Chapter 26
Design, Development, and Implementation of an ERP Security Course

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ABSTRACT

Contemporary organizations rely on ERP systems to implement their business processes. Moreover, there is a high demand from companies for ERP systems because it is an effective management system that optimizes productivity. It is important for next generation managers to understand what ERP systems are as well as the impacts for an organisation to implement an ERP system. This reliance on ERP indicates the importance of studying security issues and requirements in an ERP Environment. Information Security is both a theoretical and practical discipline and can vary from a technical aspect to the management aspect. Educational institutions must educate students to concepts, strategies, and tools that promote security of ERP systems so that after studying the certain course students understand technical, technological, management, and human security problems, identify and respond to information security challenges in ERP systems, evaluate and implement security solutions and tools to protect ERP systems against risks, and finally design information security policies, and evaluate and apply organizational security objectives. This chapter examines how universities and educational institutions are responding to current educational needs by integrating an enterprise resource planning (ERP) security course to current curriculum programs and propose a course framework.

INTRODUCTION

Companies all over the world use ERP (the abbreviation of Enterprise Resource Planning) systems to effectively manage business processes across organizational departments and information among global subsidiaries. ERP is a software-driven business management system that integrates all facets of the business (including planning, manufacturing, sales, finance, accounting, human resources and marketing) and is been used to support the core organisational activities of manage operational business information for corporate resource planning (Chou *et al.*, 2005) (Romsdal *et al.*, 2007). It can be seen more as a method than single software. ERP becomes the core application software in the information management of enterprises (Deng *et al.*, 2010).

According to Marnewick and Labuschagne, (2005) definition were ERP is "A packaged business software system that lets an organisation automate and integrate the majority of its business processes, share common data and practices across the enterprise and produce and access information in a real-time environment" emerge that ERP system is something more than simple software and illustrates the four conceptual components that make up an ERP system (alike as the 4ps in marketing model that stand for people, product, promotion and price): people, product, process and performance. This reliance on enterprise resource planning (ERP) systems to implement business processes and integrate financial data across their value chains increases and evidence the importance of security in ERP system (Hendrawirawan et al., 2007).

ERP systems vary from other IT systems, due to the fact that ERP implementation includes technological, operational, managerial, strategic, and organizational related components (Ifinedo, 2007). Gupta and Kohli, (2006) report, that the most important reasons, for companies to implement ERP systems, are for the improvement of the level of systems integration and for the improvement and standardization of processes. Implementation is successful only if it planed and executed carefully because ERP systems are huge and complex systems (Huang et al., 2004). Dimensions of ERP systems success are similar with the six categories that used to indicate Information systems (IS) success (Kerimoglu et al., 2008): System quality, information quality, use, user satisfaction, individual impact and organizational impact. Different strategies for implementing ERP successfully are (Aladwani, 2001):

- **Organizational strategies:** Include change in strategy development and deployment, management techniques, organizational structure and resources, managerial style and ideology, communication and coordination, and IS function characteristics
- **Technical strategies:** Include technical aspects of ERP installation, ERP complexity, adequacy of in-house technical expertise, and time and cost of implementation
- **People strategies:** Include staff and management attitudes, involvement and training

Successful implementation of ERP is considered to be depending on three distinct groups (Wu and Wang, 2006):

1. ERP package developers
2. Developers using an ERP system
3. ERP system users.

Young (2007) states that ERP implementation project is the single biggest project that an organisation has ever launched but from the moment the company successfully implements the ERP, the attention is headed forward to the most efficient use of the system. Still, the phase of ERP implementation is a complex task and a large number of adopters have encountered problems, in a form of failure, in different phases either caused by cancellations or cost/time overruns (Ngai, et al.,

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