Chapter 10
Knowledge Management Processes in Enterprise Systems:
A Systematic Literature Review

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ABSTRACT

Activities related to Enterprise Systems (ES) are knowledge-intensive tasks, and the management of ES-related knowledge has received much attention in the Knowledge Management (KM) field. A systematic literature review of empirical studies of KM processes in the ES lifecycle identifies the KM processes most widely explored and the ES-related knowledge most often addressed. From 350 relevant book chapters, journal articles, and conference papers, 49 papers discuss KM processes in the ES lifecycle. The KM process that appears most often in studies of KM in the ES context is knowledge transfer/sharing. The type of ES-related knowledge most often studied in the literature is knowledge of the client organization.

INTRODUCTION

The dynamic and competitive business environment today motivates many organizations to take action by investing in Enterprise Systems (ES). These complex integrated information systems promise to bring advantages by improving competitive positioning (Badii & Sharif, 2003; Alfirević & Račić, 2004; Andreu & Sieber, 2005; Dorobat & Nastase, 2010). Many researchers have postulated the benefits of ES (Grant, 1996; Aladwani, 2002; Badii & Sharif, 2003; Ko, Kirsch, & King, 2005; Vandaie, 2008; Dorobat & Nastase, 2010), and have identified that ES investment is linked to promised benefits such as operational improvements, enhanced technology infrastructure, cost-effective operations, integration of isolated systems, and seamless integration of information

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across financial management, human resources, customer relationships, logistics, and other areas.

Implementing such complex systems involves diverse streams of knowledge in software, business processes, and operational processes and requires the involvement of top management and experts. Managing the tacit and explicit knowledge in the ES, validating this knowledge and putting all of this together is also a big issue in organizations (Dittrich, Vaucouleur, & Giff, 2009; Dorobat & Nastase, 2010; Bani-Hani, Hinde, & Jackson, 2011). ES are "knowledge-intensive" as they involve configuring and testing, installing, training, maintenance and support, and due to this characteristic, the need to pay special attention to Knowledge Management (KM) is crucial in order to ensure the organization is not wasting the huge investment in ES. Due to this complexity, many researchers have suggested that KM is a key driver throughout the ES lifecycle of pre-implementation, implementation and post-implementation (Pan, Newell, Huang, & Cheung, 2001; O'Leary, 2002; McGinnis & Huang, 2004; Vandaie, 2008; Sedera, 2009; Sudzina, Kirchner, & Razmerita, 2009). One of the important aspects is to see KM from the "process" perspective such as knowledge sharing, integration, storage, capture and transfer (Alavi & Leidner, 2001). In process view studies, the process view of KM is examined to understand how KM can support the ES lifecycle activities.

KM process research has dominated the study of ES in recent years. With the volume of KM process research in the ES context expanding constantly, it is becoming more difficult to evaluate which KM process is most likely, which ES lifecycle activity the KM processes influence the most and what types of ES-related knowledge those KM processes address. We define the research questions to be answered as follows:

1. Which KM processes appear most in the literature on the KM process for ES?
2. What types of ES-related knowledge do those studies on KM processes address the most?
3. Which ES lifecycle phase do those studies on KM processes concentrate on the most?

BACKGROUND

In this section, we provide a brief background of KM and the KM process, with particular reference to the work of Alavi and Leidner (2001), and ES and ES lifecycle taxonomy with particular reference to the work of Ahmad, Zakaria, and Sedera (2011). We give an overview of existing work on the KM process in the ES lifecycle, of the research into tacit and explicit knowledge in organizations by Nonaka (1994) and ES-related knowledge as discussed by Sedera and Gable (2010).

Knowledge Management and Knowledge Management Processes

Bani-Hani et al. (2011) assert that KM often relies on the information technology available, which relies on capturing employees' knowledge and filtering it according to what the job needs. Gathering all of this important tacit and explicit knowledge and transferring it into the database of the system requires attention to knowledge management techniques, and doing this successfully will lead to the next phase of the KM process of knowledge validation. KM is defined in many ways (Horwitch & Armacost, 2002; Darroch, 2003). For the purpose of this study, we use Alavi and Leidner's (2001) taxonomy of four KM processes:

1. Creation
2. Storage/retrieval
3. Transfer
4. Application

Knowledge Creation

Pentland (1995) asserted that the knowledge creation process involves developing new content within an organization's tacit and explicit knowl-