Chapter XII
The Perceptions of Collaborative Technologies Among Virtual Workers

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ABSTRACT

This chapter discusses the findings of a qualitative research study which explored how collaborative technologies facilitate or inhibit the work of 12 virtual workers. Overall, participants perceived collaborative technologies as helpful to facilitating their work but mentioned a number of challenges inherent in each. For example, asynchronous technologies afford the ability to respond at one’s leisure, but this affordance may generate misconceptions when time lags occur. Synchronous technologies such as online meeting tools with video enhance meetings by affording the communication of visual cues but pose the challenge of coordinating the schedules of virtual team members or clients dispersed across global time zones. Participants also revealed that certain technologies were more appropriate for certain tasks. Finally, the chapter relates the results of this study to previous research on technology-enhanced work and lists implications for future research and practice.

INTRODUCTION

In the developed world, technology has become an essential component of the vast majority of jobs and therefore a fixture in the lives of most workers. Consider the following quote from the Center for Work, Technology, and Organization’s (WTO’s) Web site (WTO, 2002): “We spend over half of our lives working. Work defines our identity and social status, gives us purpose, and shapes our social network. Work is also the basis for all organizing… In organizations, work gets done through technology.” Technology’s impact on work is especially powerful for virtual work teams, a growing segment of the work population, who depend substantially more on information and collaborative technologies than co-located teams (Gibson & Cohen, 2003).

The purpose of this chapter is to discuss the findings of a qualitative research study which explored how collaborative technologies facilitate or inhibit the work of 12 virtual workers. The chapter first reviews the literature regarding the relationship between virtual work and technology. This is followed by a detailed discussion of the methodology and findings of the qualitative
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The chapter ends with a discussion of the findings and implications for practice and future research.

BACKGROUND: A REVIEW OF RELEVANT LITERATURE

Computer-Supported Cooperative Work

An examination of how collaborative technologies facilitate the work of virtual teams must begin with a discussion of current and future research in computer-supported cooperative work (CSCW). CSCW is a formal area of inquiry “concerned with how technology can help people work together more effectively” whether virtual or co-located (Coover & Thompson, 2001, p. 2). Since Irene Greif and Paul Cashman coined the phrase during a workshop in 1984, scientists, scholars, and practitioners from such diverse disciplines as anthropology, business, cognition, computer science, ergonomics, human-computer interaction, human factors, information technology, office automation, organizational design, psychology, and sociology have been drawn to CSCW (Coover & Thompson, 2001). The challenges inherent in such a multidisciplinary field of study, as characterized by Grudin and Poltrock (1997), are the “Tower of Babel” problem and a lack of shared knowledge. Those interested in CSCW often use different terms to describe the same concept and contribute their research and lessons learned to different journals, books, and conferences. What further challenges the field is a split in research foci. While some researchers investigate the technological aspects of CSCW and others focus their investigations on the collaborative aspects, CSCW is “best conceived of as an endeavor to understand the characteristics of cooperative work behavior with the objective of designing adequate technology to support it” (Coover & Thompson, 2001, p. 6).

The Evolution of CSCW Technologies

Technologies that support cooperative work have evolved over the last three decades and each new generation of technologies has expanded the scope of support available to individuals, groups, teams, and organizations. Research on Group Decision Support Systems (GDSS), an application designed specifically to support cooperative work, began over 20 years ago in business management schools. GDSS was originally intended as an electronic support system designed to facilitate decision-making among high level managers meeting face-to-face (Grudin & Poltrock, 1997). Through a network of computers, managers used GDSS for idea creation and to vote on alternative decisions during ad hoc meetings but not for continuous cooperation (Andriessen, 2003). Originally very expensive, GDSS were only used by high level managers, but, as costs dropped, lower-level project teams began using these decision support tools.

In the mid 1980s, GDSS researchers began attending CSCW conferences and using the term GDSS more generally to include all technologies that facilitate decision-making including e-mail, and some began to think that GDSS was synonymous with CSCW (Grudin & Poltrock, 1997). Eventually the “D” in GDSS was dropped to reflect the new emphasis on a variety of technologies, not just electronic meeting support systems, and the new acronym became GSS (group support systems). GSS researchers now contribute research to their own journals and focus on project and large group support. They rarely use the term CSCW, since CSCW research tends to focus on small groups or teams composed of ten members or less. Despite their different foci, the GSS and CSCW literatures now both use the term “groupware” (Grudin & Poltrock, 1997).

Groupware is a generic term that can refer to hardware, software, and services designed to support face-to-face or virtual group collaboration (Coover & Thompson, 2001). According to
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