Chapter 9
CoMIS–KMS:
An Elaborated Process Model for Transitioning MIS to KMS

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ABSTRACT

Modern information system environments generally contain complex computing infrastructure often mapping business processes to people and data. Data manipulation to summarize and report meaningful information is commonplace, although some of these systems and techniques have not been extensively exploited within developing countries. Even in developed economies, where resources and experience are abundant and accessible, the process for moving from information management to knowledge management is not well understood and therefore remains a challenge. In this study, a comprehensive process model that guides the transitioning of an existing information system to a knowledge management system is developed and evaluated. The results indicate that the model sufficiently represents and organizes the activities to be carried out to meet the desired outcome of converting an existing information system into a knowledge management system.

INTRODUCTION

A Knowledge management system (KMS) facilitates the creation, capture, refinement, storage, application, update and dissemination of knowledge (Alavi and Leidner, 2001; Bose, 2004). KMS may vary in sophistication and features but are generally supported by information technology. Several alternate methods and techniques have been proposed for developing knowledge based systems given observed inadequacies of traditional software development methods (Weitzel & Kerschberg, 1989; Angele et al, 1998; Schreiber, et al, 1994).

Although many developing countries are still at the stage of trying to use information systems to digitize, collect and manage data, having only partial automation of tasks and limited capabilities, knowledge can be of significant value and may provide for significant improvements that may allow for better decisions and an informed way forward to prosperity. With the pervasive nature of information systems across industries and in organizations, and the lagging of developing countries in exploring some of these resources to access efficiencies, research is required to provide guidance on how to access and exploit sources of potential knowledge, and harness this knowledge into existing systems towards improvement of their capabilities. The emphasis on the value of knowledge, knowledge creation and application of knowledge across all areas of endeavour necessitates the development of research to support improvements in knowledge integration in existing information systems.

The process to transition from the current state of information management to knowledge management driven by a KMS is not well articulated in the literature; a comprehensive model to guide this process does not exist. Therefore, research is needed to fill the existing gap regarding prescribed steps for the integration of knowledge into existing Information Systems (MIS) to produce a knowledge management system that is sufficient for the criteria of creation, capture, update, application and dissemination of knowledge.

This study contributes to the current literature in the prescriptive domain in the form of a process model which is developed to transition existing information system environment to a knowledge management system. The model is based on the context of a developing country environment and has been instantiated in this context. The model and its instantiation provide further contribution in design theory as well as in the descriptive domain through observation, classification and measurement (Gregor and Hevner, 2013).

In the next section, a brief review of related works is presented. This is followed by a discussion of the research methodology employed and presentation of the process model. A discussion of the model applied in two separate domains under different conditions within a developing country is then presented followed by discussion, conclusion and future work.

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Leonard and Sensipar (1998) define knowledge as relevant, actionable information based partially on experience. O'Dell et al (1998) suggest that knowledge is what members of an organization know about their customers, products, successes and mistakes. The authors adopt for the purpose of this study that knowledge is a 'fluid mix of framed experience, values, contextual information and expert insight that provide a framework for evaluation and incorporating new experiences and information (Davenport & Prusak, 2000). This differs significantly from information and data which are lower according to the data-information-knowledge-wisdom (DIKW) hierarchy (Rowley, 2007). Data is a collection of facts and figures, while information is organized data that provides meaning. Context, experiences, and expert insights can then be added to information to produce knowledge.

Bowman (2002) argues that knowledge can be critical to an organization's success as it can improve their capability. Examined from the capability perspective (Alavi & Leidner, 2001), knowledge enhances the ability of a firm to develop existing and new core competencies. It also influences future action which can contribute significantly to the long run survival of a firm (Darroch, 2005; Watson, 2008; Eriksson & Raven, 1996). One view of institutional knowledge capability is that this is encompassed

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