Chapter 5
Challenges to ES Success: A Critical Need for Knowledge Integration

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ABSTRACT
Recent literature on Enterprise System (ES) implementation projects highlights the importance of Knowledge Integration (KI) for implementation success. The fundamental characteristics of ES—integration of modules, business process view, and aspects of information transparency—necessitate that all frequent end-users share a reasonable amount of common knowledge and integrate their knowledge to yield new knowledge. Unfortunately, the importance of KI is often overlooked and little about the role of KI in ES success is known. In this chapter, the authors study the KI impact on ES success that is relevant to the ES post-implementation in support of organizations’ returns on their ES investments. They adopt the ES post-implementation segment of ES utilization to explore whether the KI approach is causally linked to ES success. The research model was tested in a multi-industry sample in Malaysia from which data was gathered from managerial and operational employees spread across six large organizations. Consistent with the explanation by knowledge-based theory, the results show that KI was valid and significantly related to the outcome of ES that relates to an organization’s performance, which the authors refer to as ES success. The KI positive impact on the success of ES drives one to highlight the importance of ontological KI in the complexity of the ES environment. The authors believe that focusing on an ontology through the KI perspective can make significant contributions to current ES problems.

INTRODUCTION
An Enterprise System (ES), also referred to as Enterprise Resource Planning (ERP), is a large integrated system designed to meet most needs of organizations including those in the fields of accounting, manufacturing, sales, human resources and management reporting (Strong & Volkoff, 2010). The ES is important for organizations as a tool to optimize their productivity and efficiency, and to provide the functionality for employees to work more effectively.
Challenges to ES Success

The popularity of the ES began in the late 1990s, when most of the organizations tried to use an ES to quickly address the “Y2K” problem (Ross, et al., 2003). While an ES is a solution that has a number of potential applications and can deliver significant benefits, some organizations fail to achieve the potential advantages of the ES (Liang, et al., 2007; Soh, et al., 2000). Numerous studies report ES failures (Scott & Vessey, 2002; Zabjek, et al., 2009) with businesses continuously losing billions of dollars annually (Zhang, et al., 2005). Many times, it is found that the ES does not serve the purpose for which it was implemented. Since current research indicates a 90% failure rate (Zabjek, et al., 2009; Momoh, et al., 2010) despite large investments, the issues surrounding ES failure remain the subject of debate among organizations and researchers (Dey, et al., 2010; Strong & Volkoff, 2010). Therefore, understanding why an ES fails is an important factor in learning how to operationalize an ES effectively in organizations.

In parallel with the huge number of ES failure studies (Al-Mashari, et al., 2003; Dey, et al., 2010; Mandal & Gunasekaran, 2003; Umble, et al., 2003), a wealth of research suggests knowledge management as one of the critical success factors for ES (Lee & Lee, 2000; Pan, et al., 2007; Volkoff, et al., 2004). An ES would certainly fail if the key employees lack the relevant skills and knowledge (Zabjek, et al., 2009). Lack of knowledge of the ES makes it difficult to convince employees about the advantages offered by the ES compared to their legacy system (Klaus & Blanton, 2010). Among the top reasons is the failure to integrate knowledge (Pan, et al., 2001) of the ES implementation with all the employees throughout the organization. To shine some light on this, we build on the concept of Knowledge Integration (KI) as a critical ES success factor (Newell & Huang, 2004; Pan, et al., 2007) and we explore the issues of ES success from the knowledge integration perspective (Grant, 1996).

This chapter aims to discuss the significance of KI for a successful ES. In order to achieve the objective, this chapter explains the importance of KI for ES implementation, which begins with the identification of KI essential elements followed by an overview of the positive impact of KI on ES success. The positive impact of KI is then discussed more specifically in relation to the ES stages of pre-implementation and post-implementation. However, to demonstrate and verify the impact of KI on ES success, this chapter only empirically analyses data in ES operationalization in the post-implementation phase. Finally, we highlight the need to develop an ontology of KI to facilitate the success of the ES.

KNOWLEDGE INTEGRATION FOR ES OPERATIONALIZATION: WHY?

Given the huge amount of money outlaid for ES implementation, the high failure rate of previous ES implementations is a major fear for organizations (Dey, et al., 2010). Since an ES is very complex and heavily integrated, it is difficult to utilize. The integrated database and complex structure of an ES may make it difficult for companies to adapt their processes (Davenport, 2000). Besides multiple functions, the ES involves numerous internal and external stakeholders, including the client organization, ES vendor, and consultants (Sedera & Gable, 2010). Thus, KI is essential for the successful implementation of the ES (Srivardhana & Pawlowski, 2007) due to the diversity of the ES knowledge sources, stakeholders, and types of knowledge to be shared.

In ES operationalization, KI deals with how well employees use all the available knowledge resources. The operationalization involves users from various levels, departments and divisions of the organization (Lin & Rohm, 2009), from senior executives to middle managers, technical and operational staff. These ES user cohorts have
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