ERP Post Implementation Risk in Manufacturing Sector
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ABSTRACT
ERP has probably been "the most rapidly growing system area in operations today and thousands of companies [of any size] have implemented or are in the process of implementing an ERP system". This paper clearly shows that the organizations should not neglect the post implementation risk after go-live.

Keywords---- ERP system, Demographics, Knowledge management

I. INTRODUCTION
Enterprise resource planning (ERP) systems are "configurable information system packages that integrate information and information-based processes within and across functional areas in an organization"(Keng, 2006). As one of the most crucial tools to sustain business competitiveness, ERP has probably been "the most rapidly growing system area in operations today and thousands of companies [of any size] have implemented or are in the process of implementing an ERP system". In today's highly competitive manufacturing environment, firms are implementing enterprise resource planning systems to address the problem of fragmentation of information or "islands of information" in business organizations. ERP systems promise to computerize an entire business with a suite of software modules covering activities in all areas of the business. Furthermore, ERP is now being promoted as a critical link for integration between all functional areas within a firm’s supply chain, and has shown to be a significant contributor to a corporation’s success, if implemented correctly.

However, the implementation of ERP is never a straightforward task. As more and more companies’ progress from implementation to exploitation of ERPs, practitioners and information systems (ISs) researchers increasingly recognize that, the "go-live" point of the system is actually not the end of the ERP journey. Very often, the system exploitation stage is where the real challenges will begin and more critical risks may occur.

The purpose of the present study is to identify, assess and explore potential risks that manufacturing companies may encounter when using, maintaining and enhancing their enterprise resource planning (ERP) systems in the post-implementation phase.

II. PROBLEM IDENTIFICATION
ERP systems have significant benefits to offer an enterprise in terms of improving operational efficiency. Despite the benefits, ERP systems have been criticized as being too complex. Users are no longer willing to spend time digging through reports or struggling with hard-to-use solutions. Today’s organizations realize that ERP solutions are critical to helping them serve customers throughout their lifecycle and providing the accurate, up-to-date information they need, to make better decisions more quickly and effectively.

III. RESEARCH GAP
The ontology, proposed by Peng and Nunes (2009a, b) focuses specifically on aspects of ERP usage, exploration, exploitation and enhancement, rather than on the traditional aspects of implementation and installation. The comprehensive risk ontology contains 40 potential ERP risks that user companies may encounter during ERP exploitation.

IV. RESEARCH OBJECTIVES

- To identify the most prevailing category of risk in the manufacturing sector
- To identify the relationship between year of implementation of ERP and the risks
To identify the relationship between the occurrence of risks and demographic factors.

V. SCOPE OF THE STUDY

The present study is conducted in eight different manufacturing firms and the same came be implemented in service sector.

VI. LITERATURE REVIEW

The identified ERP risk ontology in general and the four critical risks in particular (Kuifan Pan, Miguel Baptista Nunes and Guo Chao Peng Information School, University of Sheffield, Sheffield, UK, 2010) should be used immediately by managers and IT experts of the company, as a checklist for managing and preventing potential ERP post-implementation risks and associated causes and consequences. Training and education cannot be shortened even after the “go live” date of an ERP implementation. (Joseph R. Muscatello, DBA, Kent State University, USA Diane H. Parente, PhD, Penn State Erie, USA, Idea Group Publishing, 2006). For practitioners, the established risk ontology can be used as a systematic tool and checklist for risk identification, assessment and management, as well as for strategic planning and decision-making. The risk relationships highlighted in the ontology can also help managers to identify and explore possible triggers of risks. (Peng, G.C., Nunes, M. (2009), 109 (7), pp. 926-942). The root causes affecting the effectiveness of post implementation ERP systems are ‘CEO commitment and involvement’, ‘professional management knowledge of MIS leaders’, and ‘top and middle management commitment and involvement. (Chian-Son Yu, Department of Information Management and center for ERP research, Shih Chien University, Taipei, Taiwan, 2005)

Post-implementation analyses revealed that while an implementation can be deemed a success immediately following go-live dates, long-term planning is essential to maintain change management continuity for administrators and employees (Lee E. Allen University of Memphis, Memphis, Tennessee, USA Business Process Management Journal Vol. 14 No. 3, 2008). ERP systems are mainly designed to integrate and automate transaction processing activities of companies (Chou et al., 2005). As a consequence, operational staffs in the shop floor are the main users of ERP, and they do so extensively in their daily work (Scapens and Jazayeri, 2003). Decision being made by top managers without the involvement of users and IT managers is a risk that may occur in IT projects (Lientz and Larssen, 2006:116). Very often an integrated solution from one single ERP vendor may not satisfy all business needs of the company. Therefore, it is not uncommon for modern companies to procure suitable software modules from different system vendors to form their own unique ERP system (Currie, 2003).

VII. RESEARCH METHODOLOGY

In the present study, responses were collected from various users of ERP packages who are working for different manufacturing sectors. Questionnaire survey method was selected following the previous study to evaluate various risk categories of the selected industries that have been found through literature review. Cross sectional study has been carried out wherein the questionnaires were sent among the respondents at one point in time. The present study is descriptive in nature because the focus of research is not on why a particular risk has occurred in the selected industry.

VIII. SAMPLING METHOD

Convenient sampling method is used in the selection of the samples as the questionnaire was sent randomly to the target population. The respondents were the middle level managers who are ERP users (General manager, deputy manager, Analyst, IT head, etc).

IX. FINDINGS

- Technical risk is the most prevailing category of risk among the four categories and operational risk is the least in the manufacturing sector.
- Organisation wide risk is the second most prevailing category of risk in the selected
industries. Organisation wide risk can be attributed to the following:

- Insufficient training received by the ERP users
- Important decision related to IT taken by the top management without consulting other employees
- Certain users feel uncomfortable to use the ERP in their daily activities
- Lack of proper knowledge management practices to capture the ERP related know how and other such crucial information
- Insufficient resources and fund are assigned to the ERP post implementation phase.

- Operational risk is the least among all the risks in the selected companies because information such as inventory records, supplier records, customer files, bill of materials stored in the ERP system are accurate and users do not find any error in such records.
- Industries with year of implementation of ERP 5 to 10 years have shown the highest level of risk and firms having greater than ten years of ERP implementation have the lowest level of risk.
- In the operational risks, risks associated with finance and accounting is the most prevailing type in the selected manufacturing firms.
- In the Organisation wide risks, top management risk is the most prevailing type in the selected manufacturing firms.
- In the analytical risks, risks associated with sales and marketing is the most prevailing type in the selected manufacturing firms.
- In the technical risks, risks associated with system failure due to hardware or software crash is the most prevailing type in the selected manufacturing firms.
- Both male and female have common perception about the level of occurrence of all the four risk types.
- People with different age groups have common perception about the occurrence of ERP post implementation risk.
- People with different experiences have different perceptions about the occurrence of risk. People having 1 to 5 years of experience have highest value for the ERP post implementation risk.
- People with less than one year of experience and between the age group 30 and 40 have responded with the lowest value for all the risks categories. Hence they perceive to encounter lowest risk in ERP post implementation stage.

- Majority of the users feel that the ERP related know-how and expertise accumulated over time are lost due to lack of systematic knowledge management practice to capture and hence it becomes a major problem for the organisation when people leave the company.
- Loss of IT experts might be caused by current high market demand of skilled labor in India; loss of ERP know-how seemed to be a result of inappropriate knowledge management practice and knowledge sharing behaviour, etc.

X. CONCLUSION

This paper aimed to fill the current research gap of ERP post-implementation by identifying the most prevailing category of risk in the manufacturing sector. Questionnaire was used to collect the responses from the users of the selected industries. The study has led to several important conclusions. Specifically, the results confirmed that successful implementation of the system is not the end of the ERP journey. In truth, a wide range of risks may occur in diverse business and system-related areas during ERP post-adoption. More importantly, the findings also show that an ERP risk may often be because of technical issues. As a consequence, in order to ensure long-term ERP success, IS managers must become aware of these risks and take proper risk mitigation actions as early as possible.

This study clearly shows that the organizations should not neglect the post implementation risk after go-live because it impacts the long term success of the ERP implementation

REFERENCE