



# Building a Shared Basis for Effective Use of Computer-Mediated Communication in Group Decision Making

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## ABSTRACT

Managers spend up to 80% of their time in communication. New media now offer alternative means of communication within organizational contexts. Promoting effective communication using the new media is a fundamental issue for managers and researchers alike. This paper proposes an approach to considering the affect of building a shared basis for effective communication using the new media in response to current theories on media choice and effective communication.

## 1.0 INTRODUCTION

Organisational managers and employees spend a considerable portion of their workday (30-80 percent) attending a broad spectrum of meetings and working with a wide range of cross-functional work groups (Panko 1992). These communication processes must be supported by communication structures and technology. In today's organisations this technology includes a variety of computer-mediated communication (CMC) media. Communication media choice and use is a very important issue for both managers in organizations and researchers in information systems. Media Richness Theory (MRT) has been the most influential theory in guiding managers for media choice and use for the last decade (Daft & Lengel 1986). According to MRT, lean media such as email could not be used to effectively convey rich information which is the key for solving many complicated equivocal organizational problems. However, the inconsistencies of research findings in the literature have encouraged a reconsideration of the descriptive and predicative validity of MRT, especially for CMC systems (Huang 1996, D'Ambra et al 1998a). Some research contends that media richness is not a fixed feature of a medium, but could be changed by shared social constructions, which refers to an object that is, at least in part, socially constructed and subjectively generated (Huang 1996). To choose and use CMC systems effectively for improving group performance, the key issue is thus how to build up a shared basis (e.g., shared social constructions) for communicators before they work together as a team to perform a task and communicate frequently. This research in progress paper explores the proposition of improving communication effectiveness through developing a shared social construction of effective communication behaviour.

## 2.0 BUILDING A SHARED SOCIAL CONSTRUCTION

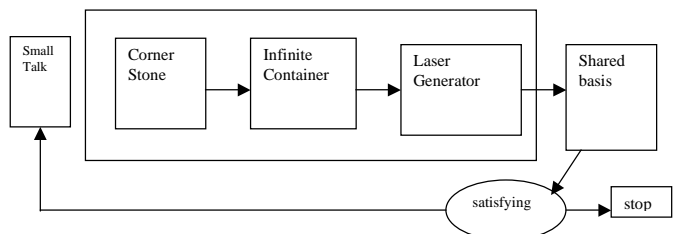
Dialogue theory (Bohm 1990) and an operational dialogue procedure proposed by the MIT's Dialogue project provide a sound theoretical foundation for building up such a shared basis for communicators.

The dialogue can help to establish shared meanings and group cohesion. Based on theories of dialogue, learning, learning organizations and alignment a theoretical framework proposed by Huang et al. (1998) is adapted in this research to develop a shared relationship for users of the new electronic media (Senge 1990). The dialogue framework is illustrated in Figure 1.

The dialogue process will include:

1. Communicators take part in a small-talk session to introduce themselves and get to know the other communication partners (Jarvenpaa and Knoll 1996).
2. CornerStone: Communicators engage in a dialogue on defining and generating shared goals for communication.
3. InfiniteContainer: The core of the framework is a dialogue session adopted from the MIT's dialogue procedure (Schein 1993). Firstly communicators reflect on their past experience of cooperation in terms of good communications. Secondly communicators, in concert, disclose and share their past cooperative working experiences, identifying related characteristics of their past experience related to experiences of good communication protocols (Nath and Lederer 1996). Thirdly, given the shared goals, communicators exchange feedback to the derived characteristics of good communication. Fourthly, communicators are not allowed to criticise other's input. A dialogue facilitator would intervene, when necessary, to clarify or elucidate on any

Figure 1: Dialogue Framework



issue. Fifthly, the dialogue will be closed when no further exchange and clarification from communicators are possible.

4. LaserGenerator Outcomes of the dialogue are described as laser (Bohm 1996). Communicators rank the characteristics discussed at step (3).
5. Verification of an outcome that will support effective communication in a mediated environment.

### 3.METHODOLOGY

Figure 2 outlines the proposed research model. The three media to be used in the experiment include: face-to-face, email, and video-conferencing. For each medium there will be two treatments: with framework and without framework. The mediating variables to be measured are perceived media richness and perceived group cohesion. The dependent variables include decision process satisfaction, decision satisfaction and decision quality.

The study will adopt a 2x2x3 factorial design, as shown in Table 1. Communication medium varies in face-to-face, email and video conferencing. Group structure varies with the presence or absence of the theoretical framework as shown in Figure 2. A baseline (or control group) is the one without the support of information technology and the framework. Group size is three. Subjects will be drawn from post-graduate students and randomly assigned into groups and each of the experimental treatments in Table 1.

The procedure to be followed for those groups in the with framework treatment will proceed as follows:

1. Each subject will complete a pre-experiment questionnaire. This will collect control data that is required for the research.
2. Each group will then participate in a small talk session of 15 minutes duration. This is a "get to know you session" for participants to build some rapport among themselves.
3. Following the small talk session each group will take part in a dialogue session of one hour duration. In this session the groups will develop a foundation for effective communication following the dialogue framework outlined in Figure 1.
4. In this session each member of the group will take part in resolving a group problem. The group will be responsible for recommending a solution. This task will take place in one of the following mediated environments: face-to-face, email, video-conferencing. Once the task has been completed each subject will complete a post-experiment questionnaire. This will collect the data for the mediating and dependent variables.
5. Finally each group will take part in a debriefing session.

The procedure for the without framework groups will be identical to the with framework groups with step 3 being omitted.

Figure 2: Research Model

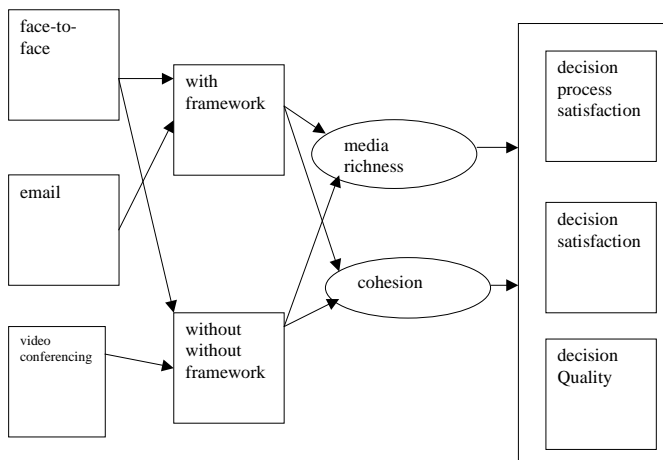


Table 1: Research Design

	Email	Face-to-face	Video conferencing
With framework	10 groups	10 groups	10 groups
Without framework	10 groups	10 groups	10 groups

#### 3.1 Task

Past research showed especially mixed results in terms of the role of "rich" media for equivocal tasks. Therefore we propose a task that has no clear decision-making criteria and no demonstrably correct answer such as the "van management" task (Mennecke and Wheeler 1993).

#### 3.2 MEDIATING VARIABLES

##### Media Richness

Media richness will be measured using a calibrated version of the scales developed and tested by D'Ambra and Rice (1998a,b). MRT proposes that communication media differ in the extent to which they can (a) overcome various communication constraints of time, location, permanence, distribution and distance; (b) transmit the social, symbolic, and nonverbal cues of human communication; and (c) convey equivocal information. The D'Ambra and Rice scale measures perceived media richness of a medium on four dimensions. Higher values indicate greater media richness.

##### Cohesion

The research model in figure 2 hypothesizes on the mediating influence of group cohesion on the dependent variables. Each of the media treatments will result in a different experience of group decision making for subjects in the groups. The nature of the experience as measured by group cohesion may mediate each subjects perception of the outcome.

It is anticipated that each of the groups will have a zero history. Groups will be scheduled individually and team members will meet for the first time and the beginning of each experimental procedure. Seashore's group cohesiveness Index (1954) will be used to measure group cohesion.

#### 3.3 Dependent Variables

The dependent variables of decision process satisfaction, decision satisfaction, and decision quality will measure the perceptions of the effectiveness of each communication treatment as well as allow for the testing of the hypotheses. The three dependent variables of decision process satisfaction, decision satisfaction, and decision quality will be measured by the following scales, respectively: Tan et al. 1999, Gouran et al. 1978, and Green and Taber 1980.

#### 4.0 CONCLUSION

This research in progress paper recognises the need to fill the gap that exists in theoretical approaches explaining media choice. The major contribution being the extension of media richness theory by including and measuring the influence of a shared social construction of communication behaviour. The expected results of this research project have significant implications to organizational computer-mediated communication (CMC) system adoption and diffusion. With the growth of global organisations, virtual teams, and advances in networks and telecommunications, fact-to-face meetings are no longer the sole communication medium used by organisations to discuss problems and make decisions. Various CMC systems, such as email and video-conferencing systems, emerged in recent years have revolutionised communication and made possible new and expanded forms of group work. Meanwhile, the decisions on choosing and using the CMC systems usually involve an investment of millions of dollars in information technology infrastructure, which becomes an important strategic issue affecting an organisation's survival and competitiveness. The proposed framework

in this research project could help communicators to build up shared basis for further effective communication and decision making. In other words, after a shared basis of effective communication is built up among group members, CMC systems can be used as effectively as FTF meetings to solve problems or make effective group decisions.

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