

# Chapter 23

## Managing Knowledge with Technology: Current Trends in Local Government

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### ABSTRACT

*This chapter reports on types and roles of information and communication technologies (ICT) implemented in knowledge management (KM) solutions in local governments. A sample of nine local councils were rated on usage of various generic and KM specific ICT in supporting knowledge exploitation or exploration, and codification or personalization strategies. The results indicate a marked preference for generic types of ICT, and support for knowledge exploitation and codification approaches. These findings and their implications are further interpreted in terms of three stages of KM development in organizations.*

### INTRODUCTION

Increased interaction, interdependency and volatility on a global scale are rapidly changing local governments' external environment, their community characteristics, as well as their orga-

nizational orientation. In circumstances of high uncertainty and ambiguity, the success of local governments depends to a greater extent on how well they utilize knowledge resources in adjusting to contextual changes. This requires special attention to knowledge management (KM). The

major challenge for KM in local government is to foster the development of an enriched knowledge base that will enable local actors to better deal with adjustment and development issues of importance to their communities (Anttiroico, 2006). The purpose of this chapter is to address technical issues in organizational KM.

Referring to the theoretical work by Handzic (2004) the chapter considers the role of various information and communication technologies (ICT) in facilitating the processes in which knowledge is created, transferred and utilized in local governments. Findings reported in the chapter are part of an ongoing research project into the adoption of KM principles and practices in public sector organizations in Bosnia and Herzegovina (BiH). The role of ICT in local government KM solutions addressed in this chapter is only one of several aspects covered by the research project. Further project details can be obtained elsewhere (Handzic et al., 2008).

The current chapter is structured as follows. First, an overview of the literature on ICT and KM is presented in the next section. This is followed by a description of the methodology and the results of the empirical study related to ICT usage. The key findings are discussed next in the light of theoretical models relating technology use to different KM strategies and stages of KM development. Finally, conclusions and implications for practice and research are offered.

## **LITERATURE REVIEW ON ICT IN KM**

The spectrum of views on the role of ICT in KM ranges from those that see knowledge as a uniquely human concept and consider that KM has little to do with technology, to those that see knowledge as an object and therefore KM as being mostly about technology (Snowden, 2003; Swan, 2003). The integrated approach advocated by Handzic (2004) bridges the artificial divide between two extreme perspectives by considering KM as a

socio-technical phenomenon with both technology and people playing an important role.

Within the integrated framework, technology is placed among major influencing factors on knowledge processes. The functionalities of ICT are perceived as significant in shaping organizational efforts for knowledge creation, transfer and utilization, and thus for organizational learning, improvement and innovation. In order to better understand and appreciate the importance of technology in KM, this section surveys some ICT-based KM initiatives deployed in firms and their roles in supporting knowledge processes.

The KM literature offers a number of useful classifications of ICT tools for KM. Initially, Binney (2001) proposed a KM spectrum that consisted of six categories: transactional, analytical, asset management, process based, developmental and innovation/creation. Based on their functions and techniques, Tsui (2003) suggested a framework of commercial KM software tools including nine categories: search, meta/Web crawler, process modeling and mind mapping, case-based reasoning, data and text mining, taxonomy/ontological tools, groupware, measurement and reporting, and e-learning. More recently, Balmisse et al. (2007) grouped KM tools by functionalities into: explicit knowledge management, collaboration, knowledge discovery, expertise mapping tools and KM suites.

A typology of KM technologies developed by Handzic and Zhou (2005) is used to frame the discussion about the applications of ICT in KM in this chapter. This typology includes seven categories based on the distinction of basic KM processes they support. They include: knowledge storage, access, search/retrieval, sharing/delivery, discovery/visualization, utilization and platform technologies.

- Knowledge storage technologies cover databases, textbases, data warehouse, data marts and various multimedia systems used to capture and store organizational knowledge

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