Chapter 5.3
Supporting Distributed Groups with Group Support Systems:
A Study of the Effect of Group Leaders and Communication Modes on Group Performance

Youngjin Kim
Fordham University, USA

ABSTRACT

The leadership role facilitates group process by structuring group interaction. How leadership affects group performance in GSS settings remains one of the least investigated areas of GSS research. In this study, the presence of a group leader is found to make a significant difference in objective decision quality and satisfaction with the decision process. At the same time, perceived decision quality and consensus are not significantly different in groups with a leader and those without one. A content analysis of comments by group leaders shows that group leaders are effective when making comments on clear group objectives and interaction structure in the early stages of group interaction. In the later stages, however, it becomes more important for group leaders to offer comments encouraging interaction and maintaining group cohesion.

INTRODUCTION

Group support systems (GSS) are information technology-based environments to support group activities that may be distributed geographically and temporally (Dennis, George, Jessup, Nunamaker, & Vogel, 1988). The objective of GSS is to increase the effectiveness and efficiency of group interaction by facilitating the interactive sharing of information among group members (Nunamaker, Dennis, Valacich, Vogel, & George, 1991). These objectives are accomplished by augmenting the group's information-processing capability, increasing participation, and improving communication by structuring the interaction with technology (Ho & Raman, 1991). In this respect, there are clear parallels between GSS studies and structured group interaction techniques, such as the nominal group technique and the Delphi method (Turoff, Hiltz, Baghat, & Rana, 1993),

in which leadership and structured communication have been found to exert a significant influence on group outcomes. In fact, GSS research has a strong tradition of studying the effects of structuring group communication (Fjermestad & Hiltz, 1998-1999). Investigation into the impact of leadership on group performance, however, is seldom part of GSS studies (Briggs, Nunamaker, & Sprague, 1997-1998; Parent & Gallupe, 2001). Out of about 230 published papers on GSS, only 6% investigated the effect of leadership in GSS environments (Fjermestad & Hiltz, 1999).

Another little-explored area is the effect of distributed group support systems (DGSS) on dispersed groups, where all group members are geographically and/or temporally dispersed and interact asynchronously through computer-mediated communication systems (CMCS) (Turoff et al., 1993). Although there has been considerable research on communication behavior in face-to-face groups with GSS, there have been few efforts to verify the generalizability of face-to-face communication behaviors in distributed group settings or to investigate factors of computer-mediated communication that uniquely affect the performance of distributed groups (Fjermestad, 2004).

Synthesizing previous studies, Bordia (1997) reports several behavioral differences between groups with CMCS and those with face-to-face communication. The main reason for these differences is that in computer-mediated communication, the lack of social presences (Short, Williams, & Christie, 1976) affects the perception and interpretation of the meaning of the messages exchanged (Rice, 1984), making exchange of information among dispersed group members difficult (Hightower & Sayeed, 1996). This implies that communication support for distributed groups is necessary to overcome the potential problems with limited bandwidth and lack of social presences in CMCS (Hiltz & Johnson, 1990). In addition, the support for asynchronous communication with CMCS should include ways to support larger decision groups, improve the participation of uncooperative subgroups, and deal with critical mass activity phenomena (Turoff et al., 1993). To this end, this study was designed to look into the effects of leadership and communication structuring on group performance in asynchronously interacting distributed groups with CMCS. In the following sections, the literature on leadership and GSS is briefly reviewed, research design and methodology are explained, and research findings are discussed.

LEADERSHIP AND GROUP SUPPORT SYSTEMS

Leadership, by its very nature, is the process of directing and coordinating group interaction (Jago, 1982). According to path-goal theory (House, 1971), a leader affects group performance by clarifying the path to the group's goals, reducing obstacles that prevent the group from reaching these goals, and trying to increase the group's satisfaction as it works toward achieving its goals. In doing so, a leader may define objectives, maintain goal direction, provide the means for goal attainment, provide and maintain group structure, facilitate group action and interaction, maintain group cohesiveness and member satisfaction, and facilitate group task performance (Roby, 1961; Schutz, 1961). Leaders also establish and maintain the link between satisfaction and group performance by employing different leadership styles whose effectiveness can be moderated by the nature of the task, which may account for variance in group performance of more than 50% (Hirokawa & Poole, 1986).

The study of leadership in GSS research also sees leadership as the process of directing and coordinating group interaction. In this research, leadership is considered to be another layer of the group interaction structure (George, Easton, Nunamaker, & Northcraft, 1990; Hiltz, Johnson, & Turoff, 1991) that uses GSS tools to dictate who