Mobile Knowledge Management

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INTRODUCTION

Mobility appears to be the most important organizational and technological trend in the foreseeable future. According to IDC, two-thirds of U.S. workers will be mobile by 2006. The increasing mobility of workforces and knowledge seems to pose new challenges for organizations to effectively manage knowledge assets (cited in Mobile & Wireless Advisor, 2002). Recent advances in mobile computing make it possible for workers to use information and knowledge resources for business virtually from everywhere, which creates opportunities for organizations to engage in mobile knowledge management (mKM).

This article attempts to propose mKM strategies by studying how mobile knowledge assets can be leveraged and mKM processes can be incorporated into the main KM processes by looking at two aspects of knowledge mobility organizations. The knowledge retention processes will also be the focus to further analyze how to merge the knowledge retention processes into the main KM processes. Finally, the integration of mKM strategy into the main knowledge management processes within organizations will be explored.

The rest of the article proceeds as follows. The next section discusses the background followed by the main focus of the article, presenting strategies of mobile knowledge management and implementations. The article concludes by outlining future directions.

BACKGROUND

mKM has become an emerging business practice for knowledge management within organizations. Several studies have also touched upon the notion of mKM recently. For instance, Mummy (n.d.), an EU-based information technology company, proposes a detailed mKM model discussing related key concepts. Loutchko and Birnkraut (2005) suggest the application of mobile knowledge portals in managing mobile knowledge assets. Grimm, Tazari, and Balfanz (2002) propose a technical framework for mobile knowledge management by identifying the abstract use cases of mKM systems and by outlining a reference model that can be used to validate mKM concepts in their system architectures.

Derballa and Pousttchi (2004) examine how mobile technologies can be used to support KM and particularly to support the knowledge distribution process. With the general introduction of relevant mobile technologies, they apply the theory of mobile-added values to analyze how mobile technologies contribute to the support of KM processes. Fagrell (2000) looks at various issues related to mKM from an Informatics perspective, which includes empirical studies of mobile work, technologies for mKM systems, and the design and validation of prototype systems, observing mobile service electricians and mobile news journalists. He develops and refines mobile technologies to be used in knowledge systems, and also makes a contribution in outlining a generalized technological architecture that can be applied to mobile work settings. However, managing mobile knowledge assets are not explicitly investigated. The article will partially fill that gap by studying how mobile knowledge assets can be leveraged and how the mKM process can be incorporated into the main KM processes.

STRATEGIES OF MOBILE KNOWLEDGE MANAGEMENT

In this section, the mKM strategies will be discussed focusing on how mobile knowledge assets can be leveraged and mKM processes can be incorporated into main KM processes. To discuss mKM strategies, two special characteristics of mobile knowledge management need to be considered: the mobility of organizational knowledge and that of corporate environment. The mobility of organizational knowledge may result from the innate nature of knowledge as well as high turnarounds of workforces within organizations. As a result, an additional knowledge retention process is required to fully leverage the mobile knowledge assets, as shown in Figure 1. Environmental mobility within organizations determines the special features of mKM processes from the main KM processes. mKM processes are shown to have the similar components and flows as those of main KM processes. However, each sub-process within the mKM processes may have distinctive features. Therefore, mKM should be incorporated into the main knowledge management processes of organizations considering its special features.

Figure 1. mKM: Leverage and integration

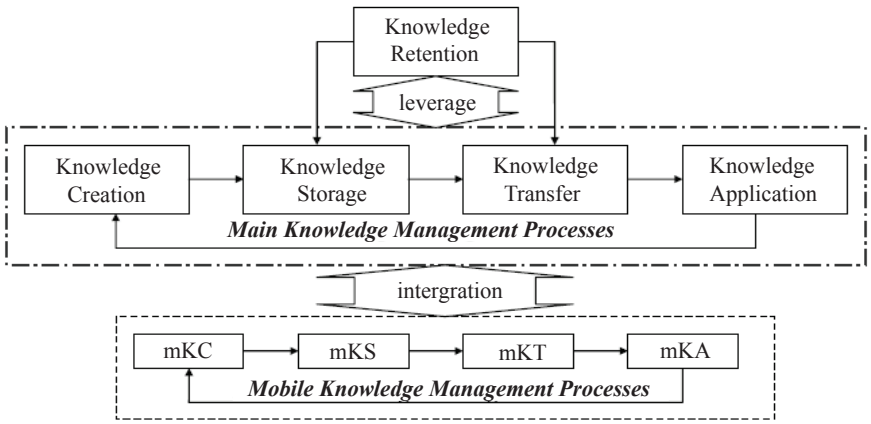

Figure 2. The relationship of m[KM], [mK]M, and KM

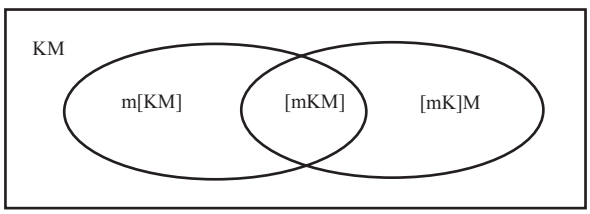

Figure 3. The relationship between [mK]M and m[KM]

		Dimensions of environmental mobility	
		Time	**Location**
Dimensions of knowledge mobility	**Detachability**	Upradability	Generality
	Volatility	Longevity	Immutability

KM, [mK]M, m[KM], and [mKM]

KM is used to denote the entire knowledge management processes within organizations. To investigate mKM strategies, the implications of mobile knowledge management will be discussed from the following three subsets:

1. **m[KM]:** mobile "Knowledge Management"
2. **[mK]M:** "mobile Knowledge" Management
3. **[mKM]:** intersection of m[KM] and [mK]M.

The first subset m[KM] focuses on the mobility of knowledge management processes due to the mobile KM environment of organizations. In particular, this subset deals with the management and integration of mobile processes of knowledge in mobile environments. The second subset [mK]M emphasizes knowledge management from the perspective of the knowledge mobility in organizations. Specifically, the second subset manages and leverages knowledge assets by taking into account the innate mobile nature of knowledge. The third subset is the intersection of m[KM] and [mK]M, which considers the mobility issues of both organizational knowledge and corporate environment.

As shown in Figure 2, some KM processes belong to m[KM] processes, some to [mK]M, and others to [mKM]—the intersection of m[KM] and [mK]M. The degree of knowledge mobility refers to the innate property of knowledge. The second refers to the increasing mobile environment of knowledge management.

UGLI: Relationship between [mK]M and m[KM]

Based on the prior discussion on [mK]M and m[KM], the relationship between m[KM] and [mK]M is investigated in this section. The mobility of knowledge is considered from the following two aspects: detachability and volatility. Detachability denotes the degree of knowledge to be detachable and applicable in the mobile environment. Volatility means that knowledge may not be captured and retained in a timely manner and in its completeness due to the innate nature of knowledge, the turnaround of organizational members, and the mobility of environments. Although these two aspects describe different characteristics of mobile knowledge, they are essentially related—knowledge with high volatility is difficult to be detached, and knowledge with high detachability must be relatively stable.

The environmental mobility is also measurable from two dimensions, time and location, which are then related with the two dimensions of knowledge mobility as shown in Figure 3. The relationship between knowledge mobility and