Knowledge Quality, User Motivation, and Knowledge Use: A Theoretical Framework and Research Proposal

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Abstract

Electronic knowledge repositories, defined as “databases allowing the storage and retrieval of explicit research and technical and management knowledge in text format” (King, Marks and McCoy 2002, p. 93), represent one of the fundamental tools for knowledge management (KM) initiatives. While companies continue to purchase and implement repository systems, recent research shows that the content of such systems does not necessarily receive high levels of usage by target users (Gray & Durcikova, 2005-2006; Goodman and Darr 1998). As the economic benefits of repository systems derive from use (Kogut and Zander, 1992), and the value of knowledge appreciates over time through use (Romer, 1994), understanding factors that increase the level of knowledge use is an important research topic.

Existing work on knowledge repositories, however, has largely focused on supply-driven questions, such as employee motivation to contribute knowledge to a repository (Garud and Kumaraswamy 2005; Kankanhalli, Tan and Wei 2005). This research turns attention to the demand-side issue of knowledge usage, as repository systems are successful only to the extent that their content is actively utilized by organizational members to enhance their work performance. In particular, this research focuses on knowledge quality and user motivation as antecedents to use.

Knowledge quality and knowledge use have been suggested in the literature as an integral part of knowledge management success (Kulkarni et al. 2006-7). However, these two constructs have received relatively little theoretical examination. By analyzing properties that distinguish knowledge from information, this research proposes to define knowledge quality along five dimensions: argument quality (Sussman and Siegal 2003), causal ambiguity (Reed and Defilippi 1990), knowledge novelty (Wierenga and Van Bruggen 1998), information quality (Rai, Lang and Welker 2002), and metaknowledge quality. This conceptualization emphasizes the dimensions that are uniquely important about codified knowledge in organizational settings, and yet at the same time recognizes the understanding that knowledge cannot be defined independently of information.

At the same time, this research seeks to develop a more systematic approach to examine knowledge use. In the knowledge management literature, knowledge use has been examined perceptually in several different ways. Sussman and Siegal (2003) study the decision to adopt knowledge (that leads to actual use), while other scholars examine frequency and degree of actual use (Arthur et al. 2005; Haas and Hansen 2005; Kulkarni et al. 2006-7). We draw on the marketing research literature to go beyond objective measures and consider a broader range of type and extent of use (Menon and Varadarajan 1992). Specifically, knowledge use can be conceptual, behavioral, or affective. Juxtaposing these two literatures, we define knowledge use as the degree to which an individual believes he or she has incorporated a knowledge object into work practices, including problem-solving and decision-making activities (Kulkarni et al. 2006-7). Moreover, we examine knowledge use along three dimensions: degree of innovative use, degree of affective use, and degree of conceptual use.

Existing literature suggests that knowledge use can be low for two reasons. First, users are reluctant to use a repository’s content if they believe its quality is suboptimal. When perceived knowledge quality is low, the repository system is perceived to be less useful (Clay et al. 2005), which in turn lowers the level of knowledge use (Gray & Durcikova, 2005-2006; Kulkarni et al. 2006-7). On the other hand, even when content quality is high, users may not necessarily be motivated to use the knowledge due to a number of
reasons. For example, user motivation can be low when usage is perceived to threaten the user’s status or self views (Menon and Pfeffer 2003; Menon, Thompson and Choi 2006).

Both theoretical research and empirical evidence suggests that knowledge quality is positively associated with knowledge use. First, argument quality is an important predictor of the likelihood that a piece of advice gets accepted and eventually adopted by its recipient (Sussman et al. 2003). Moreover, novel and non-obvious ideas can be perceived by managers and knowledge workers to be more useful (Shrivastava 1987) which in turn increases the likelihood of knowledge use (Menon et al. 1992). In contrast, causally ambiguous knowledge is difficult to imitate, or, in other words, used by others (Reed and Defillippi, 1990). Finally, when the process of searching for ideas is aided by accurate and complete metaknowledge, such ideas are more likely to be reused and developed into more innovative ideas and insights (Faniel and Majchrzak 2002; Majchrzak et al. 2004). Overall, knowledge of high quality is more likely to be incorporated into work routine (Kane, Argote and Levine 2005) or used after careful assessment (Harvey, Harries and Fischer 2000). As such, knowledge quality is hypothesized to positively predict knowledge quality.

A large body of literature on motivation has demonstrated that motivation levels are critical to individual and group performance (e.g., Malhotra, Galletta and Kirsch under review; Roberts, Hann and Slaughter 2006). This research considers motivation in terms of perceived locus of causality (PLOC), “the degree to which action is initiated for and endorsed by the self” (Malhotra et al. under review, p.6). Drawing on the organismic integration theory (Deci and Ryan 1985), we hypothesize that internal and external PLOC are positively associated with knowledge use, whereas introjected PLOC negatively predicts knowledge use.

Finally, when individuals use knowledge contributed by others, they are exposed to ideas that were otherwise unfamiliar to them. Such exposure to novel ideas should enhance the individual’s ability to solve problems and to make better decisions (Faniel 2002), and to develop radically innovative ideas that are high impact (Majchrzak and Malhotra 2004). As such, we hypothesize that knowledge use is positively associated with perceived individual benefits.

To test the theoretical model, we are currently collecting both qualitative and quantitative data from users participating in the Xerox Eureka community. Eureka is a knowledge repository system that supports knowledge sharing among Xerox service technicians (Bobrow and Whalen 2002; Boucher 2006; Hickins 1999) and enables the “globalization of local knowledge” (Von Krogh, Ichijo and Nonaka 2000). More than 20,000 users worldwide access Eureka for service “tips” that are authored by Xerox service technicians who are also Eureka users. These tips are submitted to the repository system by authors who discover innovative solutions, and reviewed and approved for publication by qualified validators. Qualitative data collection involves interviews with Eureka users to develop a rich understanding of what constitutes knowledge quality, how knowledge is used, and why knowledge is used. Quantitative data are currently being collected through a survey instrument that consists of validated measurement items adapted from existing literature and a small number of original items created for this research. Control variables include system quality, the author’s credibility, the validator’s credibility, the number of times the tip has been revised, and the length in time of the tip’s validation process. Participants are asked to identify a Eureka tip using the tip ID, and answer survey questions with reference to this tip of their choice. Initial analyses of about 50 cases show promising trends. Results will be shared during the workshop presentation. Implications for knowledge management research and managerial practices are discussed.