Chapter XIII
Knowledge Management Systems: Towards a Theory of Integrated Support

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ABSTRACT
This chapter is motivated by one simple question: Why do so many knowledge management systems (KMS) fail when implemented in organizational knowledge work practice? Indeed, imbalance between the desire for accurate content and the workload required to achieve this still appears to be a critical issue, resulting in KMS of little use for organizational members. Hence, KMS maintenance is an important research subject. With the objective to contribute recommendations for how to integrate KMS with everyday knowledge work, we apply general lessons learned from development of groupware applications as a theoretical lens to analyze empirical experiences of three implemented and evaluated KMS. Theorizing the relationship between the recommendations developed and extant KMS design theory, the chapter offers implications for IS research and practice.

INTRODUCTION
Over the last decade or so there has been much debate in academic literature about concepts such as knowledge-based organizations, knowledge-creating companies, knowledge work, and organizational knowledge (Nonaka, 1994; Blackler, 1995; Spender, 1996; Schultze, 2000). Consistent with this debate, knowledge management has been promoted as an important approach for organizations trying to achieve competitive advantage (Hedlund, 1994). Knowledge management is often regarded as the generation, representation, storage, transfer, transformation, application,
embedding, and protecting of organizational knowledge (Schultze & Leidner, 2002). While processes of knowledge generation, storage, and transfer do not necessarily result in improved organizational performance, effective knowledge application does (Alavi & Leidner, 2001).

According to the knowledge-based theory of the firm, the source of competitive advantage resides in the ability of an organization to turn knowledge into action and less on knowledge itself (Grant, 1996). Integration of knowledge, either explicitly or implicitly, of many different people to facilitate knowledge application, Grant argues, is the motivation for organizations comprising multiple individuals. Recognizing that integration of knowledge of organizational members is exceptionally difficult, Grant advocates that a key challenge for organizations to achieve effective knowledge application is to establish a mode of interaction facilitating that people’s specialist knowledge is integrated.

As Davenport and Prusak (1998) note, there are several reasons for knowledge workers not to apply their knowledge. Chief amongst these are social factors such as distrusting the source of knowledge or lack of time or opportunity to apply knowledge (Alavi & Leidner, 2001). Observing that organizations tend to have a gap between what they know and what they do (Pfeffer & Sutton, 2000), many IS researchers suggest that information technology may have a positive influence on knowledge application (e.g., Alavi & Leidner, 2001; Nidimolu et al., 2001). For example, information systems can enhance knowledge application by facilitating the capture, updating, and accessibility of organizational information and knowledge (Mao & Benbasat, 1998). Also, information systems can increase the size of knowledge workers’ internal social networks by allowing for organizational knowledge to be applied across time and space (Kock & McQueen, 1998).

However, while contemporary organizations typically expect knowledge management systems (KMS) to become major innovations in terms of the ways in which business can organize and be conducted (e.g., Gallivan et al., 2003; Scheepers et al., 2004), recent IS research indicates that such systems often fail when implemented in everyday knowledge work (Schultze & Boland, 2000). In response, several studies have explored the issue of how to support knowledge work with information systems (Hayes, 2001; Hayes & Walshaw, 2001; Ellingsen & Monteiro, 2003; Levina & Vaast, 2005; Poston & Speier, 2005). However, despite the fact that KMS maintenance has been acknowledged as an important issue (Holtshouse, 1998; Hahn & Subramani, 2000), imbalance between the desire for accurate content and the workload required to achieve this still appears to be a critical problem, leading to systems of little use for organizations in their knowledge application processes (e.g., Lindgren & Stenmark, 2002; Lindgren et al., 2004). Following this, an important area of KMS research is the development of systems with the potential to bridge the knowledge application gap (Alavi & Leidner, 2001). In this context, a significant challenge is to develop design principles intended to keep KMS alive—updated, current, maintained—by encouraging use (Markus et al., 2002).

The problems KMS are facing today, that is, the fact that systems remain unused in day-to-day practice despite good theoretical reasons why they should work, show great resemblance to the difficulties experienced when introducing groupware applications in the 1980s. Being one of the first to study the challenges faced by groupware developers, Grudin observed that when groupware started to emerge as a new market, many of the early application developers were people who previously had focused exclusively on single-user applications. The maturing single-user application domain forced these developers to explore new territories and pushed them into areas of which they had little knowledge. The problems they ran into they had never experienced when supporting individuals and they were thus completely unprepared (Grudin, 1994). We believe