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The Role of the Facilitator in Computer-Supported Environments: A Critical Incidents Study

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DISSERTATION APPROVAL

THE ROLE OF THE FACILITATOR IN COMPUTER-SUPPORTED ENVIRONMENTS: A CRITICAL INCIDENTS STUDY

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ABSTRACT

THE ROLE OF THE FACILITATOR IN COMPUTER SUPPORTED ENVIRONMENTS

By
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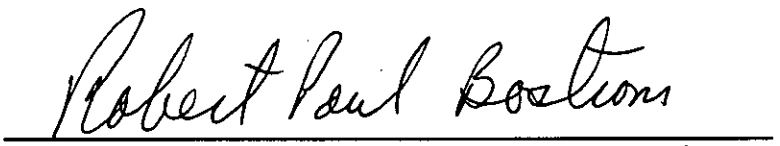
B.S., Purdue University, 1972
M.S., Purdue University, 1980



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Dissertation Submitted in Partial Fulfillment of
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ABSTRACT

The Role of the Facilitator in Computer-Supported Environments

This multiphased study represents a rigorous exploration of the role of the facilitator in computer-supported environments. The purpose of the study was to identify and empirically measure the importance of the critical dimensions of the facilitator's role. The study examined the following research questions:

1) **What are the critical dimensions and their related behaviors that contribute to the role of the effective facilitator in face-to-face computer supported environments?**
2) **Are there impacts on or differences in critical facilitator role dimensions/behaviors when facilitating with different types of group support systems (GSS) -- (computer based technology to support group work)?**

The critical incidents methodology was employed to collect two hundred thirty-five reports of facilitator experiences from fifty experienced facilitators in computer-supported environments. One hundred forty-six (146) generic and one thousand two hundred ninety-eight (1298) specific facilitator behaviors were identified. These behaviors were then categorized into critical role dimensions.

The results of Phase I of the study indicated the existence of sixteen critical role dimensions. The empirical measures of importance in Phase II produced significant findings, identifying Planning and Designing Meetings as the most important facilitator role dimension overall. Other extremely important dimensions were identified. Statistically significant agreement on the relative importance of a number

of role dimensions, along with significant differences across technology on mean importance rankings were identified. These differences were quite dramatic considering the small sample size.

The study findings have important implications for organizational practitioners and researchers alike. This study is the first to identify and ground the critical role dimensions of the facilitator's role in computer-supported environments. These precise descriptions furnish a starting point for future research on the role and process of facilitation in both traditional and electronic contexts. The richly grounded dimensions also provide an excellent practical foundation for the development of behavior based selection criteria, performance measures and skill based facilitator training programs.

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Many months (and years) ago when I began this doctoral program, I realized it would be a long and interesting journey. I knew that I would work very hard and that I would learn a lot about systems, organization, groups and facilitation, about persistence and about being committed to an outcome. What I didn't realize is how important this journey would be to me and how much I would discover and rediscover about myself, my friends, colleagues and family. Thus, this journey toward academic excellence and professional and personal integration has been both rewarding and surprising. For all the people who have provided me with the support, the rewards and the surprises along the way I would like to dedicate this dissertation manuscript.

I would like to express my deepest gratitude, respect and affection to my chairperson and faculty advisor, Bob Bostrom. Bob has been my mentor, friend and partner on this journey. He has been the philosopher, warrior and dreamer behind me and beside me on this path. He has helped me conceptualize, fight for (and about) and imagine the ideas that comprise the spirit and content of this study. He has been my unwavering emotional and academic support in this learning process ("let's get it done!"). To him, I will be forever grateful for his friendship, commitment and involvement. YK. . .

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CHAPTER I - INTRODUCTION

"Discovery consists in seeing what everybody has seen and thinking what no one else has thought." Albert Szent Gyorgyi

"Research is worth doing if it builds knowledge." Marshall and Rossman, 1989

1.0 Statement of the Problem: The Nature of Meetings, Groups and Facilitation

Using groups to solve problems is as old as human behavior itself (Keltner, 1989). However, the art and study of facilitating groups -how to help groups work effectively to accomplish shared outcomes-- is still in its infancy. This is especially true within the context of computer-supported groups.

Very little has been done to empirically study the role of the facilitator (Bostrom, et al, 1991). Yet the capability to facilitate diverse human and technological interactions will be one of the most essential skills for leading and contributing to organizations in a complex world (Pasmore, 1989).

Recently some researchers have strongly argued for the importance of the facilitative behaviors and skills at all levels of the organization (Naisbett and Arburne, 1989, Kayser, 1991). There is a growing realization among many researchers and practitioners about the important role played by a facilitator and facilitation skills in computer supported contexts as well (Bostrom et al, 1991; Vogel 1991; Biese, 1991; Grohowski et al, 1990; McGoff et al, 1990). Although there is an awareness that group work will be essential to

future organizational success, research and experience bear out that most leaders and members of organizations are woefully ill-prepared to meet the challenge of facilitating groups (Hirokawa & Gouran, 1989; Keltner, 1989).

Meetings are viewed as very time consuming yet very necessary features of organizational life. Yet, numerous studies continue to document wide spread dissatisfaction with the overall group process and outcomes of traditional group interactions (meetings) within organizations (Mosvick and Nelson, 1988, Hofstra et al, 1989). The research literature identifies a variety of problems which lead to unproductive meetings (Weinburg et al, 1981, Hirokawa and Pace, 1983, Hirowkowa 1987, Oppenheim, 1987, Monge et al, 1989, and Tobia and Becker, 1990).

Recent surveys of managers and professionals have found an enormous amount of their time (25% to 80%) is spent in meetings, with much of that time (53%) viewed as unproductive (Mosvick & Nelson, 1987; Hofstra 1989). This expenditure contributes to a major loss of work hours per person and millions of dollars per year for organizations (Mosvick and Nelson, 1987 and Hofstra et al, 1989). Clearly ineffective group interactions in a world becoming ever more dependent on group work directly impact organizational as well as individual productivity and profitability!

A number of researchers have suggested that there are two possible pathways to improve meeting interactions in

organizations--one, the enhancement of group facilitation skills; the other, the use of appropriate group technology to support group work (Bostrom, et al 1991). Recently, in an effort to improve meeting interactions, group support systems (GSS)--software to support group/team work--have been developed and have become commercially available (Nunamaker, et al, 1991).

However, it is not likely that a group social technology such as GSS in and of itself will be sufficient to turn meetings into fully satisfying and effective exchanges. McGoff and Ambrose (1991) evidenced this fact in their description of over 900 group sessions using GSS. They noted that: **"Although the technology (GSS) has matured to the point where it is very easy to use by almost anyone, our experience continues to confirm that the quality of the group session is predominantly dependent on the facilitator!"** (p. 807).

The implication here is clear: the success of meeting interactions is not merely the function of the group technology or structures accepted, adapted, and applied by the group, but rather it is also the result of the effective facilitation of the interaction!

In an effort to improve group meeting interactions, researchers are calling for renewed efforts in the study of group facilitation in both traditional and electronic contexts (Bostrom et al, 1991; Hirokawa and Gouran, 1989; Broome and Keever, 1989; Keltner, 1989). What is needed are empirical

studies on the facilitator's role (behaviors, beliefs, characteristics, and capabilities). Many of these same researchers are arguing for the development of skill-based training models, and more comprehensive conceptual frameworks in order to deal with the increasing complexity groups must face (Broome & Keever, 1985; Hirokawa and Gouran, 1989; Keltner, 1989; Bostrom et al, 1991).

In a recent paper on using group technology, Bostrom and Anson (1989) highlighted the overall problem of inadequate research on facilitation in the electronic setting in this way: **"None of the research to this point has described in depth what the facilitator's role should consist of and how it should be carried out. A great deal of work remains to develop and empirically ground facilitation guidelines appropriate for electronic meetings"** (p.11, Bostrom and Anson, 1989). These issues (concerning organizations, group interactions, facilitation and group technology) suggest some important research questions.

1.1 Research Questions

The purpose of the study was to empirically identify the critical dimensions and behaviors of the facilitator role in face-to-face computer-supported contexts. The general research question addressed in this exploration was:

1. **What are the critical dimensions and the related behaviors that contribute to the role of the**

effective facilitator within face-to-face computer-supported contexts?

Additionally, this study examined the impact of technology on the facilitator's role and related behaviors in computer supported environments by asking a second question:

2. **Are there impacts on or differences in critical facilitator role dimensions/behaviors when facilitating with different types of group support systems?**

The study specifically investigated questions one and two above.

In addition, this study gathered exploratory information on a number of other issues related to the facilitator role, such as the particular skills, capabilities, and/or beliefs that contribute to the effective facilitator role. These issues were intended to be strictly exploratory in nature, and were not part of the research scope of this study. Thus, this data was not comprehensively addressed by the study. Rather it was selectively used to explain or support study findings and to raise future research issues.

1.2 Importance of Research

With the growing importance of groups as the fundamental unit of work and the perceived importance of group facilitation, the research questions described above are critical and significant for both researchers in social/organizational theory and management information

systems (MIS), along with leaders and practitioners in organizations.

The first question concerned the dimensions and behaviors of the facilitator role, neither of which has been investigated specifically or empirically in the organizational and/or MIS/GSS research (Anson, 1992, Bostrom et al, 1991, Vogel, 1988, McCord, 1990, Anson and Bostrom, 1988). Significantly the study was the first to empirically examine actual accounts of effective and ineffective facilitator behaviors in computer-supported contexts.

The exploration also was the first to provide the explicit description of key dimensions and behaviors of the facilitator's role and to measure their relative importance to effective role performance. The identification of critical behaviors furnishes an important foundation for the development of facilitator selection criteria and potential guidelines for the effective facilitation of computer-supported groups. Additionally, the precise descriptions of facilitator role dimensions provide a basis for the creation of skill-based training. Finally, these dimensions can provide useful suggestions for potential group technology enhancements and possible building blocks for the transition of skills from traditional to electronic facilitation.

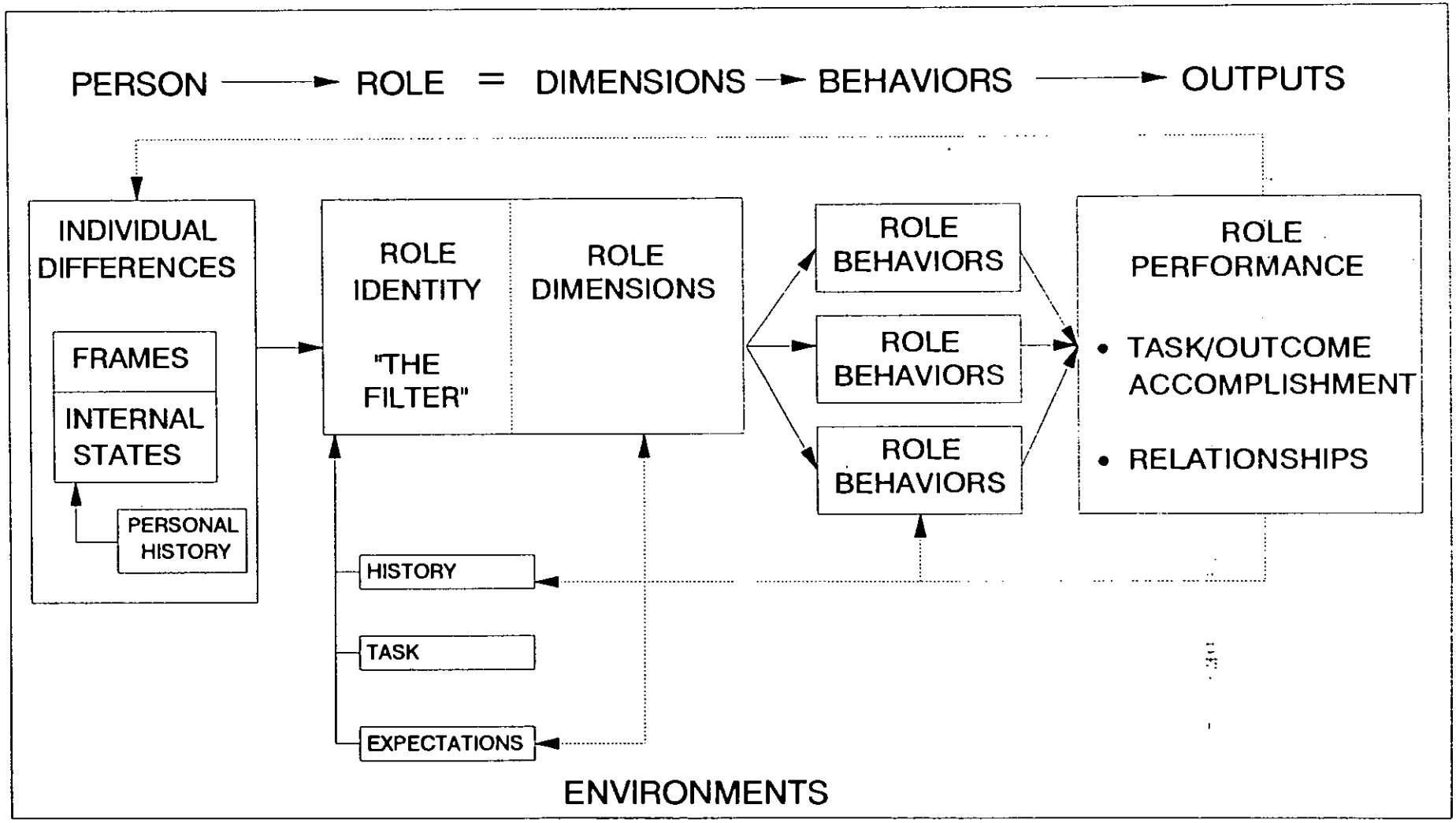
The second question of the research study was important because it contributes valuable insights into the use and impact of different GSS technology relative to the role of the

facilitator. Practically, the research study has significance for organizations which now depend on groups/teams as their basic work unit. For group-based organizations there have been few theoretically and empirically valid guidelines for facilitating group performance (McGrath, 1984; Gouran and Hirokawa, 1989). The study presented here provides a foundation for the creation of such guidelines. Finally, this study contributes knowledge for those organizations wrestling with how to enhance the effectiveness and satisfaction level of their meeting interactions. The facilitator dimensions and behaviors identified here provide critical information about the role and process of facilitation in technology-supported environments.

1.3 Overview of Theoretical Framework

The study dealt specifically with the role of the facilitator in face to face computer-supported contexts. The Person-Role Model presented in Figure 1 provides a theoretical framework within which to understand the concepts of role, dimension, and behavior--three concepts which are considered in this study. This model furnished a point of reference --a research boundary-- for the study. However, this model was not explicitly tested here. Rather, this study concentrated on related sets of critical behaviors that ground the dimensions of the role of the facilitator in computer-supported environments.

FIGURE 1: PERSON-ROLE MODEL



This Person-Role Model incorporates the managerial effectiveness work of Campbell and Dunnette (1970), Katz and Kahn's model of organizational role behavior (1976), along with Bostrom's sociotechnical-person submodel (1980). The concept of role--with its dimensions and behaviors--is the major building block of organizations and the major construct in this framework. People working in organizations enact a "role" or certain set of behaviors to accomplish specific tasks/jobs. In light of this study, the model in Figure 1 reflects a "facilitator" role focus.

The Person-Role Model (Figure 1) depicts a framework for understanding how the individual (facilitator) within a system (group or organization) enacts a role within that system. Individuals (the facilitator) come to the group (system) with their own unique individual differences, eg, their personal history, and the way they make sense of information--their own cognitive frames of reference and internal states. **(Inputs)**.

Within the group/system, the individual (facilitator) takes on/identifies with a particular role -- in this case the facilitator role. This role acts as a filter or general frame of reference or role identity through which the individual (facilitator) views and acts/behaves within the system (group).

Role is a term borrowed from the theater. It is a metaphor for certain behaviors associated with the role are directly connected to "parts in the play" (positions in the

organization) rather than adhering to the players who recite them (Bostrom, 1980; Katz and Kahn, 1976). A role in a group or organizational context consists of recurrent behaviors (actions/activities) associated with a particular position or office within the system/organization (Bostrom, 1980; Katz and Kahn, 1976). The behavior of a person in a role, then, is a complex interaction and a combination of interrelated responses to a number of environmental and internal factors.

A role is made up of specific **dimensions** and **behaviors**. Role **dimensions** are the overall functions--the broad-based tasks and activities required by the role. Role **behaviors** are the more specific actions or sets of behaviors the individual engages in in order to meet the demands of the role functions effectively. For example, an overall **dimension** of the facilitator's role might be **Encouraging/Assuring Broad-Based Participation**. The more specific **behaviors** a facilitator might engage in to carry out this role dimension are: **calling on group members by name, maintaining eye contact, providing structures which enhance participation.**

Knowing the critical role dimensions and their related role behaviors is important to the effective and constructive enactment of the role. Not knowing them leads to role ambiguity, role conflict and great confusion in obtaining desired organizational outcomes. The study presented here purposefully and empirically identified and measured the importance of the critical dimensions of the facilitator role

and their related behaviors in order to provide both strong conceptual and practical working knowledge of the role in computer-supported contexts.

Returning to the Person-Role Model, a role then is influenced by its own **history** within the system, the **tasks** it performs, and the existing role set or the **expectations** of peers, group members etc., about the role itself. The interplay of the individual and the dimensions of the role result in certain **role behaviors** which in turn impact or create specific **outputs**. The ultimate output of effective person-role behaviors is reflected in the **task/outcome accomplishment** of the group and in the case of the facilitator role, the maintenance of productive **relationships** within the group/system (Bostrom, 1980, Bostrom et al, 1991). Finally, the outputs create a **feedback loop** by which the effectiveness of the role is measured within the system/group.

It is important to note that any "role" has the potential to powerfully impact both the system and the individual "playing out" the role. A role can be so personally powerful and overwhelming that "we can literally become what we do" (Agryris, 1970). Considering the powerful nature of roles, understanding and being able to carry out their critical dimensions and related behaviors effectively is extremely important to both the individual and the organization who enact and support these roles. The study presented here provides pioneering information on the key dimensions and

behaviors of the facilitator's role in computer-supported contexts.

1.4 Overview of Research Methodology

The critical incident methodology was selected as the main research approach for investigating the study's research questions. Historically, critical incident method has been one of the best research techniques for conducting behaviorally specific samplings. It has been extensively and effectively used in identifying key dimensions of both roles and jobs within organizations (Hopkins, 1987; Yukl, 1981; Saskins, 1981; Campbell et al, 1970; Flangan, 1954).

Phase I specifically utilized critical incident methodology to construct both interview and questionnaire formats for collecting specific behavioral descriptions of facilitator experiences. Two hundred thirty-five critical incidents were gathered from fifty experienced facilitators in computer-supported environments.

The critical incidents were rigorously analyzed for reports of facilitator role behavior. One hundred forty-six generic behaviors and one thousand two hundred ninety-eight specific descriptions of the generic behaviors were documented in this process. These behaviors were then classified into sixteen key role dimensions.

Phase II measured the relative importance of each of the dimensions in relationship to effective performance of the facilitator role. A unique card sorting activity based on a

modification of the Q sort technique was used for this phase. This process allowed the respondents to specifically rank levels of importance, as well as required training needs and current facilitation performance.

1.5 Chapter Summary

This chapter addressed the importance of the research topic and the basic research questions explored. A theoretical framework -- the person - role model -- was also presented.

Very little empirical research has been conducted on the role of the facilitator in either traditional or computer-supported environments. The study presented here is the first to provide explicit descriptions of the key dimensions and the related behaviors of the facilitator's role in technology supported contexts. It is also the first to empirically measure the relative importance of each dimension to the effective performances of that role.

1.6 Overview of the Dissertation

The critical incidents study of the role of the process facilitator in face-to-face computer-supported environments presented here includes the remaining chapters:

Chapter II: **Literature Review**--This chapter presents a review of the relevant prior literature. Research pertaining to the nature of facilitation, GSS and related fields is

summarized. The purpose of this chapter is to document the importance of facilitation and the facilitator's role in both traditional and computer-supported environments and this chapter also establishes the need for the research reported and shows how the reported research builds upon and extends existing knowledge.

Chapter III: **Research Methodology**--This chapter provides an in-depth description of the research design and process. Special attention is paid to the critical incident methodology. A visual model of the overall study process is presented.

Chapter IV: **Phase I Critical Incidents Study: Data Collection and Analysis**--This chapter presents an in-depth review of the data collection and analysis of the critical incidents phase of the study. A profile of two hundred thirty-five critical incidents is described. The coding process for the identification of generic and specific behaviors, and a description of the development of key role dimensions are also presented.

Chapter V: **Phase II--The Verification and Measurement of Relative Importance**--This chapter describes the verification of the key role dimensions and

measurements of their relative importance. An analysis of dimensions is presented here by mean rankings and overall frequencies of their importance. Additionally mean rankings and frequencies by required training needs and performance levels are examined. Finally, a comparison of key role dimensions across keypad and workstation technology (by mean rankings and frequencies) is reported in this chapter.

Chapter VI: Conclusions, Discussion, and Implications: Contributions to Change in the Profession -- This final chapter discusses the significant conclusions, implications and limitations of this study. These conclusions address implications for future research and practice from both practitioners' and researchers' perspective. This chapter also includes a discussion of the study's contribution to organizational change and its impact on management and administration.

CHAPTER II

REVIEW OF PRIOR RESEARCH

CHAPTER 2 - REVIEW OF PRIOR RESEARCH

2.0 Chapter Overview

This chapter reviews several areas of research that are most relevant to the study presented here. The overall outcomes for this in-depth review are to document the importance of facilitation and the facilitator role in both traditional and electronic environments; to establish the need for research in this area by identifying the lack of critical facilitation research, especially in electronic contexts; and to demonstrate how the research reported here will build upon and extend the existing knowledge. This literature review purposefully documents the potential dimensions and behaviors of the facilitator role. This documentation provides insights into the potential categories for the initial sorting of the behavioral data collected in this study.

The review of the literature begins with an overview of the nature of facilitation and the relevant literature on traditional facilitation. This is followed by a review of related group dynamics research on facilitative interventions and behaviors. Next pertinent literature on the facilitative aspects (behaviors and dimensions) of roles, particularly the leadership role and the role of the change agent is presented. Finally important GSS (group support system) studies relative to facilitation in the computer-supported context are overviewed.

2.1 Nature of Facilitation: Description and Definitions

Over the years the role of group facilitation has emerged sporadically with its origin in teaching, counseling and therapy (Keltner, 1989). The theoretical nature of facilitation has been influenced by these multiple disciplines and thus its definitions are varied and many times contextualized to the field of study describing it. Traditionally, group facilitation has been defined as a process or role which creates and sustains an environment in which a group can accomplish its outcomes and learn about itself (Keltner, 1989). More recently, facilitation has been defined as a process to help a group free itself from internal obstacles or difficulties so it may efficiently and effectively pursue the achievement of its desired outcomes (Schein, 1989; Kayser, 1990). Kayser (1990) defines facilitation in terms of movement toward three overriding goals:

> **In the broadest sense, facilitation occurs at any time any group member behaves in a manner that advances the group toward any of three basic goals: 1) developing or refining a structure or process that promotes achievement of the desired outcomes; 2) making certain that information and data is shared, understood, and processed in an open, participative environment; and 3) removing any internal blockages hindering the accomplishment of the desired outcomes. (p. 18).**

Friedman explains the direction of facilitation as twofold: 1) structuring tasks and 2) establishing process/relationship norms. (These are similar to the two much addressed dimensions of leadership research -- initiating

task structure and consideration.) Similarly, Philips & Philips (1990) consider the main role of facilitation as contributing to a group's process (the how they work), not content (task-what working on). They suggest the nature of facilitation is defined by these main tasks:

1) **to see and understand the group life**
2) **to intervene in order to help group stay in the present**
3) **to maintain a task orientation**

They see the facilitator's greatest contribution as being able to see and understand the group's life or process and recommend three main ways the facilitator can gain this overall understanding: 1) by observing, 2) by attending to overt and symbolic content, and 3) by monitoring the emotions/feelings of the group.

Keltner (1989) suggests a dynamic process nature of facilitation stating that there is a continuum of facilitation. At the high end is <u>therapeutic</u> facilitation which provides guidance, insights and therapeutic support and at the low end is <u>procedural</u> facilitation which provides minimal structures and frameworks.

Over the years, efforts have been made to define the nature of facilitation by identifying the elements of effective facilitation (Lewin & Bradford, 1947; Schein, 1969; Hall & Watson, 1970; Miner, 1979; Maier & Maier, 1957; Bostrom, 1987, 1988, 1989, 1990 & 1991; Kayser, 1990; Friedman, 1989; Heron, 1989). However, few empirical studies on the nature of group facilitation have been conducted

(Hirokawa & Gouran, 1989). There is, however, a general agreement that the nature of facilitation is dynamic and complex. **"More than anything else, it is clear that there are too many persons who assume the facilitation role who are quite unprepared for the complexity of its function" (p. 28, Keltner, 1989).** There is also general agreement that facilitation affects the group's life and task accomplishment in some way; and that it can be a vital support for complex task/group interactions (Philips and Philips, 1990; Hirokawa & Gouran, 1989; Kayser, 1990; Bostrom et al, 1991).

The study presented here focused on understanding and investigating the facilitator role in group support systems (GSS) environments within the context of organizational group/team meeting interactions. In integrating and incorporating the previous thinking on the definition of facilitation, this study viewed the facilitator as a **source** (of facilitation) which provides **structure** (agenda, procedures, ground rules, GSS tools) and **support** (maintaining group relationships, dealing with disruptive behaviors) to a group or team in order to positively influence how the group works together to accomplish its outcomes. Group outcomes can be **task outcomes** - having to do with <u>what</u> the group is working on; they can be **relational outcomes** - having to do with the people or <u>how well</u> the group works together (feelings/emotions), or they can be **process outcomes** - having to do with <u>how</u> the group accomplishes its task.

Thus, a facilitator engages in a variety of structure or support behaviors in an attempt to influence (improve-make easier) the group's meeting process, the group's task outcomes and the group's relational outcomes. These facilitative actions have the potential to influence the exploration, the task accomplishment, and quality of the relationship(s) for the entire group, as well as its individual members.

For the purpose of this study, facilitation then was defined as a dynamic set of critical dimensions and related behaviors enacted by the facilitator before, during, and/or after a group/team meeting interaction in order to help (influence) the group achieve its task, process and relational outcomes.

2.2 Relevant Facilitation Research

2.21 Traditional Facilitation Literature

The extent of relevant and comprehensive research on effective facilitation has been minimal at best in traditional group settings and almost non-existent in computer-supported groups (Gouran & Hirokawa, 1989; Bostrom et al., 1991; Anson & Bostrom, 1988). This scarcity of conceptual and empirical information on group facilitation has limited the ability to offer valid theoretical prescriptions for its effective use in organizations (Hirokawa & Gouran, 1989). Davis (1986) concurs that the state of facilitative research is both scattered and not particularly grounded in theory. Consequently, if organizations are now relying on groups as their basic work

unit for effective results, there are few theoretically sound and empirically valid prescriptions for facilitating their group performance (McGrath, 1984, Gouran & Hirokawa, 1989).

A number of efforts have been made to identify the elements of effective facilitation process. Many of these attempts have been based on observation, interviews, experiences and have often not been empirically based or validated investigations (Lewin, 1947; Schein, 1970; Maier and Maier, 1957; Brilhart & Galanes, 1988; McGoff and Hunt, 1989; Bostrom, 1988; Bostrom, 1989; Bostrom and Anson, 1990).

As early as the 1940's, Lewin and Bradford recognized the importance of teaching people skills to help groups accomplish their tasks. Thus, they attempted to teach a group of interested adult educators and social psychologists "how to be a help to the groups rather than have an expert do it" (Lewin, 1947). Their program included such skills as: how to build, validate and expand work agendas; how to keep the group relevant; how to get the group started; how to get members to contribute; how to handle disruptive behavior (Lewin, 1947).

Since the 40's, other researchers and practitioners have identified similar skills as a basis for effective group leadership and process facilitation processes (Schein, 1980; Oppenheim, 1987; Bostrom and Anson, 1989). Some of these studies and field observations have generally identified overall characteristics of effective discussion leaders or process facilitator (Brilhart & Galanes, 1988; Golembiewski,

1977; Lewin, 1947). A few of these studies and a number of practitioners have specifically focused on facilitative functions, techniques and the facilitative behaviors which accompany them (Hall & Watson, 1970; Miner, 1979; Maier, 1957, 1970; Bostrom et al, 1991; Heron, 1989; Kayser, 1990).

The role of the facilitator and its functions has been the focus of interest by a number of academics and practitioners over the years, as well. In 1972, Culbert identified six key facilitator functions (dimensions) (See Table 1). Egan (1973) pursuing his interest in small group interpersonal growth, defined five essential facilitation functions (dimensions) (See Table 2). In 1989, Friedman introduced the broad-based concept that facilitation must be a proactive interaction. His "upstream facilitation" approach suggests concentrating facilitative efforts on preventive functions rather than remedying the group's process differences. He recommends three types of proactive or upstream (preventive) facilitative behaviors to apply in group situations:

1) **Reviewing the group's oulture and contextual/environmental factors.**

2) **Explicitly establishing task and process norms up front which the facilitator then enforces.**

3) **Managing developmental transitions or break points in the group's behavior.**

FACILITATOR ROLE FUNCTIONS

Table 1

Culbert's Key Six
• Maintaining Participant Awareness
• Developing Consistent Group Norms
• Providing Perspective
• Sustaining Group Tension at Optimal Levels
• Providing Vitality
• Acting as Referee

(Culbert, 1972, Adapted from Anson, 1990 p. 47)

Table 2

Egan's Essential Five
• Initial Structuring of Group's Meeting Tasks (premeeting)
• Providing Process Knowledge and Experience
• Acting as Effective Model
• Acting as Guardian of Goals and Group's Safety
• Diffusing Leadership to Empower Group

(Egan, 1973, Adapted from Anson, 1990 pp. 47-48)

A small group of researchers and practitioners have attempted to isolate specific dimensions, characteristics and broad-based skills necessary to function in the role of group facilitator under the guise of change agents, organizational development specialists and the like (Hamilton, 1988; Bostrom, 1987; Anson, 1990; Heron, 1989; Philips & Philips, 1990; Kayser, 1990). For example, Kayser (1990) mentions a number of elements crucial to overall facilitation excellence. They are: 1) initiating an open, collaborative climate; 2) maintaining an open collaborative climate; 3) dealing with disruptive behaviors; and 4) reducing confusion. Each element contains a more specific skill set (See Table 3).

From a practitioner perspective, Heron (1989) identified six dimensions of facilitation. Each dimension described an issue or target of influence for the facilitator, as well as a specific facilitative question which must be considered. Table 4 summarizes each dimension and the appropriate facilitative question.

In still another research effort, Heron (1989) developed a facilitator tool kit which incorporated both a set of specific communication/facilitative skills, along with a framework of beliefs about facilitation.

Even though the unpredictable nature of groups makes it impossible to arrive at a simple set of specific failsafe facilitation strategies and skills, there appears to be some agreement on the types of skills which would most enhance the

Table 3

KAYSER'S FACILITATIVE ELEMENTS AND SKILLS

INITIATING AN OPEN, COLLABORATIVE CLIMATE

- Focus on situation/task
- Encompass common interests
- Initially, share only primary information
- Be succinct
- Wait -- resist influencing immediately

MAINTAINING AN OPEN, COLLABORATIVE CLIMATE

- Stimulate contributions
- Recognize constructive participation

DEALING WITH DISRUPTIVE BEHAVIOR

- View differences as constructive
- Recognize cues of constructive differences
- Recognize cues of destructive differences
- Effectively manage differences

REDUCING CONFUSION

- Type I Confusion: Where are we going skills
- Type II Confusion: What should we be doing

Adapted from Kayser, 1990, pp. 125-153

Table 4

HERON'S SIX DIMENSIONS OF FACILITATION

Dimension	Target/ Issue of Influence	Facilitative Question
1. Planning	Goal oriented, end-means, aims of the group.	How shall the group acquire its objectives?
2. Meaning	Participants' understanding of what's going on, making sense, knowing how to do things, the cognitive aspect	How shall meaning be given to and found in the experiences and actions of the group?
3. Confronting	Challenge, raising consciousness about resistance and avoidance	How shall group's consciousness be raised about these matters?
4. Feeling	Management of feelings and affects	How shall feeling within the group be handled?
5. Structuring	Methods of learning, form and structure of group's experience	How shall group's experience be structured?
6. Valuing	Creating supportive climate, genuine, honors personhood of members.	How can a climate of personal value, integrity, and respect be created?

Adapted from: The Facilitator's Handbook by John Heron, p. 15

facilitative process (Friedman, 1989; Hirokawa and Gouran, 1989; Bostrom et al., 1991 etc.). These "required" capabilities are grounded in the dimensions of **task structuring** (e.g., agenda design, outcome development), **process support** (e.g., handling confusion), and **relationship development** (e.g., building rapport, maintaining resourcefulness, acknowledging individual differences) (Oppenheim, 1987; Kayser, 1990; Friedman, 1989; Bostrom, 1989; Hollenbeck, 1991).

Finally, Broome and Keever (1989), noting the scattered, seemingly directionless research approaches in the study of facilitation, have proposed the use of a science-based framework (The Domain of Science Model, p. 112-123) for research. They have also suggested seven principles (facilitative functions) to enhance what they call the "next generation facilitation." (See Table 5 for these principles.) It is their contention that if group facilitation activities are based on and driven by the framework and these seven principles/functions that there will be "less confusion, under-conceptualization, and inappropriate choice-making in group work" (Broome & Keever, 1989 p. 123).

2.23 Summary of Relevant Facilitation Literature

Recently, there has been an attempt to review and organize some specific research in the area of facilitation. In 1989, Broome & Keever edited an entire journal on current facilitation research. There is a great amount of related

Table 5

Principles for Next Generation Facilitation
• Make clear distinctions between normal and complex problems (the more complexity, the more disorganization).
• Guide the group sequentially through group activity with intelligence, design, and choice.
• Recognize and honor variety, parsimony, and saliency.
• Promote role distinction that meet the demands of content, context, process.
• Balance the behavioral and technical demands of complex situations.
• Use consensus methodologies based on a collectively satisfying set of criteria.
• Select group environments that enable efficient, effective and comfortable group work.

Adapted from Broome, Keever: "Next Generation Facilitation," 1989 pp. 112-123.

research in the areas of group dynamics, small group work and leadership, which provides a direction and foundation for continued research efforts to definite and describe the role and process of facilitation skills.

The relevant existing literature on facilitation and the role of the facilitator demonstrates some initial efforts to describe its process, functions, and behaviors. A few of these attempts have produced a number of suggested dimensions -- the overall functions and principles of facilitation -- and some specific behaviors. These studies do in fact provide a jumping off point. The potential dimensions and behaviors summarized in the existing literature provide possible choices for categorizing the facilitator behaviors discovered in this study.

However, most of this research has not specifically grounded or empirically identified key role dimensions in terms of their related facilitative behaviors across traditional contexts. Nor have these existing studies verified or empirically measured these dimensions in terms of their existence and importance in relationship to effective facilitation. Finally none of the existing studies have focused specifically on the facilitator role in computer-supported contexts.

The study presented here was designed to identify the critical dimensions of the role of the facilitator in computer-supported context and to specifically ground these

dimensions with key behaviors. The critical dimensions uncovered in this exploration were then measured for their importance in relationship to the effective enactment of the facilitator's role in electronic environments. This study was very broad-based, collecting accounts of numerous real facilitator experiences from experienced facilitators in computer-supported contexts. This study was a rigorous scholarly inquiry in an effort to add knowledge to the existing information on the facilitation process and the facilitator's role. The existing knowledge represented by the review of relevant facilitation literature documented here was used as a starting point for this exploration.

2.3 Related Facilitation Research

2.31 Group and Facilitative Interventions Studies

The foundation for many of the current facilitation studies like the ones reviewed above has been group dynamics research. This literature has been a rich area of related research for those interested in the pursuit of facilitation discoveries. In Table 6, Bostrom et al. (1991) summarize the key findings from a number of group process intervention studies which are applicable to facilitation research. This table depicts the supporting research for four general facilitative interventions which appear to have the broadest positive impact on both task performance and socio-emotional attitudes of a group. These include: **applying structured procedures, encouraging effective task behaviors, encouraging**

Table 6

Key Findings From Group Process/ Facilitative Interventions Studies

Interventions that broadly improve group processes and outcomes have been found to include the following dimensions and behaviors:

1) Applying Structure Procedures

- provide instructions to group members (Hall & Watson, 1970)
- extend problem formulation (Volkema, 1983)
- extend idea generation (Ball & Jones, 1977)
- separate idea generation from evaluation (Van de Ven & Delbecq, 1974)
- delay solution adoption (Hoffman, 1979)

2) Encouraging Effective Task Behaviors

- discuss task procedures (Hackman & Kaplan, 1974)
- apply explicit criteria (Hirokawa & Pace, 1983)
- use factual information (Hirokawa & Pace, 1983)
- maintain focus on task goals (Dalkey & Halmer, 1963)

3) Encouraging Effective Relational Behaviors

- encourage broad participation and influence (Hoffman & Maier, 1959)
- manage conflict constructively (Putman, 1986)
- emphasize consensus acceptance over majority votes (Hall & Watson, 1970)
- apply active listening techniques (Bostrom, 1989)
- discuss interpersonal processes (Hackman & Kaplan, 1974)

4) Training

- train group members and/or leaders (Hall & Williams, 1970)
- train external facilitators (Maier & Maier, 1957; Miner, 1980; White et al., 1980; Hirokawa & Gouran, 1989; Bostrom, 1989; Anson, 1990)

Adapted from Bostrom et el, 1991 p. 40, "Group Facilitation and Group Support Systems."

relationship behaviors and **training.**

Reviewing these findings highlights several points that have potential impact on the role of the facilitator. First, applying structured procedures produces better group results than "normal" (natural) group interactions. Second, more structured interventions are generally found to be more superior to less structured or naturally occurring group interaction. And third, broader interventions which support both effective task and relational processes tend to be superior to more narrowly focused interventions. These are consistent findings throughout the structured intervention literature and are potentially useful in both the study and practical application of the facilitation process (Vande Ven and Delbecq, 1974; Miner, 1980; White et al., 1980; Bostrom et al, 1991). These findings provide important insights for the study reported here since the perceived role of the facilitator involves activities which impact (and hopefully improve) both the group's process and outcome. Table 6 reflects a combination of facilitative and group process findings. These findings have not been specifically defined and/or categorized in the table as facilitative actions (behaviors) and overall dimensions.

2.32 Role Studies: Leadership and Change Agent Research

Another area of related research that has the potential to contribute to the conceptual understanding of this research is the literature on the facilitative nature of certain roles-

-especially the leadership role and the study of role behaviors and dimensions, particularly the research on leadership behaviors. This literature potentially adds to the researcher's understanding of how to go about isolating and identifying the critical behaviors and overall dimensions of a role. It also provides some samples of the type of data and the implications these studies uncover.

There has been a substantial amount of research on the "facilitative" influence of leaders on group interactions and performance (Blanchard and Hersey, 1977; Blake and Mouton, 1978; Gibb, 1989). Researchers in this area have explored the facilitative nature of leadership from a system's perspective, looking at the influence of numerous situational variables on the facilitative role of different leadership styles. These studies have provided some evidence that the facilitative effects of the leader are a function of the interplay between the personality of the leader and followers (group) and the social context of the interaction (the situation). (Gibb, 1969; Hollander, 1978; Fiedler, 1965; Blanchard & Hersey, 1977).

Studying leadership dimensions and behaviors has been a popular approach for organizational researchers for the last several decades (Yukl, 1981). Methods used to conduct this type of research have included observations, interviews, activity sampling, diaries, questionnaires, and critical incidents technique.

Two of the most noteworthy studies on leader behaviors took place in the late 40's and early 50's at the University of Michigan and Ohio State University. Both studies led to uncovering two very similar overriding dimensions of leadership behaviors: **consideration** or an employee-centered dimension and **initiating structure** or a job-centered dimension (Dafts and Steers, 1986; Stoner, 1978). The employee-centered dimensions were found to be grounded in such behaviors as maintaining positive interpersonal relationships, supporting individual differences in their group, maintaining a friendly approach, and focusing on the personal needs of the employee. The job-centered dimension, on the other hand, was evidenced by such behaviors as being focused on the tasks, productivity, efficiency and getting the job done.

The results of questionnaire research on leadership behaviors have been inconsistent at best, mainly due to the inadequate upfront conceptualization of leadership, the affects of situational variables, and the lack of accurate measures--depending heavily on subordinate perceptions (Yukl, 1981).

Studies of effective and ineffective leadership behaviors using critical incidents have also yielded highly divergent results. However, when behaviors and dimensions were grouped into broad categories, more consistent findings emerged. More recently, organizational researchers realized that what is needed is the development of a more consistent and in-depth

taxonomy of dimensions with behavioral categories that were neither too situationally specific or overly abstract.

Yukl (1981)in his critical incidents study of leadership was able to establish a considerable taxonomy of 19 dimensions and their corresponding specific behaviors that appear to reconcile some of the diverse findings from the earlier studies of leadership behaviors by defining behavioral categories at "an intermediate level of abstraction" (p. 120).

Yukl's taxonomy is one of the first to fill "the conceptual void" in the study of leadership by identifying "meaningful and measurable categories" of leadership behaviors (Yukl, 1981 p. 120). These 19 categories appear to be more applicable to a variety of leadership measurements and research techniques, thus helping to alleviate discrepancies across studies. The advantage of Yukl's taxonomy is that it incorporates for the first time a larger number of (intermediately) specific behavioral categories, as well as many of the behaviors found in previous leadership research. Yukl's work is also an excellent example of the concept of dimensions or the overall behavioral categories (Praise-Recognition) and their related behaviors (giving credit, showing appreciation).

Yukl's taxonomy is shown in Table 7. It is interesting to note that many of his dimensions reflect facilitative influences on both people and task/work and could be readily applied to the role of the facilitator with some minor

revisions. For example, Role Clarification - with slight revision could read: the extent to which the facilitator helps the group members formulate and understand their roles, or Goal Setting: the extent to which the facilitator emphasizes the importance of setting specific and clear outcomes.

Similarly the study on the role of the facilitator presented here gathered numerous accounts of critical behaviors -- both generic and specific -- categorizing them into sixteen key role dimensions. This study is also the first to fill the "conceptual void" about the critical role of the facilitator by identifying and empirically measuring meaningful, verifiable, and behaviorally grounded categories/dimensions of this role in electronic contexts.

More recently researchers in the field of organizational development and behaviors attempted to capture the dimensions and behaviors of several roles more closely related to the facilitator role. These were the roles of the change agent or the organizational development consultant (Hamilton, 1989; Esper, 1990).

The Hamilton study's main focus was on personality variables rather than behaviors. She found three core personality dimensions relevant to effective change agent performance (Hamilton, 1989). These variables were evidenced by the following change agent behaviors: Openness and responsiveness to others needs; Comfort with ambiguity and the ability to make sense out of it; and Comfort with oneself in

relationship to others. These core variables and their related behaviors were also correlated strongly with change agent effectiveness.

Esper in her study of organizational development practitioners found that core competencies existed at three levels: competencies in relation with self; competencies with relation with the client; and competencies with relation with the client system (Esper, 1990). She also identified some related behaviors that grounded these three levels of competencies. They are: 1) **Self** = knowing self, being able to laugh at one's self, living with ambiguity; 2) **Client** = maintaining rapport with the client, being empathetic and sensitive to the client's needs; 3) **Client System** = knowledge and understanding of the client system, and flexibility to meet the client system "where it is".

Table 7

Leadership Behavior Categories Proposed by Yuki

1) **Performance Emphasis**: the extent to which a leader emphasizes the importance of subordinate performance, tries to improve productivity and efficiency, tries to keep subordinates working up to their capacity, and checks on their performance.

2) **Consideration**: the extent to which a leader is friendly, supportive, and considerate in his or her own behavior toward subordinates and tries to be fair and objective.

3) **Inspiration**: the extent to which a leader stimulates enthusiasm among subordinates for the work of the group and says things to build subordinate confidence in their ability to perform assignments successfully and attain group objectives.

4) **Praise-Recognition**: the extent to which a leader provides praise and recognition to subordinates with effective performance, shows appreciation for their special efforts and contributions, and makes sure they get credit for their helpful ideas and suggestions.

5) **Structuring Reward Contingencies**: the extent to which a leader rewards effective subordinate performance with tangible benefits such as a pay increase, promotion, more desirable assignments, a better work schedule, more time off, and so on.

6) **Decision Participation**: the extent to which a leader consults with subordinates and otherwise allows them to influence his or her decisions.

7) **Autonomy-Delegation**: the extent to which a leader delegates authority and responsibility to subordinates and allows them to determine how to do their work.

8) **Role Clarification**: the extent to which a leader informs subordinates about their duties and responsibilities, specifies the rules and policies that must be observed, and lets subordinates know what is expected of them.

9) **Goal Setting**: the extent to which a leader emphasizes the importance of setting specific performance goals for each important aspect of a subordinate's job, measures progress toward the goals, and provides concrete feedback.

10) **Training-Coaching**: the extent to which a leader determines training needs for subordinates, and provides any necessary training and coaching.

11) **Information Dissemination**: the extent to which a leader keeps subordinates informed about developments that affect their work, including events in other work units or outside the organization, decisions made by higher management, and progress in meetings with superiors and outsiders.

12) **Problem Solving**: the extent to which a leader takes the initiative in proposing solutions to serious work-related problems and acts decisively to deal with such problems when a prompt solution is needed.

13) **Planning**: the extent to which a leader plans how to efficiently organize and schedule the work in advance, plans how to attain work unit objectives, and makes contingency plans for potential problems.

14) **Coordinating**: the extent to which a leader coordinates the work of subordinates, emphasizes the importance of coordination, and encourages subordinates to coordinate their activities.

15) **Work Facilitation**: the extent to which a leader obtains for subordinates any necessary supplies, equipment, support services, or other resources, eliminates problems in the work environment, and removes other obstacles that interfere with the work.

16) **Representation**: the extent to which a leader establishes contacts with other groups and important people in the organization, persuades them to appreciate and support his work unit, and uses influence with superiors and outsiders to promote and defend the interests of the work unit.

17) **Interaction Facilitation**: the extent to which a leader tries to get subordinates to be friendly with each other, cooperate, share information and ideas, and help each other.

18) **Conflict Management**: the extent to which a leader restrains subordinates from fighting and arguing, encourages them to resolve conflicts in a constructive manner, and helps to settle conflicts and disagreements between subordinates.

19) **Criticism-Discipline**: the extent to which a leader criticizes or disciplines a subordinate who shows consistently poor performance, violates a rule, or disobeys an order; disciplinary actions include an official warning, reprimand, suspension, or dismissal.

Basically, Esper's research was descriptive in nature and not empirically tested. Hamilton's study was much more empirical in nature. In either case, the findings of both studies (as well as leadership studies) provide some initial dimensions and behaviors to look for in the data to be gathered on the facilitator's role. It is important to note that the facilitator is a role more similar in nature to the change agent and consultant roles than to the role of the leader or manager, for example. Another important insight from the Hamilton research is how her rather in-depth upfront conceptualization of the characteristics of the organizational development specialist help ground her research findings. She did this through a systematic review of the literature using a panel of experts to categorize her findings.

2.3 Summary: Related Facilitation Literature

This related literature definitely adds to the researcher's understanding of the nature of roles (some of them similar to the facilitator role). The review of this literature also provides insights about how to go about isolating and identifying the critical behaviors and overall dimensions of a role as well as presents samples of the type of data and implications these studies generate. Some of the dimensions and behaviors uncovered in these studies are facilitative in nature (e.g. Interaction facilitation, role clarification, comfort with ambiguity, responsiveness to other needs) and will be a useful jumping off point for sorting and

classifying the behaviors and dimensions found in the proposed study on the facilitator. These related studies also suggest the importance of upfront study and conceptualization. This suggestion has been incorporated into the study proposed here by completing an in-depth synthesis of the relevant research summarized in this literature review.

2.4 Relevant GSS Facilitation Literature

2.41 The Nature of Group Support Systems

Group Support Systems (GSS), more generally labeled "groupware", describe a set of team/group oriented computing tools that support a broad range of group activities and tasks, i.e., decision-making, brainstorming. The nature and focus of many GSS tools is to encourage and support group collaboration and cooperation. The recent development of this social technology has reignited an active interest in the study of groups, meetings and the facilitation process in computer-supported environments (Fulk and Schmitz, 1990).

Kraemer and King (1988) and Johansen (1989, 1991) have provided extensive reviews on the availability, capabilities, and potential use of this technology in organization. The nature of GSS has also been defined by its benefits, features, and pitfalls. Bostrom and Anson compared the benefits and features of GSS, as reflected in Table 8 (Bostrom & Anson, 1988). Johansen (1989, 1991) cited similar "benefits" along with a number of GSS pitfalls, i.e., the urgency of the group to work too fast, the "over promise" of what the technology

could deliver, becoming "intoxicated" with the newness of the technology.

Bostrom, Van Over, and Watson (1990), in defining GSS, summarized the available GSS technology according to the nature of support it provides, the representative systems available and the degree of support it offers (See Table 9). For example, a GSS system like VisionQuest provides a workstation (computer and monitor) for both the facilitator and each participant along with a high level of technological support to group members in terms of structured and interactive tools to guide the group. These tools are quite structured and support generate, organize, select and evaluate types of meeting interactions.

On the other hand, a GSS like OptionFinder is a keypad based system. Therefore, it furnishes a workstation support for the facilitator only and "key pads" for each participant. Basically, keypad technology supports evaluate type activties. Thus, overall keypad technology is less structured and provides mid level support for groups. The study presented here compares key facilitator role dimensions across these two types of technology - workstation vs. key pads.

Table 8

GROUPWARE FEATURES AND THEIR BENEFITS

FEATURES	POTENTIAL BENEFITS
• Simultaneous Input\ Simultaneity	• Opportunity for broader, equal and more active participation • Participation and contribution at own level of ability and interest
• Anonymity	• Less individual inhibitions • Focus on idea rather than contributor • Enhanced group ownership of ideas
• Process/agenda Structuring	• Provides framework and process structures • Facilitates agenda control and completion • Improved topic focus
• Electronic Recording and Display	• Immediate display of data • Complete and immediate meeting minutes • Enhanced group memory • Easier modification
• Extended Information Processing Capacity	• Automates complex tasks • Creates easy accessibility to information, others' ideas and other software tools

*Adapted from Bostrom and Anson Working Paper #803, March, 1988.

Table 9

Nature/Type of GSS Support	Representative Systems	Degree of Support
Workstations - computer workstation for facilitator and each member	VisionQuest, TeamFocus, Group Systems, SAMM, SAGE	High IT Support
Keypad - Workstation for facilitator, keypads for each member	OptionFinder, Multisurvey, Innovator, QuickTalley, VisionNet	Mid-Level IT Support
Chauffeured - No support for members, workstation for facilitator	DSS tools (spread sheets), COPE	Low IT Support

Adapted from: Bostrom, Van Over and Watson (1990)

2.42 Relevant GSS Literature

The study and development of GSS and its implications was initiated by academia in the early eighties and introduced commercially for use in business in the late 80's (Nunamaker, Hemminger, Martz, Grokowsi, 1989; Applegate, 1986; DeSantis and Dickerson, 1987). There is ample perceptual and observational research evidence that using GSS can positively alter group interactions processes (e.g., Zigurs, et al, 1988). However, there is a mix of findings concerning the ultimate effects of GSS use on task and relational outcomes of groups.

The reviews of experimental laboratory studies have identified an inconclusive mix of positive, negative and neutral effects for GSS use regarding task and relational outcomes and group process measures (Anson, 1990; Dennis et al, 1988; 1991; Pinnesault and Kraemer, 1990). In contrast,

field study reports have provided far more consistently positive findings (Dennis et al, 1991). In the most recent field research of 654 participants in 64 GSS sessions, Post (1992) reported significant results on the implementation and use of GSS in business. This study included dramatic bottom line impacts (savings) on labor ($432,260 saved) and man-hour costs (11,678 hours saved) and the reduction of calendar days spent in meeting interactions (1,773 days or 91% savings). This research also qualitatively summarized the importance of facilitator skills and training in the successful implementation of this technology.

Among GSS findings overall, there is one area that has received noticeably less research attention from an empirical perspective; that is the role of the facilitator in GSS environments. The differences between experimental and field facilitation and the related GSS study findings suggest that facilitation, among other factors, may be a critical in GSS effectiveness. The mixed findings have been discussed by various GSS researchers, most recently in a meta analysis by McLeod at the University of Michigan (McLeod, 1992; Dennis et al, 1988, 1991; Sambamurthy & DeSantis, 1990; Bostrom and Anson, 1988; Kraemer and King, 1988). Dennis et al (1991) surveyed the majority of lab and field studies thus far reported. They concluded that, "the use of a facilitator can effect meeting outcomes at least as much as any other component in the (GSS) environment" (p. 24).

This conclusion is reinforced by field experience. McGoff and Ambrose (1991) and Grohowski et al. (1990) both provide summary analyses of IBM experiences using computer support in over 900 group sessions. Their research findings emphasize the critical role of a facilitator in ensuring the success of GSS supported meetings, especially the facilitator's premeeting design role. Similar conclusions about the critical role of the facilitator were reached in a recent survey of users of a key-pad based GSS (Watson et al. 1991).

The mixed findings among experimental GSS studies may be due in part to differences among how groups were "facilitated" by the experimenters. There appears to be little elaboration in these studies on "how" groups were facilitated beyond statements indicating that a script was followed, facilitators were scripted or active facilitation was not measured (Dickson et al, 1990; anson, 1990, George et al, 1992). Anson (1980) for example provided facilitators with a fully annotated eight page script in his recent experiments. Thus since many studies tend not to elaborate on how facilitative procedures are applied, the possibility is difficult to assess.

Mix findings also might be due to neglecting to pay attention to how groups appropriate and use this technology and how the group leader and/or facilitator encourages this appropriate process (Poole, 1991). With all these inconsistencies, it is important to note that there have not

been many studies conducted, thus results seem inconclusive and inconsistent at best. For example, in reviewing relevant GSS facilitation literature, it is important to note that there have been only four published studies which directly examined the effectiveness of facilitator in experimentally controlled (laboratory) conditions (Dickson, Lee, Robinson and Heath, 1989; Anson, 1990; and Anson and Hemminger, 1990).

The first study compared the consensus and satisfaction of groups provided either no facilitation ("User-Drive Approach"), technical facilitation, ("Chauffeured Approach"), or process facilitation ("Facilitation Approach") (Dickson et al. 1990). In this study, the process facilitation treatment involved a facilitator who rigidly imposed a structured approach on the group (facilitator used a script) rather than a role which flexibly worked with the group. Thus the role of the facilitator was very structured. This study found that facilitated groups had lower consensus and satisfaction than groups provided only technical, chauffeured support. It appeared that many groups resisted the task structure unilaterally imposed by the facilitator, which negated some of its impact. On the other hand, both chauffeured and facilitated groups had more satisfaction and consensus than did user-driven groups. The authors suggested that satisfaction was related to relieving the users from concerns with technical operation of the overall system.

The second study took a flexible approach to process

facilitation by training a number of facilitator in techniques that could be flexibly applied (Anson 1990). The study compared groups provided GSS or no GSS support, and process facilitator or no process facilitator support. The facilitator role in this study differed from the Dickson, et al. (1990) study in three ways: 1) participants entered own data vs. facilitator entry, 2) the facilitator was free "to intervene" in the technology, task, and group process, and 3) the facilitator actively encouraged constructive communication and enacted conflict management processes, if necessary. (Basically the facilitator in the Dickson study was scripted.)

Anson found that flexible process facilitation, whether supplied in the presence or absence of computer support, significantly improved perceptions of interpersonal relationships and group processes. Combined facilitator and computer support was most effective on average, although the effects were not significantly improved over either support applied separately.

The third study took an approach to facilitation similar to that of the second study (Anson & Hemminger 1991). The study examined groups of graduate students engaged in developing a case analysis class report. All of the groups were provided with computer support for their initial analysis effort, while half of the groups were additionally supported by a process facilitator. The role of process facilitation consisted of providing "flexible" intervention (not scripted

intervention, as in the Dickson study) into the group interactions, both during the meeting and the pre-meeting planning. The authors found that flexible process facilitation, supplied in the presence of computer support, produced significant improvements in member perceptions of group processes and task outcomes.

The most recent research in the area of GSS and facilitation was conducted at the University of Arizona (George et al, 1991). Their experiment examined the effects of the potential contributions of two specific facilitator functions in computer-supported contexts--providing technical support by initiating specific tools and providing group support by maintaining the agenda. Their research was not designed to investigate the role of "active" facilitation--that is flexible live facilitation as it happens.

This research found no significant difference between facilitated groups and user driven groups for either process or outcomes. It is important to note that once again only certain facilitator functions were examined in a limited context. Yet these researchers (George, et al.) along with many others (Bostrom et al., 1991; Anson, 1990; Nunamaker et al., 1991) continue to suggest that research is needed to rigorously identify and compare facilitator functions in both traditional and electronic contexts.

A number of researchers have continued to focus their research and practitioner efforts on the role of facilitation

in computer supported environments (Bostrom, 1988; Bostrom, 1989; Bostrom and Anson, 1990; Bostrom et al., 1991; Anson, 1989, 90, 91; Vogel, 1988; Nunamaker, Poole, 1991; McGoff & Hunt, 1990). Bostrom (1987), for example, developed a listing of facilitative guidelines for facilitator working in a university-based collaborative work laboratory. Anson's (1990) findings have suggested that facilitators in computer-supported contexts must take on a number of additional functions not present in the traditional contexts of meetings, e.g. introducing the technology into the group.

Recently this researcher, along with colleagues Bostrom and Anson carried out an in-depth review of the current practitioner and academic literature in an effort to build a framework of facilitator strategies and skills. This model was the basis for the development of an effective skill based training for facilitators in traditional and electronic environments. Figure 2 depicts the resulting framework (Bostrom, Clawson, Anson, 1990, 1991).

The facilitation study presented here continues to build upon this preliminary framework, which is a combination of common meeting issues, dimensions, behaviors and skills. The study outlined here extends these efforts by conducting the first rigorous empirical exploration to identify and sort out the critically important facilitator dimensions and behaviors,

Figure 2

STRATEGIES AND SKILLS OF EFFECTIVE FACILITATORS

Common Problems	Effective Strategies	Sample Skills
• Unclear Goals/ Outcomes	• Formulate well formed group outcomes.	• Outcome Development/ Outcome Thinking
• No agenda; Obscure meeting procedures	• Structure the task. Focus on process.	• Agenda design • Relevancy-frame clarification
• Limited rapport and resourcefulness	• Encourage and monitor rapport and positive tone	• Reframing skills • Frame clarification-backtracking
• Not acknowledging or utilizing individual differences. Limited participation	• Recognize and utilize individual differences. Encourage participation and control dominance.	• Frame clarification • Reframing skills
• Assuming others think as you think. Not verifying information.	• Generate high quality. Accurately shared information. Clarify and verify information.	• Frame clarification
• Listening passively or not at all.	• Demonstrate and encourage "active" listening.	• Frame clarification • Rapport skills
• Getting locked into a rut	• Stimulate creative thinking and group exploration	• Reframing skills
• Ignoring resistance or avoiding conflict	• Acknowledge resistance. Use conflict constructively.	• Rapport skills • Frame clarification • Reframing
• Paying attention to self when need to notice others	• Pay attention to group. Use own feelings as a barometer of the group state.	• Sensory acuity • Rapport skills
• Group becomes dependent on facilitator as expert.	• Empower the group by creating conditions for joint responsibility.	• Outcome development • Resourcefulness • Reframing skills

thus creating a strong foundation for future facilitation research in GSS contexts.

2.43 Summary Relevant GSS Literature

Only a few (four) studies involving facilitation and group support systems have been published thus far (Dickson et al, 1989, Anson, 1990; Anson and Hemminger, 1991, and George et al, 1992). These published studies produced a variety of findings concerning facilitation in GSS environments. There are, however, a number of other studies in the GSS literature allude to the critical nature of the facilitator and the facilitation process (Boston et al, 1991).

In previous GSS facilitation studies, the facilitator intervention has been essentially scripted or fixed by a procedure which resulted in a highly restrictive and comprehensive type of facilitation (Dickson et al, 1990; Anson, 1990, George et al 1992). There has been far less attention paid in GSS research to what is called "flexibly" applied or "active" facilitation (Anson, 1990; George et al, 1992). With flexible facilitation, facilitators are trained in a range of procedures and support techniques, which they adaptively and flexibly apply during the meeting (Hirokawa & Gouran 1989, Bostrom et al 1991, Anson 1990).

The effectiveness of more extensively trained facilitators has been supported by early studies of traditional facilitation. These findings suggested that meeting interactions were more effective when group members

and/or leaders were provided some "facilitation training" (Hall & Williams, 1970; Maier and Maier, 1957; Hoffman and Maier, 1959). Additionally, researchers in the area of GSS and facilitation have also suggested that facilitative skills and training might be critical components for effective GSS facilitation (Bostrom, et al 1991; Nunamaker et al, 1991; Anson 1990; Poole, 1991)

Facilitating groups is a complex and dynamic process. It requires great responsibility, concentration, and skill. With the introduction of technology into organizational group work it will be even more critical to know how to help groups work effectively together. The introduction of group technology into the business mainstream has reawakened the interest in the study of groups and facilitation in an electronic context (Bostrom et al, 1991).

The study presented here demonstrates this reawakening. It is the first research effort to focus directly on the role of the facilitator in these new computer-supported contexts by taking an in-depth look at the critical dimensions and behaviors which comprise the role.

2.5 Chapter Summary

This rather lengthy review of the facilitation literature presented here is purposeful for a number of reasons. First, it documents the relevant and related facilitation literature in traditional and GSS contexts. Second, it provides the evidence that there have been few research efforts in this

important area. Finally, it serves as the basis for a strong conceptual understanding of the role of facilitator as well as a framework of existing dimensions/behaviors. This framework is depicted in Table 10. The dimensions and behaviors gleaned from the prior research in this area are summarized in Table 10. They were used as initial guidelines and constructs for categorizing the behavioral findings in Phase I of the study reported here.

Table 10
Potential Facilitator Dimensions

Areas of Supporting Literature/Potential Dimensions	Facilitation Literature	GSS Literature	Role Literature (Leadership, Change Agent, O.D. Consultant)	Group Intervention and Related Literature
1. **Structure** - establishing, initiating, refining, developing	• Kayser, 1990 • Bostrom et al, 1990 • Freidman, 1989, 1987 • Keltner, 1989	• Bostrom et al, 1991 • Nunamaker et al, 1991 • Anson, 1990 • Dickson, 1990 • Vogel, 1988 • Poole, 1991 • McGoff et al., 1989	• Blanchard & Hershey, 1977 • Ohio State & Michigan Studies - 1940's-50's • Blake and Mouton, 1978 • Yukl, 1981, 1989	• Hackman & Kaplan, 1974 • Hirokawa & Pace, 1983 • Hall & Watson, 1970 • Bell & Jones, 1977 • Volkema, 1983
2. **Support** - establishing, contributing to, providing process support	• Kayser, 1990 • Friedman, 1989, 1987 • Philips and Philips, 1990 • Keltner, 1989 • Bostrom et al, 1991	• Anson, 1990 • Bostrom et al, 1991 • Bostrom, 1989 • Voget, 1988 • Poole, 1991 • McGoff, et al., 1989	• Ohio State & Michigan Studies - 1940's-50's • Blanchard & Hershey, 1977 • Blake & Mouron, 1978 • Yukl, 1981, 1989	• Hoffman & Maier, 1959 • Hackman & Kaplan, 1974
3. **Relationship Development** - building, developing, maintaining constructive relationships	• Bostrom et al, 1991 • Philips and Philips, 1990 • Heron, 1989	• Bostrom, et al, 1991 • Bostrom, et al, 1992 • McGoff,, et al, 1989	• Blanchard & Hershey, 1977 • Yukl, 1981	
4. **Rapport** - openness, responsiveness, respect	• Bostrom, et al, 1991 • Philips & Philips, 1990 • Heron, 1989 • Kayser, 1990	• Bostrom, 1988 • Poole, 1991	• Hamilton, 1988 • Esper, 1989 • Yukl, 1981, 1989	
5. **Open, Participative Environment** - initiating and maintaining	• Kayser, 1990 • Broome & Keever, 1989 • Bostrom, et al., 1992, 1992	• Bostrom, et al., 1991, 1992		
6. **Individual Differences** - managing, recognizing, supporting	• Kayser, 1990 • Bostrom et al., 1991, 1992	• Bostrom, et al., 1991, 1992	• Hershey & Blanchard, 1977 • Yukl, 1981	
7. **Outcome Emphasis** - goal setting, outcome focused	• Bostrom et al., 1992, 1992 • Kayser, 1990	• Bostrom et al., 1992, 1991 • Bostrom, 1989, 1988 • Poole, 1991	• Yukl, 1981, 1989	

Table 10 (continued)
Potential Facilitator Dimensions

Areas of Supporting Literature/Potential Dimensions	Facilitation Literature	GSS Literature	Role Literature (Leadership, Change Agent, O.D. Consultant)	Group Intervention and Related Literature
8. **Role Distinctions** - role clarification	• Kayser, 1990 • Bostrom et al, 1992, 1991 • Keltner, 1989 • Broome & Keever, 1989	• Bostrom et al, 1992, 1991	• Yukl, 1981, 1989	
9. **Self-awareness** - knowing self, comfortable with self	• Kayser, 1990 • Bostrom et al, 1992, 1991 • Philips & Philips, 1990			

CHAPTER III

RESEARCH METHODOLOGY AND PROCESS

CHAPTER 3 - RESEARCH METHODOLOGY AND PROCESS

3.0 Chapter Overview

Chapter Three overviews the research design, methodology and process of the study. The study presented here is a multi-phased project (Prephase literature analysis, Phase I - a critical incident study, and Phase II - verification and measures of relative importance). The study represented an exploration and analysis of the role of the facilitator in computer supported contexts.

This chapter begins with an indepth review of the critical incident methodology. This technique was selected as the primary research approach for Phase I of the study. This desciption is followed by a brief presentation of the study's basic design and research process. A visual representation and brief overview of each phase of the study concludes this chapter. The indepth discussions of Phase I - the critical incident study and Phase II - the verification and measurement of importance are presented in Chapters Four and Five respectively.

This chapter begins with a presentation of the critical incident methodology.

3.1 Critical Incidents Methodology

Of primary interest in this study is the identification of effective and ineffective role behaviors. The critical incidents methodology was selected as the main research approach for this study because of its documented ability to

isolate the context specific behavioral dimensions of a role or job (Hopkins, 1987; Yukl, 1981; Saskin, 1981; Campbell et al, 1970; Flanagan, 1954). As evidenced in many studies, the critical incidents methodology has a long-proven research history, particularly in the area of job/role analysis.

A critical incident is simple description of a behavior or a set of behaviors observed in a focal person (Flanagan, 1954). Participants in critical incident studies are asked to recall and behaviorally describe incidents of effective and/or ineffective behaviors [within a specific job or role] that have actually occurred within a certain timeframe, e.g. within the last six months or year.

The Critical Incident method typically yields rich descriptions of both the static and dynamic behavioral aspects of the job or role being studied (Hopkins, 1987). By sampling broadly and by gathering many observations of behavior, the investigator is more likely to discover crucial dimensions and thus obtain greater understanding of the phenomenon being studied.

3.11 The Demonstrated Effectiveness of Critical Incidents Methodology

Historically, the effectiveness of critical incident methodology has been described by many researchers and demonstrated by numerous studies, particularly the research and analysis of jobs and roles within organizations (Hopkins, 1987; Daft and Steers, 1986; Fombrun et al., 1984; Yukl, 1982;

Latham and Wesley, 1981; Campbell et al., 1970; Anderson and Nilsson, 1964; Flanagan, 1954, 1949). Latham and Wesley (1981) cite critical incidents as the best technique for developing behavioral criteria and analyzing roles and jobs. Hopkins (1987) reviews a number of studies demonstrating the effectiveness of this technique in the study of leadership and management behavior. Campbell et al. (1970) describe critical incidents as one of the best techniques for sampling behavior and focusing on the more important aspects of that behavior.

Yukl (1982) characterizes this methodology as being particularly helpful in conducting research designed to determine specific contextually relevant behaviors or dimensions. He also points out that the critical incident process has the ability to reveal both "universally relevant" behaviors as well as situationally specific [contingent] dimensions. He writes,

> **One contribution of critical incident research is that it reveals situation specific aspects of . . . behavior that might otherwise be overlooked (Yukl, p. 41).**

Many recent references to critical incidents technique indicate its effectiveness in serving as the initial foundation for the construction of both behaviorally anchored rating scales [BARS] and behavior observation scales [BOS] (Daft and Steers, 1986; Fombrun et al., 1984). Additionally, the effectiveness and adaptability of the critical incident methodology has been demonstrated in numerous academic, dissertation, and practitioner studies since 1986. An overall

review of the literature from 1986 to the present found over 130 academic studies, dissertation, and practitioner applications using critical incidents effectively as their core methodology. Tables 11, 12 and 13 represent a number of these critical incident studies.

As can be seen from Tables 11, 12, 13, this methodology has been used to explore a variety of research questions, particularly those which focus on the identification of critical behavioral dimensions of a role, a system, or an activity. More recently, critical incidents methodology has also been usefully applied in comparative studies of emotions and emotional behavior, attitudes and overall perceptions. (See Table 12 - Foster et el, 1986, Lewis et el, 1988, Neel, et el, 1989, Table 11 - Payne et el, 1989, Hausknecht, 1988.)

3.12 Advantages/Benefits of Critical Incidents Methodology

Although the technique of critical incident methodology has changed little over the years, its benefits to researchers and the variety of its applications have increased. As previously stated, critical incident methodology yields rich description on both static and dynamic behavior dimensions of the role or phenomenon being studies (Hopkins, 1987). It is also a research technology which allows the investigator to sample behavior broadly and from the "actor's perspective."

Table 14 below lists and summarizes the most important benefits of this methodology for the researcher. The benefits

Table 11
Recent Dissertations Using Critical Incidents Methodology

Year/Author/Journal	Study	Results
1990 Smith, Donna Case Western pp. 215	"Physician Managerial Skills: Assessing the Critical Competencies of the Physician Executive" Research designed to identify critical competencies of executive level physician managerial job/role. Method of data collection - executive skills profile, a Q sort instrument, a form of critical incident interviewing.	• 15 job priorities • Creation and partial validation of competency model • Two most critical priorities
1990 Erickson, Cassandra Purdue University pp. 200	"Professional Ethics Among Family Therapists in the Context of Clinical Training: A Multi-Wave Critical Incident Study" A multi-wave critical incident study combining qualitative and quantitative analysis. Collection of critical incidents from 34 and 29 participants respectively. Then 287 participant responded to findings in initial incidents.	• Participants tend to promote direct rather than indirect intervention • Most appropriate options have clear professional standards
1989 Shepherd, Charles David University of Tennessee pp. 326	"Skill in Personal Sales: An Examination of Expert Reasoning in Industrial Sales People." Used critical incident methodologies to study expert reasoning in personal sales. Sales situation used in study developed using critical incident methodology to isolate elements of sales job that require exceptional performance.	• Production of insights into time and quality of decision making confidence in decision making. Use of experience, structure of knowledge and processes of expert sales reasoning

Table 11 continued - Dissertations

1989 Payne, Dennis Michael Michigan State University pp. 289	Contextual Disequilibrium: A Study of Dispatchers' Perception of Job Related Training Factors. Purpose to identify and describe job relevant training factors for effective performance. Also to identify personality, skill, ability an attitudinal variables that effective dispatchers possess.	• Numerous Training Variables • Job related selection criteria • Revised dispatcher position description
1988 Silverman, Beth A. City University of New York pp. 336	"An Empirical Study of Practice in Industrial Social Work: Some Implications for Curriculum" Empirical study using critical incident methodology. Content analysis of 133 incidents collected from thirteen settings.	• Curriculum model • Typology of problems and interventions
1988 Hausknecht, Douglas University of Florida pp. 464	"Consumer Satisfaction: An Extended Research Conceptualization" Used critical incident methodology to develop measurement technique to tap the emotional nature of the satisfaction construct. Behavioral self reports.	• Measurement of emotions • Attitude and satisfaction scores consistent with discrepancy manipulation
1987 Hopkins, G. Nicholas Indiana University pp. 219	"A Study of the Role of the First Level Supervisor in Applications Development" Two groups of programmers systems analysts and their supervisors and managers participated in critical incidents study to determine role of first-level supervisor in applications development.	• 20 critical dimensions • Dimensions involving role definition and subordinate feedback most important • 19 dimensions critical to role

Table 12
Recent Critical Incidents Studies - Academic

Year/Author/Journal	Study	Results
1991 Compson, D. Chad; White, Kim; Devine, Sue Journal of Business Communications Vol. 28: (1), pp. 23-43	"Techno Sense: Making Sense of Computer-Mediated Communication Systems" 120 persons completing 2 critical incidents form or semi-structured interviews. Grounded theory analysis. Illustrates difference in views of computer-mediated system (CMCS) on relationships, message structures, task efficiency, work environment, information processing.	• Set of perceptual variances • Favorable CMCS reviews
1991 Thibadoux, Greg M.; Jetturds, Raymond Journal of Accountancy	"Effective Interviewing Strategies" Behavior description interviewing collection of critical incidents to define successful job performance in eyes of peers and supervisors.	• Critical incidents used to develop specific interview questions for a given job position.
1990 Shepherd, C. David; Rentz, Joseph O. Journal of Personal Selling Vol. 10: (4), pp. 55-70	"A Method for Investigating the Cognitive Processes and Knowledge Structures of Expert Sales People" • Focus on mental processes and knowledge structures of sales people. • Highly skilled sales people. • Investigation of cognitive process and knowledge structures. • Methodologies used: Critical incidents technique, vicarious role play, content analysis.	• Contribution of significant insights in terms of nature of sales position/role of salesperson

Table 12 continued - Academics

1990 Hamlin, Bob; Stewart, Jim Leadership and Organization Development Journal UK Vol. 11: (5), pp. 27-32	Approaches to Management Development in the UK Empirical Study of the Criteria of Managerial Effectiveness in Secondary Schools.	• Critical job dimensions • 16 critical criteria; 7 universals; 9 situation specific • suggests universally effective manager does exist
1990 Ross, Randall; Altmaier, Elizabeth M. Journal of Counseling Psychology Vol. 37: (4), pp. 459-464	"Job Analysis of Psychology Internships in Counseling Center Settings" A widely accepted method-critical incident technique was applied to determine dimensions of performance among Psychology interns, 46 training directors generated 270 critical incidents.	• Seven dimensions identified • Suggestions for improving selection and evaluation
1990 Tjosovold, Dean Group and Organization Studies Vol. 15: (2), pp. 177-191	"Flight Crew Collaboration to Manage Safety Risks" 35 pilots provided critical incidents of safety problems handled effectively and ineffectively.	• Cooperative goals and constructive discussions help maintain margin of safety
1989 Neely, Margery; Iburg, Diane School Counselor Vol. 36: (3), pp. 179-185	"Exploring High School Counseling Trends Through Critical Incidents" Use of critical incidents to identify problems encountered by school counselors in single counseling sessions. Problem areas and dynamics classified.	• Problem classified into 3 categories vocational, academic or personal and dynamics classified as lack of information, lack of skills, conflict with self and others
1988 Amundson, Norman; Borgen, William Journal of Employment Counseling Vol. 25: Sept. (3), pp. 104-114	"Factors That Help and Hinder In Group Employment Counseling" 77 adults completed critical incidents. Critical incident generated 501 helping and 44 hindering factors for job search.	• 10 categories for hindering search identified

Table 12 continued - Academic

1989 Tjosvold, Dean Journal of Management Vol. 15: (1), pp. 49-62	"Interdependence and Power Between Managers and Employees: A Study of the Leader Relationship" Critical incident method used to interview 46 managers and employees in a hospital to determine variables which influence the goal relationship between manager/employees.	• Cooperative rather than competitive interdependence contributes to exchange and productivity
1988 Tjosvold, Dean Group and Organizational Studies Vol. 13: (3), pp. 274-289	"Cooperative and Competitive Interdependence: Collaboration Between Departments to Serve Customers" The interdependence dynamics in 2 service organizations were studied using critical incident method. 27 managers and 45 employees complete 2 significant incident descriptions. Incidents coded from answers.	• Successful collaboration affect firm's productivity
1988 Lewis, Marilyn; Reinsch, N.L., Jr. Journal of Business Communication Vol. 25: (3), pp. 49-67	"Listening in Organizational Environments" A research design using critical incident methods was employed to minimize the influence of academic definitions of listening. 61 bank employees and 45 hospital employees. 4 categories.	• Interaction content significantly related to effectiveness
1991 Roush, Donna; Curtis, Craig; Dershem, Holly; Lovrich, Nicholas Jr. Journal of Public Productivity and Management Review Vol. 14: (3), pp. 267-279	"The Development of Behavior Based Performance Appraisal in Smaller Local Governments: Lessons From A Case Study" Process of development of behavioral observation scale (BOS) performance tool began with critical incident method. Change in performance appraisal tools.	• Behavioral observation scales for performance appraisal systems. Still successful after 5 years.

Table 12 continued - Academic

1988 Conway, John B. Professional Psychology Research and Practice Vol. 19: (6), pp. 642-655	"Differences Among Clinical Psychologists: Scientists, Practitioners, and Scientists Practitioners" Sample of young clinical psychologists as well as prominent senior scientists practitioners. Critical incidents in their development differed. Survey provided.	• Survey providing initial descriptive data to document individual differences likely to shape careers of clinical psychologists.
1987-88 Fraser, Mark; Haapala, David Journal of Applied Social Sciences Vol. 12: (1), pp. 1-23	"Home Based Family Treatment: A Quantitative Qualitative Assessment" Evaluated relative effectiveness of components of home based family therapy through interviews with 41 single and 2 parent families and 17 therapists. Based on critical incidents collected, 8 qualitative derived dimensions of family based treatment were identified.	• 8 dimensions • Recommends expanding definition of treatment activities
1986 Mainiero, Lisa Administrative Science Quarterly Vol. 31: (4), pp. 633-653	"Coping with Powerlessness: The Relationship of Gender and Job Dependency to Empowerment - Strategy Usage" A critical incident interview method employed to determine strategies used by men and women in organizational situation.	• Women tend to use an acquiescenu strategy to greater extent. Job dependency has greater impact than gender or powerlessness
1986 Foster, Sharon; Delawyer, David; Guevremont, David Behavioral Assessment Vol. 8: (2), pp. 115-133	"The Critical Incidents Analysis of Liked and Disliked Peer Behaviors and Their Situational Parameters in Childhood and Adolescence" Employed a critical incidents approach to examine behaviors that children reported as affecting their liking of peers. 188 2nd, 5th, and 8th grade students reported 2 incidents that make them like peers and 2 incident made dislike peers.	• Dimensions of peer behavior • Contrasts between liked and disliked

Table 12 continued - Academic

1985 Hacket, Gail; Betz, Nancy; Doty, Maxene Sex-Roles Vol. 12: (3-4), pp. 393-409	"The Development of a Taxonomy of Career Competencies for Professional Women" Semi structured critical incidents interviews used with 50 female faculty members of large midwestern university. List of 620 career relevant behaviors and skills. The 620 behaviors were examined by 3 counseling psychologists, and classification system developed. Three advanced doctoral students attempted to assign original items to these classification.	• Taxonomy of competence • 8 major categories • Subcategories
1985 Housego, Billie; Boldt, Walter Journal of Educational Research (Alberta) Vol. 31: (2), pp. 113-124	"Critical Incidents in Supervision of Student Teaching" Investigation of student teaching supervision using critical incidents methodology. 44 student teachers and 23 supervisors generated incidents that affected teaching performance negatively or positively.	• 48% incidents fall into category of organizational management

Table 13
Recent Practitioner Applications of Critical Incident - Methodology

Year/Practitioner Journal	Title/Author	Applications
1991 Spring Human Resource Professional Vol. 3: (3), pp. 53-55	"Teaching Line Managers to be Selection Sleuths" Hendrickson, John	• Learn to interview for critical incidents • Candidate assessment • Selection cues
1991 May Supervisory Management Vol. 36: (5), pp. 7-8	"Applying New Skills in Classroom Situations" Schwartz, Andrew E.	• Training • Creation of real life applications
1991 March Training and Development Vol. 45: (3), pp. 75-78	"Linking Training With HR Management" Anderson, Roger; Di Battista, Ron	• Obtaining behavioral performance data • Creating examples of effective/ineffective performance • Orientation info • Training • Selection
1990 November Training and Development	"A Competency Model for OD Practitioners" Eubanks, James L.; Marshall, Julie B.; O'Driscoll, Michael P.	• Competency based training program for OD practitioners • Categories (6) of performance competence • Assessment criteria • Skills
1988 March Success Vol. 35: (2), pp. 51-54	"He Sounds Great, But Can He Sell?" Neimark, Jill	• Behavioral event interviews • Selection criteria

Table 14

Benefits of Critical Incident Methodology

• Emphasis on observable behaviors • Collected from the "actor's" perspective vs. the opinions of outside experts • Reinforces idea of "the answers are in the model." • Especially useful in determining detailed situational behavior. • Develops comprehensive picture. • Best technique for developing behavioral criteria. • Ability to discover both universal and contingent behaviors. • Proven methodology -- used with considerable success. • Generates rich qualitative data

of critical incidents methodology as an effective and useful research technique continue to be demonstrated by researchers and practitioners alike.

3.13 How Critical Incidents Methodology Answers The Research Questions

The task of the study presented here was to identify and explore the critical dimensions and behaviors of the facilitator's role within computer supported contexts. This researcher selected critical incident methodology as the best, most reliable and broad-based process for discovering the answers to the study's research questions. The critical incident methodology is historically proven process for the rigorous study of roles within specific contexts. It has been particularly successful in isolating key/critical behavioral dimensions. This methodology continues to be a useful

research tool for exploring questions which benefit directly from the "actor's perspective" and which seek to discover core behaviors, capabilities and dimensions. The critical incident methodology is one way to begin to model and study the human experience -- specifically at the behavioral level. For these reasons, this methodology was selected as the research approach for Phase I - the identification of the critical role dimension and behaviors of the role of the facilitator.

In investigating other possible research methods for this study, direct modeling was another approach considered. "Modeling" is the process of identifying, observing and studying the behaviors of "exemplary" role models. For example, in answering the research questions for this study, a small group of excellent facilitators could have been identified and rigorously observed for effective behaviors, beliefs, and capabilities of the role.

Modeling focuses on a limited number of models and looks at what the role models "do" (behaviors) and how they do it (process and strategies). The results of modeling projects are generally written up within a case study or multiple case studies in which the selected models are described and compared exhaustively for patterns of excellence. Although modeling was another plausible research methodology for this study, it was not selected for a number of reasons, particularly because of its limited focus on very few models. The researcher in answering her question chose a more broad-

based historically proven approach to behavioral sampling. Thus, the critical incident methodology was applied in Phase I. (See Clawson, 1992 Research KAM for a more indepth review of the modeling methodology.)

What follows next is a discussion of the specific research design and methodology for the study.

3.2 Research Methodology and Process: An Overview

This study represents a rigorous exploration of the role of the facilitator in computer-supported environments. Specifically the study investigated the critical dimensions and behaviors of this role. This study applied the critical incidents methodology in field settings in answering its research questions. This section describes the study's context and factors/variables and overviews the research design and process. The detailed data collection and results analysis procedures for Phases I and II are presented in depth in Chapters 4 and 5.

3.21 The Study Context and Factors/Dimensions

The study was conducted within the context of face-to-face or same-time same-place meeting interactions in computer-supported environments. The basic unit of analysis was the critical behaviors reported in the incidents/or experiences of each participating facilitator. The study captured and analyzed information about both the facilitator's role and the impact of key role dimensions across different group support

technology.

Table 15 lists a number of factors (variables) which might influence the effective/ineffective behaviors of the facilitator's role. These include factors directly related to the facilitator role itself (i.e. the facilitator's experience, training, and relationship to the group), to the group technology employed, (workstation vs. keypad) and to the meeting context (e.g. group size, organizational level of group, task type addressed, etc.).

In this study, these variables were collected mainly as background data about the participating facilitators and the incidents reported. Of particular interest for the study presented here were two factors - the experience level of the facilitators and the specific technology type employed by them in their work. These two factors were measured in an effort to confirm that the study had tapped an appropriate number of experienced facilitators, as well as an adequate mix of workstation and keypad technology for the comparison of the facilitator role across these technologies. The remaining variables listed on Table 15 were basically collected as a foundation for future research efforts.

3.22 Participants and Respondents

The study participants/respondents included a variety of experienced facilitator in face-to-face computer-supported contexts. Many participants were drawn from a group of professional facilitators working for one major corporation,

located in dispersed team decision rooms across the USA and Canada. These facilitators were experienced in facilitating meeting interactions supported by workstation technology.

Another group of participants came from a pool of facilitators who consistently employ keypad technology in their consulting practices. Additionally, a small group was selected from major university settings where they are experienced in actively facilitating meetings for academic and business clients using both keypad and workstation technology.

The intent of the purposeful selection of study participants was to gather the most indepth and "real world" facilitator experience (behaviors) in electronic environments. It is important to note here that critical incident methodology is mainly based on numbers of incidents collected rather than numbers of participants. Since the role of the facilitator in computer-supported environments is an emerging one, only a small number of professionals (nationwide and internationally) work as facilitators in this context - a good guess might be 350-500. Fewer still bear the job title "facilitator". For purposes of the study presented here, the researcher tapped the most concentrated pool of professional facilitators using workstation and/or keypad technology as an integral part of their job role.

Table 15

Research Study Factors

Facilitator Role	Technology	Meeting Context
Relationship to Group • Internal • External • Group Member Experience • With Facilitation • With Technology Training • Formal • On the Job • Group Facilitation • Technology	Technology Type • Workstation • Key Pad • Chauffeured	Face to Face Interaction Meeting Stage • Before (Premeeting) • During • Follow-up Meeting Task Type • Creation/ Generate • Choice/Decision-making • Other Group Size Organization Level of Group • Top Management • Mid Management • Staff

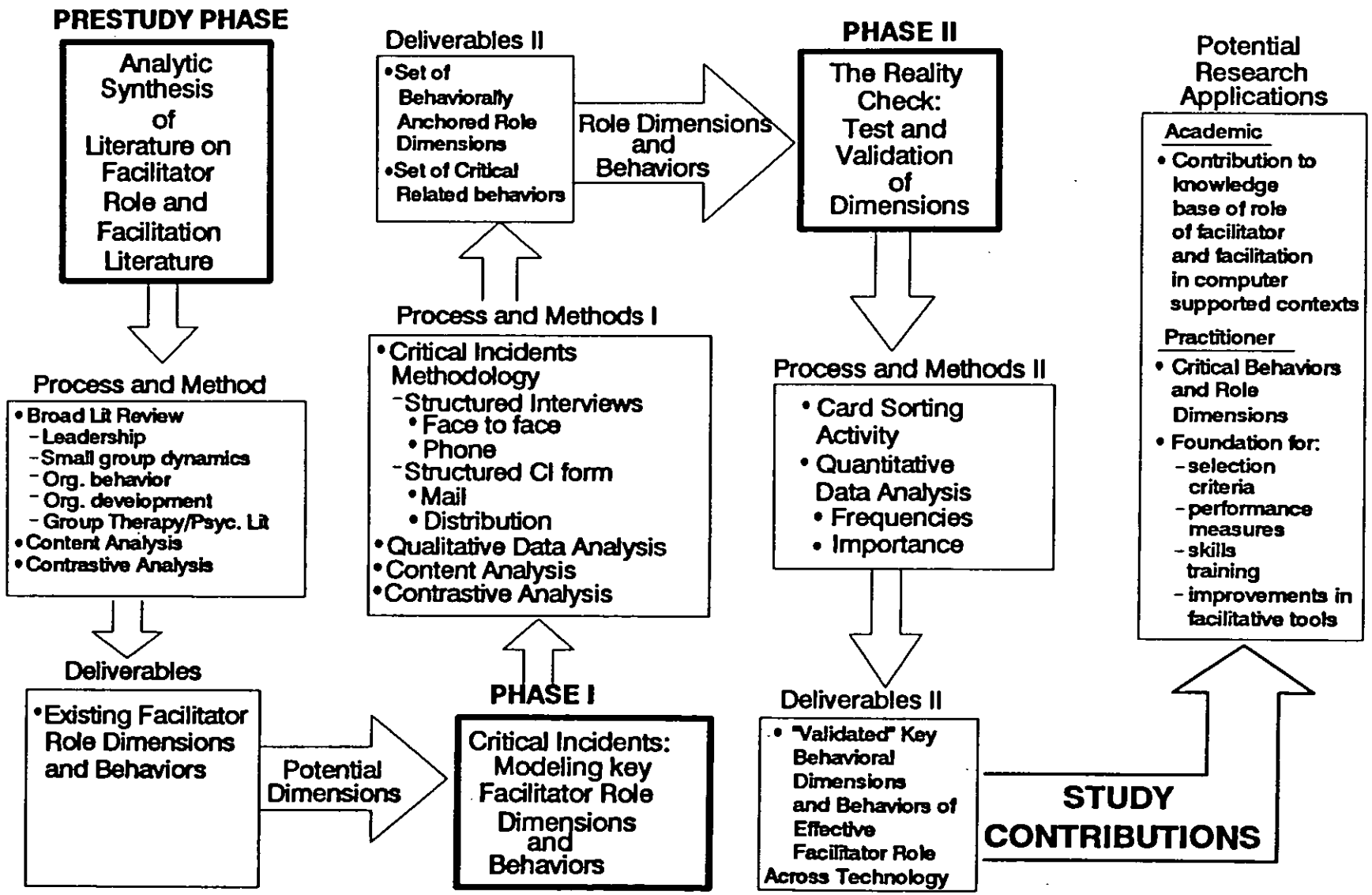
In an effort to obtain validated, indepth descriptions of critical facilitator behaviors, as well as measures of their importance, this study involved fifty (50) experienced facilitators in phase one and two. (An indepth profile of study respondents is included in Chapters four and five.)

3.23 Pre-Study Phase: Analytical Synthesis Of The Literature

Figure 3 depicts the overall research progress and methodology for this study. The pre-study phase was completed by this researcher. Basically, this phase was designed as an intensive analytic review and synthesis of the current literature on facilitation (traditional and GSS) and related disciplines, e.g. small group dynamics, organizational behavior and development, leadership/role behavior literature. The purpose of this pre-study phase was to build a solid conceptual foundation and up-front understanding of facilitation and the role of the facilitator in traditional and GSS contexts. This intensive review was used as a basis for thinking about the facilitator role and as a potential frame of reference for sorting and categorizing the critical behaviors and dimensions discovered in this study. The results of this pre-study phase were reported in Chapter Two, Review of Prior Literature.

The pre-study phase focused on the discovery of the specific behaviors and overall dimensions of the facilitator's role cited in the existing literature. The output or deliverable

FIGURE 3: RESEARCH PROCESS AND METHODOLOGY



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of this phase was a report of existing findings on the role of the facilitator (especially in computer-supported contexts) and a summary of relevant key dimensions (see Chapter 2). An effort was made in the prestudy phase to glean out universal and/or contingent role dimensions and behaviors that represented the effective facilitator role. The dimensions and behaviors uncovered in this intensive literature review were then used as a starting point for sorting and categorizing the findings in Phase I--the critical incident phase--of the study.

3.24 PHASE I: The Critical Incidents

Phase I utilized the critical incident methodology to discover key dimensions and behaviors of the facilitator's role in computer-supported environments.

In this phase, two hundred thirty-five critical incidents were reported by fifty experienced facilitators. The critical experiences were collected through face-to-face and telephone interviews or by completing critical incident description forms using explicit instructions and questions. (See Appendix B for samples of data collection forms and participant correspondence.) An effort was made to direct the interview process to the most experienced and effective facilitators in an attempt to gather the richest descriptions of critical behaviors.

The incident data was then reviewed for effective and ineffective behaviors. One hundred forty-six generic and one

thousand two hundred ninety-eight specific accountings of these generic behaviors were documented. Behaviors were then rigorously analyzed and categorized into similar overall behavioral categories or dimensions. From this analysis, the critical dimensions of the effective facilitator role were identified. (An indepth accounting of Phases I and II are presented in Chapters Four and Five.)

The main deliverable of Phase I was a set of sixteen behaviorally anchored dimensions (See table 22, Chapter 4) and their frequencies overall (See table 21, Chapter 4).

3.25 PHASE II: The Critical Role Dimensions: Verification, Validation And Measures Of Importance

In Phase II, the sixteen key dimensions were presented to the original fifty respondents in an effort to verify and validate the critical role dimensions developed in Phase I.

Phase II used a unique card sorting activity (an adaptation of the Q sort method). Respondents were asked to rank the importance of each dimension to the effective implementation of the facilitator's role. The main deliverables of Phase II were mean importance rankings of each dimension along with their measures of overall frequencies. Additionally, the study reported mean rankings and frequencies for required training and performance across dimensions as well as across technology.

A full accounting of the data collection (card sorting

activity) and the analysis of Phase II findings is presented in Chapter 5.

3.3 Chapter Summary: Research Design and Methodology

This multi-phased study represented a rigorous exploration and analysis of the role of the facilitator in computer-supported contexts. Figure 3 depicts the basic research process and methodology. This study was designed as a three phased investigation. The **prephase** addressed the current state of facilitation by completing an indepth review of the related literature. The **first phase** focused gathering critical incidents and uncovering key facilitator dimensions and behaviors based on reported experiences. The **second phase** employed a unique card sorting activity to verify and validate the key role dimensions and to measure the importance of each dimension relative to the effective performance of the facilitator role.

The study was conducted within the context of face-to-face or same-time same-place meeting interactions in computer-supported environments. The basic unit of analysis was the critical behaviors reported in the incidents/or experiences of each participating facilitator. The study captured and analyzed information about both the facilitator's role and the impact of the key dimensions across group support technology.

The study participants/respondents included a variety (50) of experienced facilitators in face-to-face computer-supported contexts in business, consulting practices and academia.

These facilitators were experienced in facilitating meeting interactions supported by workstation technology and keypad based technology.

The intent of the purposeful selection of study participants was to gather the most indepth and "real world" facilitator experience (behaviors) in electronic environments. For purposes of this study, the researcher tapped the most concentrated pool of professional facilitators using workstation and/or keypad technology as an integral part of their job role. An effort was made to obtain valid, broad-based indepth descriptions of critical facilitator behaviors, as well as measures of their importance. Chapters Four and Five discuss these efforts specifically.

CHAPTER IV

INTRODUCTION

CHAPTER 4

Phase I - The Critical Incident Phase

4.0 Chapter Overview

Phase I of this study utilized the critical incident methodology to discover the key behaviors and critical dimensions of the facilitator's role in computer supported environments. The purpose of Phase I was to: 1) explore the actual practice of the facilitator role from a number of perspectives (self, other) using reported incidents, 2) to develop a set of behaviorally grounded facilitator dimensions and 3) to provide a list of critical role dimensions with frequencies.

In this phase, two hundred thirty-five (235) critical incidents were reported by fifty (50) experienced facilitators. The critical experiences were collected through face-to-face and telephone interviews or by completion of written description forms following explicit research instructions. An effort was made to direct the interview process to the most experienced and effective facilitators in an attempt to gather the richest descriptions of critical behaviors.

The incidents data was rigorously reviewed for key role behaviors. One hundred forty-six (146) generic behaviors and 1298 specific instances of these generic type behaviors were identified in this review. The generic behaviors (146) were then categorized into overall behavioral categories or

dimensions. This categorization resulted in the creation of sixteen (16) critical dimensions of facilitator role behavior.

This chapter specifically describes the process of collecting and analyzing the critical incidents reported and the development of the sixteen key role dimensions.

4.1 Phase I Collection of Critical Incidents

4.11 Participants and Respondents

The fifty Phase I participants/respondents included a variety of experienced facilitators from business, independent consulting practices and academia. A number of participants (13, 26%) were drawn from a group of professional facilitators working for one major corporation (referred to as I company), located in dispersed decision room sites across the USA and Canada. These facilitators are experienced in facilitating meeting interactions supported mainly by workstation technology.

Another group of participants (27, 54%) came from a pool of facilitators (F company) who consistently employ keypad technology in their independent consulting practices and/or in their organizations. (F company is not actually one organization, rather it is a group of independent consultants and internal facilitators in a variety of organizations who use the same keypad based technology. The mailing list was obtained from the major keypad vendor.) Additionally, a small group (other) (10, 20%) were selected from major university settings and several other organizations where they are

experienced in actively facilitating meetings for academic and/or business clients using both keypad and workstation technology.

4.12 The Critical Incident Collection Process

Data for Phase I of the study was collected using the critical incident methodology. The critical incidents were collected by structured interview format (telephone and/or face-to-face) and by mailed incident forms using explicit step-by-step instructions for completion. Participants completing the mailed critical incident forms received a letter of invitation, a sponsor letter (from a member of their organization or vendor), written instructions, a sample critical incident, five (5) blank critical incident forms and a return posted envelope. (See Appendix B for sample Phase I data collection forms, correspondence and instructions.)

Participants targeted for interviews received an advance invitation letter from the researcher and a sponsor letter describing the importance of the research. The researcher made phone calls to schedule each interview approximately one week after the invitation letter was mailed. It should be noted here that most of the incidents (76%) were collected using face-to-face or telephone interviews. Interviews lasted one to one and one-half hours. Originally, 25-30% of the respondents were targeted for interviews. However, the researcher found most participants much more responsive and committed to the completion of the critical incident phase if

they could talk through their experiences versus writing them down.

This affinity toward the interview format could have been due to busy facilitator schedules, the "overwhelming" appearance of the Phase I research packet or the talkative, gregarious nature of this group of facilitators. Such comments as "all those forms . . . all those instructions, just talk to me and tell me what you want" . . . or "I'd rather just talk and you write," were familiar statements during follow-up calls to "research packet" respondents.

All participants were invited to participate in advance through introductory letters (sponsor and researcher) or by advanced phone calls. Company I participants were also notified well in advance by their overall corporate manager through the E-mail system. The researcher made an effort to establish a contact relationship within each participant group to help support and encourage the collection of incidents. Personalized thank-you notes were sent to each participant upon their completion of Phase I incident forms or interviews.

Formal interviews began with thanking each participant for their time, refreshing the participant's memory about the outcome of the study, and reminding them that the interview would take about 1 hour. Similarly, mailed research packets were introduced with an invitation letter explaining the purpose and time commitment of the research activity.

All incidents -- both mailed and interviewed -- were

recorded on the Facilitator Description form (see sample in Appendix B) -- a three-page form providing questions ("Think about an experience that clearly demonstrates effective or ineffective facilitator behavior . . . describe it. Who facilitated the meeting? What was the size and type of group facilitated?") and blank spaces for responses to guide the completion of incidents. Each form was coded with a participant number for identification.

Participants were asked to report specific behavioral facilitator experiences according to explicit instructions provided verbally (interviews) or in writing (mailed packets). The instructions asked participants to recall experiences that had occurred over the last two years, focusing on their most recent (last 12 months) examples of effective or ineffective facilitator behavior. Thinking of meaningful and behavioral instances was not necessarily easy. The researcher suggested that participants check their calendars and look back at the meetings they had facilitated, particularly over the last year. Participants were told to "flag" (mark them out in their memory) those memories that stood our as the most dramatic examples of effective and ineffective facilitator behavior. It was suggested that the participants first make a list of the experiences that stood out in their memory prior to writing or verbally describing their experiences. This suggestion seemed to assist in prompting the memories of these experiences.

Participants were also instructed to select facilitator experiences that demonstrated critically important effective/ineffective behaviors. They were asked to describe a wide variety of facilitation experiences (from self or other perspectives; before, during or after meeting incidents, etc.).

Interviewed participants were also encouraged to ask questions about the process before proceeding. People contributing written forms had access to the researcher's name, phone, and address, and were also encouraged to call if they had questions. Explicit written instructions with specific examples of observable behavior were also included in the mailed research packets. (See Appendix B.)

During interview calls, the researcher also reminded the participants that she would be writing their responses on the facilitator description forms. As the incidents were reported, clarifying questions might be asked to ensure that the researcher was clearly documenting what they were reporting.

Data collection occurred over a four-week time period. Follow-up memos and telephone calls were made to participants to encourage the prompt completion of the critical incident phase. Many of these reminder calls to "questionnaire" participants resulted in the scheduling of a face-to-face or telephone interview.

4.13 Pilot Studies Phase I

A number of pilot studies were conducted in a university setting and in the field prior to the initiation of Phase I of the study to verify the understandability, effectiveness, and time requirements [time demands on the respondents for completion of the study tasks] of the data collection tools.

The first pilot study was conducted in a three hour group meeting. Phase I data collection forms and study correspondence was reviewed, used and critiqued. An agenda and specific protocol for conducting this pilot study were developed. (This protocol is presented in Appendix D along with the original pre-study documents).

A number of Business School faculty and Ph.D. candidates and several facilitators working in computer supported environments participated in this pilot study and contributed ideas on appropriate revisions. A number of the pilot participants used a group support system -- VisionQuest -- to record their specific revisions and comments. This allowed the participants to give immediate, ongoing and simultaneous feedback throughout the pilot. Thus, the researcher was immediately able to clarify and incorporate critical revisions.

Approximately one week later after the first pilot study, the revised data collection documents were resubmitted to a number of individuals from the original pilot, as well as to several facilitators in the field to reevaluate these forms

for understandability and usability. This effort resulted in the final revisions (e.g. changes in language, length of questions, sequencing of instructions, etc.).

Additionally, three pilot interviews were conducted to evaluate the effectiveness of the face-to-face and telephone interviews process for collecting critical incidents. A protocol for conducting interviews was developed and is presented in Appendix D. Additional revisions were made to the process and forms based on the interview pilot.

Pilot studies indicated that both written forms and interview formats were effective ways to collect critical incidents, although interviews tended to produce more incidents in the hour time frame.

4.14 Incident Profiles

Tables 16-18 profile the incidents (235) in terms of the source of the incident (which participant group), the method of collection, had facilitation and meeting contexts. Table Sixteen indicates the source and method of collection. Most of the incidents (124, 53%) were contributed by the F company group. I company respondents reported 56 incidents (24%). The remaining groups of respondents (other and academic) provided 32 (14%) and 23 (9%) incidents respectively.

As reflected in Table 16, most incidents were collected by interviews (76%), the remainder using written incident report forms (24%). Interviewing and recording incidents was much more costly in terms of the researcher's time and budget

TABLE 16
INCIDENTS PROFILE: COLLECTION
N-235

Source	#	%	N	Method	#	%
Other	32	(14%)	5	Interview	178	(76%)
Icompany	56	(24%)	13	Questionnaire	57	(24%)
Fcompany	124	(53%)	27			
Academic	23	(9%)	5			

TABLE 17
INCIDENTS PROFILE: FACILITATION
N-235

PERFORMANCE	#	%		PERCEPTUAL POSITION	#	%
Effective	164	(70%)		Self	158	(67%)
Ineffective	58	(25%)		Other	75	(32%)
Both	13	(5%)		Both	2	(1%)

ORGANIZATIONAL POSITION	#	%
External	167	(71%)
Internal	54	(23%)
Group Member	14	(6%)

(high prime time phone charges), however, the interviews did produce more behavior specific reports of critical experiences. Participants using the interview format contributed 3 to 12 incidents versus 1 to 5 incidents reported in written form. In the long run, the benefit of interview collection in terms of quality and production of incidents was worth the money and time spent.

Table 17 presents a profile of the two hundred thirty-five incidents. 70% of the incidents were reports of effective facilitator **performance**; in 67% of the documented experiences the respondent was the facilitator (**self**), while 71% were descriptions of the facilitator working as an **external** (outside hired) consultant to the group versus being internal to the organization or a group member.

Table 18 describes the meeting contexts and characteristics documented in the incidents. **Cycle** refers to the meeting stage in which the incident occurred -- whether pre-meeting (before), during the meeting, both before and during the meeting. **Type** indicates the kind of meeting facilitated. **Group composition** reflects the makeup of the group facilitated, as reported in the incident and **group size** denotes the number of meeting participants. Finally, **technology** refers to the number of incidents documenting **workstation** (Groupsystems, Team Focus, Vision Quest), keypad (Option Finder), chauffeured technology (Lotus Spreadsheets, etc.) or the use of no technology at all.

TABLE 18
INCIDENTS PROFILE: MEETINGS
N-235

CYCLE	#	%		TYPE	#	%
Premeeting	29	(12%)		Decision Making	27	(11%)
During	195	(83%)		Creation	141	(60%)
Both P&D	10	(4%)		Other	15	(6%)
After	1	(1%)		Not Reported	52	(23%)

GROUP COMPOSITION	#	%		GROUP SIZE	%
Top Management	50	(21%)		0-5	(10%)
Middle Management	29	(12%)		5-10	(15%)
Mixed Management	32	(14%)		10-15	(25%)
Staff/Professional	60	(25%)		15-20	(25%)
Mixed Staff and Management	42	(18%)		20-40	(15%)
Not Reported	22	(10%)		40-125	(7.5%)
				128-180	(2.5%)
				Average Size	21

TECHNOLOGY

WORKSTATION BASED 122 (53%)				KEY PAD BASED 108 (46%)		
GroupSystems	39	(17%)		OptionFinder	108	(46%)
TeamFocus	67	(29%)				
VisionQuest	16	(7%)				

5 (1%)		
Chauffered	2	(1%)
No Technology	3	(1%)

A quick glance at Table 18 denotes that most of the reported incidents documented during meeting (83%) experiences, occurring in creation type meetings (60%), involving mainly staff/professionals (25%) and top management (21%) groups of approximately 10-20 people. This sample is representative of the meeting contexts and characteristics reported in several recent practitioner and academic studies of electronic meetings (Watson et al, 1991, Grohowski et el, 1990). Basically, incidents were evenly divided among workstations (53%) and key based technology (46%), which provided the desired balance for the across technology comparisons made in the study.

4.15 Phase I Data Collection Summary

The study collected two hundred thirty-five critical incidents from fifty experienced facilitators in computer supported environments. These incidents were collected by both structured face-to-face/telephone interview (76%) and mailed incident forms (24%). Both formats were successful in collecting quality incidents, although the interviews produce more reports of behavior specific experience.

Recognized experts in the area of critical incident methodology (Campbell and Dunette 1970, Saskin, 1989, Wextley and Lantham, 1981) suggest it is useful to obtain more than a single vantage point or perspective when collecting critical incident data in order to enhance the reliability of the information. They also recommend the collection of a sizable

number of observations and descriptions are necessary to discover the critical behavioral dimensions of a job or role (Yukl, 1981, Campbell and Dunnette, 1970), Phase I of this study has met both criteria in collecting descriptions from both the facilitator as self or the facilitator as other perspective and by documenting over 200 incidents and nearly 1500 instances of critical behavior.

The next step in Phase I of the study was the coding and analysis of the critical incidents and the development of the key dimensions of the facilitator's role in computer supported environments. These are covered in the next section.

4.2 The Analysis of The Critical Incidents

4.21 The Coding of Generic and Specific Behaviors

The two hundred thirty-five incidents were vigorously reviewed for descriptive instances of effective and ineffective facilitator behavior. First, a small subset (10) of the reported incidents was selected at random from both written and interviewed incidents. This subset was then examined by the researcher and two facilitation experts to check the common understanding of what defined a "behavior." (The two facilitation experts were academic researchers and practicing facilitators in both traditional and electronic environments.) The working definition of <u>behavior</u> developed was - "an action or set of actions performed by the facilitator; descriptions of what facilitators <u>do</u> - what one actually sees or hears the facilitator doing."

Working in different geographical locations, the two experts highlighted (using yellow markers) statements of effective and ineffective behaviors reported in those ten cases. The highlighted incident forms were then returned to the researcher and compared. In all cases, similar statements were identified as "behaviors" by the researcher and the facilitation experts.

Once a common understanding of "behavior" was established, the researcher continued to code each incident. Basically, the incidents were coded on a coding sheet indicating the following incident characteristics and behaviors: meeting type, stage of meeting, cycle reported, size and composition of the group facilitated, the perceptual position of the reported incident (self or other). (These characteristics are summarized and profiled in Table 18).

Incidents were carefully read and inspected for instances of effective and ineffective behaviors. The researcher coded generic and specific examples of behavioral description throughout the incidents' text. A wide random sampling (50%) of the coded incidents was also reviewed by one of the facilitation expert to verify the generic and specific behavior distinctions and occurrences. Generic behaviors, defined as the first appearance or mention of a unique type of facilitator behavior, were assigned a consecutive unique number and a code of G. Repeated similar statements of generic type behaviors were coded S for specific behaviors,

along with the numeric code of the generic type of behavior it described.

In all two hundred thirty-five incidents were analyzed identifying one-hundred forty-six (146) generic behaviors and one thousand two hundred ninety-eight (1298) specific instances of the generic types. Generics were recorded in summary terms created by the researcher based on the respondents words. The specific reoccurring behaviors describing the generic type were documented in the participants own words. For example, "Promotes Owner and Encourages Responsibility" was identified as the "generic" behavior and "turn the floor over to others" was labeled a "specific" instance of this generic behavior. Both generic and specific narratives were entered into a database.

A complete listing of the one hundred forty-six [146] generic behaviors and their documented frequencies [times mentioned in the two-hundred thirty-five incidents] is presented a little later in this section. (See Table 21.)

4.22 The Development of Key Role Dimensions

About two-thirds of the way into the behavior coding and identification process, the researcher attempted to generate an initial list of potential dimensions or common categories of role behaviors. This first cut of the dimensions was based on the review of reoccurring behaviors in the incidents, the "potential dimensions" information gathered from the prestudy literature review (see Table 10 Potential Dimensions in

Chapter 2), and the researcher's collaborative discussion with one of the facilitation experts. The results of this effort was a listing of seventeen (17) potential dimensions of facilitator behavior (see Table 19).

Upon the completion of the coding of generic and specific behaviors, the researcher and the two facilitation experts "mapped" the 146 generic behaviors to the initial 17 dimensions listing. This mapping was done by simply placing the number of the potential dimension next to the statement generic behavior. In this initial attempt of matching the generic behavior with the appropriate dimension, the researcher and colleagues agreed fully on the placement of fifty-four (54) behaviors, and produced 2/3 agreement on forty-seven (47) behaviors and placed the remaining 45 behaviors in three different behavioral categories.

All mismatched behaviors were discussed and reconciled among the three researchers. The mapping process was then completed two more times. The final mapping produced overall agreement in placement of behaviors, along with the revision in the wording and total number of dimensions. Original dimensions four (Rapport) and five (Sensitivity to People) were combined. The wording changes reflected more accurately the respondents statements.

Table 20 depicts the results final mapping of the generic behaviors to their related dimensions in terms of frequencies and overall percentages. Column 1 reflects the name of each

dimension. Column 2 indicates the number of the overall generic behaviors which related to the dimension. The percentages in parenthesis in column 2 indicate what percentage of the overall generics are represented under each dimension. For example, in column 2 under Dimension 1, Promotes Ownership, there were seven (7) of the one hundred forty-six (146) generic gehaviors which related to the category/dimension of Promotes Ownership/Responsibility. This represents 5% of all of the coded generic behaviors.

Column 2 depicts the number of <u>specific</u> accounts of the generic behavior type that were identified in the incidents and the percent of specific behaviors the number represents. For example, in looking back at Table 20 under Dimension 12, there were 180 recorded accounts of specific behaviors representing the generic behavior plans and designs. This 180 made up 14% of the one thousand two hundred ninety-eight (1,298) specific behaviors coded.

Table 19

Firstcut Dimensions

1. Technology Knowledge and Technical Skills
2. Appropriate Selection, Use and Application of Group Technology
3. Rapport (Comfort) With Technology
4. Rapport and Relationship Building
5. Sensitivity to People and Group
6. Self-Awareness/Insight, Self-Expression, Sensitivity to Self
7. Outcome Emphasis
8. Meeting Planning/Meeting Design
9. Roles and Responsibilities
10. Meeting Structures
11. Gathering, Clarifying and Sorting Information
12. Giving/Presenting Information
13. Creating an Open and Participative Environment
14. Encouraging/Supporting Multiple Perspectives
15. Art of Questioning
16. Flexibility
17. Conflict Management

Table 20
Final Dimensions - Behaviors Mapping with Frequencies

Dimension	# Generic Behaviors	Specific Behaviors
1. Promotes Ownership and Responsibility	7 (5%)	51 (4%)
2. Demonstrates Self Awareness/ Expression	12 (8%)	70 (5%)
3. Selects and Prepares Technology	3 (2%)	19 (1%)
4. Listens to, Clarifies, and Integrates Information	12 (8%)	105 (8%)
5. Develops and Asks Right Questions	3 (2%)	49 (3%)
6. Keeps Group Focused on Outcome	6 (4%)	80 (6%)
7. Creates Comfort with Technology	9 (6%)	90 (7%)
8. Creates Open, Positive Environment	12 (8%)	99 (8%)
9. Actively Builds Rapport and Relationships	21 (14%)	170 (13%)
10. Presents Information to the Group	7 (5%)	34 (3%)
11. Demonstrates Flexibility	10 (7%)	65 (5%)
12. Plans and Designs Meetings	17 (12%)	180 (14%)
13. Manages Conflict and Negative Emotion	5 (3%)	42 (3%)
14. Understands Technology and Its Capabilities	3 (2%)	61 (5%)
15. Encourages and Supports Multiple Perspectives	4 (3%)	39 (3%)
16. Directs and Manages the Meeting	15 (10%)	154 (12%)
TOTALS	146 (100%)	1298 (100%)

4.23 Final Listing of Dimensions, Generic and Specific Behaviors and Their Frequencies

In addition to the "dimension mapping" completed by the initial group (this researcher, plus two facilitation experts), the revised dimensions and their related (grounded) behaviors were presented to four Ph.D. students and two professional facilitators. Their comments provided additional input for clarifying and "cleaning up" the dimensions.

Table 21 summarizes the extensive efforts in completing the data collection and analysis of the two hundred thirty-five critical incidents. Each of the 16 dimensions is listed in bold type. Underneath each dimension are the generic behaviors which ground or describe the dimension more fully. In parenthesis next to the dimension statement are the total number of generic behaviors that ground the dimension and the percentage of the 146 generic behaviors that this number represents.

So looking at Table 21, Dimension 1 - Promotes Ownership - has seven (7) related generic behaviors which makes up 5% of the 146 generics. Next, the overall frequency and percentage of the specific behavioral instances of the generic type (grounding the dimension) are represented in the # % columns next to the dimension. In the case of Dimension 1, fifty-one (51) specific mentions of the generic behavior types were found in the 235 incidents. This represents 4% of the 1,298 specific instances of behaviors coded.

The number and percentage next to each generic behavior indicates number of times the behavior was mentioned in the incidents and the percentage of the overall behaviors in this dimension that that generic behavior represents. Looking back at Table 21, generic behavior #11 - Turning the floor over to others - was mentioned 7 times which is 14% of the total number of behaviors (51) grounding the dimension.

Thus, under Dimension 1, generic behaviors #64, "letting the group take responsibility" and #94, "moving out of the way of the group" were the most frequently documented behaviors (25%).

In summary, reviewings Table 20 and 21, the most often mentioned dimensions in the critical incidents reported were #12 - Plans and Designs the Meeting (14%/180), #9 - Actively Builds Rapport and Relationship (13%/170), and #16 - Directs and Manages the Meeting (12%/154). The least frequently mentioned dimensions were #3 - Selects and Prepares Technology (1%/19), #5 - Develops and Asks Right Question (3%/39), #10 - Presents Information (3%/34), and #13- Manages Conflict (3%/42).

Singularly, the most often mentioned generic type of behavior was #22 - Eliciting and Setting Clear Goals and Outcomes, mentioned 41 times and generic behavior #44 - Carefully Introducing and Explaining Technology, mentioned 40 times.

Other generic behaviors mentioned often were Encouraging Open Participation (35 times), Making People Comfortable (33 times), Preplanning Effectively and Actively Listening (each mentioned 31 times).

Finally in glancing at Table 21, twenty-three (23) percent of the generic behaviors were mentioned 3% or less of the overall instances (1,298 behaviors). However, these behaviors still contributed to the richness of the dimension description and reflect the actual experiences of the respondent facilitators.

These joint efforts described above resulted in the creation of the final sixteen (16) key dimensions of facilitator role behavior. Each dimension represented a category or a key class of facilitator behaviors reported by the experienced facilitators in describing their work in computer supported environments. The narrative description grounding each dimension reflected a summary of the behaviors reported. These dimensions were "behaviorally anchored" by the 146 generic behaviors and the 1,298 specific descriptions of actual facilitator behavior reported by the experienced facilitators in Phase I (see Table 21).

The final sixteen dimensions with actual behaviors are represented in Table 22. The greatest difficulty in developing the dimensions was creating categories that were as unique as possible. Because facilitation is an integrated process, the behaviors reported were not mutually exclusive -

TABLE 21
Dimensions, Generic Behaviors, Frequencies

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
1.	**Promotes Ownership and Encourages Group Responsibility (7, 5%)**	51	4%
	11 Turning floor over to others	7	14%
	63 Developing ownership of items, plan, etc.	9	18%
	64 Letting group take responsibility	13	25%
	65 Creating/developing following plans with group	5	10%
	94 Moving out of the way of the group, staying out of their content	13	25%
	101 Having group critique/evaluate the process and technology	3	6%
	146 Tying information back to the group-making info relevant back on the job	1	2%
2.	**Demonstrates Self Awareness and Self-Expressions (12, 8%)**	70	5%
	13 Handling situation in emotionally appropriate way - keeping one's cool	9	13%
	18 Dealing with and managing own emotions	6	9%
	48 Demonstrating own credibility and competence	8	11%
	52 Admitting own mistakes or lack of knowledge	14	20%
	62 Demonstrating own emotions	3	4%
	99 Using intuition and own sensing effectively	5	7%
	106 Keeping own ego out of the way	3	4%
	114 Demonstrating personal energy and spirit	4	6%
	118 Using your gut reactions	4	6%

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
	125 Using animated expressions, eye contact arm movements, voice tone, smiling, etc.	9	13%
	143 Checking in with self. Paying attention to own responses & emotions	4	6%
	145 Acting comfortable with self, being one's self	1	1%
3.	**Appropriately Selects and Prepares Technology (3, 2%)**	19	1%
	3 Selecting appropriate technology/tools	3	16%
	33 Creating alternative backup design/plan for technology for each activity	11	58%
	49 Checking the technology in advance/making sure system worked.	5	26%
4.	**Listens to, Clarifies and Integrates Information (12, 8%)**	105	8%
	7 Clarifying terms/definitions	14	13%
	10 Clarify set agenda	1	1%
	21 Capturing, summarizing, and making sense out of the data	11	10%
	40 Gathering background data on issue/problem	3	3%
	71 Backtracking verbal/written comments effectively	11	10%
	74 Actively listening	31	30%
	81 Integrates/incorporating group's suggestions	4	4%
	87 Pulling together/organizing data into themes	5	5%
	88 Remembering and referring back to previous comments	4	4%
	95 Clarifying the meaning behind an item/response	12	11%

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
	116 Asking for and using feedback	6	6%
	136 Recording & writing out information	3	3%
5.	**Develops and Asks the Right Questions (3, 2%)**	39	3%
	37 Formulating questions in technology ahead of time	5	13%
	68 Developing/asking clear/appropriate questions	29	74%
	98 Designing/adapting questions for technology on the fly	5	13%
6.	**Keeps Group Focused on the Outcome (6, 4%)**	80	6%
	39 Getting group back on track. Keeping group's comments relevant.	28	35%
	43 Communicating the outcome to group/leader	13	16%
	50 Having a direction; knowing where to go next	6	8%
	76 Focusing on outcome	26	33%
	122 Having/demonstrating a genuine interest in the group's outcome	4	5%
	141 Making important information visible, e.g., keeping outcomes/standards posted	3	4%
7.	**Creates Comfort with and Promotes Understanding of the Technology and Technology Outputs**	90	7%
	14 Directly telling group about what's going on-with the technology, if there are problems	16	18%
	30 Apologizing for technology failures and inconveniences	1	1%
	32 Preparing MTG leader/initiator for potential technology problems ahead of time	2	2%

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
	34 Open to negative comments about technology	2	2%
	35 Pacing review of technology outputs to accommodate group ability to understand graphs/information	4	4%
	44 Carefully introducing and explaining technology	40	45%
	45 Interpreting and making sense out of technology outputs	20	23%
	138 Physically positioning self to keep eye contact with group and on screens - physically positioning self to look at group and screens.	3	3%
	139 Locating items easily on the screen	2	2%
8.	**Creates and Reinforces an Open, Positive and Participative Environment (12, 8%)**	99	8%
	5 Asking indiv. to respond to group	1	1%
	6 Facilitating discussions	5	5%
	55 Acknowledging participant's contribution	9	8%
	75 Encouraging open participation	35	32%
	78 Developing/maintaining open environment	8	7%
	83 Acknowledging being open to participants suggestions	3	3%
	86 Providing anonymity/confidentiality	3	3%
	104 Using games, puzzles, riddles, play	8	7%
	105 Creating & reinforcing positive energy in the group	5	5%
	115 Handling dominant people effectively	8	7%
	117 Using humor appropriately	9	8%
	132 Using technology to get people participating	4	4%

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
9.	**Actively Builds Rapport/Relationships (21, 14%)**	170	13%
	2 Tell group their opinions matter	3	2%
	8 Sensitivity to and awareness of emotions/feelings of the group	15	9%
	15 Providing support & reassurance	6	4%
	25 Paying attention to meeting leader/initiator	1	1%
	36 Reading the group's desire, wants, and needs	19	11%
	47 Making people comfortable/putting them at ease/relaxing people	33	19%
	57 Focusing on the group	15	9%
	60 Stay in tune/in sync with group	10	6%
	61 Working well with people	1	1%
	77 Building trust/building relationships	12	7%
	103 Assisting participants with special needs/problems	4	2%
	112 Greeting the group/mingling with group before meeting/getting to know group	9	5%
	113 Updating latecomers/catching people up	1	1%
	120 Calibrating/responding to physical cues, watching eyes, watching body language	7	4%
	121 Using voice tone & tenor to communicate a message	1	1%
	123 Checking in with the group - making sure the group is with you	8	5%
	124 Moving about in group, moving in & out of group	8	5%
	126 Matching non-verbal behaviors - voice tones, body language, etc.	2	1%
	131 Positioning body in relationship to group	7	4%

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
	133 Respecting individuals/group	5	3%
	134 Keeping up with the group (quickly processing information)	3	2%
10.	**Presents Information to the Group (7, 5%)**	34	3%
	4 Giving clear/explicit instructions	8	24%
	19 Communicating and presenting information effectively	4	12%
	41 Researching & using supportive background information/content	4	12%
	42 Creating and showing graphic representations	2	6%
	82 Making reports and printouts available to group	3	9%
	91 Reviewing data display/graphics with group	13	38%
11.	**Demonstrates Flexibility (10, 7%)**	65	5%
	9 Adapting set agenda during meeting	14	22%
	31 Moving the group forward after a technology problem	6	9%
	46 Doing more than 1 thing at a time	5	8%
	54 Thinking on one's feet	8	12%
	56 Adapting design as needed	19	29%
	59 Feeling comfortable enough with subject matter to make changes	1	1%
	66 Hanging in/being persistent	3	5%
	84 Allowing the group to choose to do an activity	4	3%
	127 Adapting own style and approach to individual/group	3	5%
	130 Trying new things	2	3%
12.	**Plans and Designs the Meeting Process (17, 12%)**	180	14%

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
	22 Designing and preplanning effectively	11	6%
	26 Preplanning meeting effectively	31	17%
	27 Eliciting and setting clear goals/outcomes	41	23%
	51 Planning with and guiding the technographer's behavior	6	3%
	58 Thinking about possible options/changes ahead of time	1	1%
	69 Designing effective agendas	19	11%
	70 Mapping meeting activities to outcomes	2	1%
	72 Tying agenda to outcome(s)	4	2%
	92 Tie/map technology to the outcome	8	4%
	96 Knowing and finding out about the group before the meeting	10	6%
	100 Preparing group for change in plans	4	2%
	102 Distributing/having agendas for participants	5	3%
	107 Combining and using manual and electronic meeting technologies	8	4%
	109 Influencing/directing ML/initiator on potential agenda/process/activities	8	4%
	110 Rehearsing or imagining what might happen to anticipate problems	1	1%
	111 Designing, selecting, and using appropriate exercise and activities for group	16	9%
	140 Designing agendas that fit the time frame/being able to estimate time frames	5	3%
13.	**Manages Conflict and Negative Emotions Constructively (5, 3%)**	42	3%
	16 Allowing people to express emotion	7	17%

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
	53 Gathering/checking opinions of group to settle discrepancy in perception or conflict	8	19%
	67 Gaining consensus & agreement	9	22%
	97 Constructively handling conflict/emotions in the group	17	40%
	119 Helping people diffuse negative emotions	1	2%
14.	**Understands Technology and Its Capabilities (3, 2%)**	61	5%
	12 Understanding, dealing with/solving technology problems	22	36%
	38 Diagnosis technology problems	4	7%
	20 Using tools effectively	35	57%
15.	**Encourages and Supports Multiple Perspectives (4, 3%)**	39	3%
	85 Suggesting alternative ways of doing something	3	11%
	89 Using examples, metaphors, stories	11	28%
	90 Helping the group frame the issue; putting things in perspective for group	13	46%
	93 Getting group to take on and understand different perspectives	12	43%
16.	**Directs and Manages the Meeting (15, 10%)**	154	12%
	1 Break into small groups	4	3%
	17 Leading and directing people through meeting	31	20%
	23 Running the meeting effectively	2	1%
	24 Following the agenda	7	5%
	28 Using breaks effectively	8	5%

		Frequency	
	Dimensions With Generic Behaviors Grounding	**#**	**%**
	29 Maintaining communication (directly information) with meeting leader/initiator before and during meeting	20	13%
	73 Pacing the meeting to group	2	1%
	79 Restricting the meeting process, setting time limits, restricting number of choices	22	14%
	80 Adapting and using models	8	5%
	108 Setting frame/stage for meeting and activities up front	12	8%
	128 Using technology to manage the group	8	5%
	129 Establishing & enforcing ground rules	9	6%
	135 Knowing/stating clear roles/expectations up front	17	11%
	137 Providing model, framework, and process for discussions	3	2%
	144 Asking about & clarifying the role of decision makers	1	1%

many behaviors were related to each other. Therefore, sorting behaviors into singular categories and more importantly, creating unique "labels" for the categories was a time consuming effort.

The final set of 16 dimensions/categories (Table 22) were used as the basis for Phase II of the study. In Phase II, experienced facilitators were asked to verify and measure the relative importance of each dimension to the effective performance of the facilitator's role in computer-supported environments.

Table 22

Grounded Dimensions: Final List

1. Promotes Ownership and Encourages Group Responsibility -- The facilitator helps group take responsibility for and ownership of meeting outcomes and results; helps groups create follow-up plans in an effort to carry on after the meeting; moves out of the way of group, stays out of their content; turns the floor over to others; permits group to call own breaks; encourages group to evaluate process and technology.	**2. Demonstrates Self-Awareness and Self-Expression** -- The facilitator recognizes and deals with own behavior and feelings; is comfortable being self; responds in an emotionally appropriate way, e.g., calm under pressure; pays attention to and acts on gut reactions; behaves confidently; behaves honestly -- openly admits mistakes and lack of knowledge; shows enthusiasm and person spirit; keeps personal ego out of the way of the group.
3. Appropriate Selects and Prepares Technology -- The facilitator appropriately matches computer-based tools to the task(s) and outcome(s) the group wants to accomplish; selects tools that fit group make up; uses technology as tool, not as an end in itself; prepares and tests technology ahead of time; thinks about back-up plan in case of technology failure.	**4. Listens to, Clarifies, and Integrates Information** -- The facilitator really listens to what the group is saying and makes an effort to make sense out of it; clarifies goals, agenda, terms and definitions with group; backtracks participant's responses; listens for and clarifies the meaning behind responses; remembers previous comments to reconnect information; gathers and integrates information; helps organize information into themes.

Table 22 (continued)

Grounded Dimensions: Final List

5. Develops and Asks the "Right" Questions -- The facilitator considers how to word and ask the "best" questions; asks questions that encourage thought and participation; develops thoughtful questions on the fly; creates appropriate questions in the technology.

6. Keeps Group Focused On Outcome/Task -- The facilitator has a definite direction and knows where to go next; clearly communicates outcomes to the group upfront; makes outcome visible to the group; keeps group focused on and moving toward its outcome; keeps group's comments relevant to its outcome; demonstrates concern for the group's outcome.

7. Creates Comfort With And Promotes Understanding Of The Technology and Technology Outputs -- The facilitator carefully introduces and explains technology to group; directly addresses negative comments and inconveniences cause by technology; helps group interpret and make sense out of screens and graphs; points out key items on screen; paces review of technology outputs to match group's level of understanding.

8. Creates and Reinforces and Open, Positive and Participative Environment -- The facilitator draws out individuals by asking questions, uses activities and technology to get people involved early on; handles dominant people to ensure equal participation; provides anonymity and confidentiality when needed; acknowledges and is open to group's contributions; creates and reinforces positive energy in the group; uses humor, games, puzzles, riddles, music, and play to enhance open, positive environment.

9. Actively Builds Rapport and Relationship -- The facilitator demonstrates responsiveness and respect for people, is sensitive to emotions; regularly "reads" the group; watches and responds to nonverbal signals; is empathetic to people with special needs; works to stay in tune with group; helps develop constructive relationships with and among members; puts group at ease; greets and mingles with group; uses group's own words and symbols' moves about in the group.

10. Presents Information To Group -- The facilitator gives clear and explicit instructions; uses clear and concise language in presenting ideas; gives group written information, e.g., handouts, printouts; provides research and background information to the group; presents models and framework clearly; makes sure important information -- e.g., outcomes, standards etc. is visible to the group.

Table 22 (continued)

Grounded Dimensions: Final List

11. Demonstrates Flexibility -- The facilitator thinks on feet; adapts agenda or meeting activities on the spot as needed; can do more than one thing at a time -- handles multiple tasks smoothly; adapts personal style to individual/group; tries new things; is willing to do something different than originally planned.

12. Plans and Designs The Meeting Process -- The facilitator plans the meeting ahead of time; directly includes meeting leader/initiator in planning; develops clear meeting outcomes; designs agenda and activities based on outcome, time frame, and group characteristics; defines and clarifies key roles and ground rules; finds out about group ahead of time; incorporates use of traditional and electronic meeting tools; explores potential changes in agenda ahead of time.

13. Manages Conflict and Negative Emotions Constructively -- The facilitator encourages group to handle conflict constructively; provides techniques to help group deal with conflict; uses technology to gather and check group opinions and agreement level in disputes; helps group gain agreement and consensus on issues; allows group to vent negative emotions constructively.

14. Understands Technology and Its Capabilities -- The facilitator has an overall conceptual understanding of the technology and knows how to operate the system; clearly understands tools and their functions and capabilities; figures out and solves common technical difficulties; identifies and uses other sources of technical expertise as needed.

15. Encourages/Supports Multiple Perspectives -- The facilitator encourages looking at issues from different points of view; uses techniques, metaphors, stories, examples to get the group to consider different frames of reference; suggests alternative ways of doing or looking at things; uses the technology to explore diversity and multiple perspectives.

16. Directs and Manages the Meetings -- The facilitator leads the group through the meeting process; uses the agenda to guide the group; uses technology effectively to manage the group; sets the stage for meeting and each activity; restricts the meeting process appropriately, e.g., sets time limits, enforces roles and ground rules, limits choices; provides models, frameworks, and processes to guide the group; uses breaks effectively; checks progress and reactions with meeting leader and group.

4.3 Chapter Summary: Phase I Data Collection and Analysis

This chapter discussed Phase I data collection, analysis of critical incidents, and the development of key dimensions of the facilitator's role. This phase of the study utilized critical incident methodology to collect two hundred thirty-five experiences which identified one thousand four hundred forty-four facilitators behaviors (146 generic behaviors and 1,298 specific behaviors). These behaviors served as the basis of the development of sixteen (16) key facilitator role dimensions.

Phase I of the study established the existence of key role dimensions and behaviors of the facilitators role in computer supported environments. The relative importance of each of the dimensions could not be established by frequency counts alone, therefore no definite conclusions could be safely made about relative importance of the sixteen (16) dimensions to the effective performance of the facilitator role based on Phase I alone.

Phase II of this study was designed to answer the question of relative importance. Respondents in Phase II were specifically asked to rank the level of importance of the dimensions using a unique card sorting activity. The data collection and analysis of Phase II are addressed in the next chapter.

CHAPTER 5

CHAPTER 5

Phase II: The Verification and Measurement of Relative Importance

5.0 Chapter Overview

This chapter presents the second phase of the study on the role of the facilitator in computer supported environments. The study of critical incidents in Phase I yielded sixteen categories which represent key facilitator role dimensions. These dimensions emerged from the rigorous analysis of one thousand, four hundred forty-four documented facilitator behaviors.

However, according to a number of critical incident researchers (Hopkins 1987, Saskin 1989), frequency of behavior occurrence says nothing about its relative importance to either the role or the effective performance of the role. For example, a particular role dimension may be extremely important to the role, yet not engaged in by the facilitator due to the facilitator's lack of knowledge or skill in that particular dimension. Therefore, it was not appropriate to judge the relative importance of the sixteen (16) facilitator dimensions uncovered in Phase I solely on how frequently the dimensions and their related behavior appear. The second phase of the study was designed to verify the dimensions and to provide a more reliable measure of relative importance of these dimensions to the effective performance of the facilitator's role. Respondents were specifically asked to rank the level of importance of the dimensions using a unique

card sorting activity. They were also asked to answer questions regarding required training needs and current performance.

This chapter begins with a description of the Phase II data collection process. This is followed by the presentation of the "facilitator role shuffle" - the unique data collection technique. Next, an in-depth description of Phase II findings including measures of relative importance for each dimension, measures of required training needs based on the dimensions, and overall current performance (self-reported) ratings are also presented. Finally, this chapter concludes with the presentation of findings of relative importance, required training and performance across technology - comparing workstation and key-pad facilitation.

5.1 Phase II: Verification and Measures of Relative Importance

Phase II was specifically designed as an in-depth exploratory endeavor to measure the relative importance of each of the sixteen critical dimensions identified in Phase I. This Phase II investigation was purposely focused on the original fifty respondents in an effort to fully validate and verify the original behavioral contributions of Phase I and to base the initial measures of importance upon this research foundation (Table 21, Chapter 4). A unique approach in gathering data for this phase was utilized. The sixteen dimensions (the outputs from Phase I) were placed on sixteen

index cards - one dimension description per card.

Rather than a mundane "circle the response" survey, participants were asked to sort the card deck of dimensions into three category piles - 1) Extremely Important, 2) Very Important, and 3) Important. Participants were also asked to rank order their extremely important choices and to record the number of those dimensions that they performed well now and in which they required additional training or improvement. Additionally, participants were asked to report their own level of effectiveness compared to other facilitators working in computer-supported environments. Finally, a section of biographical data for each participant was also collected which included current and past facilitator experience, format education, experience in electronic meetings and meeting contexts in which they facilitated. (See samples of Phase II data collection tools, correspondence and instructions in Appendix C.)

5.11 Respondents and Participants

Respondents for Phase II included fifty (50) experienced facilitators -- forty-eight of the original Phase I participants (two original members had moved on to different jobs and could not be located) plus two additional facilitators. Phase II focused on the responses of the original respondents in order to take an in-depth look at preliminary patterns concerning measures of dimension. By utilizing the original participants, the researcher was able

to validate and verify the original statements of critical facilitator behaviors.

Table 23 profiles Phase II respondents in terms of their overall facilitator experience, computer-based facilitation experience, the number and type of meetings facilitated, and the type of technology used to support their facilitated group work. Many of the respondents (20%) were very seasoned facilitators with over fifteen years of overall experience and up to nine years of computer-supported facilitation. Twenty percent had also facilitated over two hundred electronic meetings. Only a few had less than one year of facilitation experience in both traditional and computer-supported meetings. Respondents were almost equally divided among workstation (51%) and keypad (46%) technology. With the exception of looking at the technology type and experience levels across facilitators, this demographic data was not analyzed in-depth in any way in this study, but was gathered as a point of interest for future research.

Table 23

Phase II - Respondents Profile
N=45

OVERALL FACILITATOR EXPERIENCE		
Years	**%**	**#**
15 yrs and over	20%	9
14 yrs - 11 yrs	18%	8
10 yrs - 7 yrs	11%	5
6 yrs - 3 yrs	31%	14
2 yrs - 1 yr	16%	7
less than 1 yr	4%	2

COMPUTER SUPPORTED FACILITATOR EXPERIENCE		
Years	**%**	**#**
10 yrs - over	0	0
9 yrs - 6 yrs	20%	9
5 yrs - 3 yrs	31%	14
2 yrs - 1 yr	38%	17
1 yr - less	11%	5

NUMBER OF ELECTRONIC MEETINGS FACILITATED		
Number of Mtgs.	**%**	**#**
200 and over	20%	9
199 - 100	16%	7
99 - 50	13%	6
49 - 25	20%	9
24 - 11	11%	5
10 or less	20%	9

TYPE OF TECHNOLOGY USED		
Technology	**%**	**#**
Workstation	51%	23
Key Pad	49%	22

5.12 Organization and Revision of Data Collection Phase II.

Originally a "circle the response" survey was developed to gather importance measures on the 16 dimensions. After much discussion and a round of pilot studies, a typical 12-page survey approach was abandoned. The unique card sort research activity which finally emerged allowed the respondents to specifically rank, not simply rate the levels of importance. This card sort activity, based on a modification of Q Sort Technique, was developed as a much better alternative to finding answers to the measure of relative importance question. The Q sort is a comparative

rating method used by individuals to rank alternatives. Typically the ranks range from extremely desirable to extremely undesirable. This technique has been popular in the fields of social and clinical psychology since the 1950's (Dickson, et al. 1985, Campbell and Dunette, 1970, Block J., 1961).

All respondents in Phase II received a mailed research packet which included: 1) a letter of introduction (one group - F company - also received a sponsor letter), 2) a deck of cards, 3) a set of explicit instructions, 4) a worksheet to record responses, and 5) a set of background data forms for the collection of facilitation experience and meeting contexts characteristics. Both the worksheets and the background data sheets were numerically coded, indicating the data source. (See Appendix C for Phase II data collection tools, correspondence, and instruction examples.)

The research activity was appropriately named the "Facilitator Role Shuffle Exercise". Participants were instructed to complete two shuffles of the deck - to sort the cards based on two questions. First, the participants were encouraged to review the descriptions of the sixteen dimensions carefully. In the first shuffle of the card deck, participants were asked to think about the question, **"How important is each category of behaviors (each dimension) to effectively facilitating groups in computer supported environments?"** They were to respond to this question by

sorting the cards into three separate piles - 5 cards in an Extremely Important pile, 6 cards in a Very Important pile, 5 cards in an Important pile. They were also directed to rank order the five cards in Pile 1 - Extremely Important Pile - to indicate which dimension they considered the most extremely important, the next most extremely important, and so on.

The second shuffle or card sort addressed the question, **"In which of these categories (dimensions) do I require training or improvement?"** Cards were sorted into two piles in response to this question - Pile 1 - require training; Pile 2 - do not require training. Respondents were also asked to rank order their top 5 training/improvement needs.

Next, the participants were asked to identify and rank order the top five dimensions they currently perform well. All responses were recorded on a worksheet in the appropriate boxes and blanks. (See full set of instructions, worksheet, and a background sheet for Phase II in Appendix C.)

Finally, the participants were asked to rate their own facilitator performance compared to their fellow facilitators and to complete the background data sheets. Upon completion, participants were asked to return the worksheet and background sheets. The card deck was given to each participant as a reminder of sixteen (16) critical dimensions of their role.

Overall, the process of data collection using the card shuffle exercise was much easier to conduct. The response ratio and commitment to the completion of Phase II was much

higher than Phase I (90% vs. 42%). The card shuffle exercise was described by participants as a fun, interesting, stimulating and useful activity. "What a great idea! I had people looking over my shoulder on the plane - they were really curious about what I was doing." "Great exercise - can I keep the cards?" "Really insightful - it really made me think about facilitation." One business participant even requested the use of the exercise as a way to benchmark his facilitators' (both expert and new) performances. He has since conducted the exercise at a meeting of seasoned facilitators and plans to use it in his orientation of new facilitators.

5.13 Pilot Studies Phase II

Data collection tools were pilot tested for Phase II. The card sorting data collection process and its corresponding instructions and worksheet were pilot tested by four Ph.D. students, two professional facilitators, one naive respondent, and the researcher prior to their distribution. The activity was timed and pilot study participants were asked to think about what they would change and keep from the card shuffle exercise. They were particularly asked to pay attention to how distinct and understandable each of the dimensions were - in other words, were the dimensions truly "sortable". Many of the pilot study members had also participated in the review of the original 12-page survey, so the card shuffle activity was a welcome relief.

Each pilot participant completed the full card exercise and background data sheets. Based on the feedback from the pilot group, additional revisions were made to the language and sequencing of the dimensions and their grounding behaviors. Great efforts were made to keep "overlap" between the dimension at a minimum. This was a difficult task since the process of facilitation is an integrated process, with no behavior being totally mutually exclusive of the others. Feedback from pilot studies also helped the researcher rethink ranking scales to reflect the overall importance of all the dimensions. These two changes helped clarify the task and improve the process immensely.

As with the study respondents, the pilot participants thought the process was an interesting and exceptional approach to gathering ranked data.

5.2 Analysis of Phase II Results

Based on the results of the critical incidents phase of the study, it was assumed that all the dimensions and their reported behaviors were viewed as important in some way by the facilitators. Therefore, an ordinal scale of Extremely Important, Very Important, and Important was selected for the card sorting activity. The responses to the card shuffle were entered into the database and were vigorously analyzed using several non-parametric statistical procedures in the SPSS Statistical Package.

5.21 Overall Importance of Dimensions

Respondents were asked to rank the importance of each dimension in relationship to the effective performance of the facilitators role by sorting the deck of 16 facilitator dimension cards into three piles. Five (5) cards were rank ordered into the Extremely Important pile. These five cards were assigned ranks of 1-5. Six (6) cards were placed into the Very Important pile, using the assigned ranking of 9 - the average of ranks 6-11. Finally, five cards (5) were placed into the Important pile, all receiving the rank of 14 -- the average of ranks 12-16.

To determine the relative importance of the dimensions, mean importance rankings and overall frequencies were calculated for each of the sixteen (16) dimensions. Table 24 reflects overall mean importance rankings in order of their mean importance. The first column provides a listing of the dimensions, column two depicts the mean ranking computed for each dimension, column three presents the standard deviation for each mean. The remaining columns show the frequency of the facilitator rankings for each dimension. Ranks 1-5 in these frequency columns indicate ranking in the top five positions of Extremely Important; the numeric value of 9 indicates the dimension was placed in the second pile - Very Important - while a score of 14 was given to all those dimensions placed in the third pile - Important.

The range of the importance means was 5.24 to 11.98. The

median mean was 8.26. Based on the overall rank order means, the **top five** dimensions were **1) (#12) - Plans and Designs Meetings (5.24), 2) (#4) - Listens, Clarifies and Integrates Information (6.71), 3) (#11) - Demonstrates Flexibility (6.91), 4) (#6) - Keeps Outcome Focused (7.31), and 5) (#8) - Creates an Open Environment (7.33).** Dimension 12 - Plans and Designs Meetings - was depicted as the most extremely important compared to others. The mean difference between the top ranked dimension (#12 - Plans) and the next ranked dimension (#4 - Listens) was 1.47, or almost two full points, whereas the difference between second and third rank dimensions of Listen and Flexibility was only .20.

The five dimensions indicated as important, yet reflecting the **lowest importance** mean rankings, were **1) Presents Information (11.98), 2) Creates Comfort With Technology (11.49), 3) Understanding Technology (11.47), 4) Encouraging Multiple Perspectives (10.53) and 5) Managing Conflicts (9.78).**

5.22 Extent of Agreement Among Mean Important Rankings

There are a number of well-established non-parametric statistical procedures which can be applied to group ranking situations (Wynne & Castellean, 1989). The Kendall Coefficient of Concordance (W) and the Friedman test are two examples used to test association between K related samples.

TABLE 24
OVERALL IMPORTANCE OF DIMENSIONS

			FREQUENCY OF RANKS						
DIMENSION	MEAN	STD	1	2	3	4	5	9	14
12 Plans/Designs	5.24	4.36	16	2	4	3	2	14	4
4 Listens/Clarifies Integrates	6.71	3.89	3	2	8	6	3	18	5
11 Demonstrates Flexibility	6.91	3.88	5	5	2	3	3	23	4
6 Keeps Outcome Focused	7.31	3.64	0	4	6	5	3	22	5
8 Creates/Reinforces Open Environment	7.33	4.42	3	5	6	1	5	16	9
3 Selects/Prepares Technology	7.49	5.22	3	10	2	5	3	7	15
16 Directs/Manages Meeting	8.02	4.31	3	2	4	1	8	16	11
5 Develops/Asks Right Questions	8.09	4.12	3	4	2	2	3	22	9
1 Promotes Ownership/ Responsibility	8.42	4.48	5	4	0	2	2	20	12
9 Builds Rapport/ Relationships	9.13	4.57	1	3	6	2	1	15	17
2 Demonstrates Self Awareness/Express	9.36	4.43	2	1	1	5	5	13	17
13 Manages Conflict Negative Emotions	9.78	3.37	0	0	1	5	1	24	14
15 Encourages/Supports Multiple Perspectives	10.53	3.57	0	1	1	2	2	19	20
14 Understanding Technology	11.47	3.38	1	0	1	1	0	16	26
7 Creates Comfort/Promotes Understanding of Technology	11.49	3.39	0	0	1	1	3	13	27
10 Presents Information	11.98	3.17	0	1	0	1	1	12	30

		W	Chi Squared	DF	Significance
Kendall	45 cases	.200	123.479	15	.0000
Friedman	45 cases		113.431	15	.0000

The Kendall is used to determine the relationship among three or more sets of ranks. It is a measure of concordance (association/agreement) among a set of rankings - an index of how strongly a group of rankings agree with another group of rankings (Wynne and Castellean 1989; Downie and Health 1970).

The Kendall statistic tests the null hypothesis that a group of judges (n) have produced a set rankings (k) (issues, items, dimensions) that are unrelated to one another. In other words, if there is no relationship between the ranks, the expectation is that all the ranks are randomly distributed.

The alternative hypothesis tested by Kendall then is the rankings of judges (n) indicate some agreement across the issues, items (k) etc., and that there is difference among the issues showing distinct ranks for each k. Agreement or concordance is reflected in the score of zero to unity or one (1). A lower value indicates little agreement; values approaching one (1) demonstrate complete agreement. The closer to one the more likely judges agree on the ordering of the items/issues.

Similarly, the Friedman tests the relationships among ranked data. Specifically, it tests whether the judges distinguish among the items/issues (k) in their rankings. The null hypothesis tested by the Friedman is that (k) the issues/items do not differ with respect to the mean ranking given to them by judges, or the judges rank all the dimensions alike. The alternative hypothesis is that the issues (k) do differ in

their rankings. Thus, if the alternative hypothesis is met, judges will rank one issue highest, next highest, etc., and differences between the issues or dimensions are discernable.

An interesting feature of these two statistics, Kendall and Friedman, is that despite being described in different ways for presumably different purposes they are equivalent statistics (Wynne & Castellean, 1989). Both tests were used to cross-check results in this study.

The Kendall and Friedman were calculated to test the extent of agreement among the respondents' rankings of mean importance across the dimensions. A Kendall of .2 was recorded on 45 cases (n) (sets of facilitator rankings) across 16 dimensions (k) indicating results in the direction of agreement. Additionally, the observed level of significance on both tests was extremely high (.0000) rejecting the null hypothesis and supporting the alternative hypothesis. The results indicated the differences among the mean importance ranks were not random and a pattern of perceived difference between the importance of dimensions was supported.

5.23 Means Measure of Required Training and Performance

In addition to overall importance, respondents were also asked to indicate in which dimensions the respondents required the training or improvement and to rank order the top five dimensions in which they required training and improvement. The Phase II participants were also asked to indicate the top five dimensions they currently perform well.

Tables 25 and 26 depict the results of these rankings. These tables are laid out like Table 24 with columns indicating the mean ranks, standard deviations and frequency of ranks. The top five dimensions were assigned ranks 1-5. The numeric value of 11 was assigned to those dimensions that required training or improvement but did not fall in the top five rankings. The value of 11 was derived from the average of the rank 6-16. The rank of seventeen (17) was given to all dimensions which did not require training or improvement or those which fell outside 1-16 ranks or in the 17th slot.

The range of the means for the dimensions requiring training was 6.00 to 14.40. The span of this range was noticeably greater than the measures of importance in Table 24, likely due to individual differences between the facilitators' training, education and experience. Differences between the means in the top three ranked dimensions on Table 25 are much wider. The top ranked Required Training dimension - Managing Conflict - recorded a mean of 6.00, while the next mean rank of 9.31 was given to dimension 5, Developing and Asking the Right Questions, a difference of 3.31.

The dimension - Managing Conflicts - stands out as the dimension which requires the most training or improvement overall. Only eight facilitators indicated they did not need improvement in this dimension. Once again, the Kendall and Friedman tests were calculated as a measure of agreement. Although the W is not large (.13), significant agreement

TABLE 25
DIMENSIONS REQUIRING TRAINING

DIMENSION	MEAN	STD	FREQUENCY OF RANKS						
			1	2	3	4	5	11	17
13 Conflict	6.00	5.98	15	3	3	6	5	5	8
5 Questions	9.31	6.33	7	3	3	3	3	12	14
1 Ownership	10.60	6.97	4	5	3	5	2	3	23
15 Multiple Perspectives	10.96	6.40	1	5	5	3	2	8	21
12 Plans/Designs	11.87	6.36	4	1	3	2	4	6	25
9 Rapport/Relationship	11.96	6.68	3	5	3	2	1	4	27
8 Open Environment	12.76	5.66	1	3	1	2	3	9	26
10 Presents	12.96	5.82	1	3	2	3	1	7	28
16 Directs/Manages	13.00	5.89	1	2	4	0	4	5	29
4 Listens, Clarifies	13.09	5.44	1	1	1	4	1	9	27
2 Self Awareness Expression	13.09	5.72	2	2	3	0	2	8	28
3 Selects/Prepares	13.24	5.94	1	5	3	0	0	6	30
14 Understands Technology & Capabilities	13.53	5.94	3	2	2	2	0	4	32
11 Flexibility	14.22	4.44	0	1	1	0	3	10	30
6 Outcome Focused	14.11	4.87	0	2	2	0	2	8	31
7 Creates Comfort Promotes Technology Understanding	14.40	4.78	0	0	3	3	0	6	33

		W	Chi Squared	DF	Significance
Kendall	45 cases	.132	89.291	15	.0000
Friedman	45 cases		60.553	15	.0000

TABLE 26
PERFORMANCE RATINGS ON DIMENSIONS

			FREQUENCY OF RANKS					
DIMENSION	MEAN	STD	1	2	3	4	5	11
12 Plans/Designs	6.51	4.52	7	9	4	1	2	22
11 Flexibility	6.58	4.15	6	2	9	1	7	20
8 Open Environment	7.04	4.21	5	4	5	4	4	23
3 Selects/Prepares	7.71	4.17	3	7	3	1	4	27
14 Understands Technology	7.82	4.22	6	3	2	4	2	28
9 Rapport/Relationship	8.04	3.93	2	5	1	6	3	28
4 Listens/Clarifies	8.09	3.88	3	2	3	5	4	28
2 Self Awareness	8.29	3.99	5	2	2	2	4	30
6 Focus on Outcome	8.49	3.63	0	2	6	5	2	30
16 Directs/Manages	8.82	3.71	3	1	4	3	1	33
1 Ownership/Responsibility	9.11	3.42	2	1	1	6	1	34
7 Creates/Promotes Comfort/ Understanding	9.47	2.95	0	2	0	3	5	35
10 Presents Info	9.60	3.09	1	1	3	2	1	37
15 Multiple Perspectives	9.62	3.05	1	2	1	2	2	37
5 Questions	10.11	2.60	1	2	0	0	2	40
13 Conflicts	10.69	1.47	0	0	1	0	1	43

		W	Chi Squared	DF	Significance
Kendall	45 cases	.10	66.151	15	.0000
Friedman	45 cases		44.749	15	.0001

(.0000) was noted on both measures.

The least often mentioned dimensions requiring training were #8 - Creates Comfort with Technology, #6 - Keeping Outcome Focused, and #11 - Flexibility. At least thirty of the forty-five facilitators responding indicated they did not require training or improvement in these dimensions.

Table 26 reflects the dimensions which the responding facilitators noted they currently performed well. The range of the means was from 6.51 to 10.69. Ranks of 1 through 5 were assigned by facilitators to indicate the top five dimensions which they performed well. A numeric value of 11 was assigned to those dimensions not mentioned in the top five slots. Eleven (11) is the average rank for slots 6-16.

The respondents reported their best performance for Dimensions #12 - Plans and Designs, #11 - Flexibility, #8 - Creates Open Environment, #3 - Selects and Prepares Technology, and #14 - Understands Technology.

Managing Conflict (#13) was the dimension most mentioned as <u>not</u> being performed well currently. Forty-three (43) out of forty-five (45) respondents did not place this dimension in their top five performance choices. Other low ranking dimensions were Presenting Information and Encouraging Multiple Perspectives.

Kendall and Friedman tests were run indicating a significant agreement (.0000, .0001) among the respondents' top five choices. However, on performance choices, the mean rankings

were more compressed (closer together) which indicated less agreement in these rankings vs. the overall importance rankings (Kendall w = .10 vs. .20).

5.3 Dimensions Across Technology: Importance, Required Training, and Performance

Respondents in Phase II were almost equally divided between workstation (23) and keypad technology (22) users. 90% of the respondents identified themselves as "pure" users of the technology -- always using workstation or keypad based technology in their computer-supported meetings. About 10% also indicated limited (10% or lower) use of another technology as well as workstation or keypad or other technologies. For those facilitators reporting this combined use of both keypad and workstation technology, their dominant technology experience was coded. This near equal division of workstation and keypad based users provided an excellent sample for the exploratory efforts of this study.

Mean scores across these two technology groups were calculated for the overall importance of the dimensions, the dimensions requiring training, and the dimensions performed well. Table 27, 28, and 29 denote the results of these calculations.

The MANN-WHITNEY statistical procedure was used to test the hypothesis that two samples (workstation, keypad) come from populations having the same distribution or that the two distributions for two groups are equal. This is accomplished

by looking at the sum of the ranks for each of the two groups.

U - the output of the Mann Whitney is the number of times a value in one group precedes a value in another group. Thus, if two distributions are equal, values from one group should not consistently precede the values in the other (SPSS User Manual, p. B179, 1989). The U score then reflects the number times a value in one group precedes a value in the other group. If the observed significance level is over .05, the null hypothesis that the two distributions are equal (no differences) can not be rejected.

5.31 Importance Across Technology

Table 27 depicts the comparison of overall importance across technology. Column one lists the names of the dimensions in numerical order 1-16. Columns two and three present the overall mean rankings for each dimension and their standard deviation in parenthesis for workstation and keypad respondents respectively. Column four denotes the difference between the means. Column five presents the results of the Mann-Whitney Statistical Test - the U score. Finally, the last column presents the two-tailed P value indicating the level of statistical significance, the probability that ranks occurred by chance.

The dimensions displaying the five highest mean rankings for workstation respondents were 1) Plan and Design Meetings (4.09), 2) Flexibility (5.48), 3) Selects and Prepares Technology (6.87), 4) Listens, Clarifies and Integrates

Information (7.13) and 5) Focused on Outcomes (7.17). The top five ranked importance choices reported by keypad facilitators were somewhat different: 1) Creates Open Environment (5.77), 2) Listens, Clarifies and Integrates Information (6.27), 3) Plans and Designs Meetings (6.45), 4) Promotes Ownership (6.77) and 5) Develops and Asks Right Questions (7.18).

There were significant differences noted across technology on a number of dimensions. The most significant differences between the dimension means of these two groups occurred on Flexibility (.012), Creates Open Environment (.024), Promotes Ownership (.027). Demonstrates Self Awareness (#2) (.069), Plans and designs Meetings (#12) (.089), Develops the Right Questions (#5) (.145), and Encouraging Multiple Perspectives (#15) (.150) were approaching significant levels.

Promotes Ownership and Open Environment were noted as being of greater importance to keypad respondents; while workstation facilitators indicated that flexibility, demonstrating self-awareness and planning and designing meetings had greater importance.

Dimensions reflecting the least significant difference (and low mean differences) between the two groups were

TABLE 27
IMPORTANCE OF DIMENSIONS ACROSS TECHNOLOGY

DIMENSIONS	MEAN (SD) WORKSTATION	MEAN (SD) KEYPAD	MEAN DIFFERENCE	U MANN-WHITNEY	P
1) Promote Ownership	10.00 (3.58)	6.77 (4.80)	3.23	158	.022**
2) Self Awareness/Expression	8.17 (4.63)	10.60 (3.94)	2.42	177	.069*
3) Selects/Prepares Technology	6.87 (4.99)	8.14 (5.49)	1.27	225	.514
4) Listens/Clarifies/ Integrates	7.13 (3.92)	6.27 (3.89)	.86	228	.548
5) Develops/Asks Right Questions	8.96 (3.98)	7.18 (4.15)	1.77	193	.145*
6) Keeps Focused on Outcomes	7.17 (4.17)	7.45 (3.07)	.28	235	.654
7) Creates Comfort with Technology	11.26 (3.12)	11.72 (3.71)	.467	224	.450
8) Creates Open Environment	8.83 (4.35)	5.77 (4.01)	3.06	157	.024**
9) Build Rapport/Relationships	9.35 (4.29)	8.91 (4.93)	.44	248	.905
10) Presents Information	11.74 (3.55)	12.23 (2.78)	.49	242	.753
11) Flexibility	5.48 (3.68)	8.41 (3.58)	2.93	151	.012**
12) Plans/Designs Meetings	4.09 (3.84)	6.45 (4.64)	2.37	181	.089*
13) Manage Conflict	9.43 (2.98)	10.14 (3.77)	.70	221	.422
14) Understanding Technology	11.22 (4.06)	11.73 (2.55)	.51	252	.979
15) Encouraging Multiple Perspectives	11.30 (3.21)	9.73 (3.82)	1.58	195	.150*
16) Directs/Manages Meetings	8.52 (4.53)	7.50 (4.11)	1.02	221	.445

** P ≤.05 Significant

* .05 ≤ P ≤.15 Approaching Significance

Understands Technology (.979/.51), Rapport and Relationships (.91/.44), Keeping Outcome Focused (.654/.281), Creating Comfort with Technology (.45/.49), Managing Conflicts (.422/.70). The mean ranks of these dimensions were the most similar between the two groups.

5.32 Required Training Across Technology

The dimensions ranked as top five needs for required training and improvement for workstation group were: 1) Managing conflict, 2) Developing questions, 3) Encouraging multiple perspectives, 4) Ownership, 5) Creating environment (see Table 28). Keypad respondents ranked the following as dimensions for most required training/improvement: 1) Managing conflicts, 2) Developing questions, 3) Selects and prepares technology, 4) Presents information, and 5) Understands technology. Both groups indicated dimensions 13 and 5 (conflict and questions) as the dimensions in need of most required training or improvement.

Significant differences (.05 and below) were noted on Dimension 3 - Selects/Prepares (.013) and Dimension 11 - Flexibility (.048). Dimension 14 - Understanding Technology demonstrated differences approaching significant (.065). Dimensions mentioned least likely to need training/improvement based on the means were:

Workstation	Keypad
1. Flexibility	1. Keeps Outcome Focused
2. Selects and Prepares Technology	2. Creates Comfort
	3. Listens and Clarifies

3. Understands Technology
4. Creates Comfort with
5. Presents Information
4. Open Environment
5. Directs and Manages Meetings

5.33 Performance Across Technology

Table 29 depicts respondents' responses concerning the dimensions they currently perform well. Workstation facilitators reported their best performance on dimensions (12) Plans and Designs meetings, (3) Selects and Prepares Technology, (11) Flexibility, (14) Understands Technology, (2) Self Expression with Performance on Dimensions, 12 and 3 being most notable with mean ranks of 5.17 and 5.87 respectively.

Keypad facilitators, on the other hand, indicated that dimensions (8) Creates Open Environment, (11) Flexibility, (4) Listens and Clarifies, (6) Keeps Outcome Focused, were their best performed dimensions.

Both groups indicated they did not perform Managing Conflicts as well as any of the other dimensions reporting mean ranks of 10.65 (workstation) and 10.73 (keypad). The lowest mean difference between these two group was also reported for these dimensions, although it was not significant (1.00).

Two tailed P scores indicated statistically significant results at the .05 level or less for Dimensions 3 - Selects and Prepares (.003), 8 - Creates Open Environments (.017), and 12 - Plans and Designs Dimensions (.034). The Dimensions of Multiple Perspectives (.092), and Directs and Manages Meetings (.133), also recorded P scores approaching significant levels

(less than .15). Workstation respondents indicated significantly higher performance in selecting and preparing technology, in planning and designing meetings; whereas, key pad participants said they performed creating open environments significantly better than their workstation counterparts. Workstation participants also reported better performance on Dimensions 15 and 16 - Encouraging Multiple Perspective and Directing/Managing Meetings.

TABLE 28
DIMENSIONS ACROSS TECHNOLOGY
REQUIRING TRAINING

DIMENSIONS	MEAN (SD) WORKSTATION	MEAN (SD) KEYPAD	MEAN DIFFERENCE	U MANN-WHITNEY	P
1) Promote Ownership	11.13 (7.10)	10.05 (6.95)	1.09	234	.634
2) Self Awareness/Expression	13.83 (5.38)	12.32 (6.07)	1.51	214	.301
3) Selects/Prepares Technology	15.57 (3.60)	10.82 (6.94)	4.75	161	.013**
4) Listens/Clarifies/ Integrates	12.35 (6.28)	13.86 (4.39)	1.52	234	.624
5) Develops/Asks Right Questions	8.96 (6.85)	9.68 (5.89)	.73	237	.709
6) Keeps Focused on Outcomes	13.17 (5.87)	15.09 (3.41)	1.92	221	.374
7) Creates Comfort with Technology	14.78 (4.24)	14.00 (5.36)	.78	244	.792
8) Creates Open Environment	12.13 (5.93)	13.41 (5.43)	1.28	223	.446
9) Build Rapport/Relationships	12.17 (6.56)	11.72 (6.94)	.45	241	.748
10) Presents Information	14.22 (4.78)	11.64 (6.60)	2.58	201	.174
11) Flexibility	15.70 (2.53)	12.68 (5.45)	3.01	181	.048**
12) Plans/Designs Meetings	12.87 (5.94)	10.82 (6.75)	2.05	215	.342
13) Manage Conflict	6.04 (6.51)	5.95 (5.52)	.09	230	.593
14) Understanding Technology	15.22 (4.39)	11.77 (6.88)	3.44	188	.065*
15) Encouraging Multiple Perspectives	10.09 (6.78)	11.86 (5.99)	1.78	217	.386
16) Directs/Manages Meetings	12.96 (5.77)	13.05 (6.15)	.09	242	.770

** P ≤.05 Significant

* .05 ≤ P ≤.15 Approaching Significance

TABLE 29
DIMENSIONS ACROSS TECHNOLOGY
PERFORMANCE

DIMENSIONS	MEAN (SD) WORKSTATION	MEAN (SD) KEYPAD	MEAN DIFFERENCE	U MANN-WHITNEY	P
1) Promote Ownership	9.17 (3.16)	9.05 (3.75)	.13	253	.988
2) Self Awareness/Expression	8.13 (4.14)	8.45 (3.93)	.32	243	.786
3) Selects/Prepares Technology	5.87 (4.32)	9.34 (3.05)	3.47	136	.003**
4) Listens/Clarifies/ Integrates	8.48 (3.64)	7.68 (4.16)	.80	223	.434
5) Develops/Asks Right Questions	10.57 (2.09)	9.64 (3.03)	.93	220	.170
6) Keeps Focused on Outcomes	9.09 (3.33)	7.86 (3.85)	1.23	209	.233
7) Creates Comfort with Technology	9.22 (3.12)	9.73 (2.82)	.51	234	.542
8) Creates Open Environment	8.57 (3.87)	5.45 (4.03)	3.12	155	.017**
9) Build Rapport/Relationships	8.22 (3.98)	7.86 (3.96)	.36	243	.784
10) Presents Information	9.00 (3.50)	10.23 (2.51)	1.23	213	.173
11) Flexibility	6.48 (4.19)	6.68 (4.21)	.20	247	.876
12) Plans/Designs Meetings	5.17 (4.45)	7.91 (4.25)	2.74	166	.034**
13) Manage Conflict	10.65 (1.67)	10.73 (1.28)	.08	253	1.000
14) Understanding Technology	7.35 (4.38)	8.32 (4.10)	.97	223	.433
15) Encouraging Multiple Perspectives	10.39 (2.04)	8.82 (3.72)	1.57	204	.092*
16) Directs/Manages Meetings	9.65 (3.01)	7.95 (4.23)	1.70	202	.133*

** P ≤.05 Significant

* .05 ≤ P ≤.15 Approaching Significance

5.4 Validation of Dimensions

To validate the completeness of the sixteen dimensions, respondents were asked to document any additional dimensions that were not represented in the list of sixteen. Suggestions were reported by four facilitators. In general, their recommendations were merely listings of generic behaviors which had already been identified, like "moving quickly away from technology," "having a manual back-up system". These behaviors were not specifically (or identically) mentioned in the grounded dimension descriptions on the dimension and index cards. However, their suggested behaviors were represented in the full listing of the one thousand two hundred ninety-eight instances of specific behavior identified. (See Appendix E for sample behaviors listing).

Interestingly one respondent suggested paying attention to the facilitators' underlying belief structure and having positive win/win beliefs as important to the facilitator's roles. Certainly this type of belief structure would be useful in managing conflicts and promoting and open environment, among other things. This suggestion also pointed out another important research area -- studying the belief patterns of effective facilitators in any context. This researcher did gather some preliminary belief data during the critical incident phase for future research in this area.

The results of this dimension verification process indicate a valid and complete list of the critical role dimensions of

the facilitator in computer-supported environments.

5.5 Chapter V Summary

This chapter presented the data collection process and analysis of results for Phase II of the study.

The second phase provided an opportunity to verify the 16 critical dimensions and their related behaviors, thus helping to reduce the effects of the subjectivity of the researcher(s) in Phase I. Phase II also offered experienced facilitators an opportunity to suggest additional critical behaviors and dimensions not represented in the original data collection which served as a further validation of the sixteen dimensions and behaviors as classified by the researcher and the assigned experts. In addition, respondents were asked to answer questions regarding required training and current performance in relation to the sixteen dimensions.

Phase II included an in-depth contrastive and statistical analysis of the data, presenting findings about overall importance, required training and current performance. These findings were also looked at across technology. Significant differences were noted in a number of dimensions across technology.

The main output of Phase II was verification of the critical role dimensions and behaviors of the facilitator role, as well as an empirical measurement of the most important dimensions. Another deliverable was the measure of importance of the dimensions across workstation and keypad

technology.

Next, a summary of the study's key findings, its limitations, contributions and implications for future research, practice, and change will be presented in Chapter Six.

CHAPTER VI

CONCLUSIONS, DISCUSSION, AND IMPLICATIONS: CONTRIBUTIONS TO CHANGE IN THE PROFESSION

CHAPTER SIX

CONCLUSIONS, DISCUSSION, AND IMPLICATIONS: CONTRIBUTIONS TO CHANGE IN THE PROFESSION

6.0 Chapter Overview

One of the most essential skills for leading and contributing to organizations in a global and complex world is the ability to facilitate diverse human and technological interactions (Pasmore, 1988). Yet current research and experience bear out that organizations have been "woefully ill-prepared" to work effectively with groups, let alone with group technology!

The purpose of the study presented here was to identify the critical dimensions and behaviors of the role of the facilitator in computer-supported environments and empirically measure their importance.

The most important result of the study was the detailed analysis of effective and ineffective role behaviors and the development of the sixteen critical dimensions of the facilitator's role. Overall this study makes significant academic and practitioner-based contributions. The results of the study provide the potential groundwork for improving (changing) the ability to facilitate group work effectively at all levels of the organization.

This chapter begins with reviews of the statistical and qualitative findings of Phases I and II. Key findings and conclusions are highlighted and discussed. This is followed

by discussions of possible limitations of the study and its practical implications and contributions. Next, a suggested agenda for future research is formulated and described. Finally, this chapter concludes with summary statements concerning the study's contributions to change in the management and facilitation of organizations and teams.

6.1 Key Research Findings: Discussions, Interpretations, and Conclusions

The key findings and conclusions of the research results reported in Chapters 4 and 5 are described in this section under three headings. The first section presents the qualitative learnings and conclusions of Phase I -- the collection of critical incidents and the development of key dimensions. In the second section, the key empirical results and conclusions of Phase II -- the implications for mean rankings and frequencies of overall importance, required training and current performance are compared and discussed. Third, conclusions about importance measures across workstation and keypad technology are presented.

6.11 Key Findings and Learnings Phase I

Phase I of the study established the existence of 16 critical facilitator role dimensions, and a frequency listing of their related generic and specific behaviors (Chapter 4 and Tables 21 and 22 presented these findings in depth.)

The dimensions (Table 22, Chapter 4) were compared to the facilitators' strategies and skills characteristics chart (Figure 2, Chapter 2) from the researcher's early explorations and to the potential dimensions (Table 10, Chapter 4) gleaned from the review of the related literature in the study's prephase. There were some noteworthy commonalities, differences, and surprises among these comparisons.

In reviewing these three items (Figure 2, Table 10, Table 22), it was interesting to note that the critical behaviors of rapport and relationship building, outcome development and emphasis, and the establishment/maintenance of structures and support were consistent themes. These dimensions appeared often in all three.

Behaviors relating to open participative and positive environments were also reoccurring and supported across the literature (See Table 10). In addition, the communication behaviors were commonly mentioned in some form throughout the literature and some explorations. Listening actively, clarifying meanings, and integrating important information seemed to be the more common behaviors cited.

Less common in the early explorations and in the literature were the appearances of self awareness type behaviors. In early explorations (Figure 2 strategy/skills listing), self awareness behaviors were identified as "using own feelings as a barometer; paying attention to self." In the practitioner literature, the same types of self awareness

behaviors were identified as "knowing and managing oneself." However, overall there are fewer mentions of self awareness or paying attention to emotions in the current theoretical literature. Recently, this research agenda has been called for by some researchers studying facilitation [Bostrom, et.al., 1991, Philips and Philips, 1990; Heron, 1989].

On the other hand, experienced facilitators, in reporting their own behaviors in the critical incident phase of the study, mentioned self aware type behaviors over sixty times. These were labeled as "being comfortable with one's self; "paying attention to gut reactions and intuitions"; and "expressing one's own emotions." It was also clear in their reports that they considered these were behaviors important to their success as effective facilitators. (See Table 24.)

Encouraging multiple perspectives and respecting individual differences were not as common in the accountings of strategies (Figure 2) and potential dimensions (Table 10). However, looking for and utilizing diversity and multiple perspectives was mentioned thirty-nine times by respondent facilitators and more often by facilitators using keypad technology.

Another interesting and surprising finding when comparing the three sets of information (Figure 2, Table 10 and Table 22), was the overwhelming indication that experienced facilitators perceived Dimension 12 -- Planning and Designing the Meeting -- as their <u>most</u> critical role dimension. In

initiating this study, this researcher (and the two facilitation experts) had a "hunch" that planning/designing was the most critical facilitator role dimension in electronic contexts. However, this hunch was based upon experience and interaction with other facilitators, rather than empirical data.

Although the need for planning and designing effective meeting interactions has been alluded to for years in the practical literature on meeting planning and managing groups (Doyle and Strauss, 1976, Hofstra, 1989), prior to the study presented here, little empirical support has been documented about its importance in the academic literature. Recently, the GSS literature has mentioned the importance of this dimension as it relates to the development and facilitation of effective computer supported meetings (Bostrom et el, 1991, Nunamaker et el, 1991, Bostrom, 1988). However, once again this literature talks about planning and designing in a general way. The results of the study presented here indicate empirically and qualitatively that Planning and Designing Meetings is by far the most critical role dimension for facilitators in computer supported contexts! This is a "surprisingly" important finding for the development and training of facilitators in these environments.

Most surprising in looking at these three information sets (Figure 2, Table 10, Table 22) was the reoccurring mention of promoting ownership and group responsibility. In

the early explorations, there was some hunch that creating conditions for joint responsibility of outcomes was important to effective facilitation, along with helping the group not become dependent on the facilitator. However, not much about this was found in the theoretical literature, although the idea of clear role expectations and distinctions was mentioned often and supported these types of ownership behaviors.

The behavior of promoting ownership and responsibility with a group was evident in the facilitator critical incident reports, particularly from the perspective of the more experienced facilitator. Comments like "I let them know it's their meeting"; "I remind them I am just a visitor here"; "I ask them to think about how they will carry on when I leave" . . . all suggested the importance of ownership and responsibility (Critical Incident Interviews, 1992).

The strong appearance of flexibility as a critical role dimension was also a "new" discovery in terms of the documented literature on the facilitator's role. Although this researcher had a "hunch" that flexibility would be critically important to the facilitator's role, especially in computer-supported environment, evidence of this finding was still surprising! It was supported by the facilitators' reports of experience. Overall, ten (10) of the 146 generic behaviors were concerned with flexibility and it was mentioned sixty-five times in the critical incident descriptions.

The experienced facilitators participating in the research study frequently talked about maintaining and demonstrating flexibility in their behavior - "to think on one's feet"; "to turn on a dime"; "to switch gears easily"; to be able to "multi-task" - or do more than one thing at a time were common statements of flexible behaviors (Critical Incident Interviews, 1992).

Another major discovery in comparing these three sets (Figure 2, Table 10, Table 22) of information was the addition of three dimensions. Dimension 3, Dimension 7, and Dimension 14 were directly related to the use of technology in facilitating groups. The idea that there seemed to be a number of important differences in how groups' processes are managed in computer supported interactions vs. traditional ones (Anson, 1990) was supported by the behaviors reported by the study's respondents. For example, responding facilitators reported the importance of having conceptual understanding of the technology and its capabilities; they noted they have to be able to appropriately select and prepare the technology, and they must engage in behaviors that create comfort and understanding of the technology and its outputs with the group. A number of the facilitators even indicated that until they had obtained their own levels of comfort and competence with the technology, that the technology could be distracting, at times even taking their attention directly away from the group (Critical Incidents Interviews, 1992).

Additionally, some facilitators reported that technology added another level of complexity to the communications/events they must attend to in meetings, e.g. "On occasion, I get so absorbed in the technology (figuring out a technology problem), that I lose sight of the group." Finally one facilitator reported creating comfort with the technology can be difficult. Her group still wanted to hang on to the "touchy-feely" interactions of meetings without technology. She stated "They don't seem as satisfied with computer-supported meetings - they don't need the anonymity and they like to talk to each other too much." (Critical Incident Interviews, 1992).

Using technology as documented by experienced facilitators in this study seemed to require some forethought on both the part of the facilitator and the group. In order to use technology at all - let alone use it effectively - the facilitator and the group had to consider what they wanted to accomplish, how they might use the technology, and for what results. Traditionally, many groups assume their interactions (meetings) will happen naturally -- i.e., put a group in a meeting room and a meeting happens! The incorporation of technology in many ways -- as reported by these facilitators -- appeared to force the group, or minimally the facilitator, to preplan the interaction. Thus, in many ways the most positive benefit of the technology is that it focuses the

positive benefit of the technology is that it focuses the facilitator and the group on planning and designing their meeting interactions (Bostrom, et al, 1991).

Facilitating with technology also seemed to require an understanding of the technical functions and philosophical underpinnings of the tools. There is no doubt that technology added dimensions (another three dimensions!) to an already complex function of facilitation.

In many ways, on the other hand, the technology appeared to reduce the "burden" of the facilitator's role of managing a group "alone." As one facilitator in this study reported, "The technology and I are a package deal - I don't know if I could facilitate without it!" (Critical Incidents Interviews, 1992.) Technology, if understood and used well by the facilitator, seems to provide a source of facilitation which can enhance and in some cases even substitute for the facilitator's capabilities to structure detailed task interactions, thus allowing the facilitator to focus more freely upon the group's process and relationship interactions (Bostrom, et al, 1991).

6.12 Summary: Phase I Key Learnings and Conclusions

Ultimately from the qualitative data gathered in Phase I, it can be argued that this study has added to the existing knowledge about the facilitator's role in computer-supported environments. The appearance of the dimensions promoting

ownership and responsibility and flexibility are generally "new" to the documented literature about this role in electronic contexts.

In an earlier study on computer support and facilitation Anson (1990) argued that facilitators in electronic environments must perform a number of additional functions; such as: fit technology with group and task, explain how technology is used to achieve outcomes, and operate and monitor the technology for the group. The addition of the three technology related dimensions uncovered in this study supports this argument and adds depth to the definition of the role of the facilitator in computer-supported environments.

Finally overall this study contributes a richness to the description of the facilitator's role. The identification of the sixteen key role dimensions and their related behaviors provides a broad-based grounding never before documented in the existing literature.

6.13 Phase II Key Empirical Results and Conclusions

The purpose of Phase II of the study was to verify and validate the sixteen critical role dimensions developed in Phase I and to measure their relative importance among the respondents and across technology. The dimensions verification and validation process (discussed more fully in section 5.4, Chapter 5) found no additions of new dimensions to the list. Four out of the forty-five facilitators offered

suggestions. However, all their recommendations had been previously considered in Phase I of the study and incorporated into the development of the final sixteen dimensions.

In an effort to measure the importance of the role dimensions, it was tempting to conclude the importance of each dimension based upon its frequency of mention. Yet as noted by other critical incident researchers (Hopkins, 1987; Saskin 1989; , Foster et al., 1986), the more or less frequent mention of a particular behavior may reflect a number of conclusions: 1) the salience of that dimension; or 2) it could represent the frequency in which the facilitator encounters the behavior; or, 3) since facilitators were asked to recall their most recent events, the recency in which they experienced it, or a combination of the above.

In the same vein, infrequently mentioned dimensions and behaviors do not necessarily indicate they are unimportant. Rather it might suggest that facilitators are less engaged in these behaviors, or lack the skill or knowledge to perform them. Thus, these infrequently mentioned dimensions may warrant further investigation. Based on frequencies alone, no definite conclusions could be safely made in Phase I about the relative importance of the sixteen dimensions in relationship to effective facilitator performance.

Therefore, in order to measure relative importance of the dimensions, study participants were asked to respond to the question, "How important is this dimension to the effective

performance of the facilitator's role in computer supported environments?" for each dimension. In response to that question, each dimension was sorted into one of three categories -- Extremely Important, Very Important and Important. Mean rankings and frequencies for all the dimensions, along with statistical computations (the Kendall Coefficient of Concordance, and the Friedman Test) were calculated for each dimension to verify these findings.

Additionally, Phase II asked the questions: "In which of these dimensions do you require training or improvement?" and "Which of these dimensions do you currently perform well?" Mean rankings, frequencies, and statistical computations relative to the responses for these questions were also computed.

Table 30 presents a summary of findings for the mean rankings of all three questions: Importance, Required Training, and Current Performance. Column 1 lists the sixteen dimensions in order of relative importance; columns 2, 3, and 4 present the mean ranks for importance, required training, and performance. The numbers in parentheses in each column represent the sequential order of the mean rankings for each dimension under each of the three question categories - which dimension was ranked first, second and so on.

At first glance, there appears to be some fairly natural patterns emerging, most noticeably in the Importance column,

TABLE 30
SUMMARY OF FINDINGS

DIMENSION	IMPORTANCE MEAN (Rank)	REQUIRE TRAINING MEAN (Rank)	PERFORMANCE MEAN (Rank)
12 Plans/Designs Meeting	5.24 (1)	11.87 (5)	6.51 (1)
4 Listens/Clarifies/ Integrates	6.71 (2)	13.09 (10)	8.09 (7)
11 Demonstrates Flexibility	6.91 (3)	14.22 (15)	6.58 (2)
6 Keeps Outcome Focused	7.31 (4)	14.11 (14)	8.49 (9)
8 Creates Open Environment	7.33 (5)	12.76 (7)	7.04 (3)
3 Selects/Prepares Technology	7.49 (6)	13.24 (12)	7.71 (4)
16 Directs/Manages Meeting	8.02 (8)	9.31 (2)	10.11 (15)
5 Develops/Asks Right Questions	8.09 (7)	13.00 (9)	8.82 (10)
1 Promotes Ownership/ Responsibility	8.42 (9)	10.60 (3)	9.11 (11)
9 Builds Rapport/ Relationship	9.13 (10)	11.96 (6)	8.04 (6)
2 Demonstrates Self Awareness	9.36 (11)	13.09 (11)	8.29 (8)
13 Manages Conflict	9.78 (12)	6.00 (1)	10.69 (16)
15 Encourages/Supports Multiple Perspectives	10.53 (13)	10.96 (4)	9.62 (14)
14 Understands Technology	11.47 (14)	13.53 (13)	7.82 (5)
7 Creates Comfort/ Understanding of Technology	11.49 (15)	14.40 (16)	9.47 (12)
10 Presents Information	11.98 (16)	12.96 (8)	9.60 (13)

as it is represented in sequential order. Based upon these natural patterns, it can be argued that Dimension 12 -- Plans and Designs Meetings -- is distinctively the most important dimension -- standing alone at 5.24. This finding wassupported as well by the frequency rankings and the documented comments of facilitators (See Table 24 and Appendix E).

Continuing to use this natural pattern analysis, it can also be concluded that the next five most important dimensions are Listens, Flexibility, Outcome Focused, Open Environment, and Selects/Prepares Technology, which cluster together between 6.71 and 7.49.

Another natural grouping appears among the next six dimensions ranging from 8.02 to 9.78 in mean rankings. Finally, the last four dimensions - Multiple Perspectives, Understands Technology, Creates Comfort with Technology, and Presents Information seem to hang together with mean rankings of 10.53 through 11.98, arguably less important than the top six dimensions above. Some natural groupings appear noticeable under Required Training and Performance, although they are not as dramatic as Importance.

In looking back at Table 30, the position of Dimension 13 - Managing Conflict -- in the Required Training column also leaps out. As with Dimension 12 under Importance, Managing Conflicts stands out as the most unique training need. With a mean rank of 6.00, the next most required training need is

Dimension 16 - Directs and Manages with a mean rank of 9.31 - a difference of over three points!

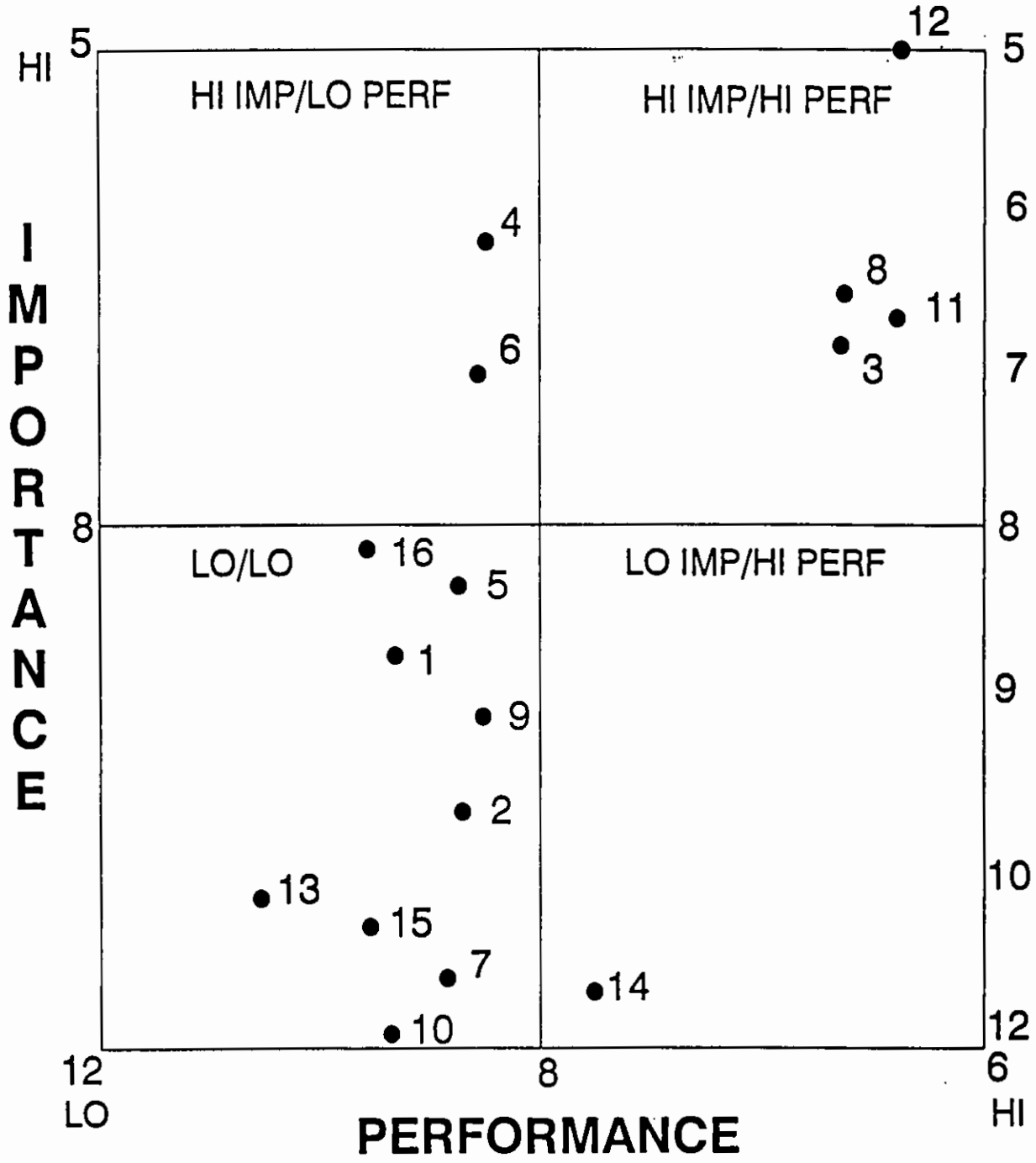
Because the other natural boundaries noted in Table 30 are not as dramatic as those represented by Dimension 12 (Plans/Directs) in the Importance and Performance Columns and Dimension 13 (Conflict) in the Required Training Column, the researcher developed Figure 4 to present an overall picture of some of the more important conclusions about this data.

Figure 4 visually depicts the relationship between importance and performance. A discretionary break point of a mean rank of eight (8) was used as the midpoint of each axis. Thus, those dimensions with rankings of 8 and under fell in the higher/upper quadrant of each category. Those categories with rankings of over eight (8) fell into the lower quadrants of each category. The dots on the two by two graph represent the approximate placement of each of the sixteen dimensions. The quadrants were labeled as follows: 1) Upper Right - High Importance, High Performance; 2) Upper Left - High Importance, Low Performance; 3) Lower Right - Low Importance, High Performance; and 4) Lower Left - Low Importance, Low Performance.

It is important to remind the reader here that all dimensions (1-16) were assumed as <u>important</u> to the facilitator's role. Therefore, the term "importance" indicates rankings from Extremely Important to Important.

FIGURE 4

IMPORTANCE AND PERFORMANCE



* Dots represent approximate placement of dimensions

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Thus, in viewing the two by two graph (Figure 4), although the label reads Low Importance, the assumption is the dimensions represented in this lower quadrant were still, at minimum, considered IMPORTANT.

Looking at Figure 4 - the Importance-Performance relationship - again Dimension 12 stands alone, high in theupper right hand quadrant - suggesting the dimension of highest importance and the one performed best by the respondents. It could be argued that the facilitators tend to perform well those dimensions they consider important or consider important those dimensions they perform well. Given the documented reports of facilitators' experience gathered in this study, it appears that the former is the case. Facilitators frequently mentioned the importance of designing and planning the meeting. In addition, they ranked this dimension most often as the extremely important. Thus they talked about it, verified it, and measured it, as the most critically important dimension of their role.

The importance of planning and designing meetings has been alluded to in both existing practitioner literature (Mosvick and Nelson, 1987; Doyle and Straus, 1976; Kayser, 1990) and a number of academic studies in the area of GSS and groups (Bostrom et al, 1991; Anson and Bostrom, 1989, Poole, 1990). However, this study represents the first time its importance has been empirically supported in relationship to the role of the facilitator in computer-supported contexts.

It is important to note in this discussion that Dimension 12 also fell fifth in mean ranking under the Require Training column recording a mean rank of 11.87. This ranking indicates quite a moderate need for training for this dimension. Given the above findings on importance and performance for Dimension 12, it could be concluded that the experienced facilitators responding to this study have already received adequate training in this area.

Interestingly, in reviewing the upper right hand quadrant, it can be argued that the dimensions the respondents think are most important to their role are also those behaviors they tend to focus on, engage in and perform well. In other words they <u>are</u> doing well what they think they <u>should</u> be doing. This includes focusing on dimensions which help them design effective tasks structure (plans and designs [12] and selects appropriate technology [3]) and create constructive relationships (listening and clarifying [4], creating an open environment [8], and demonstrating flexibility [11]).

Several dimensions appear as unique outliers in Figure 4. One is Dimension Six (6) - Keeping the Group Outcome Focused. It ranks high in terms of importance, yet low in relationship to their self-reported performance (and their need for training). Possibly this finding could be argued as a leverage point for change. Providing training in this area could be critical to the successful performance of the role.

Certainly the responding facilitators considered it important yet not performed as well.

Although Dimension Four - Listens, Clarifies and Integrates - is placed as the third most important, the respondents indicated they do not performed it as well as some of the other dimensions nor is it a dimension in which they wanted training. It could be possible that respondents viewed Dimension 4 - a set of communication behaviors - as basic knowledge for facilitators. It could be that even though the respondents know they do not perform this behavior set as well, they just cannot sit through one more "basic class" on listening skills!

Another outlier represented in Figure 4 was Dimension 14 - Understanding the Technology and Its Capabilities. This dimension was viewed as less important, yet still performed well. Respondents also considered it an area in which they did not require additional training or improvement. It fell second lowest in terms of need for training. This could indicate they already know the technology well and that they prefer to focus attention on design and relationships in facilitating groups. Although understanding the technology is important, once the facilitator has basic knowledge about and comfort with the technology, emphasis on this dimension might fade somewhat into the background while focus on design and relationships moves to the foreground. It could also be argued that a number of experienced facilitators are supported

by technographers during computer-supported meetings and therefore do not think this dimension is as critical to their role or performance.

Dimension 13 - Managing Conflict - stands out overwhelmingly as the respondents' highest need for training (See Table 30). Yet Managing Conflicts was reported as not as important as at least eleven of the other dimensions. However, it was the dimension that the respondents admitted they performed "least" well (or at least did not feel comfortable performing). The anticipation of the conflict and the possibility of having to handle a negative situation (and the need to have the confidence and competence to deal with it constructively) was mentioned often in their incident reports. This concern was well-noted in the respondents' ranking of managing conflict as the dimension in which they required or wanted the most training and improvement.

In response to this finding, it could be argued that since many of the respondents reported that they facilitated "one time" meetings with group, (only working with the group one time), conflict might not always actually occur during a one-time session. Another explanation might be since the respondents overwhelmingly focused on the planning and design of the meeting, conflict situations were <u>averted</u> through effective design.

In all cases, none of the high importance/high performance group of dimensions were reflected in the high need for

training top 5 listing. The only dimension that really distinguished itself as a critical training need was Managing Conflict and Negative Emotion (13).

This limited appearance of dimensions in the high need for required training (mean rank above 8) appears to further validate the appropriateness of the study's sample selection. The study made an effort to tap the most experienced facilitators in both traditional and computer-based facilitation. A quick glance back at Table 23 in Chapter Five indicates over 38% had over 10 years of facilitation experience (20% have 15 years or more) and 51% had over three years of computer supported facilitation experience (20% had six or more years) and 36% had facilitated over 100 electronic meetings (20% over 200 meetings!). Therefore, combined reports of low training needs with the exception of the management of conflict might be due to the sample's overall experience level.

6.14 Key Findings Across Technology

Table 31 summarizes the key findings comparisons of the sixteen dimensions across workstation and keypad based technology. The most statistically significant findings between the two groups on importance rankings were found among rankings on (1) Flexibility ($p = .012$), (2) Ownership (.022), (3) Creates an Open Environment (.024). Other differences in importance rankings between the two groups approaching

TABLE 31
SUMMARY FINDINGS
TOP FIVE RANKINGS
ACROSS TECHNOLOGY

Technology Rankings	WORKSTATION			KEYPAD		
Importance						
1	12	Plans and Designs	(4.09)*	8	Creates Open Environment	(5.77)*
2	11	Flexibility	(5.48)*	4	Listens, Clarifies, Integrates	(6.27)
3	3	Selects and Prepares Technology	(6.87)	12	Plans and Designs	(8.45)*
4	4	Listens, Clarifies, Integrates	(7.13)	1	Promotes Ownership	(6.77)*
5	6	Focused on Outcomes	(7.17)	5	Develops Right Questions	(7.18)*
Performance						
1	12	Plans and Designs	(5.17)	8	Creates Open Environment	(5.45)*
2	3	Selects/Prepares	(5.87)*	11	Flexibility	(6.68)
3	11	Flexibility	(6.48)	4	Listens/Clarifies/ Integrates	(7.68)
4	14	Understands Technology	(7.35)	9	Builds Rapport/ Relationship	(7.86)
5	5	Demonstrate Self Aware	(8.13)	6	Keeps Group Focused on Outcomes	(7.86)
Required Training						
1	13	Manage Conflict	(6.04)	13	Manage Conflict	(5.95)
2	5	Develops Questions	(8.96)	5	Develop and Ask Right Questions	(9.68)
3	15	Multiple Perspectives	(10.08)*	1	Promotes Ownership	(10.00)
4	1	Promotes Ownership	(11.13)	12	Plans/Designs Meetings	(10.82)*
5	8	Creates Open Environment	(13.41)	3	Selects and Prepares	(10.82)*

* Significantly different between groups

significance were Demonstrates Self Awareness (.069), Plans and Designs Meetings (.089), Develops and Asks the Right Questions (.145) and finally Encourages Multiple Perspectives (.150)

The differences between the groups on Dimension 11 -- Flexibility were most statistically significant. Thisdimension -- ranked second in importance by workstation facilitators, is actually ranked ninth here by keypad respondents. It might be concluded here that the demands of the technology could affect the differences in the rankings on this dimension. Workstation technology is a much more structured technology. It provides software tools to generate, organize, select and evaluate types of activities. Thus since workstation technology directs the facilitator to plan and execute each interaction (generate, organize, select, etc.), the facilitator has to pay particular attention to the ability to "switch gears" or "to turn on a dime" or to back away from the preplanned agenda when necessary; making workstation facilitators more consciously flexible in these situations and possibly pay more attention to the importance of flexibility.

On the other hand, keypad technology provides software tools to basically support evaluation activities (comparison and selection). Thus the demands of the technology in terms of planning each meeting interaction are less than workstation system. The keypad technology appears to be more driven by

the appropriate question and prompt rather than the appropriate "tool". Thus although keypad facilitators also think preplanning is important, the system does not provide structure and support for each meeting interaction (generate, organize, select, etc.). Therefore keypad facilitator might not have to shift gears in the technology as often -- and perhaps flexibility becomes less consciously important to them.

The next greatest statistically significant (.022) difference occurred between keypad and workstation rankings on Dimension 1 - Promoting Ownership. There was a difference of eight (8) full ranked positions and a mean difference of 3.23 - the greatest mean difference between any of the dimensions. This dimension did not appear in the top 5 Workstation Dimensions.

This strong difference was supported by a comparison of the <u>specific</u> ownership type behaviors reported in keypad vs. workstation critical incidents. Keypad respondents mentioned thirty-five (35) accounts of ownership behavior while workstation facilitators noted sixteen (16). This difference was also evidenced by statements concerning ownership made by workstation vs. keypad participants.

<u>Workstation facilitators statements</u>:

"<u>I</u> know exactly where to take each group and how to get <u>them</u> there."

"I don't agree that promoting responsibility and ownership is the right way to go, so I should probably learn more about it."

vs.

Keypad facilitators statements:

"I let the group take responsibility."

"I make it absolutely clear that this is their agenda."

"I remind people up front that this is their meeting."

One conclusion might be that keypad facilitators might ask for more direction from the group in developing, using, and changing questions in the technology.

Another argument for this finding might have to do with the facilitator's relationship to the group. The keypad respondents in this study tend to be independent consultants who may work with a group during a series of meetings. It might be assumed that getting buy in from the group is part of consultants' job or part of a long-term process or consultancy relationship with the group. On the other hand, many of the workstation respondents are corporate facilitators working in decision room sites. Many of the groups they facilitate are one time interactions to, for the most part, generate data or issues and possibly engage in some decision-making. The mentality of those meeting interactions might be "here's your data; do what you want with it" vs. the consultants "let's evaluate and 'own' our data" approach. These differences could also be due to the type of organizations (their culture, philosophy, beliefs) facilitated by each group.

The difference between the two group importance rankings on Dimension 8 - Creating an Open Environment was also statistically significant (.024). This dimension reflected the second greatest difference between mean rankings (3.06) for the two groups. Keypad respondents indicated that this dimension was the most important dimension. It might be concluded that keypad technology is viewed as less obtrusive and provides greater opportunity to drawing people out, for using things like games, puzzles, music, for ensuring an open, participative atmosphere. This finding could also be interpreted as a reflection of the group make up facilitated by the respondents. Most of keypad respondents were consultants potentially dealing with ongoing contracts. Therefore, the ability to create open, participative environments might be deemed more critical.

In reviewing the summary table 31, another statistically significant difference was found in relationship to Dimension 12 - Plans and Designs Meeting. It is important to note that there is an almost two (2) point difference in the mean ranks between the two groups on Dimension 12. Workstation respondents ranked this dimension as somewhat more important than keypad facilitators.

It might be concluded that workstation technology itself guides the facilitator in the planning process. For example, VisionQuest -- a workstation technology -- actually has an agenda driven architecture, so the facilitator must think

through and create a dialogue agenda in order to be able to execute the technology to deliver the outcome. Keypad technology (particularly the type of software - Option Finder - represented by the key pad respondents in this study) seems more driven by the type of question that must be asked to deliver the desired outcome. Thus, keypad facilitators might be more focused on key questions versus a tightly structured agenda, and therefore not plan as explicitly.

As a point of discussion, Dimension 3 - Selects and Plans, demonstrated a major difference in mean ranks, although not a statistically significant difference. Prepares and Selects Technology was ranked third in importance by workstation facilitators, yet eighth by keypad respondents. One might be tempted to conclude that more time has been spent in training workstation facilitators to map technology to the outcome. It might also be tempting to conclude that workstation facilitators might spend more time thinking about the appropriate tool to use for each meeting activity since workstation technology has a greater variety of tools - e.g. tools for idea generation, organization, evaluation and communication vs. the evaluate-focus of keypad tools. Thus, a possible explanation for these differences.

Finally, several other differences in importance between the two groups approaching significance were Dimensions 5 - Develops the Right Questions, and 15 - Encouraging Multiple Perspectives. Mean differences between the two groups of 1.77

and 1.58 were noted. Both dimensions appeared more important to keypad respondents vs. workstation participants. Again it might be argued that the keypad technology encourages the use of questions and focus on multiple perspectives. For example, the keypad technology (OptionFinder) utilized by respondents in this study, uses questions as prompts for the screens and incorporates a diversity function to look at differences in members' perspectives. These software functions both support dimensions 5 and 15.

In looking at the across technology summary findings under performance rankings on Table 31, both groups ranked one dimension in common in their top five performance choices - Flexibility. The remainder of all their performance choices were unique.

Several of the top performance choices of the workstation respondents seem more task and structure oriented, having to do with planning, selecting, preparing and understanding technology. The flavor of the top performance choices for keypad respondents appears more people or relationship-oriented - listens, rapport building, and more focused on creating flexible open atmosphere. These choices may reflect the background experience and training of each group, as well as the demands of each technology upon the facilitator.

The most significant statistical differences between the two groups in performance rankings were Selects and Prepares Technology (.003), Creates Open Environment (.017) and Plans

and Designs Meetings (.034). The larger differences in the across technology performance on Select and Prepares Technology could be an indication that the work station group seems to consider this dimension more important in terms of their performance. Selecting and preparing workstation tools is more demanding since the facilitator must make tool choices for generate, organize, select, and evaluate type of activities. Workstation facilitators are also more likely to receive more training in the area of tool selection and preparation.

The required training choices on Table 31 reflect once again the strong desire for training in managing conflict. This dimension was the top choice in both groups. Both groups were also concerned about learning more about developing questions. Keypad respondents also indicated a greater need for training in planning and designing meeting and selecting and preparing the technology while workstation respondents mentioned training needs for encouraging multiple perspectives and creating open environments. Both groups expressed a desire for increased skill in promoting ownership.

6.15 Summary of Key Findings Across Technology

The most statistically significant importance differences across technology were found on Flexibility, Promotes Ownership/Responsibility and Creates Open Environment. Keypad facilitators ranked creates open environment and ownership as

much more critical dimensions with an average mean ranking of 5.77 and 6.77 and mean differences of 3.06 and 3.23 respectively. On the other hand, workstation facilitators significantly ranked Flexibility (5.48) as a more important dimension, with a mean difference of 2.93.

Both groups indicated Planning and Designing Meetings was critical to their role, although workstation respondents ranked it number one overall at mean ranking of 4.09 and keypad participants placed it second with mean ranking of 6.45. Difference between the two groups on this critical dimension was approaching statistical significance at .089 (See Tables 27 and 31 for complete review of findings).

These findings were some of the more interesting and remarkable discoveries of the study. This across technology analysis indicated statistically significant differences in four of the sixteen dimensions (25%) in across technology comparisons. These differences were dramatic considering the small sample size of this exploratory study. The bottom line is that differences in the perceived importance of facilitator role dimensions <u>were</u> found across technology.

Due to the small sample size, these differences cannot be noted as conclusive, nor can causal relationships for these differences be confirmed. However, it does appear that a number of factors may have an affect on the facilitators' perception of the importance of the role dimensions reported here. These factors are: 1) the demands (architecture,

philosophy) of the technology type, 2) the role relationship of the facilitator to the group being facilitated (hired consultant for longer term group work vs. internal or external consultants for one time interactions, 3) the type and focus of the facilitator training received by the facilitators; and 4) the organizational culture and philosophy operating in the group.

All of the above factors could have impacted the choices the respondents made in measuring the relative importance of role dimensions, their need for training and their current performance. It will be interesting to see if these differences are consistently found across a larger sample of experienced facilitators in future research in this area.

6.2 Limitations of the Study

There were several research limitations inherent in the utilization of critical incident methodology. The collection of critical incidents is focused retrospectively--participants recall experiences rather than recording them as they happen. This limitation was addressed by collecting a large number of incidents from a variety of respondents. Additionally participants were asked to recall more recent incidents within the last 12-24 months. It is important to note here that past critical incident research findings indicate that "recalling" incidents has been just as effective in gathering useful information as observing the subject directly or recording the

incident as it occurred (Flanagan, 1954; Campbell and Dunnette, 1970; Saskin, 1981; Hopkins, 1987).

Another methodological limitation was subjectivity. Since critical incidents were contributed and created by the participants, they were subject to the respondents' individual perceptual filters. Once again collecting numerous incidents from a number of different perspectives (self and other), situations and facilitators helped offset this limitation. Participants were also to report in explicit behavioral terms - what did they see or hear the facilitator doing.

Another limitation was the possible misinterpretation of the questions, instructions and even the study correspondence. Care was taken during the pilot studies to pay attention to these concerns. A number of suggested revisions for clarity were made as the result of these pilots. The researcher also developed a specific interview protocol to ensure more consistent and reliable data collection. Since 76% of all incidents were collected by interviews, the potential for misinterpretation was reduced substantially.

It could be argued that another study limitation prevailed in the development of critical dimension categories. The potential for overlap in dimensions and dimension "size" problems existed. (Size has to do with the size of the frame of reference each dimension addressed. As with any categorization process it is best to maintain consistent frame sizes among categories.) The researcher did realize and

consider this dimension size issue when developing dimension categories. This limitation was address by incorporating two facilitation experts into all levels of the dimension development process, along with a number of Ph.D. students and facilitators in the field (See Chapter 4 for complete description of this process).

This limitation was also handled by the introduction of the dimension verification process in Phase II -- asking respondents to review the dimensions for completeness and to make necessary additions. There were no additions of new role dimensions made, although several generic behaviors were repeated. Thus, respondents considered the dimensions valid and complete.

Finally, some researchers suggest that even though critical incident methodology generates rich qualitative data, little quantitative data emerges or is included in these studies (Daft and Steers, 1986). Phase II was specifically designed to address the quantitative analysis of the collected data by completing measures of importance using appropriate statistical tests. Even with the smaller sample size (45) of this study, there were a dramatic number of statistically significant findings.

6.3 Implications for Practitioners

One of the most essential skills for leading and contributing to organizations in a complex world is the

ability to facilitate diverse human and technological interactions (Pasmore, 1988). Yet the current research and experience bears out that organizations have been "woefully ill-prepared" to work effectively with groups, let alone group technology! (Mosvick and Nelson, 1987; Hostra, 1989; Pasmore, 1989; Kayser, 1990, Bostrom et el, 1991). From a practitioners' perspective the study presented here has made a number of interesting contributions.

The identification of the sixteen role dimensions provides a first-time accounting of the critical behaviors related to the effective performance of the facilitator's role in computer-supported environments. This behaviorally based description of the functions of the facilitator's role furnishes a solid foundation for the development of a number of organizational processes and instruments. Several of them are listed below.

Most practically, the role dimensions and their related behaviors can be used as a basis for the development of behaviorally anchored performance scales for the role of the facilitator. The use of critical incident data for the development of behaviorally oriented performance tools has been utilized by organizations and researchers for years (Flanagan, 1954; Saskin, 1989, Campbell and Dunette, 1970; Draff and Steers, 1986).

Of equal interest is the use of the role dimensions for the creation of behaviorally based selection criteria. Since the use of group support systems is fairly recent in

organizations, little is known about how to select the appropriate human resources for this position. The role dimensions contributed by this study will be a useful starting point for this endeavor.

The dimensions' importance, performance and required training findings provide a practical basis for the development of skill based training programs. These findings contribute baseline information for the training of facilitators working in electronic contexts, as well as the transition training of traditional facilitators seeking to move into the electronic arena. Interestingly the significant findings across technology also provide a jumping off point for the program specific to workstation and keypad based facilitators.

Finally, the unique card sorting activity introduced in Phase II can be utilized as a potential assessment tool for the experienced and new facilitators in the computer supported environment. This activity can measure the importance of each role dimension in relationship to the organization, as well as facilitator's current level of performance and training needs. Development plans for improvement and training can then be built upon these assessments.

6.4 Implications for Future Research

Very little empirical research has been conducted on the role of the facilitator in traditional environments and

virtually no empirical research in the GSS field has focused solely on this role. Only four laboratory studies have been published in the GSS field in this area.

Academically the study presented here is the first to focus solely on the role of the facilitator in computer-supported environments. The findings produced by this research endeavor have added valuable empirically based knowledge about the role and process of facilitation. The behaviorally grounded list of the study's sixteen facilitator dimensions, provides a useful, consistent and empirically measured foundation for future research of the facilitator's role and facilitation process in both computer-supported and traditional meeting environments.

Based on the study's findings, a broad-based and interesting future research agenda can be created. Recommendations for future research include additional study of the role of the facilitator in both computer supported and traditional environments; the continued investigation of the interesting differences noted across technology and meeting environments; the exploration of the development of appropriate skill based training; along with the more unique research questions dealing with the existence of underlying belief patterns, attitudes and traits that predispose a person to a "facilitative" personality or identity. What follows is a brief description of this future agenda.

The intent of the exploratory study presented here was to identify key role dimensions and their related behavior and to empirically measure their relative importance to the role. The initial findings supported the existence of sixteen critical role dimensions. Although these dimensions were verified and validated by a representative sample of experienced facilitators, it would be useful to extend this research effort to include a larger sample of technology-based facilitators, as well as incorporate a sample of traditional facilitators for comparison (Currently, the researcher and a number of her professional colleagues are preparing a grant proposal to conduct a larger study based on this initial endeavor to include the addition of several hundred workstation based and keypad based facilitators across the USA and internationally.)

Findings across technology based on this small representative sample of facilitators are remarkable enough to suggest additional exploration concerning these differences. Are these "real" differences? Will they consistently appear across a larger sample of facilitators? Will these patterns hold? Are these differences in perceived importance across certain dimensions impacted by the philosophical underpinnings and architecture of the technology; the level and type of training and experience of the facilitators; the type and make up of the groups and meetings facilitated? Investigation of these differences across technology would provide stronger

evidence for these original findings, as well as provide additional insights about the nature of this complex role.

Additionally, the initial findings of this study across technology suggests potential insights for the development of appropriate skill based training. Recently a number of researchers have argued for the importance of the development of facilitation skills in GSS environments (Bostrom et al, 1991, 1992; Anson, 1990; Poole, 1991). Given the importance of gaining appropriate facilitative skills in organization, some critical research questions worth exploring are:

- **How do we develop facilitative behaviors?**
- **How do we train people to facilitate effective computer-supported interactions?**
- **How do we appropriately train facilitators to make the transition between traditional and electronic contexts?**
- **How do we successfully integrate group technology into the facilitator's tool kit?**

These research questions and training and development issues will be exceptionally vital in those organizations wanting to shift to facilitative leadership and group/teamwork efforts. Early explorations reported in Figure 2, chapter two and the practitioner literature (table 10) indicate the potential areas of skill based training -- like outcome development, rapport building skills, active listening and language clarification skills. The reports of critical incidents made by experienced facilitators in this study also pointed to the types of critical behaviors needed to effectively perform the

facilitator role. The identification of important skills, the sequencing of skills training, and the development of potential strategies for transferring traditional facilitation skills into computer supported environments are all interesting and important areas for future research.

The study presented has focused on the behavioral level of the facilitator's role. As presented in the original theoretical framework of this study -- the Person-Role Model - (in Chapter 1) the role of an individual within an organization also incorporates the elements of role identity, personal history, criteria, and beliefs. Beliefs, in particular are strong determinants of actions and behavior.

Thus, another interesting area of future research would be to ask questions concerning and comparing the underlying belief patterns of effective and ineffective facilitators:

- **Are there identifiable common beliefs held by effective facilitators?**

(This researcher encountered a number of distinctive belief statements in gathering the critical incidents in this study to suggest the possibility of a number of facilitative beliefs!)

- **Are there specific beliefs, attitudes, or traits which might contribute to the predisposition of a facilitative personality?**

Only one study on the role of the change agent by Hamilton (1988) suggests a relationship between certain personality traits and effective change agent performance.

Finally, another interesting area of future research concerns facilitating across "time and space." With the advent of technology, it is now possible to conduct group interactions in a variety of time and place environments: 1) same place, same time; 2) same place, different time; 3) different place, same time; 4) different time, different place. The study presented here investigated the role of the facilitator in same time, same place (fact-to-face) contexts. Although it is probable that the same facilitator role dimensions would exist in these different meeting environments, they might have to be applied differently. For example, building rapport and being sensitive to the group mood might have to be facilitated through electronic mood meters -- measuring the emotional intensity of the group's responses through the technology.

With the continuing growth of the world as a global society, the reality of meeting interactions across time and place exists now. Providing facilitative guidelines for productive group interactions in these environments will be another area of useful and interesting future investigation.

6.5 Summary and the Discussion of Potential Overall Contributions to Change in the Profession

> **"More than anything else it is clear that there are too many persons who assume the facilitation role who are quite unprepared for the complexity of its function,"** (Keltner, 1989, p. 45).

Researchers in both the traditional facilitation and the GSS fields and practitioners have called for specific study efforts to define the facilitative role more precisely (Chilberg, 1989; Hirokowa and Gouran, 1989; Keltner, 1989; Bostrometel, 1991, 92; Anson, 1990). The most important contribution of this study on the role of the facilitator has been the precise identification of sixteen critical role dimensions grounded with generic and specific behaviors.

Overall this study has made significant academic and practitioner based contributions. Academically this study has added specific behaviorally based and empirically measured knowledge about the role and process of facilitation. From the practitioner's perspective within organizations, the sixteen dimensions and their critical behaviors may act as a solid foundation for generating behavior-based selection criteria, performance measures, and the development of skill-based training for facilitator in both computer-supported and traditional contexts.

Because of the use of the critical incident methodology, this research has contributed rich behavioral knowledge and a strong foundation for explaining and understanding the facilitator's role in computer-supported contexts. The critical facilitator incidents collected in this study incorporated an in-depth sampling of "real world" experiences in the respondents own words and meanings. These specific descriptions of effective and ineffective behaviors produced

rich meaning which is grounded in the facilitator actual experiences rather than in mere external predictions about what effective or ineffective facilitation in computer supported environments might be.

Ultimately, this study does not simply provide a list of important dimensions and grounded descriptions of facilitator behavior; rather, it furnishes the critical foundation for initiating important changes in the way leaders, members, and facilitators prepare for and engage in effective group work within their organizations. The study presented here is the first to conceptualize and define the critical dimensions and behaviors of this role. This knowledge is both essential and useful for organizations in the process of developing specific facilitative skills within computer-supported contexts, as well as for any managers facilitating group work within the organization. In addition, these identified key dimensions and behaviors can be used to guide future research and the development of critical research and practitioner instruments.

The capability to facilitate diverse human and technological interactions will be one of the greatest organizational challenges of the future. Recently organizational researchers have argued for the importance of the use of facilitative behaviors and skills at all levels of the of the organization (Naisbett and Arburne, 1989; Pasmore, 1989; Drucker, 1990). There continues to be a growing realization about the important role played by the facilitative leader and/or

facilitator in group interactions in both traditional and computer-supported environments (Bostrom et el, 1991; Nunamaker, et el, 1991, Biese, 1992, Grohowski, et el, 1990, McGoff et al, 1990).

The study presented here has established a strong empirically measured set of facilitator role dimensions. These key dimensions can be used as a foundation for the development, the design and the enhancement of effective team/group interactions within and across organizational systems. This study has made definite conceptual and practical contributions to improve the way we manage and facilitate group interactions in our organizations in the future.

Appendix A

Definitions of Study Factors and Variables

STUDY FACTORS DEFINITIONS

Study factors are described below. These descriptions are provided to clarify the terminology of factors to be considered during this study.

a) **Facilitator Perspective** -- The point of view from which the incident is written or reported. Also reflects relationship of facilitator to the group. Perspectives can be:

- **Self** = Self as facilitator
- **Other** = Another facilitator observed
- **Inside** = Facilitator is a group member
- **Internal** = Facilitator is not a group member, but from the same organization
- **External** = Facilitator is not a group or organizational member; hired to come in and facilitate the meeting

b) **Performance Perspective** -- The type of facilitator performance the incident demonstrates. Facilitators will be reporting either **Effective** performance or **Ineffective** performance.

c) **Facilitator Experience** -- The amount and type of experience that the "facilitator" highlighted in the incident, or responding to the survey questionnaire has.

d) **Facilitators and Technographers** -- A **facilitator** manages the group. A **technographer** manages the technology. One person may do both roles.

e) **Meeting Context** -- Indicates in which meeting stage/meeting time frame the incident occurred. The context could be:

- ☐ **PreMeeting** = Incidents involving the facilitator that occurred **before** the meeting, such as planning the meeting and/or other related activities which might impact the effective or ineffective accomplishment of the meeting outcome(s).
- ☐ **During Meeting** = Incidents involving the facilitator that occurred while the meeting was in progress.
- ☐ **After Meeting** = Incidents involving the facilitator that occurred following the meeting that impact effective or ineffective implementation of meeting outcomes.

f) **Meeting Type** -- Indicates the kind of meeting the facilitator is facilitating. The meeting type can be:

- ☐ **Choice** -- These are meetings which choices are made, like decision-making meetings, problem solving meetings, etc.
- ☐ **Creation** -- These are meetings during which things are created or planned, like meetings to generate plans, missions, objectives, issues lists, opinions, requirements, etc.
- ☐ **Other** -- Indicate any other meeting type not indicated above, e.g., negotiation meetings, staff meetings.

g) **Technology** -- Describe the type of technology used to support the group. There are three types of technology support:

- ☐ **Workstation** -- Workstation (computer and monitor) for each member and for the facilitator; like TeamFocus, GroupSystems, VisionQuest technology.
- ☐ **Keypad** -- Keypad for each member and workstation for facilitator; like OptionFinder, VisionNet.
- ☐ **Chauffeured Software** -- No computer support for members and a workstation for the facilitator. Facilitator uses support software and a public screen to guide the group, e.g., Lotus 1-2-3.

h) **Group** -- Indicates description of group being facilitated. Consideration to be given to group size, group membership, group organizational level, etc.

Appendix B

Phase I Data Collection Tools, Correspondence and Instructions

Dear

Thank you for considering our invitation to take part in a two-phased study on the role of the facilitator in face-to-face computer-supported meetings. The purpose of this study is to find out as much as possible about the key facilitator behaviors in these settings and how technology might influence these behaviors.

You have been identified as a person who has facilitated groups (or has directly observed facilitators) in computer-supported meetings and thus, as a valuable participant for this research project. Your participation in the study will require about 1-1/2 hours of your time and will include:

1. Writing/reporting out a number of descriptions of critical facilitator behaviors based on your experiences (Phase I, 1 hour) and,

2. Completing a followup questionnaire (6 weeks later) based on the identified behaviors reported in Phase I (Phase II, 30 minutes).

Very little is known about the role of the facilitator in any setting, and especially in computer-supported meetings. Therefore, your honest and frank responses in describing your experiences are extremely important to this research and to gaining valuable insights into the facilitator role. **Your responses and any original study data will be completely confidential.** After Phase II, only the final summary results will be reported to you and any participating organization.

Enclosed is the study participant packet for Phase I. This packet includes five (5) description forms, full instructions for completion and a completed sample form. Please read all instructions and guidelines thoroughly prior to writing your descriptions. When you have written your descriptions, mail the postcard and return the description forms in the envelope provided by

We want to sincerely thank you for participating in this research project. Your insights will help develop an indepth understanding of facilitation in computer-supported meetings. Your thoughtful efforts are greatly appreciated.

Sincere Regards,

Victoria Clawson and Robert Bostrom
Enclosures

Option Technologies, Inc.

1275 Knollwood Lane
Mendota Heights, MN 55118
Tel: 612 450-1700
Fax: 612 450-9413

Dear OptionFinder User:

Facilitation is a critical component of a successful OptionFinder session. Yet, we know little about how technology influences the behaviors, skills and knowledge of successful facilitators.

In an attempt to remain on the cutting edge and to expand our knowledge in a wide range of areas that help improve the use and effectiveness of the OptionFinder System, we are proud to sponsor researchers who bring to us projects that will provide our customers with new or more in-depth information.

Such is the project (described in the enclosed materials) that Vikki Clawson and Bob Bostrom have asked us to support. Vikki and Bob have developed a specially-designed facilitator training program centered on the OptionFinder System. They have delivered this program in both a public and a client setting. Vikki provided one of the two pre-conference training sessions at our September 1991 Users Conference. We know their work well and have received nothing but high compliments from everyone who has worked with them.

We would like to encourage you to participate fully and openly in this research project. We have received assurances that your personal contribution will remain entirely confidential and that the results of the study will be made available to OTI and to you directly by the researchers. If you have any questions, please don't hesitate to call me directly.

Cordially,

Bill Flexner

William A. Flexner
President

Dear TeamFocus Facilitator,

You are invited to take part in a two-phased study on the role of the facilitator in meetings that are supported with computer technology such as TeamFocus. The purpose of this study is to find out as much as possible about the critical behaviors of the facilitator role in these settings and how technology might influence these behaviors.

You have been identified as a person who facilitates groups while using TeamFocus, and thus, as a valuable contributor to this research.

Your participation in this project would require about 1 1/2 hours of your time and include:

1. Completing a face-to-face or telephone interview with a researcher in which you describe key experiences/behaviors that demonstrated effective or ineffective facilitator performance (Phase I, about 1 hour), and

2. Answering a follow-up questionnaire (6 weeks later) based on the key facilitator behaviors reported in Phase I. (Phase II, 30 minutes).

Very little is known about the role of the facilitator in any setting, and especially in computer-supported interactions. Therefore, frank and honest responses in describing actual facilitator experiences are extremely important to gaining valuable insight into this role. Individual responses and any original study data will be completely confidential. Only final research summary results will be reported.

We want to sincerely thank you for considering this invitation to participate in this research project. We will be making contacts with potential participants in the next few weeks to arrange appropriate interview times. We will be conducting the actual study interviews in Enclosed for your review is a sample of the types of questions we will be asking during the interview. If you are unable to participate, you may tell us at the time of initial contact or let us know by calling 314-442-4275.

Your experienced, thoughtful insights would contribute a great deal to the indepth understanding of facilitation in computer-supported contexts.

Sincere Regards,

Victoria Clawson and Robert Bostrom

Our outcome for this study is to describe and define the key behaviors that contribute to either effective or ineffective facilitator performance in computer-supported face-to-face meeting settings. You will be writing descriptions that identify specific behaviors critical to the role of the facilitator. What follows are guidelines for selecting and writing the critical facilitator descriptions you will contribute to the study and a completed sample form. Please read these thoroughly prior to writing your descriptions.

I. SELECT FACILITATOR EXPERIENCES THAT DEMONSTRATE THE FOLLOWING....

A) **Critically Important Behaviors:** Recall and write about those experiences and facilitator behaviors that clearly demonstrated effective or ineffective facilitator performance.

B) **Wide Variety of Facilitator Behavior:** Give us a variety of examples. For example, report facilitator experiences that involve you (self) as the facilitator, as well as those facilitators (other) that you have observed; include examples that take place in the meeting, before the meeting (meeting planning) or after the meeting (follow up). Choose past experiences that involve workstation, keypad, or chauffeured technology or that involve large or small groups or multifacilitator examples. Write about both effective and ineffective experiences.

C) **The Facilitator's Role As Key And Central To The Experience And Its Description:** Describe just enough about other people's behavior(s) in the experience to understand the facilitator's role more clearly.

D) **A Recognizable Beginning and End:** It is important to think about each experience separately from all the others that have occurred.

II. HOW TO REPORT/WRITE DESCRIPTIONS

A) <u>Give specific, concrete examples of observable behavior rather</u> than examples of unobservable behaviors, such as "understanding" or "having knowledge" or conclusions about or evaluations of the behavior, such as "good," "excellent," or "poor."

Like this: "The facilitator opened the meeting by telling us two stories about his family's weekend trip to the lake. He never once asked the group what we wanted to get out of this meeting. We had no agenda! To top it off, we each used a computer to generate issues, but he never introduced the purpose of the technology and kept hitting the wrong keys. Some of the group had never used the computer technology before. We were confused and the facilitator was oblivious to our confusion."

Not this: "The meeting was ridiculous. The facilitator screwed up the technology and didn't even seem to understand what the meeting was about. The facilitator was really bad!"

B) Describe the behavior (action) not the individual. Describe the behavior occurring rather than the individual's personal traits, name, personal and physical attributes.

Like this: "When planning this meeting the facilitator talked to Mr. B ahead of time for about 2 hours to find out what he wanted. She summarized key points. She smiled a lot and used a clear, calm tone of voice. She also helped Mr. B develop an agenda with a set of meeting activities."

Not this: "This facilitator listened and was friendly. The facilitator was well-dressed and tall. The facilitator was good and planned ahead."

C) State behaviors/actions specifically, rather than quantifying behavior in terms of percentages.

Like this: "The facilitator paid close attention to the group. For example, the facilitator initiated a discussion with one participant who had been very quiet. She invited the quiet member to comment on anything he would add or question about the plan. The facilitator consistently maintained eye contact with the participant and smiled."

Not this: "The facilitator paid attention about 90% of the time."

III. HOW TO PROCEED

A) There are five (5) Description Report forms in your packet. (If you wish to contribute more than five, please make extra copies of the Report Form. Do not write more than 10.) If you need more space for writing, use the back of the form.

B) **READABILITY IS CRUCIAL TO OUR RESULTS** - Write or print legibly in ink. If you wish to use your word processor, please indicate the question(s) to which you are responding.

C) It is helpful to set aside one full hour for writing all your facilitator descriptions. However, you do not have to write them all at once. Simply complete them in the most efficient way for you to meet the study deadline.

D) **HINT:** Scan your facilitation experience to help you recall the experiences you wish to write about. Next, mentally select the ones that demonstrated a real difference in both effective and ineffective performance. Then, make a "list" of those. Use this list as a reminder to recall those experiences when you are ready to write.

E) Please return all forms in the envelope provided and mail the enclosed postcard (separately) by the study deadline , 1992.

HAVE FUN AND GOOD WRITING! YOUR CONTRIBUTIONS ARE VITAL AND GREATLY APPRECIATED!

ID OF-200

SAMPLE DESCRIPTION REPORT FORM

Enter Current Time: 9:45 am **Enter Today's Date:** Feb. 15, 1992

INSTRUCTIONS: Recall an experience during the past several years in which you [self] were the facilitator performing or in which you observed another facilitator [other] performing effectively or ineffectively in a computer-supported, face-to-face meeting. Think about one that really demonstrated effective or ineffective facilitator behavior(s) in some way. Take a moment to review this experience in your mind now. Think of it as if you were there again. Now that you have that one specific experience in mind, write out a description of it below.

PART I: DESCRIPTION

Please describe the experience you are thinking about now. Remember to focus on the key behaviors of the facilitator. Use the questions below to guide you. Answer the questions as honestly, frankly, and specifically as you can.

1. Briefly describe the background/context of this particular experience. e.g. Who facilitated the meeting you or someone else? Was the facilitator a group member or outside consultant? Did this experience take place while planning the meeting, during the meeting, or following up on the meeting? What was the size, type and makeup of the group?

I was the facilitator and an outside consultant to the group. This experience took place during the meeting about ½ hour into the second day of a Strategic Planning meeting. It was a group of 24 people. The group was made up of a CEO, 12 Executive Vice Presidents and selected staff of a large bank.

2. What **exactly** did the facilitator **do** in this situation that was **effective or ineffective**?

The system just crashed. We lost everything from that first ½ hour. I (facilitator) explained sometimes this happens with technology. Said "I'm sorry this happened, it won't happen again." Then moved on to a tool that I knew wouldn't crash.

I took responsibility, addressed it, and immediately turned to another tool that would help accomplish our task. I kept the group moving. I paid attention to their initial anger at the situation and calmly explained what had happened.

3. **How did you know the facilitator's behavior was effective or ineffective? How did the facilitator's behavior(s) affect the group?**

At first the group was angry. Once they saw the situation was being handled, they settled down and went on to complete their task. People accepted what I (the facilitator) said because it was direct and to the point and we moved on. I knew I was effective because they finished their work.

PART II: ADDITIONAL INSIGHTS

With the same experience in mind, please answer these questions as completely and specifically, as possible.

4. What **specific capabilities or skills** made (or would have made) it possible for the facilitator to perform effectively in this situation?

   - *Diplomacy -- Direct and tactful communication skills*
   - *Enough understanding of the tools to find a bulletproof substitute*
   - *Cool under pressure*
   - *Agenda development -- having activities that matched the task to be done*
   - *Being well prepared*

5. In what way(s) did **meeting design and preparation** (preplanning the meeting, developing an agenda and selecting appropriate meeting activities, etc.) or the lack of it, contribute to the facilitator's behavior in this situation?

   This meeting was an extensively planned 3 day meeting. In doing the planning, I was able to get a better understanding of CEO and the group. Perhaps this made me more effective.

   I like to design at least 2 different agendas... This way I'm sure I thought of everything and every way it might be done.

6. What **type of technology** was used by the facilitator to support the group? Check all that apply.

   ☒ *Workstation = a computer for each member and the facilitator like TeamFocus, GroupSystems, VisionQuest. Group Systems*
   ☐ *Key pad = a key pad for each member, a workstation for the facilitator, like OptionFinder or VisionNet*
   ☐ *Chauffeured technology = a workstation for facilitator to support the group and no workstation or key pads for the group*
   ☐ *Other*
   *(specify)*_____

6a) How did the **technology support** or **hinder** the facilitator's behavior in this situation?

I could not have run this type of meeting without the technology. Too much information too many tasks.... People would have been bored and grumbling. Tasks too tedious to do "by hand."

Since the system crashed, I had to change tools and respond to the group's frustration.

6b) Did the **use** of the **technology change** the **facilitator's behavior** in any way? How?

- *I was not confident that the technology (original) tool would work, so I had several bullet proof substitutes in mind.*
- *Allowed me to help group accomplish many tasks in three day period of time.*

7. When you look back at the facilitator in this situation, what **do you think** the **facilitator <u>might</u> have believed, valued**, or **assumed** that affected the facilitator's behavior? (Beliefs about the role of the facilitator, the group, the technology, etc.)

- *This is a "no game" group -- get the task done and don't waste their time*
- *Technology is a tool, not the answer.*
- *Technology can fail, be prepared.*
- *Be prepared -- always have a backup plan.*
- *Know the players.*

Dear Researchers,

- I have completed Phase I and mailed my facilitation description forms to you.

Name _____

Address _____

_____

Phone No. _____ Date mailed _____

- I would like to receive written summary results after Phase II of this project is completed. Yes ☐ No ☐

Facilitation Project
103 W. Parkway Drive
Columbia, MO 65203

VICTORIA CLAWSON
Facilitation Project
103 W. Parkway Drive
Columbia, MO 65203

_____

GOOD NEWS FOR ENLIGHTENED FACILITATORS

STUDY DEADLINE EXTENDED BY CURIOUS RESEARCHERS
TO

We realize that with taxes, Easter Break, and work, reading and completing our study packet on the role of the facilitator in computer-supported meetings and groups was probably not the upper most thing on your mind or in your "in-basket"!!

We are still very curious about your facilitation experiences and quite frankly we <u>really</u> need your help in order to make this a valuable and valid research study!!

Please dig out that big brown study envelope on your desk and tell us about as many effective and/or ineffective facilitator experiences by completing as many of the Facilitator Description Forms you can by , 1992.

If you have any questions concerning this research study, you may call Vikki Clawson day or evening at 314-442-4275.

Thanks again for reconsidering our invitation to participate in this important research project on the role of the facilitator in computer-supported meetings and interactions.

Sincerely, The Curious Researchers

Vikki Clawson

Bob Bostrom

INCIDENT CODING SHEET

ID #131D Source: ___IBM[I] ___OTI[F] ___Other[O] ___Academic[A]

Incident Background/Context:

- ☐ Self as facilitator [S]
- ☑ Other as facilitator [O]
- ☐ Group Member [G]
- ☐ Internal [Member of Organization][I]
- ☑ External [Outside of Organization][E]
- ☐ Effective Performance [E]
- ☑ Ineffective Performance [I]
- ☐ Both [B]
- ☐ Premeeting [P]
- ☑ During Meeting [D]
- ☐ After Meeting [A]
- ☐ Choice Meeting [D] [decision-mkg]
- ☐ Creation Meeting [C] [generate etc]
- ☐ Other [O]
- ☐ Workstation- GS TF VQ OW
- ☐ Keypad- OF VN OK
- ☐ Chaufferred_____[CH]
- ☐ Group Size 25

Group Composition ___ TM ___ MM ___ SU ___ SP ___ XM ___X___ XS

Incident Comments _____

FACILITATIVE BEHAVIORS

CODE	EFFECTIVE [E] INEFFECTIVE [I]	PEOPLE [P] TECHNOLOGY [T]	CODE	EFFECTIVE [E] INEFFECTIVE [I]	PEOPLE [P] TECHNOLOGY [T]
645	I	P			
755	C	P			
745	C	P			
26[illegible]	[illegible]	P			
745	C	P			
755	I	P			
133	I	P			

Appendix C

Phase II Data Collection Tools, Correspondence and Instructions

The University of Georgia

C. Herman and Mary Virginia Terry College of Business
Department of Management

Dear Fellow Facilitator:

You are cordially invited to participate in a study on the role of the facilitator in computer-supported environments. Your participation will require completing a brief research activity which will take approximately 15-25 minutes.

The good news is your participation in this study will not require circling responses on a boring multi-paged research survey. Rather we are asking you to complete a unique research exercise in which you sort a deck of cards!

The card statements were developed from the interviews and written descriptions we recently collected from a number of experienced facilitators in electronic contexts. These contributions were reviewed carefully for reports of key facilitator behaviors. These behaviors were then classified into sixteen categories. Each card describes one category of important facilitator behaviors.

The purpose of this research activity is: (1) to measure the importance of each behavioral category; and (2) to find out in which categories you feel you (as a facilitator) require training or improvement.

So far very little research has been done on the role of the facilitator and the process of facilitation in computer-supported environments. This study will be the first to document critically important role behaviors and measure their level of importance to effective facilitator performance.

Please return the completed worksheet and background information in the return envelope by You may keep the deck of cards. If you have any questions or comments, please call Vikki Clawson day or night at 314-442-4275.

Thank you for your support of this project. We are looking forward to your responses and reactions with great anticipation! Final confidential summary results will be reported to you in the late 1992.

Sincerely,

Vikki Clawson and Bob Bostrom
Principal Researchers

Brooks Hall 419 • Athens, Georgia 30602-6256 • (706) 542-1294 • FAX (706) 542-3743

BACKGROUND DATA

Questions 1-8 have to do with general information about your facilitation experience, education, and current job. Please check the blanks that apply to you and fill in information requested.

1. Your overall facilitation experience:

_____ 15 yrs & Over	_____ 10 yrs - 7 yrs	_____ 2 yrs - 1 yr
_____ 14 yrs - 11 yrs	_____ 6 yrs - 3 yrs	_____ Less than 1 yr

2. Your overall computer-supported facilitation experience:

_____ 10 yrs & Over	_____ 5 yrs - 3 yrs	_____ Less than 1 yr
_____ 9 yrs - 6 yrs	_____ 2 yrs - 1 yr	

Number of electronic/computer-supported meetings facilitated:

____ over 200	____ 99-50	____ 24-11
____ 199-100	____ 49-25	____ 10 or less

3. Your highest education level:

_____ Doctorate	_____ Trade/Business School Certificate
_____ Masters	_____ High School Diploma
_____ Bachelors	_____ Other _____
_____ Associate	

Enter your major area of study:_____

4. Briefly describe any additional formal/informal facilitation training you have had:

_____

_____

5. Are you Male____ or Female____?

6. What is your current job title?_____

7. Your current organization? _____

8. Indicate the percentage of your overall facilitation time devoted to:

___% computer-supported meetings
\+ ___% non-computer-supported meetings
100%

Questions 9-13 address some of the typical characteristics of electronic meetings. When responding, consider only your computer-supported meetings. Please enter the percentage [%] of your time you spend related to each of the meeting characteristics. Eg. I use workstation-based technology 20% of the time, keypad-based 60%, and other technology 20%. (Note: Sum of percentages for each question should add to 100%.)

9. Indicate % of time you use each type of technology to support the electronic meetings you facilitate. Then ✓ check the group technology you have used under each major technology type.

___% Workstation-Based	___% Keypad-Based	___% Other Technology
____GroupSystems	____OptionFinder	_____
____TeamFocus	____VisionNet/Conexus	_____
____VisionQuest	____Consensus	_____
____Other_____	____Other_____	

10. Meeting Types you facilitate using group technology:

____% Choice [Decision-Making, Problem-Solving] ____% Training Session
____% Creation [Planning, Generating Ideas] ____% Other [Negotiation, Staff, Etc.]

11. Organizational Level of the groups you facilitate using group technology:

____%Executive/Top Management ____%Mixed Management
____%Middle Management ____%Mixed Management and Staff
____%Staff/Professional

12. Group Size[s] you facilitate using group technology:

____%Small [10 & under] ____%Medium [11-24] ____%Large [25 & over]

13. Your Relationship to groups you facilitate:

____% Inside [I am group member]
____% Internal [I am member of same organization, but not a member of a group]
____% External [I am not a group or organizational member; I am hired to facilitate meeting]

OPTIONAL

Contact Information: If you would like the results of this survey, please complete this section:

Name_____
Mailing
Address_____
City_____ State_____ Zip_____
Phone:_____

The Facilitator Role Shuffle Exercise
Instructions

Introduction:

This is a two part card sorting activity. There are 16 "playing" cards. These cards represent sixteen categories of facilitator role behavior.

Each category depicts a key class of facilitator behaviors reported by experienced facilitators in describing their work in computer supported meetings. The narrative found on these cards reflects a summary of the types of behaviors they reported. All categories were depicted as important.

In this exercise you will complete 2 "shuffles" (sorts) of the card deck. First you will sort the cards to reflect how important each behavioral category is to effectively facilitating groups in computer supported meetings. Then you will sort the cards to let us know the categories where you think you require improvement and those categories you do well.

Instructions - Shuffle #1

1. Carefully review the statement on each card and think about the category of behaviors it represents.

2. Now ask yourself - **"How important is this category of behaviors to effectively facilitating groups in computer-supported meetings?"**

3. With this question in mind, sort all 16 cards into three piles as shown below. Note all categories are important. Sort them according to their level of importance.

Pile 1 **Extremely Important**	Pile 2 **Very Important**	Pile 3 **Important**
5 cards	6 cards	5 cards

Make sure you place 5 cards in Pile 1, 6 cards in Pile 2 and 5 cards in Pile 3.

4. After you are done placing the cards into their respective stacks, go back and carefully review **Pile 1 - Extremely Important**. Now **rank order the five cards in Pile 1.** You do not have to rank Piles 2 and 3.

5. When you are satisfied with how you have placed the cards, **record your responses (your card placement) for Piles 1, 2, 3** on the worksheet under Section I. Simply record the card number in its corresponding space on your worksheet.

Instructions - Shuffle #2

1. Shuffle your deck and carefully review the categories again.

2. Now ask yourself - **"In which of these categories do I require training or improvement?"**

3. With this question in mind, sort the cards into two piles.
   Pile 1 = Require training or improvement in these categories and Pile 2 = Do not require training or improvement in these categories.

   Enter only the card numbers of Pile 1 (Require training) into the blanks in Section II A. If you don't have any cards in this Pile, go to step 5.

4. Go back to your "Require Training/Improvement" Pile, **pull out the 5 categories in which you require the most training/improvement and rank order your choices.** Put the category in which you require most training/improvement first, next most training/improvement second, etc. If you have less than 5 choices, simply rank order the cards you have selected. Enter your choices into the boxes in Section II B on the worksheet.

5. Now go back to **both** Piles - Require and Not Require - **and pull out the top 5 categories you do very well now.** Rank order **your choices.** Put the category you do best first, next best second, etc. If you have less than 5 choices, simply rank order the cards you have selected. Enter your choices into boxes in Section II C.

Last Steps of the Exercise

1. Rate your overall performance in Section II D.

2. Enter any additional categories of facilitator behavior that are not represented on the 16 cards. Place any additions under Section II E on your worksheet.

3. Record any general comments/reactions about this exercise on the back of the worksheet.

4. Complete the background data sheets.

5. Place your completed **background data sheets and your worksheet** in the return posted envelope enclosed and mail back by October 20, 1992. Keep the card deck as a reminder of important facilitator behaviors.

6. Pat yourselves on the back for a great job!!

7. Thanks for your help!! Results forthcoming in late 1992.

4158

Worksheet

Section I. Shuffle I: Record your responses below.

Pile 1 Extremely Important	Pile 2 Very Important	Pile 3 Important
Card Numbers	Card Numbers	Card Numbers
Most Important →		
Next Most Important →		
	Do Not Rank	Do Not Rank

Section II. Shuffle II: Record your responses below.

A. Require training/improvement. Enter appropriate card numbers in blanks. If require improvement in all categories, check box.

____ ____ ____ ____ ____ ____ ____ ____ All ☐

____ ____ ____ ____ ____ ____ ____ ____

B. Categories where I require most training or improvement.

1 Require Most ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

C. My top categories I do very well now.

1 My Best ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

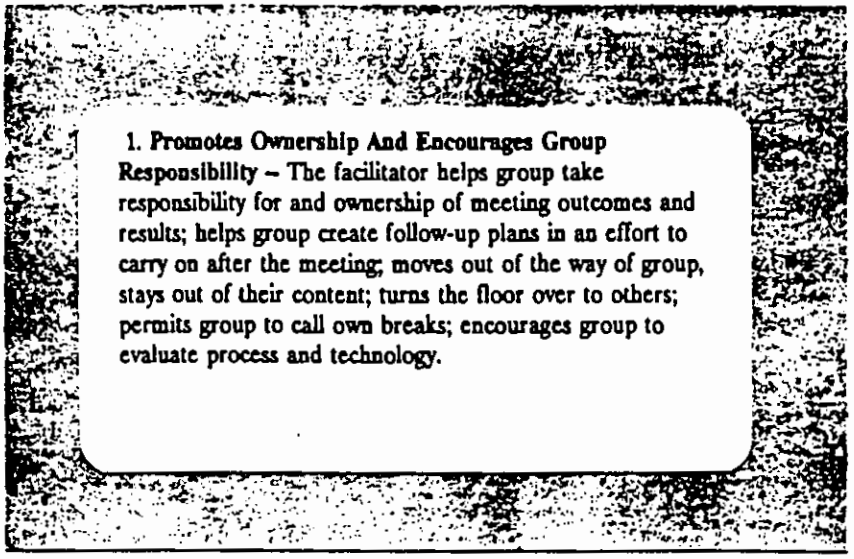
D. How would you rate your overall performance compared to other facilitators working in a computer supported environment. Consider the 16 categories and any other important behaviors. (Circle one)

1 Poor 2 3 So-so 4 5 Average 6 7 Good 8 9 One of Best

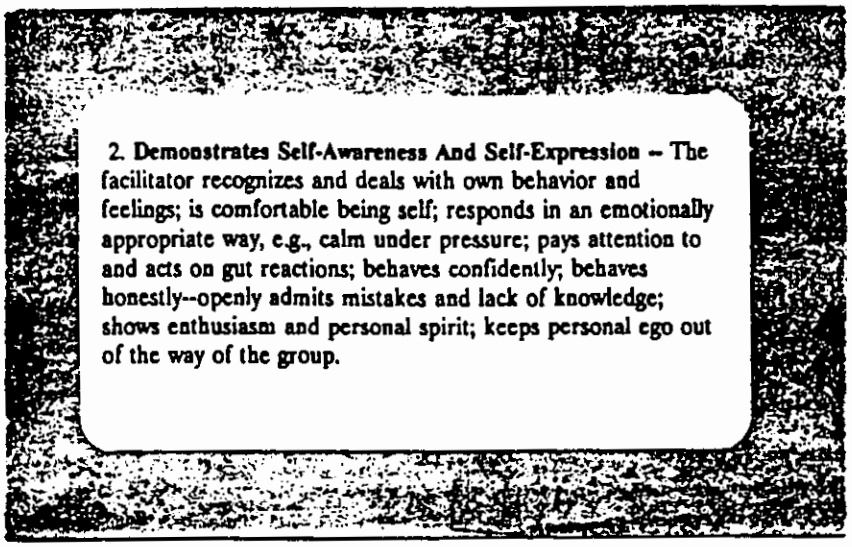
E. Additional facilitator behavior categories I would add (briefly describe).

_____

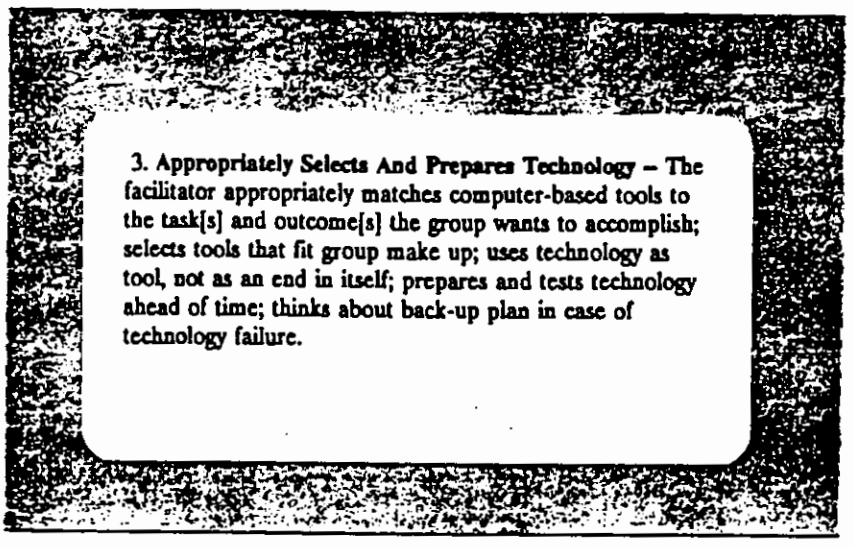
_____



1. **Promotes Ownership And Encourages Group Responsibility** – The facilitator helps group take responsibility for and ownership of meeting outcomes and results; helps group create follow-up plans in an effort to carry on after the meeting; moves out of the way of group, stays out of their content; turns the floor over to others; permits group to call own breaks; encourages group to evaluate process and technology.



2. **Demonstrates Self-Awareness And Self-Expression** – The facilitator recognizes and deals with own behavior and feelings; is comfortable being self; responds in an emotionally appropriate way, e.g., calm under pressure; pays attention to and acts on gut reactions; behaves confidently; behaves honestly--openly admits mistakes and lack of knowledge; shows enthusiasm and personal spirit; keeps personal ego out of the way of the group.



3. **Appropriately Selects And Prepares Technology** – The facilitator appropriately matches computer-based tools to the task[s] and outcome[s] the group wants to accomplish; selects tools that fit group make up; uses technology as tool, not as an end in itself; prepares and tests technology ahead of time; thinks about back-up plan in case of technology failure.

Appendix D

Pilot Studies Phase I and II

"Research Study Feedback"

Called By

Vikki Clawson

PURPOSE: Pilot Study - Facilitation Study

LOCATION: University of Georgia

DIALOGUE AGENDA

DIALOGUE TITLE: Research Study Feedback

ACTIVITY DESCRIPTION	ACTIVITY
1. Letter Feedback	Topic
2. Feedback on Letter	Brainwriting
3. Feedback on Guidelines	Topic
4. Feedback on Selection Guidelines	Brainwriting
5. Feedback on Background Guidelines	Brainwriting
6. Feedback on Writing Guidelines	Brainwriting
7. Feedback on How to Proceed Section	Brainwriting
8. Form Feedback	Topic
9. Feedback on Incident background	Brainwriting
10. Feedback on Incident Description	Brainwriting
11. Feedback on Additional Insights	Brainwriting
12. General Comments on Entire Process	Topic
13. General Comments	Brainwriting

< END OF REPORT >

PILOT PROTOCOL FOR CRITICAL INCIDENT STUDY

Time: 9am and 1-3pm and 9am

Participants: PhD and MBA students
Selected Professors
All with some computer-supported facilitation experience.

Location: University of Georgia--Athens, Georgia

Pre-Pilot Purpose/Outcome:

- To receive feedback on the quality and understandability of data collection tools for the proposed study.
- To practice the data collection technique.
- To get an idea of what kind of data this methodology will deliver.

PRE-PILOT PROTOCOL

I. INTRODUCTION AND OVERVIEW OF THIS PRE-PILOT

-- Welcome and introductions

-- Why are we here? Research Project on the role of the facilitator in computer-supported environments. Very little known about this role and the interaction of the facilitator, the group and technology. Here to conduct a brief pre-pilot study on the data collection phase of this study.

-- Purpose/Outcome:

" In this 2 hour session we hope to get your feedback on the quality and understandability of the data collection tools we plan to use in our critical incident study on the role of the facilitator in computer-supported environments. We also would like to gain some insights on the actual process of gathering critical incidents-- written narratives of critical experiences of effective and ineffective facilitator performance-- and the kind of data study participants will produce with this methodology. Our key outcome however is to get your honest and specific feedback on the quality and understandability of the three documents

QUESTIONS FOR ELICITING FEEDBACK FROM PRE-PILOT GROUP

Letter Questions:

Clear and Understandable? Readability??

Too Long? Too Much information?

What would you change--cut, clarify, delete???

Seem to contain "study jargon" that is confusing?? For example, the term "Critical Incident"...

Is the purpose and outcome of the study clear?? Do we deliver the message of what we want in an engaging and understandable way?

Are we clear on what we are asking study participants to do? On why they were selected? On the amount of time and effort we are asking them to commit???

Do we need to add incentives---like first 50 facilitators to return ten incidents get copy of working paper on facilitation??? Money?? Flowers???

Overall is the letter understandable on the first reading?

Does it reflect a professional and collegial tone?

Anything Else? Change? Combine? Delete? Add?

Questions for Instructions and Guidelines Handout

Clear? Understandable? Too long? Too Much? Too little?

What made sense?? What didn't make sense?

Selection guidelines? Change? Combine? Delete? Add?
Clear? Concise enough?

Background guidelines? Factor descriptions understandable?

Do you know how to proceed in creating incident background after reading these?

Any areas of confusion???

Writing Guidelines: Clear? Understandable at first reading?

How did you understand the idea of recording observable behaviors?

Were the example like this/not this useful? Understandable? Helpful as a guide to writing your own??

Review in your mind now the overall guidelines/instructions , are there any places that stand out in your mind as confusing or particularily unclear in these instructions?

What would you change? combine? delete? add? to make these more useful guides?

How To Proceed: Upon reading these, do you understand the steps you must take in starting the critical incident process?

Clear? Change? Delete? Add? Combine?

Anything Else?

CRITICAL INCIDENTS FORMS

Instructions clear and Understandable?

Did you use the idea of scanning your facilitator experiences first and listing 10 and writing??

Background questions understandable??

Did you understand how to fill in, select, and complete this background section?? Instructions under factors clear??

Questions 1 and 2 and 3 worded appropriately?? Do you understand what we are asking for?? Especially # 3??

Reaction to the task of writing Critical Incidents? Difficulty? Ease of completion? Hints or tips for others in writing?? Feasiable to write ten in one hour??

Any suggestions on form? On task ? On overall tools???

we will be using during the data collection phase of this research: The study participant letter, the instructions and guidelines handout, and the data collection [critical incidents] form. In the study, these three items will be mailed directly to each study participant for completion. So in most cases, Study Participants will be receiving this information by mail with no face to face interaction for clarification etc... a sub-set of participants will be interviewed face to face or by phone. Thus your frank input into the readiblity and understandability of this study packet will be very crucial to our successful outcomes in this study.

HOW WE WILL PROCEED TODAY...

This session will be a "quasi- simulation" of the "real study". The difference is you will be asked to give me feedback on the data collection tools as soon as you read them so the information is fresh in your mind.

I will also be "timing" the reading of these items so I have some idea , on average, how long it might take a participant to read them.

You will get the entire study packet. After you are done reading the introductory letter and the instructions & guidelines, we will discuss these two items and get your input. [See questions list attached to direct this discussion.]

Following this discussion, we will continue with the actual data collection --writing critical incidents -- for about one hour. Since we will be trying to simulate the study process here, you will not be able to ask me questions at that time. However, you may use your instructions, letter, and enclosed examples to guide you."

Are there any questions concerning what we will be doing over the next 2 hours??? Thank you for your willingness to spend your time on this!!!"

ORIGINAL "Pilot Study" Letter

Dear Study Participant:

You are invited to take part in a two-phased critical incident study on facilitator behavior in face-to-face meetings. The intent of this study is to discover as much as possible about the key behaviors which contribute to effective or ineffective facilitator performance in computer-supported meetings.

You have been identified as an individual who has facilitated groups in computer-supported meeting settings and thus a valuable resource for this research. If, however, you are not a facilitator with some experience in computer-supported meetings, please pass this study packet on to a colleague who is, or return it unanswered in the envelope provided.

What are Critical Incidents? Simply put, "Critical Incidents" are written narratives of key experiences that describe specific behaviors which are critical to effective or ineffective performance. Your participation in Phase I of the study will require the contribution of a number of "Critical Incidents" describing effective or ineffective facilitator behaviors. The Critical Incidents portion of the study is particularly important as it serves as the foundation of the overall research project. Writing out your Critical Incidents will take approximately one hour.

Very little is known about the role of the facilitator in meeting settings in general, and in computer-supported meeting contexts in particular. Thus, your honest and frank participation in describing your incidents in Phase I of this study will be extremely important to gaining valuable insights into this role. Your responses will be confidential. No one in your group/organization will see any original study data. Only typed summary results will be reported back to you and any participating organizations.

The outcome of Phase I of this facilitation study is to develop a set of the key dimensions which contribute to effective and ineffective facilitator performance in computer-supported meetings. Based on the results of Phase I, a follow-up questionnaire on key facilitator dimensions will be developed. The follow-up questionnaire makes up Phase II of this study and it will be mailed to you approximately 6 weeks after the end of Phase I. This questionnaire will allow you to review the critical dimensions discovered in Phase I and to identify the most important facilitator dimensions. This questionnaire phase will take an additional 30 minutes of your time to complete.

The overall results and insights discovered in this two-phased study will contribute to our in-depth understanding of facilitation in computer-supported meeting contexts. This study will also provide potentially important information for facilitators, such as, data for the development of selection criteria for facilitators, for the creation of critical skill based facilitator training, and for the improvement of facilitative technologies.

Enclosed is the study participant packet for your completion of Phase I. This packet includes full instructions and guidelines for writing your Critical Incidents, as well as ten Critical Incident report forms. Please read all instructions and guidelines thoroughly prior to writing your incidents. **When you are done, mail the postcard and return the incident forms in the envelope provided by _____, _____, 1992.**

We want to sincerely thank you for accepting this invitation to participate in this research project and for describing your critical facilitator experiences. Your contributions are vital to the success of this study. Your thoughtful efforts are greatly appreciated!

Sincere Regards,

Victoria Clawson and Robert Bostrom

Enclosures

ORIGINAL Instructions tested at Pilot Study 2/29

INSTRUCTIONS AND GUIDELINES FOR STUDY PARTICIPANTS

The focus of this study is on describing and defining key behaviors that contribute to either effective or ineffective facilitator performance in computer-supported meeting settings. This information will be gathered by using Critical Incidents. Critical Incidents are written narratives of key experiences that describe specific behaviors which are crucial (critical) to effective or ineffective performance. What follows are guidelines for selecting, developing the background, and writing the Critical Incidents you will contribute to the study.

SELECTION GUIDELINES

1) Select incidents that demonstrate critically important behaviors. That is, those behaviors that really enhanced excellent facilitator performance or those that really got in the way of effective performance. Look for those incidents that demonstrate actions/behaviors that really distinguish effective or ineffective performance.

2) Select incidents that demonstrate a variety of behaviors. In other words, do not repeat the same or similar behaviors in each incident. Write about diverse behaviors that demonstrate effective or ineffective facilitator performance. You do not just have to write about effective performances.

3) Select incidents where the facilitator's role is key and central to the incident description. If the incident includes other people, describe just enough about the other's behavior/actions so that the facilitator role might be more readily understood and described more fully.

4) Select incidents with a recognizable beginning and end. It is important to think about each incident separately from all the others that have occurred.

BACKGROUND GUIDELINES

Use the background checklists and fill-in blanks on page one of the Critical Incident form to guide you in reporting the background information. The background factors are described below. These descriptions are provided to clarify the terminology used.

a) **Facilitator Perspective** – Identify the point of view from which you will write your incident. Perspectives can be:

- **Self** = You as facilitator
- **Other** = Another facilitator you observed
- **Inside** = Facilitator is a group member
- **Internal** = Facilitator is not a group member, but from the same organization
- **External** = Facilitator is not a group or organizational member; hired to come in and facilitate the meeting

b) **Performance Perspective** – Indicate the type of facilitator performance your incident demonstrates. You will be reporting either **Effective** performance or **Ineffective** performance.

c) **Facilitator Experience** – Indicate the amount and type of experience that the "facilitator" highlighted in your Incident has. Fill in the blanks with the approximate number of years of overall facilitator experience (combined traditional and electronic experience). You do not have to know exact numbers here. Approximate numbers are acceptable.

d) **Number of Facilitators and Technographers** – Indicate the number of facilitators and technographers involved in the incident reported. A **facilitator** manages the group. A **technographer** manages the technology. One person may do both roles.

e) **Meeting Context** – Indicate in which meeting stage/meeting time frame the incident occurred. The context could be:

- ☐ **PreMeeting** = Incidents involving the facilitator that occurred **before** the meeting, such as planning the meeting and/or other related activities which might impact the effective or ineffective accomplishment of the meeting outcome(s).
- ☐ **During Meeting** = Incidents involving the facilitator that occurred while the meeting was in progress.
- ☐ **After Meeting** = Incidents involving the facilitator that occurred following the meeting that impact effective or ineffective implementation of meeting outcomes.

f) **Meeting Type** – Indicate the kind of meeting the facilitator is facilitating. The meeting type can be:

☐	**Choice** –	These are meetings during which choices are made, like decision-making meetings, problem solving meetings, etc.
☐	**Creation** –	These are meetings during which things are created or planned, like meetings to generate plans, missions, objectives, issues lists, opinions, requirements, etc.
☐	**Other** –	Indicate any other meeting type not indicated above, e.g., negotiation meetings, staff meetings.

g) **Technology** – Describe the type of technology used to support the group. There are three types of technology support:

- ☐ **Workstation** – Workstation/computer for each member and for the facilitator; like TeamFocus, GroupSystems, VisionQuest technology.

- ☐ **Keypad** -- Keypad for each member and workstation for facilitator; like OptionFinder, VisionNet
- ☐ **Chauffeured Software** -- No computer support for members and a workstation for the facilitator. Facilitator uses support software and a public screen to guide the group, e.g., Lotus 1-2-3.

b) **Group** -- Describe the group facilitated in this incident. Enter the number of people in the group. Use descriptors such as organizational level of the group, the group make-up, etc. to briefly describe this group. Do not use names. For example, "Formal task force of 8 Executive Vice Presidents from the same manufacturing firm - 6 men - 2 women" or "Focus group of 17 customers randomly selected from customer list. All professionals, e.g., lawyers, teachers, doctors."

WRITING GUIDELINES

1) Give specific, concrete examples of observable behavior rather than examples of unobservable behaviors, such as "understanding" or "having knowledge" or conclusions about or evaluations of the behavior, such as "good," "excellent," or "poor."

Like this: "The facilitator opened the meeting by telling us two stories about his family's weekend trip to the lake. He never once asked the group what we wanted to get out of this meeting. We had no agenda! To top it off, we each used a computer to generate issues, but he never introduced the purpose of the technology and kept hitting the wrong keys. Some of the group had never used the computer technology before. We were confused and the facilitator was oblivious to our confusion.

Not this: "The meeting was ridiculous. The facilitator screwed up the technology and didn't even seem to understand what the meeting was about. The facilitator was really bad!"

2) Describe the behavior (action) not the individual. Describe the behavior occurring rather than the individual's personal traits, name, personal and physical attributes.

Like this: "When planning this meeting the facilitator talked to Mr. B ahead of time for about 2 hours to find out what he wanted. She summarized key points. She smiled a lot and used a clear, calm tone of voice. She also helped Mr. B develop an agenda with a set of meeting activities."

Not this: "This facilitator listened and was friendly. She was a white woman about 5 ft. 4 in. with great eyes. She was a good facilitator and planned ahead."

3) State behaviors/actions specifically, rather than quantifying behavior in terms of percentages.

Like this: "The facilitator paid close attention to the group. For example, the facilitator initiated a discussion with one participant who had been very quiet. She invited the quiet member to comment on anything he would add or question about the plan. The facilitator consistently maintained eye contact with the participant and smiled."

Not this: "The facilitator paid attention about 90% of the time."

HOW TO PROCEED

1) There are ten (10) Critical Incident forms in your packet. Write as many Incidents as you can but no more than 10.

2) Remember you may write incidents about yourself (self) as facilitators or another facilitator (other) you directly observed.

3) Write about incidents that have occurred in computer-supported face-to-face meeting context.

4) Use the Incident forms enclosed. If you need more space for writing, use the back of the form.

5) **READABILITY IS CRUCIAL TO OUR RESULTS** - Write or print legibly in ink. If you wish to use your word processor, please remember to complete page 1 of the form "by hand," then attach additional sheets for pages 2 and 3 of the Critical Incident form, indicating the question(s) to which you are responding.

6) It is helpful to set aside one full hour for writing all your Critical Incidents. However, you do not have to write them all at once or in one sitting. Simply complete them in the most efficient way for you by the study deadline.

7) Scan your facilitation experience to help you recall the Incidents you wish to write about. Next, mentally select the ten most critical -- the ones that demonstrated a real difference in both effective and ineffective performance. Then, make a "list" of those ten. Use this list as a reminder to recall those Incidents.

8) Please return all Incident forms in the envelope provided and mail the enclosed postcard (separately) by the study deadline _____, _____, 1992.

HAVE FUN AND GOOD WRITING! YOUR CONTRIBUTIONS ARE GREATLY APPRECIATED!

ORGINAL Form Tested@ Pilot Study ID_____

CRITICAL INCIDENT FORM

Enter Current Time:_____ Enter Today's Date:_____

INSTRUCTIONS: Recall an incident during the **past several years** in which you observed a facilitator performing (or in which you were the facilitator performing) effectively or ineffectively in a computer-supported meeting. It is important to think of this incident separately from all the others that have occurred.

Take a moment to review the incident in your mind now. Think of it as if you were there again ... Now that you have a specific incident in mind, write out a description of the background of the critical incident. Use the questions below to guide you. Answer the questions as honestly, frankly, and concretely as you can.

PART I: INCIDENT BACKGROUND

Please check all the appropriate boxes and/or enter the responses that best describe the overall background/context of the incident you are thinking about now.

a) Facilitator Perspective (Check one in each set)

- ☐ Self ☐ Inside (Group Member)
- ☐ Other ☐ Internal (Organizational Member)
- ☐ External (Outside Organization)

b) Performance Perspective (Check one)

- ☐ Effective
- ☐ Ineffective

c) Facilitator Experience
(Fill in approximate numbers)
____Years as facilitator
____Number of electronic meetings
____Number of traditional meetings

d) Number of Facilitators and Technographers
(Fill in the numbers)
____Facilitators
____Technographers

e) Meeting Context (Check one)

- ☐ PreMeeting
- ☐ During Meeting
- ☐ After Meeting

f) Meeting Type (Check one)

- ☐ Choice
- ☐ Creation
- ☐ Other_____

g) Technology (Check all that apply)

- ☐ Workstation
  - ☐ TeamFocus
  - ☐ GroupSystems
  - ☐ VisionQuest
  - ☐ Other_____
- ☐ Keypad
  - ☐ OptionFinder
  - ☐ VisionNet
  - ☐ Other_____
- ☐ Chauffeured_____
  (specify software used)

h) Group (Fill in)
Group Size_____
Group Description_____
_____
_____
_____
_____

PART II: INCIDENT DESCRIPTION

Again, recall the incident about which you have just completed the background section in Part I.

Take a moment to review the incident in your mind again now. Think of it as if you were there again ... Now that you have this specific incident in mind, write out a description of this critical incident. Use the questions below to guide you. Answer the questions as honestly, frankly, and concretely as you can.

1. What exactly did the facilitator do that was effective or ineffective? In other words, what did the facilitator do or say that demonstrated to you that he/she/self was effectively or ineffectively enacting the facilitator role?

2. How is the incident you just described an example of effective or ineffective facilitator behavior? What was the results of their behavior(s) that made you think this was effective? Ineffective?

PART III: ADDITIONAL INSIGHTS

With the same incident in mind please answer these questions as completely and honestly, as possible.

1. What specific capabilities or skills made it possible for the facilitator to perform effectively in this incident? Or if this incident demonstrated ineffective performance, what specific capabilities or skills would have helped the facilitator perform more effectively in this incident?

2. What role did technology play in the effective or ineffective facilitator performance?

3. What beliefs/values/assumptions might underlie the performance of the effective/ ineffective facilitator behavior in this incident? In other words, what did the facilitator have to believe to facilitate effectively? (People are resources. The answers are in the group.) Ineffectively? (I have all the answers. People are basically stupid.)

CRITICAL INCIDENT STUDY ON THE ROLE OF THE FACILITATOR

PROTOCOL FOR FACE TO FACE /TELEPHONE INTERVIEWS

- Send introductory letter indicating their invitation to participate in this study and the statement that a researcher will be calling them within the next week to arrange an appointment or telephone time.
- Make appointment or arrange phone time with study participant.
- Have the following information available for interview:
  - -- Guidelines and Instructions
  - -- Ten critical incident forms
  - -- Interview guidelines for interviewer

THE INTERVIEW PROTOCOL

- Introductions and Outcomes
  - -- Introduce self and purpose and intent of study
    - --Use study participant letter as a guide.
    - --Key points:
      - -- Intent and purpose of the study
      - -- Why they have been selected to participate
      - -- Define CRITICAL INCIDENTS
      - -- Talk about their contribution and time commitment for phase I of the study---which is what we are doing now.
      - -- Mention outcome of phase I of study...set of key dimensions which contribute to effective or ineffective facilitator performance in computer supported environments.
      - -- Mention Phase II of study--questionairre, outcome to validate dimensions and identify most important. About 6 weeks after Phase I and approximately 30 minutes of your time.
      - -- Mention overall outcome of study and its potential contributions
      - -- Mention confidentiality.

- HOW WE WILL PROCEED TODAY...

  --Verbally Introduce instructions and guidelines for selecting and writing critical incidents

    --Use Guidelines Handout as guide here. In face to face interviews use the handout as a visual to show the types of EXAMPLES only and review with study participant. Otherwise interviewer uses background guidelines to guide questions about background during actual interview--this could be handle in elicitation of first incident.

    --With telephone Participants, review key points of selecting and descriping incidents [use writing guidelines to help ---verbally give examples of incidents from guidelines.

  -- Interviewer will be recording incidents as study participant describes.

     Each incident will be completed separately as a mini-interview. In otherwords the participant will describe and the interviewer will record one incident at a time.

     The interviewer uses a new critical incident form on each incident.

     The interviewer uses the questions on the Critical Incident form and the prompts for each section to guide the interview. Use exact wording each and every time. See Prompt Sheet for additional interview questions.

Before exchanging critical incidents, the interviewer asks the participant to take a little time [2-5 minutes] to think about the any facilitator experiences they have had or observed in computer supported contexts over the past several years. Have the partipant jot down some key word to remind them of the 10 key experiences they might want to describe---realizing this list might shift somewhat as the interview is conducted....

- Begin the Critical Incident Interviews now.

- End of Interview: When interviewer has recorded 10 incidents or participant has exhausted experiences [end in one hour], Thank the participant. Remind about phase II. Get any immediate feedback on the process. Smile, shake hand and exit.

SCRIPT FOR FACE-TO-FACE/PHONE INTERVIEWS--CRITICAL INCIDENTS

" I'd like you to recall an incident during the past several years in which you observed a facilitator performing effectively or ineffectively in the facilitator role or in which you were the facilitator performing. It is important to think of this incident separately from all the others that have occurred. Let me know when you have an incident in mind."

" Take a moment to review the incident in your mind now. Think of it as if you were there again... Now that your have a specific incident in mind, I would like to ask you a few questions that will help guide you in describing the background or context of this incident. Answer these questions as honestly and frankly and as concretely as you can---Ready?"

---

a) **Facilitator perspective--** " From which perspective are you **viewing this incident?** O Self O Other O Inside O O Internal O External???

b) **Performance perspective--** " Is this incident an example of O Effective or O Ineffective facilitator performance?"

c) **Facilitator Experience--** " How many years of experience facilitating traditional and electronic meeting has this facilitator had?" [Approximate # is OK.] _____

# of traditional meetings facilitated? _____

# of electronic meetings facilitated? _____

d) **Number of Facilitators and Technographers** in this incident. _____ _____ ??

e) **Meeting Context--In** which meeting context did this incident take place? O Before the meeting eg during the planning of the meeting ?? O During the meeting--While it was in progress?? O Or After the meeting-- following up

on implementation???

f) **Meeting type--"** What type of meeting is represented in this incident? Or what type of meeting is it? " O Choice O Creation O Other ?

g) **Technology--"** What type of technology was used by the facilitator to support the group?" O Workstation ? O Keypad? O Chauffered?

h) **Group--** " Tell me about the group that is being facilitated by this facilitator. " How many? Organizational Level? Group mix?

Appendix E

Sample Behaviors Database -- Behaviors Descriptions Grouped by Generic Behavior Identification

FREQUENCIES OF GENERIC BEHAVIORS

NUMBER	GENERIC BEHAVIOR	NUMBER OF OCCURRENCES
1	Break into small groups	4
2	Tell group their opinions matter	3
3	Selecting appropriate technology/tools	3
4	Giving clear/explicit instructions	8
5	Asking indiv. to respond to group	1
6	Facilitating discussions	5
7	Clarifying terms/definitions	14
8	Sensitivity to and awareness of emotions/feelings of the group	15
9	Adapting set agenda during meeting	14
10	Clarify set agenda	1
11	Turning floor over to others	7
12	Understanding, dealing with/solving technology problems	22
13	Handling situation in emotionally appropriate way - keeping one's cool	9
14	Directly telling group about what's going on-with the technology, if there are problems	16
15	Providing support & reassurance	6
16	Allowing people to express emotion	7
17	Leading and directing people through meeting	31
18	Dealing with and managing own emotions	6
19	Communicating and presenting information effectively	4
20	Using tools effectively	35
21	Capturing, summarizing, and making sense out of the data	11
22	Designing and preplanning effectively	11
23	Running the meeting effectively	2

NUMBER	GENERIC BEHAVIOR	NUMBER OF OCCURRENCES
24	Following the agenda	7
25	Paying attention to meeting leader/initiator	1
26	Preplanning meeting effectively	31
27	Eliciting and setting clear goals/outcomes	41
28	Using breaks effectively	8
29	Maintaining communication (directly information) with meeting leader/initiator before and during meeting	20
30	Apologizing for technology failures and inconveniences	1
31	Moving the group forward after a technology problem	6
32	Preparing MTG leader/initiator for potential technology problems ahead of time	2
33	Creating alternative backup design/plan for technology for each activity	11
34	Open to negative comments about technology	2
35	Pacing review of technology outputs to accommodate group ability to understand graphs/information	4
36	Reading the group's desire, wants, and needs	19
37	Formulating questions in technology ahead of time	5
38	Diagnosis technology problems	4
39	Getting group back on track. Keeping group's comments relevant	28
40	Gathering background data on issue/problem	3
41	Researching & using supportive background information/content	4
42	Creating and showing graphic representations	2

NUMBER	GENERIC BEHAVIOR	NUMBER OF OCCURRENCES
43	Communicating the outcome to group/leader	13
44	Carefully introducing and explaining technology	40
45	Interpreting and making sense out of technology outputs	20
46	Doing more than 1 thing at a time	5
47	Making people comfortable/putting them at ease/relaxing people	33
48	Demonstrating own credibility and competence	8
49	Checking the technology in advance/ Making sure system worked.	5
50	Having a direction; knowing where to go next	6
51	Planning with and guiding the technographer's behavior	6
52	Admitting own mistakes or lack of knowledge	14
53	Gathering/checking opinions of group to settle discrepancy in perception or conflict	8
54	Thinking on one's feet	8
55	Acknowledging participant's contribution	9
56	Adapting design as needed	19
57	Focusing on the group	15
58	Thinking about possible options/changes ahead of time	1
59	Feeling comfortable enough with subject matter to make changes	1
60	Stay in tune/in sync with group	10
61	Working well with people	1
62	Demonstrating own emotions	3
63	Developing ownership of items, plan, etc	9
64	Letting group take responsibility	13
65	Creating/developing followup plans with group	5

NUMBER	GENERIC BEHAVIOR	NUMBER OF OCCURRENCES
66	Hanging in/being persistent	3
67	Gaining consensus & agreement	9
68	Developing/asking clear/appropriate questions	29
69	Designing effective agendas	19
70	Mapping meeting activities to outcomes	2
71	Backtracking verbal/written comments effectively	11
72	Tying agenda to outcome(s)	4
73	Pacing the meeting to group	2
74	Actively listening	31
75	Encouraging open participation	35
76	Focusing on outcome	26
77	Building trust/building relationships	12
78	Developing/maintaining open environment	8
79	Restricting the meeting process, setting time limits, restricting number of choices	22
80	Adapting and using models	8
81	Integrates/incorporating group's suggestions	4
82	Making reports and printouts available to group	3
83	Acknowledging/being open to participants suggestions	3
84	Allowing the group to choose to do an activity	4
85	Suggesting alternative ways of doing something	3
86	Providing anonymity/confidentiality	3
87	Pulling together/organizing data into themes	5
88	Remembering and referring back to previous comments	4
89	Using examples, metaphors, stories	11

NUMBER	GENERIC BEHAVIOR	NUMBER OF OCCURRENCES
90	Helping the group frame the issue;putting things in perspective for group	13
91	Reviewing data display/graphics with group	13
92	Tie/map technology to the outcome	8
93	Getting group to take on and understand different perspectives	12
94	Moving out of the way of the group, staying out of their content	13
95	Clarifying the meaning behind an item/response	12
96	Knowing and finding out about the group before the meeting	10
97	Constructively handling conflict/emotions in the group	17
98	Designing/adapting questions for technology on the fly	5
99	Using intuition and own sensing effectively	5
100	Preparing group for change in plans	4
101	Having group critique/evaluate the process and technology	3
102	Distributing/having agendas for participants	5
103	Assisting participants with special needs/problems	4
104	Using games, puzzles, riddles, play	8
105	Creating & reinforcing positive energy in the group	5
106	Keeping own ego out of the way	3
107	Combining and using manual and electronic meeting technologies	8
108	Setting frame/stage for meeting and activities up front	12
109	Influencing/directing ML/initiator on potential agenda/process/activities	8

NUMBER	GENERIC BEHAVIOR	NUMBER OF OCCURRENCES
110	Rehearsing or imagining what might happen to anticipate problems	1
111	Designing, selecting, and using appropriate exercise and activities for group	16
112	Greeting the group/mingling with group before meeting/getting to know group	9
113	Updating latecomers/catching people up	1
114	Demonstrating personal energy and spirit	4
115	Handling dominant people effectively	8
116	Asking for and using feedback	6
117	Using humor appropriately	9
118	Using your gut reactions	4
119	Helping people diffuse negative emotions	1
120	Calibrating/responding to physical cues, watching eyes, watching body language	7
121	Using voice tone & tenor to communicate a message	1
122	Having/demonstrating a genuine interest in the group's outcome	4
123	Checking in with the group - making sure the group is with you	8
124	Moving about in group, moving in & out of group	8
125	Using animated expressions, eye contact arm movements, voice tone, smiling, etc.	9
126	Matching non-verbal behaviors - voice tones, body language, etc.	2
127	Adapting own style and approach to individual/group	3
128	Using technology to manage the group	8
129	Establishing & enforcing ground rules	9
130	Trying new things	2
131	Positioning body in relationship to group	7
132	Using technology to get people participating	4

NUMBER	GENERIC BEHAVIOR	NUMBER OF OCCURRENCES
133	Respecting individuals/group	5
134	Keeping up with the group (quickly processing information)	3
135	Knowing/stating clear roles/expectations up front	17
136	Recording & writing out information	3
137	Providing model, framework, and process for discussions	3
138	Physically positioning self to keep eye contact with group and on screens - Physically positioning self to look at group and screens.	3
139	Locating items easily on the screen	2
140	Designing agendas that fit the time frame/being able to estimate time frames	5
141	Making important information visible, e.g., keeping outcomes/standards posted	3
142	Using clear, concise, accurate language	3
143	Checking in with self. Paying attention to own responses & emotions	4
144	Asking about & clarifying the role of decision makers	1
145	Acting comfortable with self, being one's self	1
146	Tying information back to the group-making info relevant back on the job	1

PID	IDL	BIDL	E/I	T/P	Behavior Description
Behaviors for Id = 011					
023	c	s	i	p	He had a set script and never gave up control of the meeting.
198	e	s	e	p	I allowed the participants to sometimes play the role of facilitator during meeting.
214	b	s	i	p	He had total control of the meeting and he wouldn't give up control.
Number of behaviors in Id = 011 is equal to 8					
Behaviors for Id = 012					
000	a	g	e	t	Understanding, dealing with/solving technology problems
007	a	s	e	t	I figured out what was wrong in the technology and at the break I entered the issues they had generated in their small groups.
013	g	s	e	t	The key pad didn't work. I had to ask this person to sit out the vote. I put my best face on it and asked him to quietly sit out the vote. I tried to down play it.
018	d	s	e	t	If I do run in to problems I have a systematic way to figure them out (technology problems).
018	f	s	e	t	Understanding what the technology can and cannot do.
057	a	s	e	t	Well-versed in the option finder technology so that when it malfunctiond there was no panic
064	a	s	e	t	Understand underlying dynamics of the software.
071	a	s	e	p	Facilitator got help in making the system work
071	a	s	e	p	Identification of a resource to assist in the set up & operation of the system
071	a	s	i	t	He continued to fumble with the technology
071	a	s	i	t	The facilitator could not make the system work
071	b	s	e	t	Knowing the system & its capabilities.
13	e	s	e	p	Knowledge of how system works.
131	c	s	e	t	Knowledge of the system
169	e	s	e	t	I understand the technology very well.
183	a	s	e	t	I had to reboot from the server
183	c	s	e	t	I rebooted the system and we went on to have a regular meeting.

PID	IDL	BIDL	E/I	T/P	Behavior Description
Behaviors for Id = 012					
183	c	s	e	t	Technology locked up . I was busy trying to figure out what went wrong.
189	b	s	e	p	Knowing an almost certain way to recover the lost data kept me from becoming so nervous that the participants would have noticed.
189	b	s	e	t	I was able to address confidently (vs tentatively) the recovery of files which I had erased
189	b	s	e	t	use of tools which recover erased files.
214	c	s	e	t	Knowing technology.
223	h	s	i	t	Consultant had never used the technology. He seemed threatened by it.
Number of behaviors in Id = 012 is equal to 23					
Behaviors for Id = 013					
000	a	g	e	p	Handling situation in emotionally appropriate way - keeping one's cool
011	d	s	e	p	I had to be very calm and cool and tell them that we wanted their input and they were also free to leave.
013	f	s	i	p	He got mad. He said, "You guys are putting in every goddamned thing you can think of here!"
064	c	s	i	p	He was beligerant- when someone resisted "brick wall" response said "you don't need to know why."
071	a	s	e	p	Not let the system failure fustrate him
131	d	s	i	p	He was slightly nervous... somewhat unsure and therefore anxious to move quickly through the process.
183	a	s	i	p	it crashed, she froze
189	b	s	e	p	I was able to address confidently (vs tentativly) the recovery of files which I had erased.
210	c	s	i	p	She started getting really upset... she said to me (the technographer) "this isn't working - this is nuts, fix it!" She became more curt and reserved... she was harsh and short - visibly upset.

PID	IDL	BIDL	E/I	T/P	Behavior Description
Behaviors for Id = 013					
220	a	s	e	p	I am cool under pressure.
Number of behaviors in Id = 013 is equal to 10					
Behaviors for Id = 014					
000	a	g	e	t	Directly telling group about what's going on-with the technology, if there are problems
001	d	s	e	p	I explained how this process was to their benefit and important to a satisfied department and their needs.
008	b	s	e	t	Acknowledged that this can be problem
009	f	s	e	p	Told group what I had to do.
024	a	s	e	t	Explained clearly
024	a	s	e	t	Explained the Tech. problen as well as could
169	c	s	e	p	I forewarn them that we are exploring. I didn't let their expectations get too high of me (or the technology).
169	c	s	e	t	I would tell the group I was new and had used certain tools and had planned to use those. But I was willing to try other tools if they were willing.
173	a	s	e	p	I don't b.s. the group - they know.
173	h	s	e	t	Instead of making it (the technology and the process) mysterious for them, I talk to them and I tell them exactly what is happening - where we are (in the process or the technology) what we are doing.
183	a	s	e	t	I turned to the group + said "this system sometimes does this, from what I can tell it will be up + running soon + we've lost maybe the last page of text. I believe it will be worth the wait.
183	a	s	e	t	I was honest with them and just told them what I thought had happened to the technology and how we would proceed.
183	c	s	e	t	I said to the group, "This is a system that sometimes does this, but from what I can tell we only lost our last page." I told them what had happened and why it had happened.

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PROFESSIONAL EXPERIENCE

- Last five years focused on Management and Organizational Development consulting and training working with healthcare, insurance, telecommunications and university organizations. Have designed and facilitated a variety of seminars, outdoor development programs, meetings and consulting projects incorporating innovative experiential learning experiences to produce change.

- 15 years of organizational training and development experience.

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- Academic, career and personal counseling in university setting.

EDUCATION

- Currently Ph.D. in Management and Administration, Walden University.

- Master of Science Degree in Counseling and Education, Purdue University, 1980.

- Bachelor of Science Degree in Psychology, Purdue University, 1972.

- Certified Master Practitioner of Neurolinguistic Programming, NLP Comprehensive Colorado, 1988.

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CURRENT POSITIONS

- President - V. Associates - small independent consulting and training business, 1987 to present.

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PREVIOUS POSITIONS

- Trainer, Maritz Corporation, St. Louis, Missouri, 1990 to present

- Management Development Specialist, American Medical International. Internal organizational development consultant for 15 hospitals in the mid-Atlantic states. Consulted with Executive Directors/Presidents, Chief Operating Officers, and Department Directors in areas of organizational and managerial performance, 1985-1987.

- Administrative Director of Employee and Educational Services. Culver Union Hospital, an American Medical International investor owned hospital, 1983-1985.

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- Associate Director, Educational Services, St. Elizabeth Hospital, 1976-1981.

PUBLICATIONS AND WORKING PAPERS

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- Bostrom, R.P., Clawson, V.K., and R. Anson (1991). Training People to Facilitate Electronic Environments," working paper, Department of Management, University of Georgia, Athens, Georgia 30602.

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- Clawson, V.K. (1991). "Understanding and Managing Modern Organizations - KAM VI," working paper, Walden University.

- Clawson, V.K. (1991). "Group Facilitation and Leadership Research Issues and Possibilities," KAM V, working paper, Walden University.

- Clawson, V.K. (1992). "The Development of a Facilitator Training Program: A Chronological Review," KAM VII, working paper, Walden University.

- Clawson, V.K. and Bostrom, R.P. (1991). "Outcome frame working paper inclusion in training manual, Designing and Facilitating Traditional and Electronic Meetings.

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- Bostrom, R.P. and Clawson V.K. (1990). Dialoguing: Designing and Facilitating Traditional and Electronic Meetings: A Resource Guide. Training manual for facilitation training.

PROFESSIONAL ORGANIZATIONS

- ASTD - American Society for Training and Development
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