Chapter 5.6
Knowledge Communication with Shared Databases

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ABSTRACT

Addressing knowledge communication with shared databases, this chapter focuses on an asynchronous, many-to-many type of computer-mediated communication (CMC). After an introduction, which characterizes this kind of CMC and provides definitions, various aspects are discussed that influence people's behavior in knowledge communication with shared databases. This presentation focuses on psychological rather than on technological factors. The first aspect presented is the influence of anonymity and identifiability, followed by the impact of metaknowledge. Next, costs and bonus systems, and then feedback and guidelines are discussed. Other aspects which are considered are group size and participant personality. For each of these influencing factors, underlying theoretical approaches as well as empirical results are presented. Subsequently, these considerations and findings are examined with respect to their practical applications. In conclusion, future trends in database-oriented knowledge communication are discussed.

INTRODUCTION

Shared databases are the foundation for many applications of computer-mediated communication (CMC). Knowledge communication with shared databases plays an important role in a lot of knowledge management projects in various organizations all over the world (Haythornthwaite, Wellman, & Garton, 1998). Here shared databases are used for knowledge exchange in working groups with the goal of creating a knowledge pool all people have access to (cf. Yuan, Fulk, Shumate et al., 2005). A shared database allows every team member to enter information into it

as well as to retrieve information from it (Cress, Barquero, Buder, & Hesse, 2005). So, with shared databases information and knowledge which was originally distributed across team members can be exchanged reciprocally and can be made accessible for all team members (Hinds & Kiesler, 2002). Many organizations make such databases available for their members in order to build a shared pool of knowledge which can also be characterized as organizational memory.

Knowledge communication with shared databases is a type of CMC for which permanent storage of information and the opportunity to access information provided by other users are outstanding attributes (Connolly & Thorn, 1990). CMC can take place in synchronous or in asynchronous communication situations. In the case of asynchronous CMC the moment in which a sender posts a message differs from the moment in which the recipient receives the message: for example, if a message is expressed in the form of an entry to an online forum but is read by another user at a later date. By contrast, in synchronous CMC, users' contributions are not buffered, but transmitted directly. This is the case, for example, with online chats. Although the result of synchronous information exchange can be stored permanently, it is the current process of communication which is in the spotlight of synchronous CMC. In contrast, the storage of information is a prominent property of asynchronous CMC. This provides the opportunity for all users to access required information not only in a certain moment but as the need arises, and users can even retrieve a piece of information repeatedly.

Despite these opportunities, in practice a lot of problems appear: many field reports refer to poor motivation of team members to enter information into the shared database for making it available for others (Jian & Jeffres, 2006; Kalman, Monge, Fulk, & Heino, 2002). These motivational barriers for contributing can be derived from the inherent characteristics of the communication situation (Cabrera & Cabrera, 2002). Knowledge exchange

with shared databases represents a typical many-to-many communication situation where users send messages to a multitude of other users and where all users can serve as senders and also as recipients. In such a many-to-many communication situation, a sender does not know who the recipients are (high anonymity) and the recipients do not know who the sender of a message is (low identifiability). This is completely different from one-to-one or from one-to-many communication situations in which participants' behavior can be clearly identified (cf. Rafaeli & LaRose, 1993). In one-to-one communication only one individual communicates with another, as in the case of e-mail communication or of instant messaging. One-to-many communication refers to a communicative act in which only one special person is entitled to be the sender and is allowed to publish information. This is the case with databases with a dedicated administrator who is the only person with publishing rights. With shared databases each person can contribute his or her knowledge and make it available for everybody else. This has various implications for how participants will communicate. For example, if the addressee of an e-mail responds very quickly, this behavior can be attributed to him directly (for research on the positive impression of quick responds in CMC cf. Liu, Ginther, & Zellhart, 2001). Due to this identifiability, the people involved feel highly responsible for their own communicative behavior and their contributions to the conversation. The many-to-many communication which arises from knowledge exchange with shared databases is a fundamentally different situation with respect to identifiability and responsibility. Here, a participant does not post messages directly to another person. Instead, he or she contributes information to a repository to which many other people have access. This is the case with a multitude of settings, for example, with Web forums, electronic mailing lists, or newsgroups, as well as with a number of recent developments, such as file sharing or blogs.

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