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A Review of Mobile Knowledge Management

TREO Talk Paper

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Abstract

Knowledge management is an integral part of digital transformation of modern enterprise (Marchegiani 2021). In the last decade, with the proliferation of mobile technology, increasing amount of knowledge management activities are conducted in a mobile environment in organizations. There are important differences between knowledge management in a mobile environment (mKM) vs. a traditional PC-based environment. Technology alone won't automatically lead to successful mobile knowledge management practices. An organization must identify and implement appropriate strategy and managerial practice to use these technologies and coupled them with trained knowledge workers to generate productivity. Among many factors related to the design, implementation, and maintenance of mKM, cost is the bottom-line in most cases, especially for small and medium-sized enterprises. That led to the convergence to cloud-based third-party solution for many organizations in mKM. In this review, we identified 32 journal papers, 68 conference/workshop proceedings, 8 book chapters, and 2 thesis and white papers contributing to mobile knowledge management research topic from 1999 to 2020. These literatures included framework, strategies, and practices, important advancement of supporting technologies, and useful applications in mKM. This review paper aims at a concise summarizing study on mobile knowledge management from both strategic and technical perspectives.

Early mKM research were mainly conducted in Northern Europe due to pioneering mobile service development. In the last decade, cloud computing gradually replaced this traditional architecture, not only virtualized server but also allowing for extensive scalability, giving clients virtually limitless resources. Thus cloud-based mKM becomes an especially useful strategic option for SMEs due to low cost, flexible to adverse environment, simplicity to use and readability of collected knowledge (Abdullah and Alsharaei 2017; Núñez et al. 2018). The supporting research of TAM-motivated survey confirmed the positive effect of perceived usefulness and ease of use on implementing mKM for SMEs (Siregar et al. 2018). With the proliferation Web 2.0 and social networking technologies, Mobile KM systems could be implemented in a user-friendly way. Actually, there are successfully Web 2.0 mKM systems, such as Wiki, Yelp, and LinkedIn Apps that enable users to actively use and share knowledge in general and professional working contexts (Blunn et al. 2007). In terms of managerial practice, mKMs are mostly implemented in the format of personal knowledge management (PKM), which could connect the organizational goal with individual key performance indicators. This could be integrated with balanced scorecard or other strategy management tool to assist and improve performance of individual employees (Fairchild 2002; De Gooijer 2000).

There are considerable number of research on Mobile KM architecture and applications. Early mKM systems, such as MobiCom project and its resulting MOSCOW architecture and implementation application DARWIN addressed two fundamental issues in organizations: work coordination and collective sharing of experiences (Kristoffersen and Ljungberg 1998). It supports the distribution and exchange of knowledge in the format of lessons within distributed IT-support group via PDA-like device. At the application level, higher education is the most extensively studied field I mKM (Stal and Paliwoda-Pękosz 2017). Mobile learning is an integral part of online learning systems. As part of the learning process, knowledge management is integrated in daily online teaching and learning activities, such as encouraging learners to create, share, apply, and store knowledge. Extensive use of Mobile KM was also identified in other application domains, such as construction (Lin et al. 2001), bioinformatics (Alomary 2019), and agriculture (Janse Van Rensburg and Vermaak 2017).

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