

## Chapter 6.21

# A Mobile Portal Solution for Knowledge Management

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### ABSTRACT

This chapter discusses the use of mobile applications in knowledge management (mobile KM). Today more and more people leave (or have to leave) their fixed working environment in order to conduct their work at changing locations or while they are on the move. At the same time, mobile work is getting more and more knowledge intensive. However, the issue of mobile work and KM is an aspect that has largely been overlooked so far. Based on requirements for mobile applications in KM an example for the implementation of a mobile KM portal at a German university is described. The presented solution offers various services for university staff (information access, colleague finder, campus navigator, collaboration support). The chapter is concluded by outlining an important future issue in mobile KM: the consideration of location-based information in mobile KM portals.

### INTRODUCTION

Today many working environments and industries are considered as knowledge intensive, that is, consulting, software, pharmaceutical, financial services, and so forth. Knowledge management (KM) has been introduced to overcome some of the problems knowledge workers are faced by handling knowledge, that is, the problems of storing, organizing, and distributing large amounts of knowledge and its corresponding problem of information overload, and so forth. Hence, KM and its strategies aim at improving an organization's way of handling internal and external knowledge in order to improve organizational performance (Maier, 2004).

At the same time more and more people leave (or have to leave) their fixed working environment in order to conduct their work at changing locations or while they are on the move. Mobile business tries to address these issues by providing (mobile) in-

formation and communication technologies (ICT) to support mobile business processes. However, compared to desktop PCs, typical mobile ICT, like mobile devices such as PDAs and mobile phones, have some disadvantages (Hansmann, Merk, Niklous, & Stober, 2001):

- Limited memory and CPU – Mobile devices are usually not equipped with the amount of memory and computational power in the CPU found in desktop computers.
- Small displays and limited input capabilities – for example, entering a URL on a Web-enabled mobile phone is cumbersome and slower than typing with a keyboard.
- Low bandwidth – in comparison to wired networks, wireless networks have a lower bandwidth. This restricts the transfer of large data volumes.
- Connection stability – due to fading, lost radio coverage, or deficient capacity, wireless networks are often inaccessible for periods of time.

Taking into account the aforementioned situation one must question whether current IT support is already sufficient in order to meet the requirement of current knowledge-intensive mobile work environments. So far, most of the off-the-box knowledge management systems are intended for use on stationary desktop PCs and provide just simple access from mobile devices. As KMS are generally handling a huge amount of information (e.g., documents in various formats, multimedia content, etc.) the management of the restrictions described above become even more crucial. In addition, neither an adaptation of existing knowledge services of stationary KMS nor the development of new knowledge services according to the needs of mobile knowledge workers is taking place.

The goals of this chapter are to identify the main issues when mobile work is meeting knowledge management. In particular the focus lies on

mobile knowledge portals, which are considered to be the main ICT to support mobile KM. Further on the applicability of these suggestions is shown with the help of a mobile knowledge portal that was implemented at a German university.

The chapter is structured as follows: Section two will detail the understanding about mobile KM and derive important requirements to be fulfilled. In section three mobile knowledge portals are then described as main ICT to support tasks in mobile KM. As an example the mobile KM portal of the University of Regensburg is presented (section four) whereas section five shows location orientation as the next step in mobile KM. Finally, section six concludes this chapter and gives an outlook on future research issues within the field of mobile KM.

## **KNOWLEDGE MANAGEMENT MEETS MOBILE WORK**

A mobile working environment differs in many ways from desk work and presents the business traveler with a unique set of difficulties (Perry, O'Hara, Sellen, Brown, & Harper, 2001). In the last years several studies have shown that mobile knowledge workers are confronted with problems that complicate the fulfillment of their job (Figure 1).

Mobile workers working separated from their colleagues often have no access to the resources they would have in their offices. Instead, business travelers, for example, have to rely on faxes and messenger services to receive materials from their offices (Schulte, 1999). In case of time-critical data, this way of communication with the home base is insufficient. Bellotti and Bly (1996) show in their survey about knowledge exchange in a design consulting team that it is difficult for a mobile team to generally stay in touch. This is described as "Lack of Awareness." It means that a common background of common knowledge and shared understanding of current and past

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