Understanding the Transformation Process Success Factors in Enterprise System Implementations: An IT Professional’s Perspective

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ABSTRACT

Enterprise system (ES) implementation has been a major investment by many organizations in the last two decades and realization of benefits from this investment is a critical issue. The benefit realization process involves transformation of ES data into practice knowledge by deployment of operational and managerial processes within the technology infrastructure. This study investigates the factors that influence the process for transforming ES data into successful outcomes from an Information Technology (IT) professionals’ perspective in three New Zealand hi-tech manufacturing companies. Findings highlight that ES data transformation is a holistic process that not only includes the essential data and technology factors, but also includes organizational strategy deployment, business process management, and development of skills and proficiency levels of IT professionals. This study contributes to practice discipline as insights are shared from IT professionals who routinely use the organization’s ES for benefit realization.

Keywords: Business Benefits, Critical Success Factor (CSF), Enterprise Resource Planning (ERP), Enterprise System (ES), Information Technology (IT)

1. INTRODUCTION

Enterprise systems (ESs), also known as enterprise resource planning systems, are integrated information systems packaged to address the functional requirements of organizations and enhance their flexibility and efficiency. These systems integrate data flows from various disparate sources such as customers, supply chain partners, human resources, and financial accounting to make up the value chain of the enterprise. ESs provide information based on the current state of operations allowing managers to make vital decisions (Davenport, Harris, &
Cantrell, 2004). Many organizations continue to replace their in-house legacy systems with ESs, which are supplied from key firms such as Microsoft, SAP and Oracle. The software revenue market has surged with ES investments since 1990s despite the high upgrade costs and ongoing maintenance costs of these systems (Wailgum, 2009). ESs comprise of comprehensive software packages that combine both business processes and information technology (IT) features (Maditinos, Chatzoudes, & Tsairidis, 2012). Organizations align each ES implementation by configuring associated IT infrastructural features with specific business processes to effectively meet their individual requirements and improve overall performance.

A number of research studies have been conducted to establish and understand the adoption issues and critical success factors for ES implementations (e.g., Chen, Law, & Yang, 2009; Daneva, 2004; Holland & Light, 1999; Sarker & Lee, 2000; Scott & Vessey, 2002). However, there has been little research to understand the effectiveness of enterprise systems in the post-implementation phase and, especially, to identify the factors that contribute towards realization of business benefits and organizational improvements from ES (Hedman & Borell, 2002; Ifinedo & Nahar, 2006). This makes it difficult to draw explicit conclusions on the impact of ES on organizational performance (DeLone & McLean, 1992; Hedman & Borell, 2002; Ifinedo & Nahar, 2006). “Very few studies have gone beyond looking at implementation to tackle issues related to longer-term usage and the impacts of these technologies on organizations” (Gosain, 2004, p. 152). Hedman and Borell (2002) suggest future research should address “the critical effectiveness constructs of an organization, which can be mapped to enterprise systems” (p. 91). Given the significance, cost, and risk of enterprise systems projects, it is imperative to understand the practice methods adopted by ES users to align functional processes into the value chain at operational and managerial levels. Most ES investments are not fully exploited by organizations, since users often do not fully utilize the potential of available technology for managing knowledge exchange; hence benefits remain hidden (Maditinos et al., 2012). Although ES implementation offers opportunities to improve and transform the business outcomes, it can be risky at the same time, and take a company backwards if the implementation is not managed properly (Bandyopadhyay & Barnes, 2012).

Thus, how ES implementation can facilitate knowledge exchange through data transformation for offering long-term benefits to an organization is still an open question. The purpose of this study is to identify and better understand the key factors most responsible for the data transformation process success in an ES implementation, in which technology is used to convert semantic ES data through situated contextual practice into creation of new knowledge for establishing business decisions to achieve beneficial outcomes. In this paper, we gain insights from IT professionals who are the main operational users of ES within an organization. We ask: What are the critical factors that influence how an enterprise system can be successfully utilized for data transformation and realization of organizational benefits? Their responses provide insight into how pre-existing contextual factors influence the transformation process of ES data into desirable outcomes, as per Davenport (2000). The study is conducted in three hi-tech manufacturing companies in New Zealand who have deployed an ES and reach maturity in its implementation. The IT specialist insight gained from their practice experience with ES utilization for realizing benefits is shared with the reader which is a distinctive contribution of this study.

The paper is organized as follows. This first section introduced the intent of this paper with a brief background on ES. The next three sections comprise the literature review, concluding with the model that establishes the framework for this research. The fifth section outlines the research methodology, a multiple case study. The sixth section presents the empirical findings from the three NZ organizations who
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