Chapter 6
Contemporary Issues in Enterprise Information Systems:
A Critical Review of CSFs in ERP Implementations

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ABSTRACT

The widespread usage of enterprise information systems (EIS) by various companies operating in different countries has led to digitalization of inter and intra-organizational business functions like customer relationship management (CRM) and supply chain management (SCM). This study considers current issues in EIS implementations in the context of enterprise resource planning (ERP) systems in different countries, industries and companies. Due to the increasing demands and varying needs of different parties, ERP implementations are getting more complex, which means considering a greater number and variety of critical success factors (CSFs). This study therefore reviews the current literature related to CSFs and their classifications before introducing a new conceptual model of 40 CSFs for successful EIS implementations.

INTRODUCTION

Over the last two decades, researchers and practitioners have conducted a number of studies of enterprise information systems (EIS). Due to the need to automate systems for processing vast amounts of data and also resolve timing and planning problems, early EISs were accounting information systems (Deschmukh, 2006), material requirements planning (MRP) systems and manufacturing resource planning (MRP II) systems (Umble et al., 2003; Al-Mashari et al., 2003). Enterprise Resource Planning (ERP)

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systems were developed as a more advanced business solution (Davenport, 2000) to integrate business functions (Klaus et al., 2000) and to promote inter-organizational coordination Grabski et al., 2011).

ERP systems necessitate more collaboration between different enterprises and across different departments within the same enterprise, which has stimulated more and deeper research for understanding inter-organizational relations (e.g. Alimazighi and Bouhmadi, 2011; Daneva and Wieringa, 2006; Eckartz et al., 2010; Pigni et al., 2005). A majority of EIS studies concern ERP, specifically exploring critical success factors (CSFs). These play an important role in EIS implementations by reducing costs and set up times as well as increasing user satisfaction. This study discusses current issues and recently defined CSFs in ERP implementations to highlight the challenges facing EISs as they move into second-wave value propositions. The first section discusses contemporary issues in EIS while the following sections describe this study's methodology, results and a proposed conceptual model for CSFs in ERP implementations. The final section evaluates the study's contribution and suggests future research.

CONTEMPORARY ISSUES IN ENTERPRISE INFORMATION SYSTEMS

Having moved beyond initial ERP implementation, companies are now looking for ways to optimize their investment by extending the functionality of their ERP systems. These second wave implementations include data warehousing, customer relationship management (CRM), supplier relationship management (SRM) or advanced planning and optimization (Hawking et al. 2004). The newer implementations of ERP enable companies to move towards extended EISs that include supply chain management and provide extra tools such as real-time transaction tracking and internal process integration (Kelle and Akbulut, 2005). Because digitalization of business functions requires re-evaluation of the traditional vertically integrated business model, ERP software vendors have started to provide the users with more advanced decision support tools, known as new ERP software extensions. Some of the most popular versions of these new tools are: Advanced Planning and Scheduling (APS), Demand Planning and Revenue Management (DPRM), Customer Relationship Management (CRM), Sales Force Automation (SFA), and Supply Chain Management (SCM) (Kelle and Akbulut, 2005).

ERP systems have significantly changed the way operations take place within a company and business practices between different partners, leading to digitalization and automation of business functions. For instance, digital accounting systems in ERP speed up recording, classifying, summarizing and reporting desired accounting information, provide financial data and reports in electronic format across all accounting cycles, and promote communication of related data to interested partners. Digital accounting is based on a coherent information system ensured by ERP-type systems and the use of internet for transmitting information generated by the system both within and outside the company. Figure 1 summarizes these changes, including the operations and technologies or systems involved in acquisition, sales, payment and receipt processes, and also how they interact with the ERP system in digital accounting (Genete and Tugui, 2008).

The last decade has seen an increase in studies in the CSFs research stream, covering different countries, industries and companies. Various developing countries have been studied, including Taiwan (Liu, 2011), India (Garg and Agarwal, 2014), Iran (Amid et al., 2012), China (Srivastava et al., 2009; Zhang et al., 2005; Zhu et al., 2010), Poland (Ziemba & Oblak, 2013) and Saudi Arabia (Aldayel et al., 2011; Ullah et al. 2013). Whereas early studies were conducted in large manufacturing companies, recent studies explore the CSFs for ERP implementations in a range of industries and sectors, like oil and gas