



Enterprise Resource Planning Business Case Considerations: A Review for Small and Medium-Sized Enterprises

Carrington M. Mukwasi and Lisa F Seymour

Information Systems Department, University of Cape Town, South Africa

Abstract

Previous studies have estimated the failure rate of Enterprise Resource Planning (ERP) implementations to be between 40 to 60%. This high failure rate also extends to ERP adoption by Small to Medium-sized Enterprises (SMEs) in developing countries. The failure rate is concerning since SMEs contribute to the development of many nations. It is known that the quality of a business case has a profound effect on the outcome of an investment. Hence, stronger business cases would increase the success of IT implementations. Yet, there is a lack of research or guidance for SME on preparing business cases. As a first step in addressing this concern, this study aimed to integrate various business case elements from the academic literature, distilling a set of considerations which SMEs adopting ERP systems can use to develop realistic business cases. The study uses a general inductive approach to analyse the academic literature as a secondary data source. The review looks at the broad area of IT business cases reviewing in more detail ERP business cases at one side of the spectrum and SME IT business cases on the other extreme. The final result is a description and a summary of categorised business case considerations for SMEs adopting an ERP system. The practical contribution of the paper is that SMEs adopting ERP systems may use the proposed framework to build realistic business cases, thereby increasing their chances of implementing ERP systems successfully. Secondly, the study lays a foundation for further research on business case considerations for SMEs adopting ERP systems and the subsequent confirmation of the proposed framework to support the development of better business cases.

Keywords: Business case, SME, ERP, benefits, risks.

Introduction

For many years, the success rate for Information Technology (IT) investments has been fixed at 30% and recent studies argue that possibly this figure is too optimistic (Ward et al, 2008). What is not certain is whether the low success rate is a result of overstating the benefits in a business case (BC) to secure funding for the IT investments or the benefits are not achievable. A business case (BC) is a business proposal developed to establish the costs and benefits of a project venture (Eckartz et al, 2009). The purpose of a business case is to justify the business needs (resources and capital investment

necessary) and to secure capital funding (Robertson, 2004). This is where all project facts are tied together to build a meaningful story. While business cases are designed to secure funding approval, they can be used for effective project management (Sammon and Adam, 2007); to allow the identification of priorities for the distribution of resources and funds; to form a benefits realisation plan; and finally to secure commitment of management (Ward et al, 2008).

Although the process of building a business case for IT investments has become a common practice in organisations (Eckartz et al, 2009; Ward et al, 2008), not many organizations are able to build a robust

convincing business case (Ward et al., 2008). Some organisations (65% of the studied sample) indicated dissatisfaction with their ability to identify potential benefits upfront and to quantify the value of the benefits (69% of the studied sample) when building a business case (Ward et al., 2008). In line with this finding and commenting on an Enterprise Resource Planning (ERP) implementation, James and Wolf (2000, p101) mentioned that:

“Many of the benefits that we are able to achieve today could not have been predicted at the time that we started work on ERP”.

ERP adoption is one type of IT investment. Despite the importance of business cases in IT investments, there are few research studies that focus on the ERP business case (Al-Twairish and Al-Mudimigh, 2011). Moreover, studies that focus on the domain of Small to Medium-sized Enterprises (SME) ERP business cases are even more scarce and hence, support the need for this research. The available research is generic and the concept is fragmented in different topics such as risk assessments, benefits realisation and project evaluation (Nafeeseh and Al-Mudimigh, 2011).

There is a compelling need to raise the success rates of ERP implementations (Nafeeseh and Al-Mudimigh, 2011) especially for SMEs. It is known that the nature and intensity of the business case has a profound effect on the outcome of an investment (Peppard et al., 2007). Hence, there is a need to research business case considerations for SMEs adopting ERP systems. In response to this need, this study looks at the concept of business cases from the perspective of making the considerations known upfront to SMEs adopting ERP systems.

ERP systems are integrated enterprise-wide software packages that use a modular make-up to support a variety of key functioning areas of the organisation (Shanks et al., 2003). It is important for researchers to understand how ERP project investments are approached and justified by organisations (Sammon and Adam, 2007).

Davenport (2000), argues that developing a business case is necessary in order to understand how maximum benefits can be realized. In addition, due to the rise of ERP expenses, the need to justify their investment through a business case as the initial step of implementation has become apparent (Al-Twairish and Al-Mudimigh, 2011). Thus, the purpose of this study is to integrate various BC elements from the academic literature to come up with a set of considerations which Small to Medium-sized Enterprises (SMEs) can use to develop a realistic BC for an ERP system adoption. Therefore, the fundamental question to be addressed by our broader study is: *What are the potential benefits, cost elements and risks incurred by SMEs adopting an ERP system?*

In order to achieve the study objective and answer the research question posed, this study reviews articles which cover the general topics in IT investments, IT business cases, ERP business cases, ERP risks and benefits and ERP SME business cases. The paper, finally, proposes a comprehensive business case considerations framework which could be used by Small to Medium-sized Enterprises (SMEs) adopting ERP systems. Admittedly, many of these considerations might not be valid for SMEs as they might have been identified for Large Enterprises (LEs). However, it is the intension of the authors to verify these considerations with SMEs as the next step in the research. Having reviewed the broad area of IT investments and business cases, the next section looks at the economic significance of SMEs in a developing country.

SME Sector and Development

The role of the small business sector is acknowledged throughout the world irrespective of the level of economic development (OCDE, 2002). SMEs have the potential to generate employment (Berry et al., 2002) and upgrade human capital. The contribution of SMEs towards economic growth and social development is acknowledged and is regarded as a catalyst for achieving economic growth (Abor and Quartey, 2010). For example, in South Africa, SMEs account for about 52% to 57% of the national Gross Domestic Product

(GDP) while contributing to about 61% of the total employment sector (Berry et al, 2002). Hence, they form the backbone of the South African economy. In Ghana, SMEs contribute to about 70% of the GDP and over 80% of the employment (Abor and Quartey, 2010). Even though SMEs significantly contribute to the development of the economy, previous studies have estimated the failure rate of ERP implementations to be between 40 to 60% (Liang et al, 2007).

Despite the important contribution made by SMEs, they face a number of challenges which hinder them from operating at full capacity. Among other challenges, they suffer from lack of finance, managerial expertise; access to international markets, equipment and technology problems (Aryeetey et al, 1994; Diala, 2009; Gockel and Akoena, 2002). Focusing on technology problems only, SMEs suffer from limited access to appropriate technologies and information (Aryteetey et al, 1994). Aligned to the technology problem comes the ERP implementation predicament. The high rate of failure of ERP adoption by SMEs and the resultant impact on SMEs and consequently national development is a cause for concern. While there has been much research on ERP systems in the context of LE, little effort has been exerted to study them in the context of SMEs (Albini et al, 2007). Due to the differences between SMEs and LEs, the results of LEs cannot be easily generalised to SMEs (Thong, 1999). The next section gives an analysis of the ERP SME market to give an insight into how SMEs are a potential market for the ERP product and subsequently, how ERP adoption may impact the development of many nations.

The ERP SME Market

According to an industry report by Hamerman (2008), the ERP market is growing at an annual rate of 6.9%. Many ERP vendors are banking their future growth on SMEs. SAP, with its goal of doubling its market limit, is one of the of the ERP vendors which considers SMEs as its potential source of growth (Adams et al, 2008). The ERP market for large co-operates has reached saturation point

(Deep et al, 2008) with a higher than 70% adoption rate. Hence, large ERP vendors are left with no option but to look to SMEs as the only possible target (Yen et al, 2002). The ERP vendors had to modify their standard products to offer low cost ERP systems with business capabilities fitting SMEs organisations and these include ACCPAC for Small to Medium-sized Enterprises, SAP Business One and Oracle's eBusiness (Wang et al, 2006). Such modifications to the standard ERP systems are likely to transform the software industry by enabling more SMEs to integrate their legacy systems especially considering the benefits which ERP systems offer.

Research Methodology

Data Collection

The research followed a qualitative research method. Secondary data in the form of academic literature and publications were the only sources of data used. The analysed articles were selected on the basis of covering the requirements of the study. The reviewed articles were limited to those which looked at the broad area of IT business cases drilling down one way to ERP business cases and then the other way to SME IT business cases and finally, to ERP SME business cases. In order to get the actual considerations, articles which covered SMEs and ERPs, ERP risks, benefits and costs were analysed.

Data Analysis

This investigation followed the general inductive approach (Thomas, 2006) to analyse academic literature and publications. The primary purpose of using an inductive approach was to allow the investigation findings to emerge from the recurrent, leading themes inherent in the data. The following procedures were used for inductive analysis of qualitative data.

1. Preparation of raw data files ("data cleaning") (Thomas, 2006). The researchers went through a number of articles and publications downloaded from scholarly databases selecting the appropriate literature. Articles which focused on IT

investments (not much), IT business cases, ERP system benefits, ERP risks, ERP costs evaluation and SMEs ERP systems were reviewed. Those articles that were found to be not relevant were subsequently excluded from the study.

2. Close reading of text (Thomas, 2006). The researchers read the selected articles several times to gain understanding of the business case phenomenon. 97 themes emerged from the analysed articles and publications.

3. Creation of categories (Thomas, 2006). The researchers identified and defined categories and themes for benefits, risks and cost elements based on the nature of the study and research objective. The categories for benefits, costs and risks were treated differently. Under ERP benefits, 5 categories which encapsulated 40 themes emerged from the coding process. Some of the themes overlapped and they were finally reduced to 31 themes tied to 5 categories (Organisational benefits, operational benefits, strategic benefits, IT infrastructure benefits and operational benefits). For cost elements, 5 categories which captured 26

themes emerged. Through the process of coding, 23 themes remained tied to 5 categories. Under risks, 6 categories which captured 46 themes emerged after the coding process.

We analysed the findings from the literature and propose a framework in the form of 3 Tables (Table 1 to Table 3). In the subsequent sections we identify potential ERP benefits, ERP cost elements and risks associated with ERP system adoption.

Potential ERP Benefits for SMEs

The literature abounds with potential benefits of implementing ERP systems. These are reviewed in this section and summarised in Table 1. The concepts marked with a star in the tables denote that the researchers do not share the same views on the benefits offered by ERP systems to SMEs. An ERP system can be acquired for technological, operational, strategic, managerial and organisational reasons (Shang and Seddon, 2000). Following this perspective, the identified benefits of ERP systems are categorised as such.

Table 1: Potential Benefit of ERP Adoption

Benefit	Reference	Benefit	Reference
Operational Benefits		Strategic Benefits	
Leads to cost reduction	Williams and Schubert, 2010; Love et al, 2005; Laukkanen et al, 2007; Shang and Seddon, 2000	Promotes business growth	Esteves, 2009; Love et al, 2005; Shang and Seddon, 2000
Increase productivity	Zach, 2010; Esteves, 2009; Shang and Seddon, 2000	Improvement in information quality	Zach, 2010; Love et al, 2005
Improves customer service	Esteves, 2009; Love et al, 2005; Williams and Schubert, 2010; Shang and Seddon, 2000	Promotes business alliance	Esteves, 2009; Shang and Seddon, 2000
Leads to cycle time reduction (Improved work flow)	Williams and Schubert, 2010; Shang and Seddon, 2000	Allows development of external linkages (with customers, suppliers and clients)	Esteves, 2009; Love et al, 2005; Shang and Seddon, 2000
Eliminates data redundancy	Love et al, 2005; Williams and Schubert, 2010		
Enhances information flow within the company	Williams and Schubert, 2010	Promotes business innovations,	Shang and Seddon, 2000
Increases data visibility within an organization	Love et al, 2005; Williams and Schubert, 2010	IT Infrastructure Benefits	
Allows central information management	Esteves, 2009; Love et al, 2005; Zach, 2010; Williams and Schubert, 2010	Leads to IT cost reduction	Esteves, 2009; Shang and Seddon, 2000
*Allows flexible system coordination	Love et al, 2005	Leads to improved IT infrastructure capacity	Esteves, 2009; Zach, 2010; Love et al, 2005; Shang and Seddon, 2000
Promotes e-commerce	Zach, 2010	Develops business flexibility for existing and upcoming changes	Esteves, 2009; Love et al, 2005; Shang and Seddon, 2000
Speeds up the availability of timely information (reporting)	Zach, 2010; Williams and Schubert, 2010;	Replacement of aging IT infrastructure or technology,	Esteves, 2009
Increases the amount of information and reliability	Zach, 2010	Increases standardisation in technologies used	Esteves, 2009
*Leads to competitive advantage	Love et al, 2005	Organisational Benefits	
Managerial Benefits		Promotes organizational changes	Esteves, 2009; Shang and Seddon, 2000
Supports easy decision making and planning process	Esteves, 2009; Love et al, 2005; Garg et al, 2006; Williams and Schubert, 2010; Shang and Seddon, 2000	Enhances business learning	Esteves, 2009; Shang and Seddon, 2000
Leads to better management of resources	Zach, 2010; Shang and Seddon, 2000	Enhances empowerment	Esteves, 2009; Shang and Seddon, 2000
Performance improvement	Zach, 2010; Williams and Schubert, 2010; Shang and Seddon, 2000	Allows the building of common visions	Esteves, 2009; Shang and Seddon, 2000

Operational Benefits

ERP systems promise to end fragmented systems and bring together operations (Esteves, 2009; Love et al., 2005; Williams and Schubert, 2010; Zach, 2010). They provide data visibility across the whole organisation; allow automation of business processes; standardisation of business processes; do away with idle work; improve information retrieval (reporting) and improve process monitoring (Love et al., 2005; Zach, 2010; Williams and Schubert, 2010). In addition, ERP systems improve the cost effectiveness of an organisation (Laukkanen et al., 2007; Love et al., 2005; Shang and Seddon, 2000; Williams and Schubert, 2010). The use of ERP systems allows for better performance management; refined internal procedures; and increased production efficiency (Federici, 2009). Also, the implementation of ERP systems improves the capacity of organisations to innovate. ERP systems enable adherence to common processes (Xia, 2010) among other advantages. They enhance information flow within the company; eliminate data redundancy (Love et al., 2005; Williams and Schubert, 2010); increase the amount of information and reliability (Seethamraju and Seethamraju, 2008); allow flexible system coordination; promote e-commerce; speed up the availability of timely information; and allow for enhanced primary users' knowledge and skills (Shang and Seddon, 2000). The adoption of an ERP system leads to better management of resources, competitive advantages and supports globalization (Shang and Seddon, 2000; Singla, 2008).

On the contrary, other researchers share a different view on the benefits offered by ERP systems to SMEs arguing that an in-house developed ERP system best suits SMEs. For example Olsen and Saetre (2007) argue that a commodity ERP system may impose a rigid structure to a SME. This may weaken the competitive advantage of SMEs as they will not be able to react promptly to customers and suppliers' immediate needs. Seethamraju and Seethamraju (2008) argue that ERP systems are tightly integrated and the more a system is tightly integrated, the more difficult it is to disconnect it to cater

for the future needs and growth. For SMEs to react to new demands, it will be uneconomical and difficult for them to change the ERP systems (Seethamraju and Seethamraju, 2008). The aspects which researchers share different views have been marked with a star in table 1.

Managerial Benefits

The managerial benefits of adopting an ERP system to an organization are that the ERP system supports an easy decision making and planning process; leads to the better management of resources; and leads to performance improvement (Zach, 2010; Williams and Schubert, 2010; Seethamraju and Seethamraju, 2008; Shang and Seddon, 2000).

Strategic Benefits

The adoption of an ERP system promotes business growth and alliances; allows for the development of external linkages (with customers, suppliers and clients); promotes business innovations through product differentiation (Esteves, 2009; Love et al., 2005; Shang and Seddon, 2000) and leads to improved information quality (Zach, 2010; Love et al., 2005).

IT Infrastructure Benefits

Also, if the implementation of an ERP system is done successfully, it leads to Information Technology (IT) cost reduction; improved IT infrastructure, develops business flexibility for existing and upcoming changes; allows replacement of aging IT infrastructure or technology; leads to improved IT infrastructure capacity; develops business flexibility for existing and upcoming changes and increases standardisation in technologies used (Esteves, 2009; Zach, 2010; Love et al., 2005; Shang and Seddon, 2000; Singla, 2008).

Organisational Benefits

The implementation of ERP systems promotes organizational changes; enhances business learning; empowers employees and they allow the building of common visions within an organization (Esteves,

2009; Shang and Seddon, 2000; Singla, 2000).

ERP Cost Elements and Project Complexity

This section reviews the cost elements and complexities associated with the adoption of

ERP systems. Considering that ERPs are expensive (Yang et al, 2010) and SMEs suffer from financial constraints, the operational and financial risks become more apparent than the advantages. The identified potential cost elements are listed in Table 2. The costs are divided into direct and indirect costs.

Table 2: Potential Cost Elements of ERP Adoption

Cost Item	Reference
Hardware	Love et al; 2005; Davenport, 2000; Mckie, 1998
Servers	Elragal and Haddara, 2010; Haddara, 2011
Clients	Elragal and Haddara, 2010; Haddara, 2011
Storage	Elragal and Haddara, 2010; Haddara, 2011
Networking	Love et al; 2005
Software	Love et al; 2005; Davenport, 2000; Mckie, 1998
Database Management System (DBMS)	Elragal and Haddara, 2010; Haddara, 2011
Operating System (OS)	Elragal and Haddara, 2010; Haddara, 2011
ERP License	Elragal and Haddara, 2010; Haddara, 2011
Annual maintenance of the ERP system	Elragal and Haddara, 2010; Haddara, 2011; Love et al; 2005
Upgrading	Elragal and Haddara, 2010; Haddara, 2011
HR Costs	Love et al; 2005
Hiring (IT and Business)	Elragal and Haddara, 2010; Haddara, 2011
Training (IT and Business)	Elragal and Haddara, 2010; Haddara, 2011; Davenport, 2000; Mckie, 1998
Project Management	Elragal and Haddara, 2010; Love et al; 2005
Business Management	Elragal and Haddara, 2010;
External Consulting	Elragal and Haddara, 2010; Love et al; 2005; Davenport, 2000; Mckie, 1998
Change Management (Planning and executing)	Elragal and Haddara, 2010; Love et al; 2005
Customization	Elragal and Haddara, 2010; Haddara, 2011
Cost of migrating data and integrating modules.	Elragal and Haddara, 2010; Haddara, 2011; Love et al; 2005; Davenport, 2000; Mckie, 1998
Vendor Project Management	Elragal and Haddara, 2010; Haddara, 2011
Services	
Hosting	Haddara, 2011
Virtual Private Network (VPN)	Elragal and Haddara, 2010
Business process re-engineering (Planning and executing)	Elragal and Haddara, 2010; Haddara, 2011; Love et al; 2005

Direct costs are those that are directly associated with the implementation of a system (Love et al, 2004). Direct costs for implementing an ERP system identified in the literature include license costs, update

costs, IT infrastructure, hardware costs and software costs (Haddara, 2011). Hardware costs can further be broken down into the costs of servers, clients, storage (Elragal and Haddara, 2010; Haddara, 2011) and

networking (Love et al; 2005). Software costs consist of the costs of Operating Systems (OS), ERP license and Database Management Systems (DBMS) (Elragal and Haddara, 2010; Haddara, 2011). The other cost element identified in the literature is the implementation cost. Implementation costs are the costs paid for the implementation. These include the initial cost of the, customization costs; costs of migrating data from the old system to the new ERP system; costs of integrating different modules; annual maintenance costs of the ERP system; and vendor project management (Elragal and Haddara, 2010; Haddara, 2011; Love et al, 2005; Davenport, 2000; Mckie, 1998).

Indirect costs are those which come about during the implementation process (Irani et al, 2002) and they comprise costs of training, reorganisation costs, consultation fees (Davenport, 2000), ongoing support and hidden implementation costs (Yang et al, 2010). Indirect costs are also human related and they also encompass Human Resources (HR) costs (Love et al, 2005), and Business Process Re-engineering (BPR) costs. HR costs can further be divided into costs of hiring (IT and Business expertise); training (IT and Business) (Elragal and Haddara, 2010; Haddara, 2011; Davenport, 2000; Mckie, 1998), project management (planning and executing) and business management (Elragal and Haddara, 2010). Also, when a company adopts an ERP system, it will incur costs for services. These include costs for services such as Virtual Private Network (VPN), internet hosting and business process re-engineering (planning and executing) (Haddara, 2011). When an ERP system is adopted, the initial implementation disturbs the normal operation of the business (Buonanno et al, 2005; Ojala et al, 2006) and this may lead to potential productivity losses. Occasionally, companies implement an ERP system and only use a subset of the whole package hence, not all the benefits of the system are achieved (Ojala et al, 2006). Other common problems mentioned in the literature include insufficient resources within organisations and projects falling behind schedule (Buonanno et al, 2005; Haddara, 2011). The process of estimating both

direct and indirect costs for an ERP adoption is not easy and is problematic (Haddara, 2011).

Risks of Implementing an ERP System

When building a business case, there is a need to consider both the best and worst cases. In most instances, a business case is built taking into account the best case only and not considering the possibility of risks occurring. However, business does not operate that way; the worst scenario can also happen hence both cases need to be considered (Melendez, 2008). In this section of the study, potential risks of adopting an ERP system are identified. Willcocks and Margetts (1994) defined a risk as a vulnerability to elements which prevents a project from achieving some or all of the expected benefits. This may be due to the incompatibilities between the chosen software and hardware; implementation costs which go beyond the budget; and technical systems which perform below standard. Wiegers (1998) defined a risk as an occurrence which threatens the success of a project and may cause a loss. The identified risks are classified into categories proposed by Sumner (2000). The identified categories are: organisational fit, management structure and strategy, skill mix, user involvement and training, software systems design and technology planning integration (Sumner, 2000). The reviewed potential risks for adopting an ERP system are summarised in Table 3.

Organisational Fit

Organisational risks originate from the environment in which the system is implemented (Poba-Nzaou et al, 2008). Olsen (2007) argues that the adoption of a standard ERP system may put into effect a rigid arrangement on a company and threatens the flexible nature of many SMEs. SMEs need to react fast to the transformations of the environment to conform to the requirements of customers and suppliers. In addition, the ERP system fails to meet the future needs of the organisation (Ojala et al, 2006). An ERP system rarely fits completely into the business processes of an SME. The SMEs

have to change their business processes to fit the ERP system or make the necessary changes to the ERP system to suit the organisation's business processes (Poban-Nzaou et al, 2008). Also, there is a risk of acquiring off-the-shelf software with overlapping system modules which tend to do similar tasks (Iskanius, 2009; Poban-Nzaou et al, 2008). Related to business process risks are the risks of failure to redesign business processes (Huang et al, 2004; Sumner, 2000); misalignment of business processes (Davenport, 1998; 2000); and failure to support cross-organization design (Huang et al, 2004). All needed information may not be entered in the system (Ojala et al, 2006) resulting in problems such as a lack of data integration (Sumner, 2000). A risk such as organisational misfit is related to cumbersome input functionality; inappropriate formats for data input; inappropriate entity relationships in the data models (Soh, 2000); and undisciplined

use of the ERP system at data entry point (Ojala et al, 2006) and these can result in a lack of integration. Alternatively, lack of integration may be due to failure of the ERP system to follow an enterprise-wide design which supports data integration (Sumner, 2000). Due to changes in the business environments, small companies are interested in ERP systems solutions. However, sourcing these ERP systems remains a complex issue fraught with problems. There is a risk of choosing an inappropriate ERP system or supplier (Ojala et al, 2006). In some instances, the ERP system choice may be sound in terms of current business need but there is a risk that the system may fail to support future business needs of the organisation (Ojala et al, 2006). Other organisational risks acknowledged in the literature are the lack of enough commitment from the vendor; and the ERP failing to support company business and insufficient resources to roll out the ERP system (Ojala et al, 2006).

Table 3: Potential Risks of ERP Adoption

Risk	References	Risk	References
User involvement and training		Skill mix	
Insufficient training of end-user	Sumner, 2000; Huang et al, 2004	Insufficient training and re-skilling	Sumner, 2000; Wright and Wright, 2001
Ineffective communications	Sumner, 2000; Huang et al, 2004	Failure to merge internal and external expertise effectively	Sumner, 2000; Huang et al, 2004
Lack of full-time commitment of customers to project management and project activities	Sumner, 2000	Lack of business analysts with business and technology knowledge	Sumner, 2000; Huang et al, 2004; Grabski, et al, 2001
Fail to get user support	Huang et al, 2004; Ojala et al, 2006	Lack of in-house skills/ Insufficient internal expertise	Grabski, et al, 2001
Lack of sensitivity to user resistance	Sumner, 2000; Ojala et al, 2006	Inadequate skills in signing contracts	Ojala et al, 2006
Failure to emphasize reporting	Sumner, 2000	Lack of change management skills and managership	Aloini et al, 2007, Grabski, et al, 2001; Al-Mudimigh, et al, 2001
Lack of personnel commitment	Ojala et al, 2006	Unable to recruit and retain qualified ERP experts	Sumner, 2000; Huang et al, 2004; Wright and Wright, 2001
Lack of discipline on working with the system (data entry)	Ojala et al, 2006	Management structure and strategy	
People not realising the benefits of the new system	Ojala et al, 2006	Lack of senior management support	Sumner, 2000; Huang et al, 2004; Ojala et al, 2006
Loss of skills (staff turnover)	Grabski, et al, 2001	Lack of proper management control structure/ Loss of project control	Grabski, et al, 2001; Poba-Nzaou et al, 2008; Sumner, 2000
User resistance	Grabski, et al, 2001	Lack of agreement on project goals	Huang et al, 2004
Organizational fit		Lack of effective project management methodology	Huang et al, 2004
Unable to redesign business processes	Sumner, 2000; Huang et al, 2004	Ineffective Communication	Sumner, 2000
Misalignment of business processes	Poba-Nzaou et al, 2008; Davenport, 1998; 2000	Choosing poor project manager or project group	Ojala et al, 2006
Failure to follow an enterprise-wide design, which supports data integration	Sumner, 2000	Lack of commitment	Ojala et al, 2006
Special needs of a company not defined	Ojala et al, 2006	Software systems design	
Failure to support cross-organization design	Huang et al, 2004	Failure to adhere to standardized specifications which the software supports	Wright and Wright, 2001; Sumner, 2000
Extent of change	Huang et al, 2004	Poor data migration (conversion)	Ojala et al, 2006
System does not support company business	Ojala et al, 2006	Unclear/Misunderstand changing requirements	Huang et al, 2004
Selecting wrong ERP supplier	Ojala et al, 2006	Only part of the system used and benefits not realized	Ojala et al, 2006
The new ERP system may bring a rigid environment to an organization	Olsen, 2007	Technology planning/integration	
Insufficient resources	Huang et al, 2004	Inability to avoid technological bottlenecks	Sumner, 2000
System not meeting future needs of the company	Ojala et al, 2006	Attempting to build bridges to legacy applications	Huang et al, 2004; Sumner, 2000; Wright and Wright, 2001
System not flexible enough under processes' exceptional circumstances	Ojala et al, 2006	Capability of current enterprise technical infrastructure	Huang et al, 2004
Supplier is not committed enough to system implementation	Ojala et al, 2006	Stability of current technology	Huang et al, 2004

Management Structure and Strategy

With ERP projects, loss of control during ERP adoption can impact negatively on the performance of the organisation. The lack of control over project teams may occur as a result of decentralised decision making processes which will be followed by ineffective endorsement of decisions (Grabski, et al, 2001). It is common practice to form a project team and assign decision rights to specific individuals with particular knowledge and skills. However, a lack of proper monitoring and enough controls over this increased responsibility to project managers and the project team in organisation processes may impose a potential business risk (Grabski, et al, 2001; Poba-Nzaou et al, 2008). Lack of competence in negotiating a contract to acquire an ERP system (Ojala et al, 2006) and misunderstandings between the buyer and the supplier (Iskanius, 2009) are some of the problems organisations acquiring ERP systems face. Other management related risks include the lack of support and commitment from top management (Aloini et al, 2007; Huang et al, 2004; Ojala et al, 2006; Sumner, 2000), the lack of a champion/poor leadership; ineffective communication during the ERP implementation (Ojala et al, 2006; Sumner, 2000) and the lack of effective project management methodology (Huang et al, 2004).

User Involvement and Training

About half of the ERP projects do not achieve the desired benefits because managers underestimate the efforts involved in change management (Al-Mudimigh, et al, 2001; Aloini et al, 2007). The new changes which come with an ERP system can bring negative effects such as resistance (Grabski et al, 2001). Other risks related to users identified in the literature are ineffective communication; insufficient training; users unable to realise the benefits of the new ERP system; a lack of personnel commitment; a lack of sensitivity to user resistance; failure to emphasize reporting to users (Huang et al, 2004; Ojala et al, 2006; Sumner, 2000) and loss of skills (staff turnover) (Grabski et al, 2001)

Skill Mix

The implementation of an ERP requires special skills during and after implementation. A project team with expertise including change management, business process reengineering (BPR), risk management and technical skills are often required (Grabski et al, 2001); insufficient training and re-skilling; a lack of internal expertise; a lack of business analysts with technology knowledge; being unable to recruit and retain qualified ERP experts; and failure to mix internal and external expertise effectively may hinder the implementation (Grabski et al, 2001; Huang et al, 2004; Iskanius, 2009; Sumner, 2000 ; Wright and Wright, 2001).

Software Systems Design

Risks in this category include: failure to adhere to standardized specifications which the software supports; lack of integration; poor data migration (conversion); the system creates data security risks; lack of user controls in the ERP system (Ojala et al, 2006; Sumner, 2000); poor data migration (Ojala et al, 2006; Sumner, 2000); only using part of the system and hence not realising benefits (Ojala et al, 2006); and unclear or misunderstanding the changing requirements (Huang et al, 2004).

Limitations of the Findings

This study was limited to examining academic literature as the only sources of data. This has limited the available categories and concepts. However, Strauss and Corbin (1998) argue that literature can be a good source of secondary data and published materials represent reality. The other limitation is that the study reviewed limited articles which focused on business cases specifically. The available articles looked at business cases but not as their main focus. To some extent our business case considerations findings can somehow be viewed as abstract and therefore, can be applied to any organisation implementing an ERP system. However, the focus of this study was on developing a framework for SMEs. The identified risks may occur to any company irrespective of size or business.

However, due to the nature of SMEs, they are prone to these risks since they lack access to information.

Conclusion

This study has integrated different business case considerations which SMEs can use to develop realistic business cases. The potential benefits, risks and cost elements associated with the adoption of ERP systems have been made available to SMEs upfront and are summarised in the framework (Tables 1 to 3). Our findings address the concern of companies that BCs do not really assist them to recognize and manage different benefits during the ERP adoption process (Shanks et al., 2003). The findings may provide a solution to pre-implementation problems associated with building a realistic business case and may assist SME investors with decision making before investing in ERP systems. The information which SMEs get from ERP vendors may not always be explicit in bringing out the worst cases of ERP system adoption hence the proposed framework will make them aware of the pains they will go through in the process of adopting an ERP system. Presumably, they will make a more informed and robust decision.

There is a need for research to assist SMEs overcome some of the problems which are hindering their development. This could potentially result in economic growth especially in developing countries where SMEs form the backbone of the economy. Research on how SMEs develop their business cases and what are their considerations is in progress. The main focus of this research is to assist SMEs increase the value of business delivered from ERP investments. The SME ERP market is relatively new and the implementation of ERP systems by SMEs may pose new challenges and risks which need to be handled differently from other IT investments. Interviews are being conducted to find out what were the initial predicted benefits, risks and costs and how much of these were actually realised. The risks, benefits and costs which were not initially predicted but were finally realised, will also be investigated. The results will be

cross validated with the findings of the literature in order to verify the accuracy of the proposed framework. The benefits and risks which are unique to SMEs will be indicated. The results will be a modified business case considerations framework which includes the findings from the industry. Although empirical work to confirm these business case considerations in an SME context is necessary, a useful starting point on understanding the concept of business case considerations has been made in this paper.

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