Chapter 5.6
E–Collaboration Using Group Decision Support Systems in Virtual Meetings

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INTRODUCTION

When e-collaborating, there is often a need to bring everyone involved together for a meeting. With potential meeting participants often widely dispersed geographically, the meeting could be conducted virtually by utilizing technology known as groupware. Procedures for conducting successful face-to-face meetings have been in place for many years. However, with the rise in the number of computer-mediated virtual meetings being held amongst e-collaborators, there are additional considerations to take into account when conducting virtual meetings using groupware. This article discusses the use of a particular type of groupware (GDSS) in virtual meetings conducted by participants collaborating in an electronic environment.

GROUPWARE

Groupware is defined as any technology that improves group productivity (Briggs & Nunamaker, 1994). It is a generic term for specialized computer aids designed for use by collaborative work groups (Johansen, 1988).

Types of Groupware

The term *groupware* can in actuality stand for many different things. Briggs and Nunamaker (1994, p. 61) have identified several names and concepts defined as equivalent to groupware: group decision support systems, electronic conferencing, team databases, computer supported cooperation, video teleconferencing, shared drawing, workflow automation, information filtering, coordination support, collaboration support,

electronic meeting systems, and team scheduling and project management.

Regardless of what it is called, groupware supports e-collaboration (Kock & McQueen, 1997), communication, and coordination (Orlikowski & Hofman, 2003) and allows people to work together to perform the following types of functions in an electronic environment (Liff, 1998):

- Management support, including meeting facilitation
- Document sharing and management
- Group calendaring and scheduling
- Project management
- Information sharing and threaded discussion forums
- Real-time interactions, including audio and video conferencing and whiteboard collaboration
- Knowledge management, which allows organizations to create a corporate memory

Group Decision Support Systems

One category of groupware increasing in popularity is group decision support systems (GDSS). GDSS encourage such activities as group idea generation, voting, brainstorming, decision making, and consensus reaching (Holtham, 1994) by removing common communication barriers. Huber defines GDSS as "a set of software, hardware, and language components and procedures that support a group of people engaged in a decision-related meeting" (1984, p. 195). DeSanctis and Gallupe offer a similar definition, calling it "an interactive, computer-based system that facilitates the solution of unstructured problems by a set of decision makers working together as a group" (1985, p. 379). Pollock and Kanachowski (1993) define GDSS as a system where group members use computers interactively to support the group's decision-making capacity.

Studies have shown that technology is essential to the success of e-collaborations (see Cai,

2005). According to Poole and Holmes (1995), the strength of GDSS comes from its ability to enhance communication and information exchange, complex information processing tasks, and coordination and organization of group collaborations. GDSS facilitate e-collaboration by combining the use of computer technology (both hardware and software), video, audio, and telecommunication systems (Barnes & Greller, 1994).

There are different levels of GDSS involved in e-collaboration (DeSanctis & Gallupe, 1987). At its most basic, GDSS provide features that facilitate common communication behaviors such as voting and electronic message exchange. The next level of GDSS provide a means to model decisions and group decision techniques to reduce the uncertainty that can occur in the decision making process. At its highest level, GDSS are tools to manage group communication patterns in e-collaboration and can include expert advice in the selection and arrangement of procedures to be followed during a virtual meeting.

CONDUCTING VIRTUAL MEETINGS USING GDSS

The primary purposes of meetings are to exchange work-related information, to make decisions, or to accomplish tasks. Guidelines for conducting successful face-to-face meetings have been in place for many years. For each face-to-face meeting, four stages of meeting protocol should be adhered to:

1. Determine the need for a meeting
2. Prepare for the meeting
3. Conduct the meeting
4. Follow-up after the meeting

Even when proper procedures are followed, there are several problems that can arise in traditional face-to-face meetings. Issues not related to the relevant task can sidetrack the group. Dominant

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