

Chapter 7

An Integrated Collaboration Environment for Various Types of Collaborative Knowledge Work

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ABSTRACT

In knowledge work, different types of collaboration can be distinguished. Because of close relationships between these collaboration types, it is necessary to support them together in an integrated collaboration environment. Using case studies, in this paper, the authors describe various types of collaboration practice and demonstrate the necessity of their integrated support. Based on this work, the concept of the incorporation of different types of collaboration in an integrated environment is presented. Furthermore, a prototype implementation of such an integrated environment is offered.

INTRODUCTION

CSCW research has produced numerous solutions, systems, and tools to improve collaborative work and to achieve better results. While CSCW

research has a focus on team-based collaboration (Petrovic, 1993; Teufel, Sauter, & Mühlherr, 1995), in the context of knowledge management, the concept of communities of practice (Wenger, 1998; Brown & Duguid, 1991) has been propounded for several years. In collaborative knowledge work, however, even more types of collaboration

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can be distinguished (Fuchs-Kittowski, Stahn, & Walter, 2003). Beside this, the different types of collaboration are frequently encapsulated and treated in isolation, which explains the general failure to consider the integration of these types of collaboration. Because individuals can be active in various groups of different types simultaneously and group types can alternate - and to avoid media disruptions or to realize different degrees of trust - it can be useful and necessary to establish an integrated collaboration environment supporting different types of collaboration (Fuchs-Kittowski et al., 2003).

In this paper, various types of collaboration in knowledge work with their distinguishable features and a concept of the integration of these types in an integrated collaboration environment are presented. This concept is based on the identification of a comprehensive list of features of collaborative knowledge work, which are structured according to the dimensions interaction, organization and structure. For each feature different functions of an integrated collaboration environment are suggested and implemented, that help to reach the goals related to the specific characteristics of the features for a certain collaboration type.

The paper is structured as follows. In Chapter 3, case studies from practice are used to identify different types of collaboration, and in Chapter 4, their specific characteristics are described. The case studies also show that the integrated support of the collaboration types in an integrated environment is necessary. Based on this, Chapter 5 presents the concept of an integrated environment, and Chapter 6 demonstrates its prototype implementation.

RELATED WORK

In the field of Computer-Supported Cooperative Work (CSCW) as well as in Community research, there is a predominant differentiation between two types of collaboration: “Community” and

“Team”. There is also a distinction between different types of Communities. The typical distinguishing features are orientation on a task (focus) (Botkin, 1999), size, degree of interaction, orientation during collaboration, objects of work (Borghoff, Koch, Lacher, Schlichter, & Weisser, 2001), purpose, cohesion, borders (open/closed), duration of existence (Wenger & Snyder, 2000), formalization (of formation, leadership, coordination) (McDermott, 1999; Collison, 1999), and composition (degree of expertise) (Andriessen, Huis in ‘t Veld, & Soekijad, 2004). However, the typical values of the characteristic features of the collaboration types are neither viewed uniformly nor defined consistently.

These distinctions are mostly used to differentiate among the collaboration types, but the aspect of their integration has hardly been taken into account so far. Therefore, a common characteristic of existing collaboration environments is that they basically support a certain type of collaboration or a certain, delimited context of application. For example, systems for team support primarily provide an electronic working environment for cooperation and functionality for coordination of activities of the team members (Teufel et al., 1995). In contrast, systems for community support contain above all functionality for communication regarding a certain subject (Wenger, 2001). However, cooperative work is not limited to a certain type of collaboration or a certain application domain (Prinz et al., 2002). Therefore, an approach is necessary that supports collaboration in different collaboration types in the work context across application borders. A collaboration environment of this type provides functionality to support and manage various types of collaboration.

Effective collaboration requires an awareness of the existence and activity of other people to support the person’s own activity in the group context (group awareness) (Dourish & Belotti, 1992). In the field of CSCW concepts, systems, and prototypes to support awareness have been presented

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