Developing Synergies between E-Collaboration and Participant Budgeting Research

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INTRODUCTION

E-collaboration, through group support systems (GSS) and other forms of computer-mediated communication (CMC), is increasingly used in organizations. GSS and CMC technologies offer organizations new ways to communicate information and knowledge, to interact synchronously or asynchronously, and to generate ideas, make decisions and solve problems. Although a sizable body of literature has developed that examines behavior in face-to-face (FtF) settings compared to CMC settings, one area that is relatively unexplored in the e-collaboration literature is participative budgeting, a widely used aspect of management control systems.

Budgeting is a topic of continuing interest to managers and scholars because of its important role in coordinating activities, allocating resources, motivating employees, and communicating goals and constraints in organizations. Participation by subordinates has long been considered an important aspect of the budgeting process. Participation has been assumed to lead to improved attitudes, communication, motivation, performance, and satisfaction (Shields & Shields, 1998). Participative budgeting has also been assumed to take place in face-to-face meetings between supervisors and subordinates.

Recently, however, budgeting software (a form of group support system) has been deployed in many companies and computer-mediated communication within virtual planning teams has begun to replace face-to-face meetings between superiors and subordinates (Smith, Goranson, & Astley, 2003). E-collaboration technologies have the potential to significantly impact many aspects of the budgeting process and the outcomes of that process. Because results of GSS and CMC research have shown that the effects of e-collaboration are dependent on multiple factors, the impacts on participative budgeting need to be investigated.

In addition, participative budgeting provides a new environment in which to study the role of e-collaboration technologies. Participative budgeting differs from many of the tasks examined in the GSS and CMC literature because, like participation in the systems development process (Hartwick & Barki, 1994), participation has a dual role (contributing to the development process and using the system after it is developed). It involves both the contribution to the budgeting process (e.g., information sharing) and the future effects of that participation (e.g., job satisfaction, motivation to achieve budget goals, and actual performance). In the GSS and CMC literature, the purpose of the collaboration is to accomplish the immediate task at hand.

Even though research in e-collaboration and participative budgeting have drawn from different theoretical backgrounds and have very different perspectives, the primary aim of both is to enhance group interactions, communication, and decision making. The purpose of this article is to identify potential synergies through which scholars in both areas can enhance future research.

BACKGROUND

E-Collaboration Research

The e-collaboration literature draws on theories of communication that are primarily concerned with social aspects (e.g., social presence, social influence),

Table 1. Characteristics e-collaboration and participative budgeting research

	E-collaboration	**Participative Budgeting**
Status of participants	• Varies	• Hierarchical (subordinate and superior)
Implications of outcomes	• Performance of the task itself • Participant's perceptions of and satisfaction with task and group interaction (immediate outcomes)	• Performance of the task itself • Motivation and commitment to future behavior
Collaborative/ participative tasks	• Idea generation • Decision making • Problem solving • Negotiation	• Communication of private information • Goal setting
Communication medium	• Extensive examination of face-to-face, CMC and GSS	• Not considered
Theories	• Task-technology fit • Psychobiological	• Psychology • Economics (principal-agent) • Sociology (organizational justice)
Independent variables	• Medium (CMC v. FtF) • Characteristics of the GSS • Characteristics of the task and group	• Level of participation • Incentives
Dependent variables and outcome factors	• Efficiency of the collaboration • Consensus • Effectiveness (number of comments, level of understanding) • Satisfaction • Usability (number of errors)	• Motivation • Future performance • Satisfaction • Perception of organizational justice • Willingness to communicate accurate information
Moderating, intervening, mediating and adaptation variables	• Numerous	• Numerous

on theories that are primarily concerned with technological aspects (e.g., media richness, task-technology fit), and on theories that integrate both aspects (e.g., psychobiological). Two common threads in most of these theories are concerned with the communication medium and the task.

Social presence theory (Short, Williams, & Christie, 1976), which predates the information super highway, has had a significant influence on GSS and CMC research. Under social presence theory, communication is more effective when the medium has the appropriate level of social presence for the level of interpersonal involvement necessary for the task. Social influence theory emphasizes the importance of social influence on attitudes toward communication media. However, under social influence theory, influences like peer pressure, cultural background, and mental schema may have a stronger effect on attitudes than characteristics of the medium itself.

Media richness theory (Daft & Lengel, 1986) classifies communication media according to its ability to convey nonverbal cues, immediate feedback, personality traits, and natural language. Under media richness theory, the criterion for matching the media to the collaborative task is based on the need to reduce uncertainty. Face-to-face communication is the richest medium. The telephone is less rich. Most intranet- and Internet-based media are near the other end of the spectrum and are classified as lean. Task-technology fit theory (Zigurs & Buckland, 1998) proposes a set of ideal profiles composed of an internally consistent set of task contingencies and GSS elements that affect group performance. Like social presence theory, media richness and task-technology fit theories emphasize using the appropriate medium for the task at hand.

The psychobiological model (Kock, 2004) proposes that there is a negative causal link between the "naturalness" of a computer-mediated communication medium, which is the similarity of the medium to the face-to-face medium, and the cognitive effort required for an individual using the medium for knowledge transfer. This theory is a fresh perspective because it is integrative in that it encompasses previous theories, instead of attempting to negate them, and because it examines the *reasons* why face-to-face and CMC can lead to different outcomes. The task is an aspect of this theory, but the focus is on the cognitive effort required by the difference between 'natural' medium (face to face) and lean CMC mediums.

Empirical e-collaboration research, as classified by Fjermestad (2004), has typically modeled communication mode (face to face versus GSS or CMC) as