created fierce competition. This competition adversely affected AML. As a result of competition, AML suffered severe successive losses from 1997 to present. For example, reported losses in 1996/97 were 5,563,000 Egyptian pounds.

On the one hand, according to the Public Enterprise Law No. 203 of 1991 and its regulations, there was a failed attempt to privatise AML in 1997. This attempt led to the withdrawal of the Dutch Company, NOUR. The withdrawal of NOUR led to changing the company’s brand name from ‘NOUR’ to ‘AML’. Customers did not know the new brand name and they did not differentiate it from other available brands in the Egyptian market. Furthermore, some of the company’s machines left by NOUR were outdated and in bad condition. This means that the use of these old machines increased the occurrence of defective products and hence ‘quality costs’ such as the costs of scrap, spoilage and negative goodwill.

On the other hand, as a direct impact of the implementation of the GATT agreement in Egypt in the 1990s[8], a lot of rival light bulbs have been imported and sold in the Egyptian market at a much lower price, normally less than the product costs. A cost accountant said:

> The GATT agreement has led to the entrance of a lot of imported products, including light bulbs, to the Egyptian market, especially from China. This resulted in fierce competition and difficulties in competing with these products. For example, there is currently a dumping process, where products are sold with prices less than their costs. As a result, the local product cannot be sold.

The General Manager of Budgeting and Cost Accounting Department confirmed this fact when saying:

> The company won a legal case against a company to stop cheap imported light bulbs being dumped in the Egyptian market.

[8] In the planning budgets for 1998/99, the custom duties on imported light bulbs were reduced from 70% to 45%. In addition, the company continued the production reduction policy followed in 1996/97 and in 1997/98 as a result of the fierce competition caused by removing protection policy for local products and dumping processes.

In addition, the collapse of the Soviet Union in the early 1990s facilitated importing complete light bulbs factories on a large scale from former Soviet Union countries. The phenomenon known as ‘downstairs factories’ started to emerge. These factories, managed by unknown producers, started to compete with AML by manufacturing and selling a diversity of cheap untested rival light bulbs. A cost accountant explained:

> The Soviet Union Collapse was a major source of the emergence of unknown small producers. AML was unable to compete with those producers because they have small factories and few staff and produce their products with low costs.

Due to all the above unfavorable competitive circumstances, AML has lost most of its market share. Because of the marketing problems of AML’s products, the company started producing and inventorying lamps in order to continue running and to find work for the company’s workers. However, the ERP system did not support the policy of production for inventory and would increase the visibility of this policy. The General Manager of Financial Accounts Department described this problem as follows:

> At the end of each year, we need to increase production either to reduce losses or to make use of available materials and workforce. Therefore, we produce to put our production in warehouses until we can find an opportunity for sale. But that was not available in the BAAN system. The BAAN system did not recognise the production for inventory purpose but only production without inventory. This was an obstacle to implementing the ERP system in the Production Planning Department.

So the ERP system was perceived as not supporting the only available policy for the company's survival, which is the production for inventory purpose. Furthermore, the ERP project increased the degree of financial crisis in AML. The cost of BAAN software was very high. So it was difficult for the company to recover the cost of this software, taking into account the previously mentioned circumstances[9]. However, AML was not been declared insolvent because there is no notion of bankruptcy in the public sector. To avoid the legal liability of canceling the ERP purchase contract and to regain control over this crisis situation, the company transferred the reason for ERP failure to the ERP vendor. The argument was that the ERP vendor failed to customize the software to satisfy the company’s needs. The General Manager for Planning Department explained this fact as follows:

> There was a fear of legal responsibility from control agencies such as the Central Agency for Accountability. I rejected responsibility for the ERP project. After three years, it was found that the sound solution was to stop the project…It was decided to stop the project at this point… We stopped and liquidated the guarantee letter. For three years the Central Agency for Accountability was asking us. We stopped it (the ERP project). It was a fear rather than anything else. The ERP vendor in Saudi Arabia has been charged all costs. It was a high cost.

[9] The company expanded the use of overdraft loans from local and international banks to finance its operations. In the planning budgets for 1998/99, local overdraft loans on 30/06/1997 were L.E. 27,793,000 (total assets were L.E. 249,327,000). These loans were expected to become L.E. 40,000,000 in 1998/99 (total assets were L.E. 269,027,000).

The competitive market forces interacted with the institutional environment to shape the failure of the ERP project. The introduction of the ERP was a coercive pressure exerted by the holding company. However, the holding company did not support AML financially to purchase and implement the ERP project. To fund the ERP project AML had to use its own resources. But the market pressures led to continuous losses. So AML could not afford the cost of the ERP software. The organizational members resisted the pressure of the holding company and unfavorable market conditions by citing the uniform accounting practices imposed by the regulatory authority for accounting, the Central Agency for Accountability. The inability of the ERP system to meet the requirements of these authorities was the explicit reason citied for the failure to embed ERP in the organisation. On this way, the externally imposed institutional requirements were used to resist both other institutional pressures and market and competitive pressures.

These findings support the view that under conditions of heightened coercive pressures, accounting systems can become decoupled from day-to-day operations (Modell, 2002). In addition the paper has demonstrated that in this highly regulated economic and political environment, market and competitive pressures also inhibited the adoption of new, supposedly efficient, accounting systems. These findings contradict those of Hoque and Hopper (1997), who found that when managers face both high market competition and strong political and industrial relations turbulence, the market competition tend to have positive effects on their use of accounting information and strong political and industrial relations turbulence tend to have negative effects.

5. Summary and Conclusions

The aim of this paper was to interpret and understand the failure to embed the technology of Enterprise Resource Planning (ERP) in an Egyptian state-owned company (AML). The paper draws on new institutional sociology and its extensions as the theoretical framework for interpreting this failure. It explains ERP customization failure in terms of the interplay between institutional pressures, institutionalised accounting practices, conflicting institutions, intra-organizational power relations, and market forces. The findings revealed that the inability of the ERP system to meet the core accounting requirements of the control authorities (the Central Agency for Accountability) was the explicit reason cited by organizational actors for the failure to embed ERP in the company. In addition, the externally imposed requirements for a Uniform Accounting System and planning budgets were used to resist both other institutional pressures (the Holding Company for Engineering Industries) and market and competitive pressures.

The findings of the case study presented in this paper contribute to the literature addressing ERP and accounting stability (Granlund, 2001, Granlund and Malmi, 2002; Spathis and Constantinides, 2002; Scapens and Jazayeri, 2003; Quattrone and Hopper, 2005). The accounting stability in this paper was an outcome and a reason for the ERP customization failure. The results of the case study are consistent with Granlund (2001) who described the introduction of an ERP system and the resistance that followed its implementation. He explained this resistance as adherence to earlier procedures, i.e. routines.

This research also supports the findings of Burns (2000) that the existing institutional context acted as a barrier against change. Similarly, Scapens and Jazayeri (2003) found that companies tended to replace existing accounting systems with other very similar systems. Also, in one of two organizations studied, Quattrone and Hopper (2005) found that the ERP reproduced existing structures and distance which permitted conventional accounting controls to be maintained. This paper extends this literature by studying the introduction of ERP in a company in Egypt (a less developed country), focusing on the problem of misfits, and identifying additional factors, specifically the impact of regulatory agencies and competitive market forces, that contribute to the failure of ERP.

Furthermore, the paper also makes a contribution to the accounting literature on developing and transitional economies by specifically confronting the question of whether uniform systems of accounting technology, such as ERP or activity-based costing, can be successfully introduced in countries with very different cultures and economic and political structures.

Finally, there are several implications for future accounting research. The institutional framework can be applied to other problems in management accounting, for example the introduction of new budgetary control systems. This framework is based on analysing the interplay between institutional pressures, institutionalised accounting practices, conflicting institutions, intra-organizational power relations, and market forces. The use of such extended institutional analysis contributes to recent calls to broaden NIS (Oliver, 1992; Modell, 2002; Dillard et al., 2004; Tsamenyi et al., 2006). The proposed framework is valuable in explaining the origins of the problem of misfits and how to solve or exaggerate this problem. This problem has been observed in both developed (Scapens et al., 1998: 48) and developing countries (Soh et al., 2000: 48).

Additional case studies of ERP and accounting in other developing and transitional economies, perhaps with very different cultures and political structures, would test the reliability of the conclusions of this study. Imported information (and accounting) systems face a lot of difficulties in developing countries (e.g. Mensah, 1981; Ndubizu, 1984; Hove, 1989; Wallace, 1993; Larson and Kenny, 1995; Longden et al., 2001). It is assumed that organisations in different countries introducing ERP systems face similar difficulties and challenges as a consequence of the ERP package-organization misalignments identified in this paper. However, new case studies should explore similar or other difficulties and challenges facing companies working in developing countries when trying to implement imported advanced information technologies such as ERP systems.

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