Chapter 8.15
A Social and Technical Investigation of Knowledge Utilization from a Repository Knowledge Management System

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EXECUTIVE SUMMARY

The need for developing countries to empower themselves through knowledge management cannot be underestimated. Knowledge utilization is the process where the benefits of knowledge management systems (KMS) are actually realized. This study investigated the effects of knowledge quality, system level, system form, service quality, management support, knowledge trust and rewards policy on knowledge utilization behavior, and the benefits of knowledge utilization from a repository KMS in an Omani organization. Findings suggested that determinants of knowledge utilization were not related to system technical characteristics or information technology service quality; they were related to knowledge quality, management support, knowledge trust, and rewards policy. Results also suggested that knowledge utilization results in individual benefits. Findings implied to practitioners that the development of high-level KMS does not guarantee their success. Organizations need to establish a knowledge-oriented culture and develop standards that ensure high knowledge quality to promote KMS and knowledge utilization behavior.

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INTRODUCTION

The need for developing countries to empower themselves through knowledge management (KM) cannot be underestimated. Knowledge plays a major role in individuals' learning and decision making capabilities. It improves an individual's ability to take an effective action (Huber, 1991; Nonaka, 1994). Thus, KM has become one of the main imperatives of knowledge-based economy.

KM is driven by increasing knowledge domain complexity, accelerating marketing volatility, intensifying speed of responsiveness and diminishing individual experience (Becerra-Fernandez et al., 2004).

Knowledge management systems (KMS) are IT-based systems that support and boost the organizational processes of knowledge creation, storage/retrieval, transfer, and application (Alavi & Leidner 2001). KMS also are defined as "the applications resulting from the synergy between the latest technologies and social/structural mechanisms" (Becerra-Fernandez et al., 2004, p.7). They offer organizations an efficient and effective way to create knowledge repositories that can be utilized to improve employees' performance and productivity. Two common KMS models are repository KMS and network KMS (Alavi 2000; Davenport & Prusak, 1998). Empirical studies have indicated that the use of KMS results in several benefits for organizations such as improved operating performance (Jennex & Olfman, 2006; Liu & Tsai, 2007), learning and innovative performance (Chang & Lee, 2007; Jiang & Lia, 2008). Moreover, KMS improve developing nations' and their organizations' efforts to manage their knowledge, and consequently build their human resources (World Bank, 1998; World Bank, 2003).

However, KM and KMS benefits can be actually achieved through knowledge utilization (Alavi, 2000; Scholl et al., 2004).Hence, knowledge utilization is critical to the success of repository KMS. Knowledge utilization is the application of the stored knowledge to solve daily work problems and make decisions. Knowledge utilization, however, is inhibited by several corporate cultural issues such as "Not-Invented here (NIH) syndrome" (Katz & Allen, 1982), lack of time, and risk aversion (Davenport & Prusak, 1998). Thus, knowledge utilization from repository KMS is a social and technical process. An effective knowledge utilization process will be achieved only by an effective integration of technical and social factors. The need for this investigation has been stressed in both management and knowledge management systems literatures (O'Dell & Grayson, 1998; Scholl et al., 2004).

This study aimed to provide a better understanding of the factors that improve the individuals' knowledge utilization in a petroleum company in Oman. In Oman, KMS is emerging; several organizations (e.g. Sultan Qaboos University, Ministry of Education, Petroleum Development of Oman etc) have recognized the importance of KMS and created KMS tools such as portals to integrate knowledge and information from internal and external sources. The development of knowledge repositories is becoming imperative for petroleum companies. In the oil industry, market volatility is accelerating, speed of responsiveness is intensifying and individual experience is diminishing. For instance, in the oil refining industry, there is a shortage of qualified and knowledgeable personnel who are ranging from 30 to 50 years old, and 60 percent of plant engineers will retire by 2010 according to the journal of petroleum technology (Clark, 2005). "Oil exploration can cost millions of dollars a day, and anything that makes it more efficient has magnified value" (Steinberg, 2002, p.45). The use of KMS may result in some efficiency and financial gains for petroleum organizations. For instance, Shell Company saved $200 million in 2000 by implementing discussion groups and knowledge repositories where more than 10,000 engineers can share ideas and solve problems (King, 2001; Steinberg, 2002). Also, British Petroleum (BP) Company is implementing computer-supported visualization environments to share know-how knowledge to promote teamwork, innovation and creativity; BP is expected to improve its productivity by four percent per year from this KMS implementation (Barrow, 2001). Thus, individual knowledge utilization through KMS leads to financial benefits. Investigating the factors that influence the knowledge utilization behavior is, therefore, essential to promote