Chapter III

Research Challenges for Integration of E-Collaboration Technologies

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Abstract

Integrated technology support for collaborative work is a topic of great interest to academics and practitioners alike. E-collaboration has become a vibrant and fruitful area of research and application from many perspectives. Integration remains a major challenge, however, and a significant opportunity exists to advance the state of practice as well as research. We provide an overview of different forms of integrated e-collaboration technologies, along with examples of key application areas. Based on these examples, we analyze the research opportunities and challenges and provide a set of recommendations for advancing our understanding of integrated e-collaboration technologies. The focus throughout is on behavioral and organizational issues related to these technologies and their underlying theoretical perspectives. The overarching goal of the chapter is to identify important needs for research, based on a clear understanding of the key concepts, issues, and existing knowledge.
Introduction

Developing integrated technology support for collaboration has been a major target for both research and industry since the early groupware era of the 1980s. Numerous prototypes have been developed in the area of computer supported cooperative work (CSCW), which integrate combinations of collaborative support tools for different working modes and contexts (e.g., Francik et al., 1991; Sohlenkamp & Chwelos, 1994; Geyer et al., 2001). While providing important illustrations of the potential and limitations of different design concepts and architectures, the evaluation of these prototypes in real use tends to be limited. As with most technologies, the road from prototype to commercial systems is long and complex.

With the widespread diffusion of the Internet and the Web, new possibilities have emerged for providing integrated support for flexible, anytime/anyplace collaboration. The current market for integrated e-collaboration products and solution providers is growing rapidly. This trend coincides with the current industry focus on enterprise integration, i.e., the integration of vital information from both internal systems and those of trading partners (Rabin, 2001).

Integrated e-collaboration technologies available in the marketplace today range from small-scale, Web-based team and project rooms, to enterprise-scale collaborative product suites. They include both new products developed exclusively for this market and established products that extend their functionality to collaboration. Examples of the latter include integration of document management and workflow functionality in enterprise resource planning systems. During the last few years, major vendors of e-collaboration suites have sought to broaden the scope of their platforms by acquiring vendors of conferencing and team support applications, e.g., the acquisition of PlaceWare and Groove Networks by Microsoft, and eRoom by IBM. Even standard office applications such as MS Word and MS Powerpoint today offer collaborative features for co-authoring and net meetings, which when used to their full extent comprise relatively advanced collaborative support.

While integrated e-collaboration technologies have finally become easily available in the commercial marketplace, we still know little about how the integration aspect of these technologies affects their appropriation and use, nor is it clear what their effects are on productivity and quality of task execution and work processes. Research on CSCW and groupware has provided a rich body of studies on the adoption and use of single technologies or services, such as electronic calendaring and scheduling (Grudin & Palen, 1995), workflow management support (Grinter, 2000), electronic meeting support (Fjermestad & Hiltz, 1998-1999, 2000-2001), or desktop conferencing (Mark et al., 1999). While these different technologies can also integrate several features, they mainly support one of the three major forms of collaboration—either communication, coordination, or information sharing (Grudin & Poltrock, 1997). Furthermore, the research rarely focuses on integration aspects.
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