

## Chapter 31

# Enhancing RCIES Model: A Case Study in the Sudanese Electricity Transmission Company

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### ABSTRACT

*Risk identification and prioritization is very essential activity in any successful strategic risk management process. Developing a plan for dealing with such problems reduces the impact of unexpected risks and failures while prioritizing risks draws attention, efforts and resources to the risks with great impact on projects success. The aim of this paper, is to identify the critical risk factors in an ERP project through a case study of a successful implementation of an ERP system in a Sudanese organization and to understand how the organization implemented the appropriate controls to minimize its business risks impact. To achieve this objective, a number of key articles were reviewed and analyzed to understand the different critical risk factors influence ERP implementation. New risk factors and controls influence ERP implementation have been identified. A new model of ERP implementation critical risk factors was developed. Furthermore, the risk factors were classified into categories, probability, impact and proximity, then using a prioritizing tool, the results of this study contributes to risks identification and prioritization by pointing to the less priority and the most critical risk factors.*

### INTRODUCTION

Enterprise Resource Planning (ERP) packages have become one of today's most common and powerful IT solutions that integrate a wide range of business functions and processes, link most of the functional areas within an organization and replace its legacy information systems. Enterprise resource planning systems are comprehensive multi module enterprise packages of computer applications and solutions that support many business processes in an organization, they consist of modules support thousands of

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business activities, systems functionalities include a number of modules such as: accounting, human resources, customer order processing, purchasing, finance, inventory management, manufacturing/operations, distribution, planning, customer service, supply chain management, customer relationship management, E-Business etc. Each module can work alone or several modules can be combined together to become an integrated system. The system works under different platforms such as UNIX, MS Windows NT, Windows 2000, IBM AIX, and HP-UX systems. It is not limited to specific sector; it can be used in multiple industries. ERP software is unlike traditional software that must be programmed in traditional ways (Davenport, 1998). ERP systems are complex software packages (Parr, Shanks, 2000); in addition they provide a high level of data integrity and security comparing with other software. By enabling data grouping into a single database, data sharing between different departments, users can access updated information and accurate reports at anytime from anywhere which reduces the time to access and communicate with its different modules plus system users can perform their different daily tasks faster and easily.

Customizing the software is the process of adding nonstandard features to the system (Davenport, 2000) while configuration is tailoring the software using parameter settings provided by the vendor. Organizations can change their business processes to fit the software. However, the risk in this case is that changing the organization processes is hard and system processes may not suits organization needs.

Although there are many successful ERP implementation cases, about 30% of ERP implementations have been successful (according to the “The Quarter Research” Report and statistics 2004), also there have been multiple cases of ERP system implementation failures have been reported (Wong, B. & Tein, D., 2004). As ERP is more risky and expensive than any other software package, this makes their implementation much more complex, implementation cost very high, time consuming and implementation phase is unlikely to be successfully meets its high expectations. However, a successful ERP implementation must always be in time and within its specified budget.

Companies implementing ERP usually face difficulties with changes in business processes and organizational structure (Davenport, 2000) they are not aware of the implication of their day to day business and operations, not realize the full benefits from the ERP system, in addition, some departments may not be ready for integration G. A. Langenwalter (2000). Many research studies and authors have reported that among the main reasons leading to ERP projects failure are: the lack of strong and committed leadership, a clear implementation plan along with a strategy to implement it, problems in software customization and testing, lack of technically skilled and well trained staff and, finally, a lack of financial planning, budgeting and justification Sarker (2003).

The main goal of the paper is, to identify the critical risk factors in ERP projects implementation and the appropriate controls used to mitigate those risk impact.

The paper is organized as follows: the next section presents the reviewed risk management literature in ERP systems and a comparison of the existing risk identification methods followed by defining the research approach used to achieve study objectives and illustrating the proposed model in details. Next, the case study is included and finally, we concluded the study results and suggestion for future work.

## **RISK MANAGEMENT**

Unrecognized or/and ignored risks are the cause of many failure cases of software projects McManus (2003) hence, focusing on risks is very essential. ERP literature addressed many ERP projects failure

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