

# Chapter 4

## An Investigation of Enterprise Resource Planning Implementation in a Small Firm: A Study of Problems Encountered and Successes Achieved

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### ABSTRACT

*Enterprise Resource Planning (ERP) systems have been recognized as complex and costly, which limited their implementation in large organizations. However, an increasing number of small organizations have recently gained interest in this system. This paper investigates the implementation process of ERP in a small firm. The investigation focused on two perspectives of ERP implementation: successes achieved and problems encountered. Despite many problems encountered in the firm, the ERP system still exists. This gives evidence that small organizations are more flexible and motivated to adapt to change and implement an ERP system. Most problems were encountered at early stages of implementation, which can be minimized if deliberate decision making of ERP implementation and proper selection processes were in place. Further, ERP is a good solution for small organizations if they are able to build a relevant in-house system.*

### INTRODUCTION

“Today’s dynamic business environment is continuously changing because of globalization, regulatory changes, increasing intensity of competition, increasingly demanding customers,

new information technology and mergers and acquisitions” (Hung et al., 2006). Companies that can compete and survive in such dynamism have a drive to be better by making processes more efficient, improving the quality of their products and maximizing the profitability (Themistocleous & Corbitt, 2006; Olsen & Saetre, 2007a). Signifi-

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cant improvements can be achieved only when organisations integrate their processes at both enterprise and cross-enterprise levels (Davenport, 1998; Themistocleous & Corbitt, 2006). The advanced development of information technology has enabled organizations to develop business applications such as ERP to facilitate integration of different internal and external business processes (Bendoly & Schoenherr, 2005; Beheshti, 2006; Soja, 2006). Currently, ERP systems can be considered as the most widespread and advanced group of integrated systems (Al-Mashari, 2003; Bendoly et al., 2006; Beheshti, 2006; Soja, 2006; Law & Ngai, 2007). Corporate expenditures for ERP, excluding implementation costs, were \$30 billion in 2004 and that have been growing at about 150 percent in recent years (King, 2005).

There are many definitions for an ERP in the literature. For example Somers and Nelson (2003) define ERP systems as software tools to manage enterprise by dealing with the supply chain, receiving, inventory management, customer order management, production planning, shipping, accounting, human resource management and other businesses functions. As this definition is limited to the functionality description and does not refer to the integration feature of ERP systems Beheshti (2006) has defined ERP as “a set of business applications or modules, which links various business units of an organization such as financial, accounting, manufacturing, and human resources into a tightly integrated single system with a common platform for flow of information across the entire business”. Some other definitions attempted to expand the concept of business integration. For instance, to express the important connection with external processes, Verville et al. (2005) define ERP as “a suite of application modules that can link back-office operations to front-office operations as well as internal and external supplies chains”. A more sophisticated definition is by Slooten and Yap (1999). They define ERP as “an integrated, multi-dimensional system for all

functions, based on a business model for planning, control, and global (resource) optimization of the entire supply chain, by using state-of-the-art IS/IT technology that supplies value added services to all internal and external parties”.

Despite various definitions of ERP there are two common characteristics in an ERP. It is an integrated enterprise system and it is to enable the integration between different business processes no matter what type of operations they belong to; back-office, front-office, internal or external activities. The system can support the management and get direct control of the entire enterprise through a pervasive integrated information system (Soja, 2006; Berretta, 2002). Further, the implementation design of an ERP can take one of three forms (Summer, 2005, pp. 8-9):

- **“Vanilla” ERP implementation:** The complete implementation of a vendor ERP system, costing an average of about \$150 million over 5 years and offering the benefits of total integration and re-engineering of business process, based upon vendor’s “best practices”.
- **In-house ERP system:** The most time-consuming and expensive alternative, building a software system based upon its own unique processes and its software will not be shared with competitors. The average cost is about \$240 million over 7-10 years.
- **Partial ERP implementation:** Maintaining current legacy systems and implementing only some functionality of ERP modules. The average cost is about \$108 million over 2-3 years.

The complexity and cost of ERP implementation have attracted many scholars to undertake research to examine ERP implementation from different perspectives such as its success/failure (Poston & Grabski, 2001; Hunton et al., 2003;

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