**A GROUNDED THEORY OF
VIRTUAL FACILITATION:**

Building Relationships with Virtual Team Members

by

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Abstract

The purpose of this study was to develop a deeper understanding of the issues facing virtual team facilitators as they implement and facilitate virtual teams. The study asked the following research question:

How do facilitators of virtual teams build relationships with their virtual team members?

Because virtual teams are a new form of highly dynamic and ambiguous collaborative interaction, a major challenge of this study was the need to generate relevant data and analyze it in an appropriate manner. To achieve this, a research framework involving a training program format was instituted based on methods developed in Action Learning (AL), with data collection and analysis based on grounded theory approaches (Glaser and Strauss, 1967).

The AL-based ‘virtual team facilitation’ training program used in this study was designed to achieve the following three goals: to generate interest and incentive for would-be participants, to give participants information and skills to initiate and facilitate their own virtual teams, and to generate data for analysis. After being recruited, participants were broadly interviewed to determine their prior experience with virtual teams and their perceived needs and concerns in implementing and facilitating their own virtual team. The researcher then developed a ten-week training program to meet these needs. A pilot program and two subsequent training programs were held. During the training programs, each participant planned for, or actually initiated and facilitated a virtual team within their own organizational context. Every two weeks the participants met with the researcher to investigate issues related to initiating and facilitating virtual teams and to discuss issues that were arising in their own virtual teams.

In all seven participants from a variety of New Zealand organizations took part in the study. The seven participants formed a diverse group, from the managing director of a one-man, global virtual organization who worked exclusively in global virtual team settings to a self-employed consultant

managing a local virtual work team. The participants were in various stages of their virtual team lifecycle, from planning through initiation to full-scale facilitation and evaluation of a just-completed virtual team project. The participants' virtual team project tasks ranged from managing a political campaign on the other side of the world to developing and running a national web-based academic assessment center. A unique feature of this study is that it involves organizational professionals as opposed to students.

Data was collected from face-to-face and telephone interviews, group discussions and e-mail correspondences. Data collection extended to several months beyond the end of the training sessions. Using grounded theory techniques, the data was analyzed using "a general method of (constant) comparative analysis". Data was collected and coded simultaneously over the course of the training sessions, with subsequent coding confirming, refining, extending and modify the data.

The data showed very clearly that the facilitators considered it essential to build some level of personal relationship with their virtual team members before commencing a virtual working relationship. Further, a unifying framework of three inter-related theoretical steps in the overall process a virtual facilitator goes through when building relationships with virtual team members was inductively derived from this study. These three steps are Assessing Conditions, Choosing Level of Relationship, and Creating Strategies.

This study is the first to identify the steps a virtual team facilitator undertakes when building relationships with virtual team members. It has implications for virtual team practice, research and training.

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First and foremost I would like to thank my wife, Beatrix, for her patience and support over the last three years as I left fulltime employment to become a fulltime student. We lived on a student allowance and the bounty of our 'vege' garden and the nearby fields and forests.

Special thanks to Dr. Pak Yoong, who proved a superb supervisor. Professing his utmost faith in me, he kept a deft touch on the tiller while keeping my sails full with words of encouragement. My special thanks also go to Prof. Brian Corbitt, who although he came on board late, was a concerned and helpful ally. My special regards to Dr. Lalita Rajasingham and Prof. John Tiffin who helped get me started.

Finally, I would like to express my gratitude to the facilitators who took part in this study. Without them, this would not have been possible.

What a long strange trip it's been...

(J.G. & Team, Virtual)

David J. Pauleen
Wellington, New Zealand

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Part 1

The Nature of the Research Problem

There are three parts in this report. Part 1 gives an introduction to the nature of the research problem and a review of relevant prior literature. Part 2 describes the research methodology and procedures, and Part 3 presents the research findings, implications, conclusions, and limitations of this study.

Part 1

The Nature of the Research Problem

Chapter 1 - Introduction

Chapter 2 - Review of Prior Relevant Literature

Part 2

The Research Act

Chapter 3 - Research Methodology

Chapter 4 - Specific Research Procedures

Part 3

The Research Findings and Conclusions

Chapter 5 - A Grounded Theory of Virtual Facilitation

Chapter 6 - Assessing Conditions

Chapter 7 - Choosing Levels of Relationship

Chapter 8 - Creating Strategies

Chapter 9 - Implications, Conclusions, and Limitations

Chapter 1

Introduction

1.1 The nature of the Research Problem

This dissertation is a report of a study on the issues facing facilitators¹ of virtual teams. More specifically, this study examines how virtual team facilitators build relationships with their virtual team members. The report develops a model, which represents the process that facilitators undertake when building virtual relationships.

Virtual teams are a relatively new phenomenon and Townsend et al. (1998:18) define them as "groups of geographically and organizationally dispersed coworkers that are assembled using a combination of telecommunications and information technologies to accomplish an organizational task". Implicit in this definition is that 'dispersed' often means teams that span cultures and organizations, as well as distance.

Virtual teams may communicate and work synchronously or asynchronously through such technologies as telephones, electronic mail, bulletin boards, audio/video/data conferencing, automated workflow, electronic voting and collaborative writing (Coleman, 1997). Face-to-face communication may also be a factor in virtual teams. Virtual teams are playing an increasingly important role in organizational life and offer organizations the flexibility to remain competitive (Mowshowitz, 1997).

Maznevski & Chudoba, (2000) point out that global virtual teams are often assigned the most important tasks in an organization, such as multi-national product launches, negotiating mergers and acquisitions, and managing strategic alliances. According to Grenier & Metes (1995), virtual teams will form the nuclei of 21st century organizations. But the use of virtual teams has outpaced our understanding of their dynamics and unique characteristics (Cramton, 2000; Oakley, 1998)

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¹ The term facilitator is used throughout this report and is more fully defined below. In this study it refers to the person who is primarily responsible for the team meeting its objectives.

One of these little understood factors in the success of virtual teams within organizations involves those who implement and facilitate the running of virtual teams. Davenport & Pearlson (1998) point out how one large organization uses “coaches” to facilitate virtual teams to address team cohesion issues through non-technical means. Therefore, one of the keys for the successful use of virtual teams is to encourage and train coaches.

Successful virtual team facilitators must be able to manage the whole spectrum of communication strategies via new technologies, as well as human and social processes, and often do it across cultures. O’Hara-Devereaux & Johansen (1994) place process facilitation skills as some of the most crucial for managing and leading global teams. Facilitation aims at clarifying all aspects of communication including the unspoken interpersonal issues. O’Hara-Devereaux & Johansen (1994:121) define facilitation as...

... the art of helping people navigate the processes that lead to agreed-upon objectives in a way that encourages universal participation and productivity.

Most of the extant research on virtual teams has been anecdotal and descriptive with little in the way of systematic, empirical research (Furst et al., 1999). This is particularly true when virtual team facilitators are the main focus of study. Although the importance of facilitators in virtual teams is noted in the literature (Davenport & Pearlson 1998; Kimball, 1997; O’Hara-Devereaux & Johansen, 1994), and suggestions for facilitating virtual teams are enumerated, no systematic research where the facilitator of virtual teams is the primary focus of study has been located. Nunamaker, Briggs, Mittleman, & Vogel (1996/97) stated that little research has yet been undertaken to understand and improve the process of distributed facilitation. Warkentin & Beranek (1999) in the conclusion to their study on virtual team communication call for a further evaluation of the role of leadership in effective virtual teams. This study seeks to address some of these gaps.

1.2 The Research Question

How do facilitators of virtual teams build relationships with their virtual team members?

This study aims to build a model representing the processes that a virtual team facilitator goes through when building relationships with virtual team members. In particular, the study focuses on the experiences and perceptions of the seven participants, who facilitated virtual teams as part of this study.

The study will also examine in some detail the factors affecting facilitator-team member relationship building particularly at the start up of a virtual team; the possible effects of communication and relationship building between facilitators and team members on accomplishing team tasks; and the selection and use of appropriate communication channels to facilitate relationship building.

This study proposes to use grounded action learning, an integration of grounded theory and action learning, a variant of action research, to both guide the design of the virtual team training programs and the collection and analysis of the research data. The description of and the rationale for the use of this methodology are given in Part 2.

1.3 Significance of Study

Organizational structure is changing to meet the demands of the fast-paced, dynamic global economy (Limerick & Cunnington, 1993). Many organizations are moving from a systems-based organizational model to a collaborative, networked organizational model. One of the driving forces in this change is the introduction of technology, and particularly the introduction of information and communication technology (ICT).

ICT have the potential to alter organizational structure in profound ways by acting as the glue that creates and cements relationships across functions, divisions, and organizations, as well as distance, time and culture. ICT also support the use of virtual teams in organizations by providing the links and information needed for distributed individuals to work together (Lipnack & Stamps, 1997).

While the global, organizational and technological pieces are in place for a revolutionary change in the way people work together, it is imperative that virtual team members and facilitators have the cognitive models they need to operate effectively in this new environment. The importance of relationship

building in a virtual environment and methods to build relationships are significant factors when practitioners engage in virtual work.

1.4 Personal and Professional Perspectives

In the last four years I have become increasingly interested in computer-mediated communications. In 1997 I conducted a survey on the use of virtual teams in New Zealand (Pauleen, 1998) in cooperation with TUANZ (Telecommunications Users Association of New Zealand) and found 64% of responding organizations using virtual teams. Twenty-nine percent responded that a lack of team leaders was hindering the implementation and use of virtual teams within their organizations (See Appendix 1 for further results).

This spurred my interest in virtual teams and in 1997 while employed as a lecturer at Wellington Polytechnic, I developed an Internet-based online course, *Virtual Teams: Managing the On-line Meeting (VTMOM)*, of which an important learning outcome was an understanding of leadership in virtual team interaction. I implemented and facilitated a global pilot of VTMOM in late 1997 and ran into a number of challenges in initiating and maintaining participant interest. Another attempt at running VTMOM in the beginning of 1998 as an academic training program ran into similar difficulties (see Appendix 2 for a full discussion of VTMOM).

These experiences have led to my interest to engage in the systematic study of virtual team facilitation. I hope to use the results of this study to further my work in education and organizational training.

1.5 Structure of the Dissertation

The account of this study and its theoretical findings is presented in three parts containing nine chapters. Part 1 introduces the nature of the research problem and research question, including the researcher's personal and professional reasons for conducting the study (Chapter 1) and summarizes the research literature pertaining to virtual teams, including facilitation, team membership, relationship building, groupware and electronic communication channels, and organizational issues (Chapter 2). The purpose of this literature review is to confirm that very little research has been conducted on virtual teams and facilitation, particularly with professionals in organizational contexts.

Part 2 discusses in detail the nature of and the rationale for selecting a qualitative research methodology, and in particular the grounded action learning approach for this study. Special attention is paid to the criteria for assessing the validity, credibility and plausibility of qualitative research findings (Chapter 3). Chapter 4 introduces the research participants, presents a framework for a virtual team action training program as well as a detailed description of the research procedures taken during the study.

Finally, Part 3 presents the research findings and conclusions of this study, comparing and contrasting them with the literature. Chapter 5 gives an overview of a grounded action research theory of facilitating virtual relationships. The three-step facilitator-led process for building virtual relationships with team members is described in Chapters 6, 7, and 8. Chapter 9 contains the implications, conclusions, and limitations of the study. In the Appendices are case studies summarizing much of the data collected on each of the research participants.

1.6 Definition of Terms

For the sake of clarity and consistency definitions and descriptions are given for key terms used in this study, virtual teams, virtual team facilitators, and personal and working relationships.

Virtual team - a given number of people at distributed locations communicating and working to some degree via information and communication technologies on a set project or task, which may be of a limited or unlimited duration. Face-to-face meetings at the start up of the team or at regular intervals are possible in a virtual team. Virtual teams are often characterized by their boundary spanning attributes; that is, they usually cross time and distance, and often include different national (ethnic), organizational and functional cultures.

Virtual team facilitator - this is the person who functions as the hub of the team, holding it together. In the literature, this person may be termed a team leader, (virtual) project manager, coordinator or coach depending on the nuances of the role, the perspective of the researcher and

organizational terminology. The term facilitator is used in this study to emphasize the role's responsibility in establishing communication and team protocols, facilitating interpersonal and team communication, handling conflict, and managing technology and in general ensuring effective participation of all the team members. The facilitator's responsibilities may also include all or some of the usual team leader's or project manager's responsibilities such as selecting team members, setting team tasks and team member roles, ensuring project or task completion and liaising with stakeholders and clients.

Personal Relationships - the kind of relationship between people exemplified by shared understanding, mutual trust and social bonding (Lau et al., 2000). Communication in personal relationships is initially directed toward the exchange of personal information and later toward the sharing of mutual experiences.

Working Relationships - the kind of relationship exemplified by people who work together toward the completion of work-based tasks. It involves communication related to sharing information, coordinating tasks, meeting timelines, etc. (Lau et al., 2000).

Part 1 The Nature of the Research Problem	Chapter 1 - Introduction
	Chapter 2 - Review of Prior Relevant Literature
Part 2 The Research Act	Chapter 3 - Research Methodology
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Part 3 The Research Findings and Conclusions	Chapter 5 - A Grounded Theory of Virtual Facilitation
	Chapter 6 - Assessing Conditions
	Chapter 7 - Choosing Levels of Relationship
	Chapter 8 - Creating Strategies
	Chapter 9 - Implications, Conclusions, and Limitations

Chapter 2

Review of Prior Relevant Literature

2.0 Chapter Overview

The purpose of the review will change over the course of the study. Initially, the literature is reviewed to identify the scope, range, intent, and type of research that has been done. Other writings, such as case reports, are examined for the extent of what is known on the subject and the concerns of clinicians and others. Finally the literature is used to establish the study's purpose, background, and significance. (Chenitz, 1986; p. 44)

This chapter reviews relevant prior literature to support a discussion of areas relevant to virtual team facilitation. Most of the literature in this section was reviewed prior to data collection in September 1998. Additional relevant background literature from September 1998 - February 2001 is also included here. However, it should be noted that literature (particularly from 1999-2001) highly relevant to the findings in this study is included, when appropriate, in the Summary and Discussion sections of Chapters 6, 7, 8, and in Chapter 9.

2.1 The Literature

The information systems area is characterized by constant technological change and innovation. IS researchers, therefore, often find themselves trailing behind practitioners ... (Benbasat, Goldstein, & Mead, 1987:370).

As Benbasat et al. (1987) alluded; published academic journal research specifically on virtual teams and the facilitation of virtual teams was nearly non-existent when I first began this investigation. It was primarily for this reason that a grounded research method was chosen for this study. Most of the literature on facilitation of virtual teams and virtual teams that was available was written by practitioners and was primarily anecdotal and descriptive, with little in the way of systematic, empirical research, an observation later confirmed by Furst, Blackburn, & Rosen (1999).

Available Literature on Virtual Teams and Virtual Team Facilitation

Books on virtual teams by O'Hara-Devereaux & Johansen (1994), Grenier & Metes (1995), Lipnack & Stamps (1997) were the first books to be published on virtual teams and were often cited in subsequent research literature (Jarvenpaa & Leidner, 1999; Nandhakumar, 1999; Pare & Dube, 1999; Cramton, 2000). These books highlighted the benefits of using virtual teams, which include the effective use of human expertise, cost reductions, project cycle-time reductions, and integration of distant team members. These books gave practical advice on a wide area of topics related to virtual teams, from technology implementation and use to team make-up and leadership to organizational issues such as planning, training and change management. These were the books that generated my interest in virtual teams and gave me ideas as to the direction of my research. Articles were also appearing in practitioner and popular magazines, as well as on the Internet (Townsend, DeMarie, & Hendrickson, 1996; Kimball, 1997). In all cases these articles appeared to be primarily anecdotal, based on the authors' experiences working with organizations. None of these articles made mention of research-based findings.

If the literature on virtual teams before 1998 was scarce, then that on virtual team facilitation was even more so. Although the importance of facilitators in virtual teams is noted in the literature (Davenport & Pearlson 1998; Kimball, 1997; Kostner, 1996; O'Hara-Devereaux & Johansen, 1994), and suggestions for facilitating virtual teams are enumerated, no systematic research where the facilitator of virtual teams is the primary focus of study has been located. This conclusion was confirmed by Nunamaker Briggs, Mittleman, & Vogel (1996/97), who suggested that little research had yet been undertaken to understand and improve the process of distributed facilitation.

It was primarily the practitioner-oriented literature that was presenting discussions on virtual team facilitation. Simons (1998) of Ventana Corporation - the founders of GroupSystems and producers of monographs, newsletter and conference proceedings for its worldwide network of users and facilitators - stated that the facilitator, who manages the group dynamics and group process issues, was the key to a successfully distributed meeting or project. Davenport & Pearlson (1998) point out how one large organization uses "coaches" to facilitate virtual teams to address team cohesion issues through non-technical means. A

key lesson for the successful use of virtual teams, according to Davenport and Pearlson, is to encourage and train coaches.

O'Hara-Devereaux & Johansen (1994) placed process facilitation skills as some of the most crucial for managing and leading global teams. They define facilitation as "the art of helping people navigate the processes that lead to agreed-upon objectives in a way that encourages universal participation and productivity (p. 121). This definition mirrors descriptions of traditional team facilitation (Keltner, 1989; Friedman, 1989). Hirokawa & Gouran, (1989) describe traditional strategic facilitation as having three parts: substantive, procedural and relational, with substantive concerning the provision and use of information; procedural, the process of maintaining task focus; and relational, the management of interpersonal interactions. According to Niederman, Beise, & Beranek (1996:179), with the introduction of technology into meetings, ie. Group Support Systems environments, the complexity of the facilitation task increased, "requiring the facilitator to determine how and when to employ technology in addition to performing traditional facilitation tasks". With virtual teams, technology becomes the crucial and ever present link between team members (Lipnack & Stamps, 1997), one that facilitators must manage skillfully.

However, while it is important in virtual teams for a leader to understand and appropriately manage the technology, it is critical to keep in mind the relationship between people and technology. Kimball (1997:13) makes this point:

When a face-to -face meeting does not "work", we tend to look at our meeting design and our role as facilitator for insights about why things didn't go the way we had hoped. When using groupware and other technologies, we tend to blame the technology. Instead we need to extend our level of consciousness about group dynamics to include understanding of what happens when people interact using new media.

This understanding may need to be extended in broader ways. Technology creates discontinuity (Limerick & Cunningham, 1993) as it allows loose structural couplings outside of time and place and changes social power arrangements through access to information. Facilitators of virtual teams will need to be aware of these factors, perhaps even more so when dealing with people across cultures.

O'Hara-Devereaux & Johansen (1994) use the term "process facilitator" to describe a virtual team leader because the facilitator is an active participant in

the same processes through which he or she is guiding the team. They describe process facilitation skills as:

... the capacity to coordinate and collaborate across time, distance and culture with a minimum of formality and centralization. With the help of technology - and the skills to facilitate its use - they must manage teams whose members speak different languages, have different beliefs about authority, time and decision making, have access to different technological capabilities and supports and bear a variety of direct and indirect relationships to the company and the mission. (p. 104)

Kimball has published an extensive array of materials on the web dealing with the facilitation, leadership and management of virtual teams. Again, most of the work is based on her experiences as a consultant. Nevertheless, her work points to many areas that would likely be critical in successful virtual teams. For example, she elaborates on the factors team leaders must focus on to create successful virtual team:

1. Create Purpose - most critical factor in determining the success of a virtual team, must develop a shared understanding and commitment to the team's purpose. Maintain purpose over time and distance (lack of f2f). Virtual teams need more frequent and explicit check-ins about their purpose
2. Roles - need to moderate the expectations of members as patterns of virtual behavior and dynamics of interaction are unfamiliar: it's easy to fall into misunderstandings and become frustrated with each other
3. Culture -creating culturally appropriate metaphors and cognitive maps to context team behavior, support relationships and complete tasks, determine what norms, styles and behaviors help or hinder. How does media affect the culture of the team's environment. Choosing appropriate media and managing it
4. Conversation - supporting conversation, modelling ways of using different media effectively. Assessing team interaction and keeping it interesting, supportive and productive
5. Feedback - developing norms for giving and receiving feedback
6. Pace - facilitating pace in asynchronous environments - the "rolling present"
7. Facilitating entry and re-entry of team members - getting new members up to speed, making information available

8. Participation - be able convey and understand information that indicates what's going on - to be able to "sense what's happening based on data , not the nonverbal cues available in f2f (face-to-face)
9. Flow - paying attention to what is actually happening, need to detect where members are now and work with that energy to move in the direction needed. Energy dynamics are greatly influenced by the nature of the media - need to pay attention to how interaction feels in different media. (Kimball, 1997:4-5).

Since 1998-99, several empirical studies on virtual teams, many of them using students as research participants, have been published indicating increased interest in this area. A sample of these student-based studies include: issues of knowledge transfer (Cramton, in press), attribution (Cramton, 2001), development of trust (Jarvenpaa, Knoll & Leidner, 1998), virtual team management issues (Kayworth & Leidner, 2000; Lau Sarker & Sahay, 2000), the effects of geographic dispersion on collaboration and collaborative processes in virtual teams (Cramton & Webber, 2000; Sahay, Sarker & Lau., 1999), and ways of improving virtual team communication (Tan, Wei, Huang & Ng, 2000; Warkenten & Beranek, 1999).

A few studies set in organizational contexts have also been published recently. These include studies on organizational aspects of virtual teams (Jackson, 1999; Vickery, Clark, & Carlson, 1999), trust issues (Nandhakumar, 1999), virtual team dynamics and effectiveness (Maznevski & Chudoba, 2000), situated learning in virtual teams (Robey, Khoo & Poers, 2000), and use of communication channels in building virtual relationships (Pauleen & Yoong, 2001).

The findings of these studies are discussed below and in Chapters 5-9.

Collaborative Technologies and Other Antecedents of Virtual Teams

Virtual teams may communicate and work synchronously or asynchronously through such technologies as telephone, electronic mail, bulletin boards, audio/video/data conferencing, automated workflow, electronic voting and collaborative writing (Coleman, 1997). Collaborative technology can be seen

to encompass several areas including human interaction as well as software, hardware and network technology. CSCW (Computer Supported Collaborative Work) is the term often used to describe many of the facets of collaborative technology and is a central element of virtual teams.

Groupware, another commonly used term, are the technologies providing "electronic networks that support communication, coordination and collaboration through facilities such as information exchange, shared repositories, discussion forums, and messaging" (Orlikowski & Hofman, 1997:12). Groupware is a way for companies to cope in the current dynamic environment of diverse pressures and changing technologies including the globalization of business. Many organizations have attempted to meet the challenges of distributed offices using groupware tools (Davenport & Pearlson, 1998). Groupware makes it possible to meet across geographic and cultural boundaries both synchronously and asynchronously without the massive stress and cost of travel.

The roots of CSCW (Computer Supported Collaborative Work) begin with the work of Douglas C. Englebart in the 1960's at the Stanford Research Institute, now SRI International. Englebart developed the notion of "augmentation" of the human intellect and the enhancement of the productivity of individuals working in teams, a central theme in current groupware development. The research effort at Stanford attempted to develop an interactive computing environment that would allow individuals and groups to adequately conceptualize and organise materials. Englebart's work is widely acknowledged as developing many of the seminal concepts for today's efforts to enhance group work activity (Oravec, 1996). One of these concepts was the notion of the "knowledge workshop", where knowledge workers could do their knowledge work.

Other early efforts that inform current work in CSCW include the computerization of Delphi group conference techniques, nominal group techniques and brainstorming activity (Oravec, 1996). In the 1970's the Institute for the Future conducted groundbreaking explorations of group communications through computers, emphasizing collaborative efforts in a scientific community (Johansen, 1988). Because coordination and collaboration using electronic networks may be more fragile than that based on personal contacts, it may require interpersonal backup to work successfully (Suchman & Wynn, 1984).

Kling & Scacchi's (1982) description of a social web of computing was an early recognition of the importance of social relationships in supporting successful computer use.

In more recent times, Fulk & DeSanctis (1995) discuss five key developments that have led to the possibilities of richer, more complex communication in organizations.

1. Increased speed of communication
2. Dramatic reduction in communication costs
3. Increased communication bandwidth
4. Vastly expanded connectivity
5. Integration of communication with computing technologies

The emergence of these new communication channels has prompted much research in a number of areas. One area relevant to this study are media choice theories which explain why individuals use certain channels in certain situations and what the outcomes are of such use (Ngwenyama & Lee, 1997; Karahuna, 1995). Some researchers have concluded that appropriate media choice is more a function of preference, convenience and cost than of task media fit (Johansen, Vallee & Spangler, 1979). Information richness theory (Daft & Lengel, 1986) states that different communication channels vary in their capacity to transmit rich information. "Rich" channels, such as face-to-face and video conferencing, enable rapid feedback, the use of varied social cues and personalisation of use helping to resolve equivocality (Ngwenyama & Lee, 1997), while 'lean' channels, such as e-mail are more useful for reducing uncertainty (Daft & Lengel, 1986). Social presence theory refers to the ability of a medium to allow receivers to feel the actual presence of the communicator (Short & Christie, 1976) through the transmission of verbal, nonverbal and other visual cues. As with information richness, media differ widely in their abilities to convey social presence, with, for example, video conferencing conveying more social presence than e-mail. Other relevant media choice theories include social information processing theory (Fulk, Steinfield, & Power, 1987), symbolic interactionism theory (Trevino, Lengel & Daft, 1987), and critical mass theory (Markus, 1987).

Most of the communication channels available to virtual teams (videoconferencing, desktop videoconferencing, audioconferencing, computer conferencing, as well as telephone and face-to-face communication) have been researched, although not always in the context of virtual teams. One relevant study has found that virtual team facilitators make strategic use of communication channels to build relationships with team members (Pauleen & Yoong, 2001). Table 1 summarizes the most commonly used communication channels and their relevance to virtual team communicative interactions based on media choice theories.

Communication Channel	Types of Tasks			
	Generate ideas collect data	Routine problems	Complex problems	Negotiating complex situations
Audio	Marginal fit	Good fit	Good fit	Poor fit
Video	Poor fit	Marginal fit	Good fit	Marginal fit
Data only	Good fit	Marginal fit	Poor fit	Poor fit
Face-to-Face	Marginal fit	Marginal fit	Good fit	Goof fit

Table 1: Task/Communication-Mode Matrix (from McGrath & Hollingshead as cited in Duarte & Tennant-Snyder, 1999)

E-mail is one of the most widely used channels in virtual teams. It can support groups distributed by time and place (Kettinger & Grover, 1997). Its use enables a team to create and sustain its identity without a shared physical setting (Finholt & Sproull, 1990). Kettinger & Grover (1997) looking at the use of e-mail in inter-organizational communication found it is used for broadcasting, task and social communication with task use dedicated to accomplishing group work such as information dissemination and project coordination. However, researchers have theorised that e-mail is less likely to be effective in communication tasks that require greater social interaction or social presence, such as getting to know someone (Kettinger & Grover, 1997).

Virtual Teams and Relationship Building

In a study conducted by Nandhakumar (1999), it was found that in the absence of collocation, trust relationships for temporary virtual teams were based on the abstract structures of the organization. However, for continuous virtual

team working the study found trust relationships were essential and that team members actively sought to personalize relationships through face-to-face contact. The study concluded that information and communication technologies were inadequate for establishing and maintaining adequate levels of trust relationships.

However, van der Smagt (2000:154) in a recent paper posited a new view of virtual team relationship building that might be possible in a post bureaucratic environment:

...where the relation between parties is organized (in terms of structure and culture) in such a way that feeling responsible for the overall result really pays off (in terms of status, recognition, career opportunities or payment).

He went on to argue that in such an environment where 'trustability' is high, dialogue between team members, rather than a two-way monologue, became institutionalized. This institutionalization of dialogue opens the way to less demanding forms of communication and easier implementation of virtual teams, dropping the need for face-face communication that he feels is threatening the success of virtual teams.

Communication is an essential element in virtual teams. Empirical studies support the important role communication plays in virtual teams (Robey et al., 2000). Many studies have emphasized the importance of communication in accomplishing team requirements for coordination and efficient task execution (DeSanctis & Poole, 1997). Another study showed the impact of formal and informal communication on organizational commitment was greater for virtual employees than those in traditional offices (Whiting & Reardon, 1998 as cited in Robey et al., 2000). Jarvenpaa & Leidner (1999) found that communication was an important factor contributing to trust in global multicultural virtual teams.

Cramton (2001) and Cramton & Webber (2000) looking at the issues of attribution and knowledge sharing in virtual teams posited that increased team relationship building and social integration could reduce attribution bias and increase knowledge sharing among team members. They called for further investigation of potential moderators of relationships. In this context, facilitators could be considered 'relationship moderators'. They also suggested that team

leaders could model appropriate empathetic behavior during difficult team situations.

In a team performance model (Drexler, Sibbet & Forrester, 1988, adapted by Warkentin & Beranek, 1999), designed to be used from the moment a team forms, each stage provides an important step in the team building process. The second step in the model is *Trustbuilding* and it asks the question, 'Who are you?' This is essentially what a facilitator is asking and answering when building relationships with team members.

In his TIP theory (time, interaction, performance) McGrath (1991) suggests that the development of relational links in groups involves performing activities related to member support and group well-being functions. In this theory, groups make contributions at three different levels: (1) production function, (2) member-support function, and (3) group well-being function. Warkentin & Beranek (1999) comment that in a team with no past history, working on complex problems with much technological and environmental uncertainty, i.e. a virtual team, members will have to engage in all three functions to avoid negative effects on performance.

When working in virtual teams, Coleman (1997) warns that focusing only on technical issues can lead to expensive failures, while focusing on the people and organizational issues dramatically increases the probability of success. Organizational policies or the lack of them can impact the effectiveness of virtual teams. Many companies have no formal company or HR policies on virtual teams (Pauleen, 1998). Virtual project teams are often formed on an as-needed, ad-hoc basis (Ocker & Fjermestad, 2000). Another issue that can be a factor is team member competence in using various technologies (Kayworth & Leidner, 2000). This may be an organizational training issue, but in some cases it may be a member-selection issue (Jarvenpaa et al., 1998) as some people may have a psychological dislike for certain communication channels

The link between team effectiveness and team member relationships is an important area of study in virtual teams. Stronger relational links have been associated with higher task performance (Warkentin & Beranek, 1999) and the effectiveness of information exchange (Warkentin, Sayeed & Hightower, 1997). According to Lau et al. (2000), effective communication is the key to successful virtual teams, and one of the keys to effective communication is how well team

members are able to build and maintain their personal relationships. Kimball (2000:4) states, "the purpose of building and maintaining relationships in teams is to ensure that individuals develop at least enough harmony to be able to get their group work done". Building relationships with virtual team members is clearly of fundamental importance to a virtual team facilitator as people generally rely on personal relationships to resolve problems and deal with unusual situations (Krackhardt, 1992). Personal relationships also serve as a valuable governance mechanism. For example, personal relationships can lead to trust between parties involved in an economic exchange, which in turn reduces the likelihood of opportunistic behavior (Granovetter, 1985; Uzzi, 1997).

According to Walther & Burgoon (1992), strong relational links are associated with enhanced creativity, and motivation, increased morale, better decisions and fewer process losses. Research shows it is easier to complete relationship-building activities in a face-to-face context than in a strictly virtual one (Warkentin et al., 1997). This may in part be explained by media richness theory, which explains that the lack of contextual cues and timeliness of feedback inherent in computer-mediated communication can negatively affect the building of relationship links (Daft, Lengel & Trevino, 1987).

While face-to-face meetings are the preferred way to build relationships and in general deal with sensitive and complex situations, it is possible with the skillful and thoughtful application of virtual communication channels to facilitate a completely virtual team. Research has found that computer-mediated teams do share relational information and are likely to develop relational links over time (Walther, 1997; Chidambaram, 1966; Warkentin et al., 1997). However, since many virtual teams are project or deadline driven, there may not be the opportunity to allow relationships to develop over time. The idea of "swift trust" was put forth by Jarvenpaa et al. (1998) to describe how virtual team members may be able to accomplish tasks without first having developed relationships. This rational perspective centers on the view of "calculus of self interest", which weigh the cost and benefits of certain courses of action between team members. If a team member feels confident there will be a "payoff" for co-operating with and trusting virtual team member than they will do so. However, such trust appears to be very fragile and temporary.

The role of the any team facilitator is to move the team towards its objectives by encouraging collaboration. This is done through a sustained process of relationship building, idea generation, prioritisation and selection. The particular challenge to virtual team facilitators is to manage this process through electronically-mediated interactions (Kimball, 2000).

Virtual Teams and Organizational Issues

Organizational structure is changing to meet the demands of the fast-paced, dynamic global economy (Limerick & Cunnington, 1993). Many organizations are moving from a systems-based organizational model to a collaborative, networked organizational model. The collaborative organization is based on loosely coupled networks and alliances, managed by principles of empowerment, collaboration and individualism. The glue that will hold these individuals and networks together is relationships. Schrage (1995:148-9) explains:

The real basic structure of the workplace is the relationship. Each relationship is itself part of a larger network of relationships. These relationships can be measured along all kinds of dimensions - from political to professional expertise. The fact is that work gets done through these relationships.

The collaborative organization recognises and values relationships. This has always been true in high context relationship-oriented cultures such as Japan (Hall, 1976), and is now becoming more common in low-context, task-oriented networked western organizations.

One challenge that virtual teams present to organizations concerns the retention and distribution of individual, team and organizational knowledge. Gundry & Metes (1996) state that organizations need to manage the experiences and knowledge of virtual teams, a sentiment echoed by Kimball (1997:1) who said, "organizations need to harvest the learning and experience of members of the organization so it's available to the whole organization". Further organizational support of virtual teams will entail the design of new management, measurement and control systems, including rewards based on team performance (Wilson, 1996).

Collaborative technologies that support virtual teams also support the concept of self-organising systems, a hallmark of the learning organization (Coleman, 1997). The learning organization, as exemplified by Peter Senge's book, *The Fifth Discipline* (1994), believes that in order to survive, organizations, just like the people that compose them, must continuously change or die. Flexibility is the earmark of the learning organization, as it is with virtual teams.

According to Jackson (1999), organizations need to understand what role virtual teams will play in achieving competitive success and how to introduce and support virtual teams as part of their business processes. He suggests that virtual teams may be part of a radical overhaul of business processes and structures. Jackson goes on to make the case that just as in non-virtual teams (Table 2), longevity, interchangeability of skills, and tasks and function range may vary between virtual teams, and that the internal dynamics - roles adopted, leaderships styles, needs for creativity, etc - will also be different. He rejects the notion that all virtual teams can be treated as more or less the same. For example, a virtual self-managing product or service team in a relatively permanent arrangement is in a good position to develop trusting relations and a strong sense of identity even exclusively through electronic communication channels. A key issue for the organization will be to ensure fairness and equity within team operations. On the other hand, according to Jackson, a product development team, comprised of diverse expertise holding tacit knowledge and working on knowledge creation may require shared action contexts requiring rich interaction (face-to-face communication) and high levels of developed trust. According to Jackson (1999:319), the challenge researchers face is as follows:

On the one hand, to create a body of research and practice across all types of virtual team, and, on the other hand, to identify important points of difference between varieties of teams.

	Time Span	Interchangeability of Skills	Tasks & Functional Range
Cross-functional management and product development teams	Exist for the duration of a given project	Low. Are likely to be experts from different functions and think of themselves as 'members' of those functions	High. The team should comprise the range of skills needed to complete the project
Top management & Strategy teams	Permanent	High. Are responsible for direction giving across functions. May also see themselves representing 'their function'	High. Have skills and responsible for direction giving and strategic planning across organizational areas
Problem solving teams	Short. Exist until problem is solved	Low. Likely to be composed of experts from different functions	Medium. Problems and skills will be narrowly focused. Team is likely to have only limited authority.
Departmental & functional teams	Permanent	Medium. The team is the focus for a service or activity, involving some overlap of tasks.	Medium to low. The tasks are confined to a particular department or function
Self-managing production and service teams	Permanent	High. All members are expected to acquire the skills developed in production and service processes	Medium to low. Activities are limited to a particular part of the production process

Table 2: Types of Teams (modified from Jackson, 1999: 318)

One model for characterizing virtual projects considers the degree to which virtual team members are geographically dispersed and the degree to which the organizational affiliation of team members is dispersed (Katzy, Evaristo & Zigurs, 2000). The first dimension is the familiar one of 'place'. The second describes the extent to which team members have the same or different affiliations to organizations, cultures or nations. The authors claim that examining a virtual team project through these dimensions provide interesting insights into differences of the effects of such factors such as organizational culture, communication patterns and skill sets, among others.

Team Member Selection

Another important organizational issue in virtual teams has to do with membership selection. As Limerick & Cunnington (1993) noted, teams of the previous organizational era sought to "homogenize" individuals, a process that goes against the grain in most individualistic cultures. In contrast, virtual teams

can be seen to be post teamwork (Limerick & Cunnington, 1993), being composed of mature, autonomous, proactive individuals who collaborate to achieve personal, team and organizational goals, and who through this collaboration create what we call the organization.

Limerick & Cunnington, (1993) call these post-teamwork virtual 'team members' collaborative individuals and argue that this is a concept held by a growing number of people in western society. Collaborative individualism stresses the need for individuals to work together with others toward a common vision and mission, but also stresses their emancipation, their freedom from groups, organizations and social institutions.

Kelly (1985) introduced the concept of the 'gold collar worker': workers, who are imaginative, engage in complex problem solving, and who can work well in an uncertain environment. Kelly adds that many gold collar workers don't know what they will do next, nor when or where. This ability to positively handle uncertainty may stand the gold collar worker in particularly good stead when it comes to working across boundaries. Kelly lists the following skills possessed by gold collar: autonomous, proactive, empathetic, intuitive and creative, transforming, politically skilled, networking, and mature. From a cultural perspective, many of these skills tend to found in less linear cultures and will be invaluable in intercultural situations as they will allow members to better deal with ambiguity, a key issue in intercultural situations.

Duarte & Tennant Snyder (1999:126) list the following key team member competencies, in addition to traditional team competencies, that ensure virtual team success:

1. Project Management
2. Networking
3. The use of technology
4. Self-management
5. Boundary management
6. Interpersonal awareness

Jacqyues (1995) sees the virtual worker as a proactive problem-solver, self-managing team player, abstract conceptualizer, and life-long learner. The virtual worker is process-oriented, can coordinate and synthesize work,

collaborate with team members from culturally diverse backgrounds and make collective decisions and negotiations based on mutual trust (Traummüller, 1995). O'Hara-Devereaux & Johansen (1994) commented that virtual team members needed to be capable of sharing, analyzing and utilizing information across vast distances and time zones.

Intercultural Considerations

These collaborative, 'gold collar' virtual workers may go hand in hand with the network and virtual organizations, which are becoming more prevalent in today's dynamic, global, business environment (Limerick & Cunningham, 1993). Most of the research done on these 'state of the art' workers is from a western perspective, particularly from individualistic cultures such as the USA and Australia.

However, Nonaka & Takeuchi (1995) describe a similar phenomenon in successful, knowledge creating Japanese companies. They have termed these workers, "autonomous individuals", and describe them as organizational members that companies allow to act as autonomously as circumstances permit, thus increasing the possibility of individuals motivating themselves to create new knowledge. Differing from Limerick's & Cunningham's (1993) description of collaborative individuals who through collaboration create the organization, Nonaka's & Takeuchi's autonomous individuals function as a part of the whole, in which individuals set their task boundaries by themselves in pursuit of higher organizational goals. Nonaka & Takeuchi go on to explain that a powerful tool for creating circumstances which allow individuals to act autonomously is provided by what they refer to as "self-organising teams". It is perhaps not surprising that the whole, ie: the organization still plays a primary role in the more collectivist Japanese culture.

That these qualities in virtual workers are important is not in doubt. Simons (1997) noted that people and process issues in virtual teams are often incompletely addressed, leading to sub-optimal or reduced use of virtual global teams. He goes on to make the point that virtual teams are not the answer to team-working problems - that in fact successful use of virtual global teams requires better team-working than ever.

O'Hara-Devereaux & Johansen (1994:35) summarize the importance of intercultural competency in business:

In the 1990's the art of managing cultural interfaces has become an everyday business challenge at every organizational level. In the twenty-first century, the ability to communicate and collaborate among racial, national, corporate, and functional "tribes" will provide an essential competitive edge.

However, the awareness of intercultural communication issues with regards to the start up and managing of virtual teams may not always be so clear. Those aware of the intercultural issues in face-to-face business situations will most likely also be cognizant that these issues will still exist, and be compounded, in virtual environments (Simons, 1997).

The problem is that communication technologies are making it ever more likely that people from diverse cultures will be interacting more often, without considering the differences they will be encountering. After all, they will be sitting in their own offices, surrounded by their own people and eating their own food. Even in face-to-face encounters, preceded by 15 hours of flight time, many business people remain oblivious to cultural differences even as they encounter culture-based difficulties. How much more so will it be to determine culture-based barriers in technology mediated interactions?

And yet the literature reveals statements that seem to indicate that merely using communications technology in virtual environments will in and of itself lead to cultural awareness on the part of its users.

Lipnack and Stamps (1997:47) posit:

When people know they are at a distance - culturally and linguistically as well as spatially - they are more conscious of the need to be explicit and intentional about communication.

And Ciborra (1996:98):

More generally, such systems (groupware) can break down the barriers between organizational units that departmentalization, geographically dispersed offices in different time zones and cultural and language diversity create within an enterprise.

No empirical evidence is offered to back up these statements. They appear, according to the authors, to be self-evident truths.

However, other researchers point out the need to be very explicit about the effects of culture on interpersonal interaction and business success. O'Hara-Devereaux & Johansen (1994:49) propose that when working in distributed and crosscultural business teams, we need to ask questions to develop firm cultural understanding. They posed two:

What are the cultural influences of this situation?

How can they be understood so that a good people-oriented environment is maintained and productivity is enhanced?

Varner (2001) makes the point that any theory or model of intercultural business communication must include business as an essential variable, not merely to illustrate a point about intercultural communication. She emphasizes it is the communication that occurs among individuals or groups from different cultures *in a business environment* that is particularly relevant when researching intercultural business communication. Varner (2001:43) argues that intercultural business communication is "more than the sum of its parts... and that the process results in a new synergy and presents a new construct." This is an idea that might resonate particularly strongly in a virtual team context, where the dynamics of the virtual team process as well as the business context could greatly affect intercultural communication.

One of the purposes of this research is to determine what intercultural issues are likely to unfold between facilitators and team members in multicultural virtual teams, how these issues manifest and how a facilitator can manage them.

Virtual Team Building and Socialization

A number of researchers have discussed protocols for structuring virtual teams and virtual team building, as well as developing suitable managerial and organizational climates for the implementation of virtual teams.

O'Hara-Devereaux, & Johansen (1994) discuss a team performance model (developed by Drexler et al., 1988) and consider the cultural issues involved in each step. The steps are as follows:

1. Orientation
2. Building trust
3. Goal/Role clarification

4. Commitment
5. Implementation
6. High Performance
7. Renewal

When structuring virtual teams Wilson (1996) places prime importance on creating instant team cohesiveness through visioning conferences, introductions, and team building. He emphasizes the need to create a connection between individual and team goals, to build a sense of responsibility to team and each other. He points out the importance of team members learning about diverse styles and decision making, with special attention on clarifying roles. He also points out the need for training in relevant communication technology, groupware and meeting protocols.

Kimball (1997) points out that teamwork is fundamentally social and that there is a need to create a way for team members to experience membership. She cautions that a failure to perform is often the result of exclusion from participation.

Knoll (1995) has run a series of on-line Masters level courses in which international, geographically distributed students formed virtual teams to complete assignments. Based on her experience running these courses she developed the following Code of Conduct, which she placed on a webpage called "Practical Advice for Global Virtual Teamwork". Her advice on virtual socialization skills include:

1. Begin communicating with teammates asap and keep communicating
2. Use group addressing mechanisms, assign specific channels for specific communications
3. Use team members' names in greetings
4. Introduce yourself, use vivid language, use a picture
5. Ask for feedback
6. Avoid risky humor
7. Express appreciation for ideas and finished tasks
8. Begin with positive comments, before suggesting ways to improve
9. Respond within one business day, at least acknowledge receipt of messages

10. Keep members abreast of your schedule change
11. Describe technical restraints
12. Minimize discussion of status differences
13. Ask permission before giving out members' e-mail addresses
14. Avoid references to private discussions that you have w/ individual team members
15. Effort can correspond to influence - do not suggest major changes to process or content if you are new to the team.

A key feature in virtual teams is shifting membership. Facilitating entry and re-entry is a key challenge. Townsend et al., (1996:126) state:

To realize the advantages of dynamic membership, companies must ensure that changes in team personnel occur with seamless continuity. If teams and potential members can be taught cultural values and social protocols for teams (my emphasis), new members will be able to avoid some of the problems associated with learning a particular team's idiosyncrasies.

Technology may be helpful in handling entry into a virtual team. Boaz and Allan, an international consulting firm, has set up an intranet, called Knowledge on Line (Cambell, 1998). One use of this system is to keep detailed CV's of personnel on-line. Before joining a team, a new member can learn about the other team members. Such systems can incorporate rich contextual media on team members such as video and audio. Other uses of technology include groupware, which can store electronic records of all asynchronous and synchronous communications between team members thus allowing a new team member access to a full record of what has gone before.

2.4 Chapter Summary

In this chapter, practitioner and research-based literature on virtual teams, virtual team facilitation and a number of areas related to virtual teams, including technology, organizational and team member issues have been reviewed. Several points have emerged.

First, it is clear that research on virtual teams is still in the very early stages. Most of the literature is practitioner-based, although in the last several years several empirical studies focusing exclusively on virtual teams have been

published. Most of these have been student-based studies, though in the last two years more studies on organizational-based virtual teams have been published.

Second, it is also clear that almost no research-based studies have been published focusing on the facilitators of virtual teams, although again there are several books and articles from practitioner-based perspectives on virtual team facilitation and leadership.

Third, much of the literature and research related to virtual teams has to do with information and communication technologies, particularly collaborative systems and electronic communication channels. In this area, a number of studies have been done on how people select and use these systems and with what result. Also, a significant amount of literature is available on organizational issues regarding the use of virtual teams.

From this review, it can be concluded that it is clear that virtual teams represent an important new form of organizational and global interaction. It can also be concluded that very little field research has been done on the interpersonal interactions at the team level particularly in organizational contexts, and particularly with concern to facilitators or team leaders. The reviewed literature also makes it clear that more research is needed precisely in the area of interpersonal interactions in virtual teams and how these interactions may be managed and facilitated. It is this area that this study intends to investigate.

Part 2

The Research Act

This part describes the nature of the research methodology (Chapter 3) and the specific research procedures (Chapter 4).

Part 1

The Nature of the Research Problem

Chapter 1 - Introduction

Chapter 2 - Review of Prior Relevant Literature

Part 2

The Research Act

Chapter 3 - Research Methodology

Chapter 4 - Specific Research Procedures

Part 3

The Research Findings and Conclusions

Chapter 5 - A Grounded Theory of Virtual Facilitation

Chapter 6 - Assessing Conditions

Chapter 7 - Choosing Levels of Relationship

Chapter 8 - Creating Strategies

Chapter 9 - Implications, Conclusions, and Limitations

Chapter 3

Research Methodology

Grounded theory approaches are becoming increasingly common in the IS research literature because the method is extremely useful in developing context-based, process-oriented descriptions and explanations of the phenomenon (under study) (Myers, 1998; p.4; <http://www.auckland.ac.nz/msis/isworld/>).

3.0 Chapter Overview

This chapter describes the research methodology used in the collection, analysis and interpretation of research data. The first section describes the rationale for using qualitative research and gives examples of recent qualitative studies in IS. The second section describes action research, with particular emphasis on action learning. The third section looks at the nature of grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1990), while the fourth section describes the grounded action research approach used in this study. The chapter ends with a discussion on the principles of research and the criteria for evaluating the credibility and validity of the findings of the study and the role of the researcher in this study.

3.1 The Choice of Qualitative Research Methodology

There are those who hold that experimental and survey research are the only 'valid' modes of scientific inquiry (Hirschheim, 1985), particularly when applied to information systems (IS). Orlikowski and Bouroudi (1991) point out the predominance of positivist research approaches in the IS field. Kock (1997) believes that the bias towards the use of experiments in some IS areas has led to difficulties in the replication of findings in organizational settings. As a result, perhaps, in recent years increasing attention has been paid to the promotion of qualitative methods in IS, which can allow for the capture of the complexity and richness of human endeavors in the use of information systems within the

organization and at home (Yoong 1998). It has only been very recently that there has been general agreement that qualitative approaches to information systems research are finally gaining acceptance (Avison, Lau, Myers & Nielsen, 1999)

The underlying epistemology of qualitative IS research can be either positivist, critical or interpretive (Myers, 1998) as shown in Figure 1. Positivists generally assume that reality is objectively given and can be described by measurable properties, which are independent of the observer (researcher) and his or her instruments. Positivist studies generally attempt to test theory in an attempt to increase the predictive understanding of phenomena. IS research is classified as positivist if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a

Figure 1 Underlying Philosophical Assumptions (from Myers, 1998:4; <http://www.auckland.ac.nz/msis/isworld,1998>)

Critical researchers assume that social reality is historically constituted and that it is produced and reproduced by people. People's ability to change their social and economic circumstances is constrained by various forms of social, cultural and political domination. The main task of critical research is seen as being one of social critique, whereby the restrictive and alienating conditions of the status quo are brought to light. Critical research focuses on the oppositions, conflicts and contradictions in contemporary society, and seeks to be emancipatory, i.e. it should help to eliminate the causes of alienation and domination (Hirschheim & Klein, 1994).

An interpretative view holds that access to reality is available only through social constructions such as language, consciousness and shared meanings. Interpretive studies generally attempt to understand phenomena through the meanings that people assign to them. Interpretive methods of research in IS are "aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context" (Walsham, 1993:4-5). Interpretive research does not predefine dependent and independent variables, but focuses on the full complexity of human sense making as the situation emerges (Kaplan and Maxwell, 1994).

A number of interpretative qualitative studies in IS have been conducted in the last several years using a variety of methodologies. As the three examples below illustrate, interpretative qualitative methods allow the researcher to engage in in-depth research that goes to the core of real and current situations in IS, resulting in highly relevant data:

- 1) Cramton (2000) in her study on dispersed collaboration used a multiple case study design that allowed her to make inferences about causal relations and construct theory while studying events in context and in a holistic way.
- 2) Nelson, Narayanan & Ghods (2000:447) in their study on software operations support expertise used revealed causal mapping, a qualitative methodology, to "gain a great deal of insight into a particular domain" based on interviews with expert respondents.
- 3) Thanasankit & Corbitt (2000) in their study on the way systems analysts in Thai software houses operate used a critical ethnographies approach, which they claim represents a research methodology where the nature and extent of what is important becomes apparent, inevitably enriching our understanding and providing a deeper understanding of the social forces that impact on information systems.

For the same reasons - to research an area in depth and to provide relevant data - a qualitative methodology with an interpretive perspective has been chosen for this study investigating how facilitators of virtual teams build relationships with team members. With virtual teams being a new form of highly

dynamic and ambiguous collaborative interaction, qualitative methodology is more likely to be effective in answering this question than quantitative methods. Failure to include human factors has been said to explain some of the dissatisfaction with conventional information systems development methodologies as they do not address real organizational issues (Avison et al., 1999). Qualitative methodology will allow this exploratory research to focus on the emerging issues and challenges inherent in virtual team settings (Kayworth & Leidner, 2000). An action research framework has been chosen because it "embodies a strategy for studying a complex, multivariate, real world phenomena that can not be reduced for study with more positive approaches" (Baskerville & Pries-Heje, 1999:2), while a mostly traditional grounded theory approach to data analysis and theory building has been chosen precisely because it will allow for the collection and analysis of data in such a dynamic and ambiguous area.

This study focuses on the experiences a group of professional business people found important as they each implemented and facilitated a virtual team within the larger context of their organizations and the rapidly evolving information and communications technology (ICT) environment. To ensure participants had experiences to talk about a specially designed action research-based virtual team training program was developed that would provide participants with the knowledge and skills to both implement and facilitate a virtual team as well as be able to talk about them. These training programs functioned as learning spaces for the participants and the researcher, allowing for structured, yet flexible training, semi-structured interviewing and free discussions.

No particular hypothesis was being tested in this research design, but the grounded theory approach was expected to produce a set of theoretical constructs and a description of their relationships relevant to the experiences of the participants. It was hoped that my close involvement with the participants would allow me to best capture their feelings and experiences Orlikowski & Baroudi (1991:5) discuss this issue:

Interpretive studies assume that people create and associate their own subjective and intersubjective meanings as they interact with the world around them. Interpretive researchers thus attempt to understand phenomena through accessing the meanings that participants assign to them. In direct contrast to the 'descriptive' studies above, interpretive

studies reject the possibility of an 'objective' or 'factual' account of events and situations, seeking instead a relativistic, albeit shared, understanding of phenomena.

In summary, qualitative research methodology based on an interpretive perspective, specifically a combination of action research and grounded theory, has been chosen because it allows the researcher to focus on human experiences and to get close to the participants' experiences as they happen over time. This is crucial as the participants will be undergoing new experiences and trying new strategies as they implement and facilitate their virtual teams. Benbasat, Goldstein & Mead (1987) suggest that qualitative research methods are suitable in IS research for the following three reasons. The researcher can: (a) study information systems in a natural setting, (b) examine the 'how' and 'why' questions, and (c) research in areas undergoing rapid changes and where few previous studies have been carried out, all conditions present in this study.

3.2 The Nature of Action Research

Action research produces highly relevant research results, because it is grounded in practical action, aimed at solving an immediate problem situation while carefully informing theory. (Baskerville, 1999a: 2-3)

Action research (AR) is a qualitative method used in IS research. AR combines theory and practice (as well as researchers and practitioners) through change and reflection in immediate problematic situations within a mutually ethical framework (Avison et al., 1999). According to Checkland (1991) the most unique aspect of AR is in its iterative process of problem diagnosis, action intervention and reflective learning by the researchers and practitioners acting together. Kock (1997a) points out that AR is being increasingly used in the IS field in recognition that a social system can be more deeply understood if the researcher is part of the sociotechnical system being studied. And by applying positive intervention on the system, cooperation between the participants and the researcher is fostered improving information exchange and research quality (Kock, 1997a). Lau (1999) mentions several variations of AR including participative action research (Whyte, 1991), action science (Argyris, Putnam & Smith, 1985) and action learning (Revans, 1982).

Following are three recent examples of AR methodology in IS research which illustrate its usefulness in working in an organizational context:

- 1) Kock (1997) used an action research approach in studying the effects of asynchronous groupware on business process improvement in part because it allowed the researcher to take into account the full richness of organizational interactions without exerting any artificial control on the environment being studied.
- 2) Gregor & Jones, (1999) used action research to study and assist a professional business organization become proficient users of electronic communication as a precursor to fuller engagement in electronic commerce. The study sought to add knowledge, apply knowledge, and become involved in the implementation of plans.
- 3) Davison (1998) used action research to study group support systems in a field study within an organization. One of the key contributions of this study was the recognition of action research as an important research methodology conducive to good practice and good research in an organizational setting.

Action Research Cycle

Originally seen as a two-stage process involving collaborative analysis of a social situation followed by a therapeutic stage involving collaborative change experiments (Blum, 1955 as cited in Baskerville & Wood-Harper, 1996), additional structure has usually been imposed to achieve scientific rigor. The most prevalent description is a five-phase approach proposed by Susman & Evered (1978). It is a series of stages (Figure 2) involving diagnosing, action planning, action taking, evaluating and specifying learning. However, in practice the applied method can vary depending on the application (Baskerville & Wood-Harper, 1996).

Figure 2: The Action Research Cycle (Susman, 1983)

Diagnosing corresponds to the identification of the primary problems that underlie the organization's desire for change. In AR, this diagnosis will develop certain theoretical assumptions (ie. a working hypothesis) about the nature of the organization and its problem domain. Action planning is a collaborative effort between the researchers and the practitioners to specify specific organizational actions, based on the theoretical framework, that should relieve or improve the primary problems. The action-taking phase then implements the planned action, usually causing a specific change in the organization. This change and the resultant outcomes are then critically evaluated in the next stage. If the change was unsuccessful, then another iteration of the cycle is undertaken along with a corresponding change in the hypothesis. Specifying learning is nominally the last step, but is usually an ongoing process through out the AR cycle.

In AR, the researcher may conduct a number of cycles determined by the need to design, and refine the research framework and evaluate and test the collected data. The cyclic nature of AR allows for the strengthening of research

findings by building on evidence gathered in previous iterations and increasing the level of internal consistency and validity (Kock, 1997).

According to Baskerville & Wood-Harper (1996:239), the ideal domain of the AR method is revealed in three distinctive characteristics of the method:

1. The researcher is actively involved, with expected benefit for both researcher and organization.
2. The knowledge obtained can be immediately applied. There is not the sense of the detached observer, but that of an active participant wishing to utilize any new knowledge based on an explicit, clear conceptual framework.
3. The research is a cyclical process linking theory and practice.

It is apparent that the distinctive characteristics of AR have a significant level of congruence with those of grounded theory (Section 3.3). This congruence will be further explored in Section 3.4, Grounded Action Learning.

The Nature of Action Learning

Action learning is closely linked to action research and is cited as one of the 'several streams' of action research (Lau, 1999). Zuber-Skerritt (1991:214) argues that action learning "... is a basic concept of action research". Action learning is described as the process by which groups of people work on real organizational issues and come up with practical solutions that may require changes to be made in the organization (Revans, 1982). Action learning is a practical group learning and problem-solving process where the emphasis is on self-development and learning by doing. The group, known as the action learning 'set', meets regularly and provides the supportive and challenging environment in which members are encouraged to learn from experience, sharing that experience with others, having other members criticize and advise, taking that advice and implementing it, and reviewing with those members the action taken and the lessons that are learned (Margerison, 1988)

Action learning, in association with action research, provides a useful approach for those who are in the process of unraveling the nature and complexity of the virtual workforce (Yoong, 1996b), including virtual team facilitation. Action learning focuses on tackling real and current organizational

issues. The use of virtual teams in organizations is certainly a real and current issue (Moshowitz, 1997; Grenier & Metes, 1995), and action learning provides an appropriate framework for studying virtual teams.

Figure 3: Action Research Spiral (Zuber-Skerrit, 1995:13)

Yoong (1996b) proposed a model of action learning using the action research spiral (Figure 3) of Zuber-Skerrit (1995) to guide actual workplace learning and research in virtual workspaces. Yoong's model provided the following guidelines for the planning, design, and implementation of action learning projects:

Participants are encouraged to work in groups and use the learning groups to:

- work and gather data on real life issues and problems associated with working in the virtual workplace,
- reflect and improve on their workplace practice by the appropriate incorporation of groupware tools,
- interlink their action and reflection, and
- discuss their action and reflection with others.

Participants are encouraged to learn and experience and to:

- use the experience as a foundation and stimulus for further learning,
- discuss their prior experience and to recognize the effects and influence of prior experience in their learning,

- use the knowledge, skills, and experiences of other group members as resources for their own learning,
- gain new experiences by testing techniques and actions, and
- invite group members to provide feedback, taking that feedback and implementing it, and reviewing with those members the action taken and the lessons learned. (Yoong, 1996b:5)

Action learning is suited to environments, which are experiencing conditions of uncertainty and unpredictability (Ramirez, 1993). Virtual teams take place in "virtual" environments that are, almost by definition, highly uncertain and unpredictable. The uncertainty often extends to the organizations within which the virtual teams operate, as many organizations appear to have no policies or ground rules regarding virtual teams (Pauleen, 1998). In these respects, action learning is appropriate for virtual team training as it encourages and promotes the practice of active and flexible team facilitation. The following two comments by this study's participants on why they wanted to participate in this study illustrate the relevance of the 'action learning' paradigm:

(AR) So I have significant interest/experience with virtual teams from different ethnic and cultural backgrounds - but I am no expert - there is still an awful lot for me to learn. Mostly my virtual team experiences have been great - but there have been one or two pitfalls along the way. I have done much of my work by "the seat of my pants". I would like some kind of structure in terms of learning to set up an organized system, the sorts of things that make a good virtual team, the sorts of things that make things work well, the things that can be done differently. I am particularly impressed with all the other bios I have read from the other participants. I look forward to both learning and contributing.

(BC) In terms of what I'm looking for in the training, it covers structural, procedural and technical issues and having a dialogue on intercultural issues and seeing what we come up with.

Finally, as the participant comments above indicate, action learning meets the requirement that this training program be tailored to a group of experienced organizational people who bring their own professional expertise and who, by researching their own practice, would be able to learn to improve their own facilitation skills in a virtual team environment. Action learning can assist a participant to seize ownership of what needs to be known and release a powerful

chain reaction of effort within the learner and the learning set independent of the trainer (Casey, 1983).

3.3 Traditional Grounded Theory and Grounded Theory Approaches

The notion of what is traditional grounded theory is somewhat problematic. Glaser & Strauss (1967) are credited with creating classic grounded theory. According to Annells (1996:391), classic grounded theory is “philosophically critical realist and modified objectivist in perspective, with a resultant slant toward theory generation that is postpositivist in inquiry paradigm”. Later Strauss & Corbin (1990) made significant changes to the methodology that also came to be widely accepted. Annells (1996) described the philosophical underpinnings of these changes as relativist in ontology, subjectivist in epistemology and dialectical in the relationship of researcher and researched, placing the Strauss & Corbin method in the social constructivist belief system. Annells stresses that it is vital to recognize that the grounded theory method is undergoing evolutionary change resulting in different modes and changing philosophical perspectives, paradigms of inquiry and research process, although as she points out key procedural elements may remain unchanged.

For the purposes of this study, the term 'traditional grounded theory' will refer to either the original incarnation of Glaser and Strauss or the later one promulgated by Strauss and Corbin when either is followed to the letter². Grounded theory approaches may include some of the elements of traditional grounded theory such as the constant comparative method, theoretical sensitivity and theoretical sampling, but often refer to techniques of grounded theory, such as open coding, used in conjunction with other research methodologies. The use of grounded theory approaches and techniques will be further explored in Grounded Theory Approaches and Techniques below.

Traditional Grounded Theory

The goal of grounded theory is to generate a theory that accounts for a pattern of behavior which is relevant and problematic for those involved.
(Glaser, 1978:93)

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² This research has closely followed Glaser's & Strauss's version as part of a grounded theory approach as will be demonstrated in Chapter 4.

Traditional grounded theory is a methodology for developing theory that is grounded in data systematically gathered and analyzed in which theory emerges during actual research, doing so through the continuous interplay between analysis and data collection (Strauss & Corbin, 1990). Central features of this analytic approach include the general method of (constant) comparative analysis, theoretical sampling, theoretical sensitivity and theoretical saturation (Glaser & Strauss, 1967). Strauss and Corbin later introduced a paradigmatic framework to assist in structuring data in meaningful ways (Strauss & Corbin, 1990).

In traditional grounded theory data are collected and coded simultaneously. Subsequent coding will confirm these categories or will refine, extend and modify them to fit the new data. New categories may emerge at this stage. 'Theoretical sampling' is the process that governs this data collection procedure, in which the coding and analysis done at the initial stages determines the subsequent data to be collected.

Theoretical sampling is the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges (Glaser and Strauss, 1967:45).

Unlike statistical sampling, theoretical sampling is the process of collecting data for comparative analysis and is especially useful to facilitate theory generation.

It is by theoretical sampling that representativeness and consistency are achieved. In grounded theory, representativeness of concepts, not of persons, is crucial. The aim is to build a theoretical explanation by specifying phenomenon in terms of the conditions that give rise to them, how they are expressed through action/interaction, the consequences that result from them, and variations of these qualifiers. (Corbin & Strauss, 1990: 9)

Theoretical sampling is a flexible procedure that allows the researcher, unconstrained by a prescribed sample, to pursue theory development as new concepts emerge from the data. It also allows for the selection of samples from

outside of the norm to verify or test the validity of a category (Chenitz & Swanson, 1986).

As the study continues, data collection and coding are reduced as analysis and theory building become more dominant. Emerging concepts from the data are compared and contrasted with the literature to establish hypotheses, which are then refined and elaborated to develop theory. The generation of theory occurs around a core category, which accounts for most of the variation in a pattern of behavior (Glaser, 1978).

(The core category) has several important functions for generating grounded theory: integration, density, saturation, completeness, and delimiting focus. (Glaser, 1992:75)

The core category is often, but not always the same as the Basic Social Process (BSP) (Glaser, 1978). BSP's are "pervasive, fundamental, patterned processes in the organization of social behaviors, which occur over time and go on irrespective of the conditional variation of place" (Glaser, 1978:100). Stages in a process, defined by normally discernible breaking points, are a prime property of BSP's. In short, BSP's can be understood as theoretical reflections and summarizations of the patterned and systematic flow of social life.

The notion of 'theoretical sensitivity' is particularly useful at this stage. Strauss & Corbin (1990:42-43) define it as "the attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn't". Sensitivity is achieved through a variety of approaches including extensive literature search in related fields of study and a series of reflections on personal and professional experience.

Further data collection and analysis become more selective and are finally concluded when 'theoretical saturation' (Glaser & Strauss, 1967) is achieved. This means that additional data, coding, or sorting would not contribute to the extension of the developed theory.

A number of recent studies in IS using traditional grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1990) have been conducted over the last decade. It is apparent that grounded theory is chosen as the research methodology when the subject area under study is new, the research problem is

unclear or ambiguous, and/or large amounts of unstructured and complex (textual) data are generated. Following are four examples:

- 1) Preis-Heje (1991) used a grounded theory in his study on computer-based tools in information systems development as an approach in analyzing and structuring large amounts of interview data.
- 2) Yoong (1996a) used grounded theory methodology in an inductive exploratory study of GSS to capture the experiences of facilitators as they made the transition from facilitating conventional meetings to electronic meetings.
- 3) De Vreede, Jones & Mgaya (1998-99) conducted a grounded theory study on group support system applications in Africa. They reasoned that their cross-cultural GSS study with an ill-defined research question: 'How can we effectively apply GSS in non-Euro-American cultures?' required an inductive, grounded theory approach.
- 4) In a study on the relationship between organizations and information technology, Mallalieu, Harvey & Hardy (1999) chose grounded theory because it was a research method that was: inductive; qualitative; flexible in terms of research techniques that can be used; suitable for the time frame of the project, and investigative not prescriptive. They noted that grounded theory is not reliant, in the first instance, on previously reported IS research and that it allowed them to undertake fieldwork to collect information from organizations as the necessary precursor to deriving theories.

Grounded Theory Approaches and Techniques

Recently there have been a number of studies in IS that have made selective use of grounded theory techniques, usually in data analysis. These grounded theory approaches usually change the emphasis of emergent theory as put forth by Glaser & Strauss (1967) or modify or discard Strauss' and Corbin's paradigmatic approach to theory building (e.g. Sarker, Lau & Sahay, 2000). Even more common have been a number of IS studies, particularly in interpretive inductive studies that require the development of meaningful categories (e.g. Trauth & Jessup, 2000), that have combined various elements of grounded theory

with other research methods. The most commonly borrowed elements from traditional grounded theory methods are the grounded theory coding techniques (open, axial and selective) used to analyze data. Following are five recent examples of the use of grounded theory approaches and techniques in IS studies:

- 1) Trauth & Jessup (2000) in their study on the use of group support systems used open coding techniques developed by Glaser and Strauss (1967) because it allowed them to approach the data "without a preconceived commitment to a particular line of thinking" and to "allow the interpretative lens to evolve through the iterative analysis of information..." (p. 55).
- 2) Maznevski & Chudoba (2000) in their study of global virtual team dynamics used the grounded theory technique of axial coding in case-based research guided by templates from adaptive structuration theory and other previous research.
- 3) Gopal & Prasad (2000) in their study of GDSS used symbolic interaction as their methodological framework and grounded theory 'variants' to analyse content of observation notes and interview transcripts.
- 4) Sarker et al. (2000) used an adapted grounded theory approach in their study of virtual team collaboration in part because it would guide theory development based on the experiences of those who are or have been members of virtual teams, while allowing the use of broad theoretical frameworks, or meta-theories, to develop the 'storyline'.
- 5) Orlikowski's (1993) investigation of the relationship between CASE and organizational change used a process-based approach incorporating grounded theory that "allows a focus on contextual and processual elements as well as the action of key players associated with organizational change" (p. 310)

The Appropriateness of Grounded Theory in this Study

Given the nascent state of knowledge on virtual teams an inductive methodology such as grounded theory is particularly well suited to the study of virtual teams. (Sarker et al., 2000: 1)

That traditional grounded theory, and grounded theory approaches and techniques in particular, are becoming more and more common in interpretive inductive IS studies is evident. Grounded theory methods are highly congruent with the need to understand rapidly evolving information systems as they are used in their organizational environments. Two distinct characteristics of grounded theory are especially relevant here:

1. The conceptual framework is generated from the data rather than previous studies.
2. The researcher attempts to discover the dominant processes in the social setting rather than describing the unit under study. (Stern, 1987:81-82).

The choice of grounded theory as a research method for the collection and analysis of data in this study was guided by the following considerations (modified, from Yoong, 1996a: 33-35):

1. Little previous research on the topic

This study is explorative in nature. No other studies have been located that focus on the experiences of facilitators as they implement and facilitate virtual teams. The aim of this study is an inductive generation of theory. For this reason, quantitative methods, with a focus on verification of established hypothesis would be inappropriate. Instead a detailed descriptive account, subject to a vigorous and systematic analytic approach of what actually happened in reality will be the product of this study. The following quotation reinforces this point: "Grounded theory makes its greatest contributions in areas in which little research has been done. In these areas, theory testing cannot be done since the variables relevant to the concepts have not been identified" (Chenitz & Swanson, 1986:7).

2. The focus is on human experience and interaction

As discussed earlier in this chapter, one reason for choosing the qualitative research approach is that this study looks at the experiences a group of professional business people found important as they each implemented and facilitated a virtual team within the

larger context of their organizations and the rapidly evolving ICT environment. Grounded theory facilitates "the generation of theories of process, sequence, and change pertaining to organizations, positions and social interaction" (Glaser & Strauss, 1967:114).

3. Applicability to practice

Grounded theory is a methodology that can close the gap between practice and research by providing an emergent theory based on a detailed and carefully crafted account of the area under investigation. "This theoretical account not only aids the researcher's understanding, but provides a means of communicating findings to those in the area studied, either as a basis for discussion or as a vehicle for implementing change" (Martin and Turner, 1986:143).

4. The use of contextual interpretation

Human experiences are complex and rich. Orlikowski (1993:311) suggests that "to produce accurate and useful results, the complexities of the organizational context have to be incorporated into the understanding of the phenomenon, rather than be simplified or ignored". In this study, the complexities and richness of the facilitators' experiences as they implement and facilitate their virtual teams within their organizational contexts will be captured.

In summary, before this study was conducted, very little was known about the issues facing facilitators as they implemented and facilitated virtual teams and how they handled these issues. This study, although substantive, is still exploratory in nature, focusing on the experiences the facilitators undergo as they facilitate virtual teams. The study captures their experiences and attempts to interpret the complexities and richness of them. Because the emerging theory is grounded in data representing the real life experiences of the facilitators, this study hopes to bridge the gap between theory and practice, representing not only the experiences of those who took part in the study, but also providing guidance to those who may make similar journeys in the future. This research approach attempts to meet the challenge articulated by Jackson (1999:319) "to create a body of knowledge that can inform research and practice across all types of

virtual teams, ... as well as identify points of difference between varieties of teams".

3.4 Grounded Action Learning

Both grounded theory and action research have been undergoing evolutionary changes as research methods. As has been shown above, the grounded theory method has been maturing and branching as it is affected by multiple experiences and new ideas in the world of inquiry (Annells, 1997). Its synthesis of sampling, analysis and coding is perceived as rigorous, while still allowing the researcher to remain flexible and creative when investigating new phenomena (Baskerville & Preis-Heje, 1999). Sarker et al (2000:9) concluded, "few methodological approaches can accommodate the ontological and epistemological range as the grounded theory".

While action research embodies a strategy for studying change in organizations and has proven popular in IS research, it has gained only limited attention in the information systems research literature (Lau, 1999). In response, Lau (1999) developed a comprehensive action research framework to try and advance the understanding and use of action research in IS. Others, such as Baskerville & Pries-Heje (1999) consider the reason for this limited attention may be action research's lack of rigor, particularly in its theory development. In response, they have sought to merge some techniques from grounded theory with the theory formulation steps of action research. They see this as a refinement and improvement of the action research method and call their method grounded action research.

Baskerville & Pries-Heje (1999) argue that action research and grounded theory cannot be fully integrated on several grounds. First, action research is usually too limited and goal oriented (ie. to solve a problem within an organizational context) to permit the full use of a comparative method like grounded theory, where theoretical sampling implies data collection within a wide range of situations. Also, action research normally begins with a practical problem suggesting predefined categories and concepts whereas in grounded theory research core categories usually emerge sometime after data collection has begun (Figure 4). During action research the core category may evolve or be abandoned.

Figure 4: Theory Building in Action Research and Grounded Theory

On the other hand, Baskerville & Pries-Heje (1999:7) state that "grounded theory, like action research, is a highly collaborative process" and that the rigor of grounded theory, alluded to above, is compatible with the character of action research as these two quotes illustrate (from Baskerville & Pries-Heje,1999:7):

Grounded Theory:

Grounded theory is more trustworthy for consultations because both laymen and sociologists can readily see how its predictions and explanations fit the realities of the situation. This is strategically important. ... a layman does not trust a prediction of what will happen in his situation unless he can readily see how it applies. ... he will not accept a theoretical explanation unless he can readily see how it explains his situation and gives him a sound basis for corrections and future predictions. Grounded formal theory, like substantive theory, earns the trust of laymen and sociologists alike. (Glaser & Strauss, 1967:98)

Action Research:

The criterion by which the research was judged internally was its practical success as measured by the readiness of actors to acknowledge that learning has occurred, either explicitly or through implementation of changes. (Checkland, 1981:253)

The Integration of Action Learning and Grounded Theory Techniques

Integrating grounded theory and action research can take place in two ways according to Baskerville & Pries-Heje (1999:8). The authors suggest: (1) using grounded theory notations, such as memos and diagrams, to illustrate the relationship between emergent theory and the raw data and (2) utilizing grounded theory coding techniques “for the evaluating, learning and diagnosis phases of action research”.

In this study both of these suggestions were followed and are demonstrated in Chapter 4. Moreover, the grounded theory method was placed within the standard action research cycle creating, in essence, a grounded action research cycle, or more specifically in this study a grounded action learning cycle. Table 3 outlines the grounded action learning cycle used in this study and compares it with the traditional action research cycle. The changes reflect the nature of this study as well as the inclusion of grounded theory methods. The grounded action learning cycles will continue with different action learning sets (theoretical sampling) until a grounded theory has emerged and theoretical saturation has been reached, i.e. the evaluating and learning phases produce little change in any of the categories, especially the core category.

Cycle One

Action Research Cycle	Grounded Action Learning Cycle	
	Researcher	Participant
Diagnosis	Needs Assessment	
Action Planning	Training	
Action Taking	Data Collection	Implement & Facilitate Virtual Team
Evaluating	Data Analysis	Evaluating
Specifying Learning	Theory Generation	Specify Learning

Table 3: Iterative Grounded Action Learning Cycle compared with Traditional Action Research Cycle

When this research was originally conceived, I intended to use a method that combined traditional grounded theory and action learning to analyze data collected from virtual team facilitators following a strategy developed by Yoong (1996a). As it became clear to me that I had to offer my research participants, who were busy professionals, something in exchange for their time and effort, I created a training program in which they could receive knowledge and a safe place to improve their virtual facilitation skills. I believed the action learning training program with the set topics that I chose to present, such as "VT Implementation and Project Planning", "Developing VT Purpose and Communication", "Strategies & Protocols" (see Chapter 4 for complete description of training program), would invariably have some influence on the experiences that the facilitators had and hence on the data I collected from them. It is primarily for this reason then that I believe that the methodological approach I have taken here can be more accurately be termed a grounded theory approach within an action learning framework, or grounded action learning, rather than traditional grounded theory.

It should also be re-emphasized here that although grounded action research as espoused by Baskerville & Pies-Heje (1999) inspired the grounded action learning framework used in this study to conceptualize the procedures I followed, there are significant differences. Working within the 'client-system infrastructure', according to Baskerville & Pries-Heje (1999:18) "means that every action research project begins, from a grounded theory perspective, with certain pre-defined categories and perhaps even a pre-defined core category ...

contradicting a grounded theory tenet that theory must be allowed to emerge from the open coding". Because I was not working within the 'client-system infrastructure', my concern was exclusively for the learning that the participants achieved and the unfettered emergence of the data; albeit given the limitations described above. I did not have to overly concern myself with the organizations that the participants worked for, which is normally a significant concern of traditional action researchers.

Finally, a characteristic of action learning is its iterative cyclical nature often involving the same learning set. The learning set continues in successive cycles until an appropriate level of self-development and learning is achieved. In this study, each iterative cycle involved a new learning set. This is a modification of the action learning approach and was made to improve data collection by accommodating the grounded theory notion of theoretical sampling. It should be pointed out that the action learning training program itself was evaluated at the end of each cycle and changes were made to the training program in the manner of action research. As for the participants, although their involvement with their action learning set ended at the end of each cycle they were invited to get to keep in touch with me if they wanted to discuss new experiences or insights.

3.5 Research Principles

In a recent paper, Klein & Myers (1999) proposed a set of principles for the evaluation of interpretive field research in information systems. Although these principles were developed for interpretative research of a hermeneutic orientation, the authors suggested that they may be used in any given interpretative field study if applied with 'judgment and discretion' in deciding how and which of the principles may be applied and appropriated. They emphasized that this set of principles for interpretative research was just one among many plausible and useful sets of principles for interpretative research, and in Section 3.6 below I evaluate this study in terms of another set of principles from an action research orientation, which I found appropriate for this research design. However, I believe it is a useful exercise to take this study and 'line it up' it with the Klein & Myers' set of principles (Table 4) to see what congruence there may be.

Principle	Definition	This study
1. The Fundamental Principle of the Hermeneutic Circle	This principle suggests that all human understanding is achieved by iterating between considering the interdependent meanings of parts and the whole that they form. This principle of understanding is fundamental to all the other principles.	I believe a process similar to this has been undergone in this study when I decide to look at virtual team facilitation (the whole) by breaking it down into its parts, a process encouraged by the open coding procedures of grounded theory, and then putting the parts together through theoretical coding and the constant comparative method, which is really a search for the relationships between the parts in the attempt to create a holistic interpretation of the subject under study.
2. The Principle of Contextualization	Requires critical reflection of the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged.	Virtual teams and the study of them are relatively recent phenomenon. This is confirmed in the Literature Review. The why and how of this study (its contextualization) are discussed in both Chapter One and Four.
3. The Principle of Interaction between the Researcher and the Subjects	Requires critical reflection on how the research materials (or data) were socially constructed through the interaction between the researchers and participants.	This is the nature of action learning and in conjunction with grounded theory techniques I believe a high level of attention has been given to this principle. I have also specifically discussed my role as researcher.
4. The Principle of Abstraction and Generalization	Requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical, general concepts that describe the nature of human understanding and social action.	The context of action research is usually local and the nature of action learning is also primarily relevant to the learner-participant. Grounded theory is also foremost concerned with the development of 'local' theory. A case for the wider implications of the emergent theory are made in Chapter 9.
5. The Principle of Dialogical Reasoning	Requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings ("the story which the data tell") with subsequent cycles of revision	Being heavily guided by grounded theory methodology, there were no theoretical preconceptions guiding this research design. There were epistemological and ontological preconceptions in the sense that I believe the research participants would be able to generate the data required to develop relevant theory.
6. The Principle of Multiple Interpretations	Requires sensitivity to possible differences in interpretations among the participants as are typically expressed in multiple narratives or stories of the same sequence of events under study. Similar to multiple witness accounts even if all tell it as they saw it.	I believe this principle has been met in the sense that all the data was analyzed line by line and so each participant's view was given "equal time". Narratives case studies of each participant are included in the Appendix, so readers can evaluate for themselves whether each participant's story was told.
7. The Principle of Suspicion	Requires sensitivity to possible "biases" and systematic distortions" in the narratives collected from the participants.	As I saw it, for the most part participants were open with the information they shared, even to the extent of pointing out mistakes they made as they facilitated their virtual teams. Operating in learning sets, they seemed to be helpful and interested in what others said. Of course, if a participant wants to be deceptive, they can be, but I saw no evidence of it.

Table 4: This Research in Light of Summary of Principles for Interpretive Field Work (from Klein & Myers, 1999)

3.6 Issues of Rigor, Credibility, and Validity

Rigor, credibility, and validity are critical issues in evaluating research findings. In most forms of research, most notably quantitative research methods, rigor, credibility, and validity are established through the use of certain procedures for data collection and analysis. In qualitative research, these issues are not addressed in the same way as in quantitative forms, since the nature of the research process is different (Chenitz & Swanson, 1986). In classic grounded theory as espoused by Glaser & Strauss (1967), the usefulness of the emergent theory is judged primarily by the fit, work and relevance to the local situation of the research participants (Annells, 1997)³. The usefulness of action research also tends to be guided by the effectiveness of the intervention at the local level. In both methods, particularly when the local theory is generalized, further validity may be achieved through further research in other contexts subject to more traditional, perhaps quantitative, reliability and validity criteria. Although in this study, the emergent theory will be “member” tested for local fit and relevance, it is necessary in a research project such as this to measure the whole research framework and the results against criteria suitable for a qualitative study.

Stringer (1999) argues that traditional criteria for evaluating the rigor of experimental and survey research - objectivity, reliability, validity, and generalizability - are inappropriate in naturalistic inquiry, and a different set of criteria for establishing rigor in interpretive inquiry may be required (Lincoln & Guba, 1985). Stringer (1999:176-177) suggests researchers establish the trustworthiness of their study by reporting on the following:

1. *Credibility* is established by long engagement with participants; triangulation of information from multiple data sources; member checking procedures that allow the participants to check and verify the accuracy of the information recorded; and peer debriefing that enables research facilitators to articulate and reflect on research procedures with a colleague or informed associate.
2. *Transferability* is established by describing the means for applying the findings to other contexts. Fundamentally, the possibility of applying

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³ In Strauss and Corbin's version of grounded theory, the criteria for the validity, reliability and credibility of the study are not stipulated, though criteria are give for the research process (Annells, 1996). As mentioned earlier, this study was based on the classic Glaser and Strauss (1967) method.

findings across settings is established through thickly detailed descriptions that enable audiences to identify similarities of the research setting with other contexts. Put another way, it enables other audiences to see themselves and/or their situations in the accounts presented.

3. *Dependability and confirmability* are provided through an audit trail that clearly describes the processes of collecting and analyzing the data and provides the means by which readers may refer to the raw data.

This study meets these criteria. The measures of credibility, listed above, are discussed in detail in Chapter 4, *Specific Research Procedures*, while the notions of *dependability* and *confirmability* are supported by the research procedures delineated in this chapter as well as Chapter 4, as well as by the participant case studies available in Appendix 7. While the case for *transferability* is made in Chapter 9, Section 9.1 *Implications for Practitioners*, it should be emphasized here that this study is exploratory in nature and it is hoped that future research studies, undertaken in similar conditions and using similar methodologies, will be conducted in other locations. The results of those studies may verify, or otherwise modify, the results and models of this study.

3.7 Researcher's Role as Participant Researcher

In action research methodology, the researcher moves from the position of detached observer to that of consultant/facilitator and active participant in the process of inquiry (Bunning, 1994). This role has been referred to as one of co-learner (Elden & Levin, 1991). In this study I took the roles of trainer, researcher and co-learner as described here:

- (A) In my role as trainer I present information to the participants sharing my previous experiences and knowledge of virtual teams (see Appendix 2) with participants in order to help them implement and facilitate their teams;
- (B) In my role as researcher I ask questions to try and generate relevant data: my primary goal is the collection, analysis and interpretation of data using grounded theory methodology.

- (C) In my role as co-learner I would listen and learn from the other participants as together we investigate our experiences as we develop insights and strategies.

Zuber-Skerrit (1992:12) models three different action researchers role's including, 1) outside 'expert', 2) Socratic role, encouraging participation and self-reflection, and 3) process moderator with responsibility shared equally by participants. In the Socratic role, which most closely describes the role I have taken in this study, the relationship between the participants and myself is one of cooperation. It is through this process of co-operative inquiry that the researcher and participants can illuminate and clarify the human processes for each other (Heron, 1981) as cited in Bunning (1994).

3.8 Chapter Summary

This chapter looked at the general research methodology. Using relevant literature from information systems and social science research, I have explained the rationale for using qualitative methods: in particular action learning to provide a framework to the study and grounded theory approaches to collect, analyze, and interpret the research data: the combination of the two being termed grounded action learning. I have also given the key elements of action research, action learning and grounded theory and explained how I have merged them to create a comprehensive and rigorous research methodology that can meet the usual principles, standards of rigor, credibility and validity of qualitative research. I have also discussed my role as participant researcher.

The next chapter, Chapter 4, gives a detailed account of the actual research procedures used in this study.

Part 1 The Nature of the Research Problem	Chapter 1 - Introduction
	Chapter 2 - Review of Prior Relevant Literature
Part 2 The Research Act	Chapter 3 - Research Methodology
	Chapter 4 - Specific Research Procedures
Part 3 The Research Findings and Conclusions	Chapter 5 - A Grounded Theory of Virtual Facilitation
	Chapter 6 - Assessing Conditions
	Chapter 7 - Choosing Levels of Relationship
	Chapter 8 - Creating Strategies
	Chapter 9 - Implications, Conclusions, and Limitations

Chapter 4

Specific Research Procedures

4.0 Chapter Overview

Chapter 3 describes the general research methodology to be used in the collection, analysis and interpretation of research data. This chapter describes how the virtual team training program and specific research procedures were carried out, as well as continuing to make the case for the study's credibility, dependability and confirmability.

The research question in this study is - *How do facilitators of virtual teams build relationships with their virtual team members?* That is, can a theory be developed that describes the processes that a virtual team facilitator goes through when building relationships with virtual team members?

Seven virtual team facilitators participated in a training program, called 'Virtual Team Action Learning Program', a program that was specifically designed for this study. One pilot project and two separate training programs were held. The pilot project was conducted more in the manner of participative action research (Whyte, 1991) than action learning. In other words the pilot participant and myself worked together, more or less, as co-researchers (Elden & Levin, 1991). The pilot project carried on for more than a year. Data from this participant was collected in the form of regular interviews via phone, e-mail, online text chat, and face-to face-channels.

The two training programs, each with three facilitators forming an action learning 'set', consisted of five, two-hour sessions held over a ten-week period. Semi-structured face-to-face interviews with each participant were held at each training session and phone interviews were conducted with each participant between training sessions. Informal discussions between participants were also recorded during the training sessions. Further contact and data collection with many of the participants continued for several months after the training programs concluded. Finally, a follow-up review and evaluation session was held for all the facilitators approximately one year after the training programs were completed in which facilitators were given a final interview. These interviews

and discussions, as well as other written and electronic documents, became the research data from which the analysis and interpretation were conducted.

This chapter begins with an account of the development and implementation of the virtual team training program relevant to this study. The second section describes how specific research procedures - i.e. the collection and analysis of the research data - were carried out, gives an account of how computers were used in the data analysis, and includes a description of the steps taken to ensure the credibility, dependability and confirmability of the qualitative data.

4.1 Designing and Implementing a Virtual Team Action Learning Program

Four factors were instrumental in determining the design and implementation of this study. First, when this study commenced three years ago, very little research had been conducted on virtual teams and almost nothing on virtual team facilitation. What little research that was being published mostly involved student subjects. As Bordia (1997) pointed out although most computer-mediated communication research focuses on its application to organizational and social functions, the applicability of results is "jeopardized" because most of the research is done on student subjects. Järnvenpää & Leidner (1999) echoed this thought in their often-cited study, *Communication and Trust in Global Virtual Teams*. To make this study as meaningful as possible, it was my intention to work with professional organizational people, who themselves were working within their organizational contexts. The results of the study would then be directly applicable to the ways in which these people work. One challenge, of course, was how to persuade busy professional people to take part in the study.

The second factor was my own experience trying to implement and facilitate a virtual team as part of the *Virtual Team: Managing the On-line Meeting* Internet-based course I had developed for the New Media Centre at Wellington Polytechnic (see Appendix 2). From this generally unsuccessful attempt, I realized that serious issues were involved in working virtually, for example getting virtual team members to participate, and I was interested in

learning more about them. In short, I wanted to be an integral part of the learning process.

The third factor was that the research framework had to be fundamentally compatible with the grounded theory approach that would be used in the analysis of the data. The fourth factor involved consultation with academic and professional colleagues who suggested that the best way to approach this study would be through some sort of action research-based framework.

After a thorough investigation of possible research methods, it became clear that action learning would meet the circumstances raised by these three factors. As explained in Chapter 3, an action learning framework 1) provides a relevant learning opportunity for research participants, 2) allows for groups of people to work on real organizational issues, 3) allows for the researcher to be intimately involved in the learning set, and 4) is fundamentally compatible with grounded theory approaches. Another very important consideration is that an action learning approach is an ethically sound way to conduct research as it offers research participants something valuable (their learning) in return for the data they provide the researcher.

The Pilot Project⁴

In 1997, I wrote an opinion piece on the use of virtual team use in New Zealand for a local Wellington newspaper. DW, the owner of a local advertising company, subsequently contacted me. DW's company was part of a global partnership of independently owned advertising companies, Global Partners (GP) and DW was very interested in learning more about virtual teams and how they could be used in GP (Table 5). We discussed various ways we might be able to work together within the larger global context of GP. Eventually we agreed on a research format in which he volunteered to initiate and facilitate a virtual team consisting of interested members of GP while I would provide him with training. More accurately stated, I provided one-on-one informal coaching based on the knowledge and skills I had acquired in my prior two years of research in virtual teams. At the same time I was learning from DW what virtual facilitators

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⁴ A complete case study of the pilot project can be found in Appendix 7

required in the way of training and knowledge. In this respect, as co-learners, the pilot project was an example of participative action research, a variant of AR.

Participant/ Positions	Organization	Previous experience	Project	Team	Participant's role	Team stage
DW Managing Director	New Zealand- based advertising company - part of an international partnership	very familiar with use of virtual communication channels	initiate a project within the international partnership	global, CEO membership, volunteer	team initiator and facilitator	initiation

Table 5: Summary of DW's Details

After conducting a needs assessment with DW to determine the areas in which he required guidance, I developed a Virtual Team Implementation and Facilitation Checklist (Appendix 3) for DW's use. DW's intention was to initiate a team made up of interested members of GP to discuss and eventually implement an organizational project using virtual teams. We worked together for more than a year. I interviewed him regularly and he consulted with me when he felt the need. He copied all the e-mail correspondences he had with his team members and with GP's CEO and CIO. The most notable characteristics of this project included:

- the project took place within a global intra- and inter-organizational context
- the project was heavily focused on the initiation of the team and project within the above context.
- participation in the team was voluntary

Unfortunately, soon after initiating the project, DW took ill and as a result of this he sold his company. He tried to re-establish the team later in 1999, but without success. Nevertheless, I collected a lot of data from DW with which I was able to begin open coding (Glaser & Strauss, 1967). Moreover, my experiences with DW as well as the Virtual Team Implementation and Facilitation Checklist that I developed for him became the bases for the Virtual

Team Action Learning Program that I subsequently used in the later data collection cycles.

Cycle One

From March 1999 until July, I tried to recruit participants to take part in the first of the two action learning training programs, but without success. The difficulty of attracting professional people willing to commit their time and energy was becoming apparent. As part of a strategic rethink to attract study participants, I made several public presentations on virtual teams, at the end of which I called for volunteers to join my proposed Virtual Team Action Learning Program. I also did a mass e-mailing on two Victoria University listservs asking for volunteers. Out of these efforts, I was able to secure three participants, BC, SC, and RB. Table 6 lists their details. None of these participants had any particular experience working in or facilitating virtual teams, although they were all familiar with and used a number of electronic communication channels in their daily work.

Participant/ Positions	Organization	Previous experience	Project	Team	Participant's role	Team stage
BC Senior Policy Analyst	New Zealand Government Department	familiar with use of virtual communication channels - e-mail, fax, phone	treaty negotiation between government and indigenous group	representatives from government departments and claimant group	facilitator	on-going to conclusion
SC Independent contractor	New Zealand educational consulting company	familiar with use of virtual communication channels - e-mail, fax, phone	construct web page, followed by management of web-based assessment center	local, Wellington (NZ) based, independent contractors	facilitator	ongoing
RB General Manager	New Zealand software and business development consulting company	familiar with use of virtual communication channels and underlying technology- e- mail, fax, phone and Internet	initiate virtual communication channels with branch office	members in New Zealand and Australia-	project initiator	initiation

Table 6: Summary of Cycle One's Participants' Details

From October - December 1999 a formal training session was offered to these three volunteer research participants. The training was based on an Action Learning framework, with materials from the Pilot Project being modified, based on pre-training interviews with the participants, and expanded for a longer, more

formal training program. The participants and I met five times, every two weeks for ten weeks. Table 7 outlines the main topics in the training program schedule.

Virtual Team Action Learning Program
Session One Virtual Team Implementation and Project Planning
Session Two Developing Virtual Team Purpose, Communication Strategies and Protocols, and Technology
Session Three Developing Team Identity, Building Relationships and Intercultural Communication Issues
Session Four Preparing for and Facilitating Virtual Meetings
Session Five Concluding a Virtual Team and Other Training Issues. Virtual Teams in the Organization

Table 7: Outline of Virtual Team Action Learning Program

The reasons for offering a formal training program were three-fold. The first reason was to generate interest and incentive for would-be participants, as it was clear that professional study participants (as opposed to students) would require something of value to compel them to voluntarily participate in this kind of study and to convince their employers (where applicable) that this was a valuable and relevant learning experience. The second reason was to give participants the information and skills they might need to initiate and facilitate their own virtual teams, as it was quite possible that virtual teams being a new phenomenon, the study participants may not have had any or only very little experience with them. The third reason for offering a formal training program was to generate research data for analysis. These three reasons support the use of an action learning framework both practically and ethically.

During the training programs, each participant planned for, evaluated the use of, or actually initiated and facilitated a virtual team within their own

organizational context. Every two weeks the participants met with me to investigate issues related to initiating and facilitating virtual teams and to discuss issues that were arising in their own virtual teams.

In order to give a clearer picture of what actually occurred in the training program, each training session will be described in more detail. Basically, each two-hour session was divided into three sections. Section 1 began with a report by each of the three participants on the virtual team issues they had encountered during the prior two weeks. This was followed by Section 2, an open discussion by all the participants and me on how a facilitator might handle these issues⁵. In Section 3 I gave an informal presentation on key issues related to the implementation and facilitation of virtual teams. Table 8 illustrates the format of the first three sessions, which are representative of all five sessions. As can be seen from Table 8, the issues covered in Section 3 one week became the bases of Section 1 and 2 the following week.

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⁵ These two sections of each training period were recorded and transcribed, forming a major part of the data collected in this study. Any ensuing discussions during Section 3 were also recorded. A narrative case study containing much, but not all, of the data collected from each participant can be found in Appendix 7. Data collection and analysis is discussed in more detail in Section 4.2.

Virtual Team Action Training Programme *The VT Pioneers*

Session One

1. Pre-program interview with each participant	50 minutes
2. Open discussion on training needs	30 minutes
3. Training on VT Implementation and Project Planning	40 minutes

Virtual training - contact *VT Pioneers* using 2 - 3 different media; note and evaluate your experiences

Office - create project plan, initiate your virtual team (or continue if in one); keep notes of what is working and what isn't.

Session Two

1. Progress report/issue review with each participant	50 minutes
2. Open discussion on implementation issues	30 minutes
3. Training on Developing VT Purpose, Communication Strategies & Protocols	40 minutes

Virtual training - exchange ideas with *VT Pioneers* re: communication strategies; note and evaluate your experiences

Office - with your virtual team develop team goals and communication protocols; keep notes of what is working and what isn't.

Session Three

1. Progress report/issue review with each participant	50 minutes
2. Open discussion on develop team goals and communication protocol issues	30 minutes
3. Training on Developing Team Identity, Building Relationships and Intercultural Communication Issues	40 minutes

Virtual training - continue exchanging ideas and strategies with *VT Pioneers*; note and evaluate your experiences

Office - with your virtual team develop team identity & begin building relationships, discuss intercultural differences and possible effects on the team; keep notes of what is working and what isn't.

Table 8: Detailed Program of Typical Training Sessions

As can be seen from Table 8, participants were asked to continue work during the subsequent two weeks on the implementation and facilitation of their individual virtual teams in the general subject areas that were presented in the training sessions. For example in Session 1, we looked at virtual team implementation and project planning. After this session, it was hoped that the participants would return to their offices and work on the implementation of their

virtual team and develop a project plan. By doing so, they would be engaging in 'action' within the context of their organizations. At the next session, they would bring back their experiences to share, discuss and critique with their learning set. Essentially, a mini learning cycle was being conducted within the larger action research cycle.

Virtual Team Simulation

Because these were busy professionals working on diverse projects, it was clear to me from the start that it was unlikely that all the participants would be carrying out the implementation and facilitation of their virtual teams in lock step, and would therefore not always have the same issues to discuss in the training sessions. Therefore, I proposed to the participants that they consider themselves to be a virtual team and work together outside of the training sessions experimenting with electronic communication channels and discussing virtual team issues raised in the training sessions. This would give them another avenue to gain practical and relevant experience. To this end, I gave the participants a team name, *VT Pioneers*, before training Session 1, and during each training session asked them to do small tasks as shown in Table 9 (excerpted from Table 8).

Session 1

Virtual training - contact *VT Pioneers* using 2 - 3 different media; note and evaluate your experiences

Table 9: Session 1 Simulation Task for Virtual Pioneers (Cycle One Participants)

The Cycle One participants never did make an effort to work with each other outside of the training session, except on one occasion when I organised an on-line Netmeeting tutorial that two of the three participants took part in. At the end of the training program when I asked for feedback, I received some conflicting comments relating to this attempt at a virtual team simulation as this dialogue indicates:

(RB) For me, I want to relate this (Training Program) to what I am doing. And you (the researcher) will struggle having to run it, having different people in different places (with their projects). It would be useful to have

some specific tasks that can be done in a couple of weeks and then commit to doing it and then report on it.

(Trainer/Researcher - TR) Part of the idea of VT Pioneers was to have you guys working with each other on tasks within the team. We tried that a bit with Netmeeting.

(RB) ... I really learned a lot in that session we had with you. That was quite interesting.

(TR) I was thinking about running exercises with team members here, but I wasn't sure how professionals would feel about doing work not related to their jobs.

(BC) My comment is much of what we are doing is bilateral with David (TR). He is like the spoke in the wheel. How much do we have to do with each other? That may have been one reason we did not contact each other.

(TR) I think what I may need to do is something like set up a virtual team meeting and do the first week's task, maybe naming the team. Maybe just e-mail each other and see if we can agree on it and come to the training session and review our experiences.

These comments by the participants indicate mixed feelings about getting involved with each other as a team outside of the training sessions, and yet clearly they thought that some level of virtual team simulation would be useful. After evaluating their comments I did institute a virtual team simulation in Cycle Two, which I report on in the next section.

Cycle Two

In early January 2000 I began recruiting participants for the second cycle of training and data collection. I sent out a call for volunteers on a single listserv run by one of the professors at Victoria University. I received over forty return e-mails from people wanting to participate. In selecting whom I would invite to join the training program I looked for people who were facilitating virtual teams that would most likely complement the training schedule; i.e. a team working on a project that was just being implemented and was likely to finish, or at least accomplish a fair amount of work, within the ten weeks of the training program. My second most important selection criteria was that the team consist of globally distributed team members who would have to work primarily through electronic

communication channels, as I was looking to widen the theoretical sample (Glaser & Strauss, 1967) in the study. In Cycle One two of the three participants were working with primarily local teams, and all three participants were able to meet face-to-face fairly regularly with their team members.

After engaging in e-mail and occasional phone conversations with the most promising applicants, I invited five people to participate in the training. Three of the five would be implementing and facilitating global teams with team members from countries other than New Zealand. One was working in a highly dynamic New Zealand-based organization. The last participant had just completed a global virtual team project, and she made a strong case that what she had experienced could be "deconstructed"⁶ in the training program to our mutual benefit. Unfortunately, by the second session (fourth week) two of the participants dropped out of the program citing time constraints. The three remaining participants and their details are listed in Table 10. The training program ran from the mid-January until the end of March 2000.

Participant/ Positions	Organization	Previous experience	Project	Team	Participant's role	Team stage
RW Managing Director	New Zealand-based political consultancy operating worldwide as a virtual organization	very familiar with use of virtual communication channels and experience facilitating virtual teams	manage a political campaign in California	members in New Zealand and California	Facilitator	initiation through conclusion
AR Project Manager	New Zealand office of international consulting company	very familiar with use of virtual communication channels and experience facilitating virtual teams	develop and write a strategic plan for Southeast Asian government ministry	members in Southeast Asia, Australia and New Zealand	Facilitator	evaluation of completed project
JJ ⁷ Project Analyst	New Zealand trading company	some experience as a student with use of virtual communication channels	open and organise a branch office in Vietnam	members in Vietnam, New Zealand and Australia	Facilitator	initiation

Table 10: Summary of Cycle 2 Participants' Details

⁶ Her term. She meant that in the training program she would be able to review and evaluate her recent experiences as a virtual team facilitator.

⁷ This participant, after reviewing her case study, requested that her case study be deleted from this study to protect her and her company's anonymity (see Appendix 7). At the same time, she made it clear she was happy that I could derive my theoretical constructs with the help of her data. Therefore, I continue to include her and her experiences as part of my research data. To protect her identity I have changed most of the details pertaining to her and her company.

The training program was set up much the same as in Cycle One (Tables 3 & 4), with the content only changing slightly to reflect the specific needs of the second set of participants. Information was presented in a more structured format, reflecting my increased confidence in the material based on Cycle One participants' comments. Powerpoint slides were used with fewer handouts, whereas in Cycle One handouts were fairly disorganized and mostly served as a resource for participants to study on their own. The most significant change was my attempt to introduce a much more formal virtual team simulation to the Cycle Two training program.

Virtual Team Simulation Redux

As mentioned above I originally thought professional business people would be too busy to be willing to do extra work in the form of a simulation, but based on the feedback from the Cycle One participants I thought we would try it and see what happened. So after selecting the five participants and one week before the first training session I sent them all an e-mail with the simulation exercise in Table 11.

**Virtual Team Action Training Program
Cycle Two   Session One**

Simulation Exercise # 1

(to the tune of Mission Impossible)

Your CEO, an inventive, 'follow her intuition sort of character', and founder of ***Mission Possible Software Solutions*** would like to do an impromptu experiment on the initiation of a virtual team. So she randomly contacts a few of the company's employees from different offices and functions and asks them to form a virtual team to look into an as yet unidentified organizational issue.

The first task of this team is to choose a team name and logo. She offers no other input.

You have been chosen to be a member of this team. The other team members are:

1. RW	RW@pole.net
2. AR	AR@Azi.co.nz
3. CL	CL@innov.net.nz
4. JJ	JJ@trade.com
5. SL	SL@ISOCS.org.nz

Deadline: Team name and logo to be presented in Session One 25 January 2000

(For the purpose of this simulation, your role in this company is similar to your current role in your current company, ie manager = manager, analyst = analyst))

Table 11: Virtual Team Simulation Exercise - Part 1

Most of the participants immediately began e-mailing each other introducing themselves. A couple made suggestions for team names. One e-mailed me saying she was too busy at the moment to respond to the others' e-mails. One participant tried to organize the team. This suggestion and a couple of others apparently got lost in the shuffle. By the time of the first session, everyone had introduced himself or herself through e-mail, but nothing had been decided about a name or logo. I wanted to see if the group would be able to sort the tasks out by themselves virtually, so we did not use session time to extensively discuss the simulation. I asked them to continue with the original

task and also asked them to start thinking about developing a seven-step program for implementing virtual teams from an organizational perspective (Table 12).

From: david.pauleen@vuw.ac.nz
To: Cycle Two Participants
Date sent: Thu, 27 Jan 2000 13:11:24 +1300
Subject: Follow up
Priority: normal

Hello "whatever your team's name is"

I am having a listserve set up for our training group. Should be ready by early next week. I will keep you posted.

Onward with the simulation. As mentioned I suggest something like the following. If completed successfully you will all take with you a useful document. If not successful, you will have a cyberlifetime to ponder the vicissitudes of life on the net.

Team Task

Develop a "seven-step"(or whatever number works) plan for implementing virtual teams in an organizational context.

Suggestions

- try and align (at least some of)your work on this project with the issues raised bi-weekly in the sessions, so these 2 weeks you may want to tackle "developing a team charter", in the next two weeks "technology, communication strategies and protocols" (refer to program schedule for an outline of what's coming up.

At the same time you may want to tackle some of the wider organizational issues that virtual teams and virtual communications raise.

I acknowledge that the guidance I am providing is slim. You are all extremely talented, knowledgeable and experienced in the ways of the world. The challenge here is making it work in a virtual context with what you've got.

Consult with me if need be. But in any case keep me in the communication loop please. (By the way this could be a virtual team role - liaison with stakeholders, sponsors, etc)

Think about keeping a journal or the like for recording thoughts, feelings (bursts of anger!) , ideas, etc. Could prove a useful adjunct to your final document.

Table 12: Virtual Team Simulation Exercise - Part 2

In mid-week telephone interviews with two of the participants it became clear to them that interpersonal and team issues, including non-participation by two members, were already coming to the fore and impairing the team's performance. Before the second session, two of the participants had dropped out of the training and the three others had become seriously demoralized not only

about the simulation, but about the training program as well. In spite of the setbacks, two of the participants met face-to-face and came up with a team name, *Imbroglia*, a logo and a 'plan for implementing virtual teams (Table 13), which they presented in the second session. But for all practical purposes the simulation exercise was finished. From then on, I focused on the training while the participants worked on their organizational teams.

The Fundamentals of a Successful Virtual Team

The participants were given an exercise to develop fundamental points to pay attention to when initiating and facilitating a virtual team. This is what AR and RW came up with.

Purpose

So we came up with a preliminary design of our logo. Keeping the pentagon (5-sided symbol) idea, then fundamental to the whole idea is purpose. A virtual team must have a purpose. I think the two people who have dropped out of the group fit here as well. They did not have a sense of the group's purpose or else they felt that their purpose was not aligning with our purpose. Because all the extra commitments a member must put into a virtual team, purpose is essential. We all must know what we're there for.

It seems to me, from out of all this, having a purpose, identifying and being absolutely clear about what the purpose is, where everyone is coming from is absolutely fundamental, having the roles sorted out is fundamental, and communication is fundamental. You have to be the eyes and ears of the people.

Planning/Preparation

Planning or preparation is another P. You know what your purpose is now, so next is to know how you are going to approach it. You need planning or preparation.

People/Personnel

The next P is the people or the personnel on the team and associated with the team. I talked about my need to sort of get inside of people's heads and to discover what they are really about, what they are after, how they work, and how best to communicate with them. It's easy to give offense with an e-mail when no offense is intended. Maybe we are being flippant or ironic. We need an understanding of the people and the people have to be clear about what their individual role and purpose in the team is.

Participation

And we need participation. That's really fundamental. The feeling that you should have with any team is that the whole is greater than the parts.

Protocols

The last P is protocols. We're looking at two things with protocols, the team protocols or norms and technology protocols. Particularly in virtual teams there will be people who have not worked together before and you need protocols or norms.

Table 13: Results of the Cycle 2 Simulation Exercise

My original hunch that professionals would be too busy to commit to the simulation was basically correct. Yet the simulation exercise was not a failure,

either in terms of participant learning or data collection. Here are three participant comments on the simulation:

(AR) One of the big things that struck me about what was happening here in this simulation actually mirrored a number of experiences I have had in virtual teams.

(RW) I think we have identified what needs to be there (in the seven-step virtual team implementation program). People dropping out has been useful for us, by helping us to define the things we needed to make a virtual team work, so now the seven steps are a bit more clear.

(AR) There is no silver bullet for these things. This is in a sense pioneer country. It is a bit trial and error. That's what makes it fascinating for me.

All the data from the simulation was coded and relevant findings are presented in Part Three, *A Grounded Theory of Virtual Facilitation: Building Relationships with Virtual Team Members*.

Presentation of the Emergent Theory

In January 2001, after I had analyzed the data and developed an emergent grounded theory, I invited all the participants together to present my findings to them, before I made these findings available to the wider public (Appendix 4). I had two reasons for doing so. One reason was based on a methodological consideration and the other one an ethical consideration. First in both action research - and in particular action learning - and grounded theory, it is vitally important that the findings (or theory in the case of grounded theory) are applicable and useful to those who were instrumental in their development. This 'member checking' allowed me, as the researcher, to check my interpretation of the data with the research participants (Lincoln & Guba 1985; Cresswell, 1998; Trauth & Jessup, 2000). By presenting my findings to the participants I could receive their agreement that the theory I developed had captured their experiences, feelings and thoughts as virtual team facilitators. Moreover they could confirm that the theory was relevant and useful to them should they facilitate another virtual team. Receiving this affirmation I could be reasonably certain of the credibility, and the transferability, of my findings. Should they disagree with my findings I would be forced to concede that theory was not

grounded in the data and that I had misinterpreted the data. In either case I would need to return to the data and perhaps engage in further data collection.

After I presented my data to six participants (out of seven) from the pilot project and Cycles One and Two, I received favorable feedback as well as several suggestions on how the model of facilitating virtual relations that I developed might be improved, some of which were then incorporated into the model.

The second reason for presenting my findings to the participants first was an ethical one. I simply believed that by doing so I could repay in some measure my gratitude for the time and effort these people had expended in on my behalf.

The Relationship between Action Learning and the Training Program

The features of action learning have informed the design and implementation of the training program and every effort has been made to link them with action and reflection activities in the training program. Table 14, based on Yoong's (1996b) model of action learning in the office of the future, illustrates the relationship between a number of learning activities and relevant features of the Virtual Team Action Learning Program.

Learning Activity in Training Program	Features from Action Learning in the Office of the Future
Implement and facilitate a virtual team within the organization	Work and gather data on real life issues and problems associated with working in the virtual workplace
Learning to use Netmeeting, e-mail, listservs and other electronic communication channels to facilitate virtual teams	Reflect and improve on workplace practice by the appropriate incorporation of groupware tools
Progress report/issue review with each participant	Interlink action and reflection
Open discussion/peer feedback	Discuss actions and reflection with others

Table 14: The Relationship between Action Learning and the Training Program (modified from Yoong, 1996b)

4.2 Collecting and Analyzing Data from the Program

As explained in Chapter 3, this study is based on a grounded action learning methodology. An action learning framework was used to generate data

while grounded theory approaches were used in the analysis of the data. Figure 5 shows the relationship between action learning on one side, and grounded theory methodology on the other.

Figure 5: Data Generation and Theory Development (Yoong, 1996a)

This section begins with a discussion of some practical issues associated with this study, followed by a description of the procedures used during the collection, analysis and interpretation of the research data. The section ends with a discussion of issues relating to the study' rigor, credibility, and validity, the use of computer software and the lessons I have learned as a research participant.

Practical Issues

The field work in this study, which involved the pilot study, the designing and conducting of the two subsequent training programs and the associated collecting of interview and other field work data, took place over a period of three years. Dividing the fieldwork into three blocks of activity, the pilot project and the two training cycles, proved to be a useful approach. The extended period between each block of fieldwork provided time for transcription and analysis of the interview data. Equally importantly, these in-between periods were used for reflection, interpretation and strategy building.

These reflective periods, which are built into the action research cycle as well as the grounded theory method (Yoong, 1996a), significantly influenced the way the next period of fieldwork was conducted. The following two examples are illustrative. The difficulties I encountered in the pilot project working with a

single individual encouraged me to think strategically about my data collection methods and consequently to devise a training program for several participants so as to ensure adequate data collection; and the interim results from Cycle One helped me to determine the selection of Cycle Two participants based on the principle of theoretical sampling. As explained in the Section 4.1, trainees in Cycle Two were selected because of their differences to those participants in Cycle One, both in their experience with virtual teams and in the global nature of their virtual teams and team projects. As a result, I was able to compare and contrast the emerging theory with the data as prescribed by the constant comparative method.

Analyzing the Research Data

In grounded theory, the constant comparative method provides the researcher with an established set of procedures for conducting the data analysis. Although data collection and analysis are presented in two sections here because they represent different conceptual stages in the research process, in fact data collection, analysis and interpretation are concurrent and iterative processes (Glaser & Strauss, 1967). In this study many of these approaches of grounded theory are used in data collection and analysis.

Data Collection

As this study involved studying human beings and their behaviour, the research proposal was submitted to the Faculty and Human Ethics Committee who gave their approval. All research participants gave their signed informed consent (Appendix 5) before taking part in the study, allowing any data generated to be used by the researcher. Some participants requested anonymity, and for the sake of consistency all research participants in this report are identified by their initials and all company names have been changed⁸.

Several methods of data collection have been used in this study: progress reports, interviewing, informal discussions, researcher journal, and to various degrees: participant notes, organizational documentation and copies of electronic

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⁸ Later, after reading his case study, BC reconsidered his request for anonymity for his organization. He wrote me in an e-mail - "Re my original consent form, I have reconsidered and there is no problem with mentioning the Office of Treaty Settlements. OTS has a policy of being open to being researched."

conversations, i.e. e-mail. Participants were asked to keep communication logs recording their use of communication channels with team members, but this proved to be very time-consuming for them and none of them continued with this for more than a couple of days. The primary methods of data collection were progress reports and semi-structured interviews. These methods provided for the collection of diverse kinds of data and enhanced the use of the constant comparative method (Glaser & Strauss, 1967).

In the pilot project, data was collected primarily in face-to-face semi-structured interviews that were conducted on several occasions throughout the year the pilot project was running. Data was also collected via written e-mail interviews and live text chat interviews. Finally, the facilitator in the pilot copied all his e-mails and those from members of his virtual team and the management of Global Partners to me as well.

In Cycles One and Two, progress reports were given by each participant at the start of each training session. In the first session of each cycle, the participants introduced themselves, their organizations, their experiences with virtual teams, their proposed virtual team projects, and any other relevant background information. In subsequent reports participants would discuss their implementation and facilitation efforts with their virtual teams and any issues that had come up in the previous two weeks. Generally, the content of these reports would mirror the training lesson of the prior training session. The researcher and other participants would occasionally ask questions of the reporting participant. Each report might last between fifteen and thirty minutes.

After the participants made their reports, the discussion was opened up to everyone including the researcher. Explanations were sought, suggestions were made and other issues that were on participants' minds were raised. This part of the session generally ran about thirty minutes. Whenever it was called for, I used the grounded theory principle of theoretical sensitivity - my growing awareness of the key emergent issues as I collected and analyzed data - to guide participants' reports or free conversations to draw out the similarities, differences and density of the trainees' accounts of their experiences.

Between training sessions, a semi-structured telephone interview was usually held with each of the trainees, particularly if a trainee had missed the training session. In these telephone interviews, I would especially ask

participants to expand on particularly relevant points they had raised in the training session, again with theoretical sensitivity as my guiding principle. These telephone interviews also allowed the participants to raise issues that they were more comfortable talking only to the researcher about.

As is common in qualitative research, a large volume of data was collected (Gopal & Prasad, 2000), and I began to analyze the data by listening to and transcribing each recorded interview and discussion. Even working through Via Voice, a software package that allowed me to transcribe directly into the computer by speaking into a microphone, this was an intensive and time-consuming process, but it helped me to become thoroughly immersed in the data and to continue to develop theoretical sensitivity (Glaser, 1978). In all over 250 pages of interviews and discussions were transcribed from the pilot project and Cycles One and Two. Transcripts were returned to the participants for member checking and validation.

Not only was I the trainer in these programs, but I also took the role of researcher and co-learner. That is to say, in my role as trainer I presented information to the participants; in my role as researcher I would ask questions to try and generate relevant data; and in my role as co-learner I would listen and learn from the other participants and share my experiences and insights with them. This multi-variate role is discussed in more detail in Chapter 3.

Data Analysis

In this study, my first step in the analysis of the data was to code all the transcripts as well as relevant documents such as e-mail correspondences. I used open coding techniques, a process of labeling the events and ideas represented in the data (Baskerville & Pries-Heje, 1999). Again this was done throughout the pilot project and the two action learning cycles. During the pilot project and part of Cycle One I did this coding manually, but later on I used NVIVO, a subsequent version of Nudist, which is a computer software program developed especially to be used with qualitative research methods (Richards & Richards, 1994). Using NVIVO I was able to peruse the transcript and assign one or more conceptual codes (called free nodes in NVIVO) to each line, sentence or paragraph, most often in terms of properties and dimensions. All transcripts from the pilot project and each of the two training programs were similarly coded. In

all 69 conceptual codes were developed. Table 15 illustrates how I used open coding to assign conceptual codes to participant comments.

Participant Comment	Conceptual Code
I used calls if I felt I was not getting back the stuff that I needed from them, as in this case.	Communication Strategy
The other teams were holding formal Government team meetings, which could take forever. So we relied a lot will on trust again. We trusted the Conservation people to keep their bits under control and it worked very well.	Trust
The building trust one is interesting - it's one thing to have money at stake, it's another thing to have a company's reputation at stake, but we're dealing with clients whose personal reputation is at stake. It can get very emotional.	Trust
That's an interesting point of quality versus quantity of. Some people tend to try to get things done by quantity, firing e-mail after E-mail at you. One of the people I work with will call me up to ask me to do something and then send me an e-mail asking me if I have done it, all in about 30 seconds.	e-mail
That could be true. I have never had a serious discussion on ICQ. It is always hi, how are you, or let's meet in a chat room. It does seem to be seen as a social medium. You are right, if you can encourage people to use I C Q as a social medium.	ICQ
Yes he has access to that in all the information on that. It's an okay intranet, its not all things to all people. But I guess some people must get some advantage from it being there.	Intranet
We have 11-hour difference with South Africa, too, which throws things out little bit. It's a question of prioritizing things, is it that urgent that I ring someone at this hour, because I'm only going to be able to get them first thing in the morning or last thing at night.	Time Differences
I'm wanting to steer a careful path between doing what the group wants to do and guiding the group. I want this group to be fully participatory and to be able to move in any direction which group consensus allows. Equally I see the need for moderation, particularly over the initial stages to get the group up and running effectively. So I propose to be reasonably directive at first but to keep asking questions and seeking the consensus of the group through formal and informal questionnaires and processes.	Facilitation Strategies

Table 15: Open Coding: Assigning Conceptual Codes to Data

The examples of conceptual codes given in Table 15 are varied in their level of abstractness. Some of them, like e-mail, intranet and time differences, are relatively low level descriptions, while trust and facilitation strategies are at a relatively high level of theoretical abstraction. But in the beginning of the coding procedures, as a researcher, I tried to approach the data without any particular preconceived notion (Trauth & Jessup, 2000) and simply assign a descriptive label. Often data could be described in multiple ways as can be seen from Table 16.

Participant Comment	Conceptual Codes
The other thing is working across organizations. In the future we're going to increasingly be working across organizations, even virtual organizations.	Organizational Issue, Culture
I would rather send an e-mail then use the telephone, simply because of the amount of work I am doing.	E-mail, Communication Strategy, Organizational Issue
So I guess it's an idea of the rolling present. For example if you were to check your e-mail four times a day and somebody else checks it once every four days, you are going to develop different concepts of work flow or work pacing. Your contribution to the team is different and you'll probably judge other people, the other team members, by your the way you were doing it and the way you're accessing the team....	E-mail, Communication Protocols

Table 16: Examples of Assigning Multiple Codes

At the end of Cycle One, I began looking for connections between conceptual codes though the use of several strategies. As suggested by Baskerville & Pries-Heje (1999) I use grounded theory notation such as memos and diagrams. I created a Communication Strategy model (Appendix 6) based on the codes and emergent categories that were taking shape, as well as my intuition guided by increasing levels of theoretical sensitivity. I also wrote narrative, chronological case studies of each of the participants (Appendix 7). This gave me another lens through which to view the data and to draw cross linkages between the experiences of each of the participants, as well as further immersing me into

the data. These cases also gave me a valuable way to engage in 'member checking' with the participants when they read through them and verified their experiences as I had written them up.

As data analysis continued, particularly during and after Cycle 2, using theoretical coding and the constant comparative method, I continued to merge, change and occasionally eliminate codes (Sarker et al., 2000). Examining the conceptual codes for similarities or differences, I grouped them into clusters of conceptual codes, which I called conceptual categories, and which represent a higher level of abstraction (Figure 6). At this stage of data analysis, because conceptual categories were emerging as connections between categories and their properties in the manner described by Glaser (1992), I did not feel the need to use the paradigm system developed by Strauss & Corbin (1990).

Figure 6: Grouping Conceptual Codes into Conceptual Categories

Nine conceptual categories were eventually developed (Table 17). This grouping was done with the help of the NVIVO indexing and retrieval system. I did extensive writing around these categories, which I called 'Emergent Theory'. Essentially, these were a collection of integrative memos (Sarker et al., 2000) in which I organized subcategories, began interpreting the data and brought in participant quotes for illustration and support. I did this for the Pilot Project, Cycle One and Cycle Two data. As with the writing of the case studies, this gave me another perspective on the data and the linkages between the two cycles of data collection, as well as getting me started on the process of interpreting and understanding the data.

Conceptual Categories
Communication Channels
Communication Strategies
Communication Protocols
Virtual Team, Facilitation and Related Issues
Culture
Human Interaction
Organizational Issues
Non Technical Barriers
Technology

Table 17: Key Conceptual Categories

As I reread the data from the various perspectives I had developed - transcripts, coding, cases, and emergent theory - it became apparent that newer and higher levels of abstractions and relationships were forming. I tried constructing models to give form to these relationships. Figure 7 is an example.

Figure 7: Use of Grounded Theory Notation to represent Theory-Data during Action Research Cycle (Baskerville & Pries-Heje, 1999)

Eventually, it became clear to me that *relationship building* was the key social process (Glaser, 1978) that facilitators were concerned with as they initiated their virtual team. Although I had not listed it at first as a key conceptual category, I found after reexamining the data that relationship building was a significant factor in the *Human Interaction* and *Virtual Teams, Facilitation and Related Issues* categories as well as figuring prominently in several others. At this point, I sought to delimit my coding to only those variables that related to the

core category in sufficiently significant ways (Glaser, 1978). The core category, along with the other significant theoretical categories and the relationships between them eventually became the emerging grounded theory.

Concluding the Study

Richards & Richards (1994:446-447) summarizes the data analysis process as involving:

... the recognition of categories in the data, generating of ideas about them, and the exploration of meaning in the data ... concepts are captured; links are explored, created, and tested; ideas are documented and systematically reworked, in textual memos, models, and diagrams expressing the specification, explication, exploration and elaboration of theories.

For example, in this study, some conceptual codes from the pilot study continued to appear in Cycles One and then in Cycle Two, while others did not. From the codes that continued from the pilot to Cycle One I was able to begin to construct theoretical categories, which were then confirmed or modified, expanded or even discarded when the data from Cycle Two was analyzed. In a sense, the initial categorizing of data served as hypothesis building that would be tested against the data collected in the following training programs. Strauss and Corbin (1990:111) described this process as such:

As you have probably noticed, while coding we are constantly moving between inductive and deductive thinking. That is, we deductively propose statements of relationships or suggest possible properties and their dimensions when working with data, then actually attempt to verify what we have deduced against data as we compare incident with incident. There is a constant interplay between proposing and checking. This back and forth movement is what makes our theory grounded!

As alluded to earlier I strived to choose, where possible, trainees with differing characteristics. Termed theoretical sampling, this method of selection increased the likelihood of "negative cases" (ie. cases that do not fit an existing category). As a result, I was able to compare and contrast the emerging theory with the current set of data. Should a conceptual category "survive" a negative case, I could be increasingly sure of its robustness (Glaser & Strauss, 1967). For example, the conceptual category, *Organizational Issues*, along with many of the conceptual codes that make it up were relevant to all of the participants whether

they were in large or small organizations, working globally or locally, or were experienced or inexperienced virtual team facilitators.

Theoretical sampling and constant comparative analysis with the aim of allowing a core category or BSP to emerge (Glaser, 1992, 1978) were the main strategies for data collection, analysis and interpretation in this study. In the cyclical process of gathering, analyzing and interpretation, every unit of data is compared with every other unit. Theoretical codes and later categories emerged with the aid of the indexing and retrieval capabilities of NVIVO. The relationships between the conceptual categories also emerged and were explained. The memos and diagrams helped to provide a high degree of procedural rigor embodying the multi-threaded "chain of evidence" important in achieving reliability in qualitative research (Yin, 1994).

As this process continued through the pilot, Cycle one and finally Cycle Two, it became clear that the core category along with the other significant conceptual categories and the relationships between them were not being substantially altered. At that stage I knew theoretical saturation had been reached and data collection could be concluded.

Improving the Rigor, Credibility, and Validity of the Data

In Chapter 3, I discussed how researchers can establish and readers can judge the trustworthiness of a qualitative study by looking at the study's credibility, dependability and confirmability, and transferability. This section discusses the steps I have taken to achieve trustworthiness in light of these standards. What follows is a description of those steps:

To achieve credibility

- (a) I have maintained long engagements with the research participants wherever possible; always seeking follow-up data when called for. My presentation of the research results to the participants in January 2001, meant contact with participants had been extended to at least one year with all the participants and almost three years with DW, the pilot project participant.
- (b) I have ensured data collection from several sources including free discussions, interviews, personal notes and

journals, e-mail and organizational documents thus providing for instrumental triangulation. Taking data at different times (time triangulation) and from different people (source triangulation) were also features of this study.

- (c) I have engaged in member checking procedures whenever possible. All interview transcripts were regularly checked by the study's participants. Participant was given their individual case studies to read and comment on. Finally, the emergent theory was presented to the participants for their verification and approval.
- (d) I engaged in peer debriefing with academic colleagues in both private and public forums who helped me to reflect on my research procedures and data analysis.

To achieve dependability and confirmability

- (a) I have endeavored to provide a thorough and clear description of the processes I carried out in the data collection and analysis, and to show they are in accordance with the specifications of current grounded theory approaches.
- (b) I have provided case studies of all the research participants in Appendix 7. These case studies provide a major portion of all the data I collected on the participants in an easily accessible format.

To achieve transferability

- (a) At least one research participant, DW, presented the experiences he gained from this study and his participation in the pilot project to a virtual team workshop attended by professionals. His presentation appeared to achieve resonance with the attendees.
- (b) Engaging professional business people working within their organizational contexts as research participants rather

than students should increase the transferability of the research findings to other professional settings (Bordia, 1997).

In summary, I took a number of measures to reduce the threats to the trustworthiness of this study. These measures were primarily procedural and done to ensure methodological rigor, but I believe they were necessary to do provide the safeguards necessary to increase the integrity and credibility of the research findings.

4.3 Chapter Summary

This chapter described how the Virtual Team Action Learning Program and research procedures were carried out. It began by describing the design and implementation of the program, including descriptions and details of the pilot project and the two training cycles, as well as a discussion on the relationship between action learning and the training program. The second section described in detail how data was collected and analyzed using grounded theory approaches, and includes an account of how computers were used in data collection and analysis. Finally, the chapter ended with a description of the steps taken to ensure the trustworthiness of the research findings.

Part 3

The Research Findings and Conclusions

This part describes an overview of a grounded action learning theory of virtual facilitation (Chapter 5) and the three steps in facilitating virtual relationships (Chapters 6, 7, and 8) and the implications, conclusions and limitations of this study (Chapter 9).

Part 1 The Nature of the Research Problem	Chapter 1 - Introduction
	Chapter 2 - Review of Prior Relevant Literature
Part 2 The Research Act	Chapter 3 - Research Methodology
	Chapter 4 - Specific Research Procedures
Part 3 The Research Findings and Conclusions	Chapter 5 - A Grounded Theory of Virtual Facilitation
	Chapter 6 - Assessing Conditions
	Chapter 7 - Choosing Levels of Relationship
	Chapter 8 - Creating Strategies
	Chapter 9 - Implications, Conclusions, and Limitations

Chapter 5

A Grounded Theory of Virtual Facilitation: Building Relationships with Virtual Team Members

An Overview

5.0 Chapter Overview

Perhaps because of geographic dispersion and the potential for team member isolation as a result of cultural and language differences or functional speciality, the team leader usually feels as if he or she is the "glue" that holds the team together (Duarte & Tennant Snyder, 1999:74)

This chapter is an overview of a *Grounded Theory of Virtual Facilitation: Building Relationships with Virtual Team Members* (from now on referred to as *Facilitating Virtual Relationships*).

Facilitating Virtual Relationship describes the processes and issues associated with how facilitators of virtual teams - the participants who took part in this study - develop personal relationships with their virtual team members. The need to develop relationships is based on the contention put forth by the participants that developing some level of personal relationship with team members is an important prerequisite to successful virtual working relationships. The processes and issues in developing these relationships were documented from the time the participants entered the training program until either they completed a virtual team project or they became unavailable for further participation in the study⁹. The research findings from this study form the basis of this chapter.

Step in Facilitating Virtual Relationship is a unifying framework of three inter-related theoretical steps in the overall process a virtual facilitator goes through when building relationships with virtual team members. These three steps are *Assessing Conditions*, *Choosing Levels of Relationship*, and *Creating Strategies*. Figure 8 shows the relationships of the three steps. The purpose of introducing the grounded theory at this stage is to assist the reader to be aware of

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⁹ Either the organizations participants belonged to were taken over by other organizations or virtual teams or tasks were discontinued for various reasons. With some participants, data collection continued for months after the training programs were completed.

the whole theoretical framework before examining the details of each component in the next three chapters. Together, the four chapters present the theory and show how it is grounded in the data - the participants' descriptions of their experience.

Figure 8: Steps in Facilitating Virtual Relationships

5.1 The Importance of Building Relationships with Virtual Team Members

The importance of building relationships with team members will be explored further in Chapter 7. Here it should suffice to point out that stronger relational links have been associated with higher task performance (Warkentin & Beranek, 1999), increased effectiveness of information exchange (Warkentin et al., 1997), and with enhanced creativity, and motivation, increased morale, better decisions and fewer process losses (Walther & Burgoon, 1992). For a facilitator, relationship building can result in improved team management (Kayworth & Leidner, 2000). Clearly, the building of relationships with virtual team members is of fundamental importance to a virtual team facilitator.

It became very apparent throughout the training sessions that facilitators believed that building relationships with their team members was a necessary process if a virtual team was to be successful. In the context of a grounded theory study, this emphasis on building relationships was the core conceptual category to emerge in this study. For most of the participants, the need for building relationships was based on their previous experiences and seemed to center on the need to establish some kind of "contact" with team members. Participants

used phrases such as "eye them up" or "get into their heads" when discussing the need to know the people they were working with. Participants related experiences where a working relationship became much stronger after they had finally met someone who they had previously been dealing with exclusively through electronic communication channels.

Upon reflection, and after evaluating their various experiences working in face-to-face and virtual contexts, the participants concluded that having some level of personal relationship with the people they are working with would be an essential precondition for a successful virtual team (Figure 9).

Figure 9: Personal Relationships are a Critical Prerequisite for Successful Virtual Working Relationships

How facilitators developed personal relationships with their team members is summarized below in *Steps in Facilitating Virtual Relationships*.

5.2 Steps in Facilitating Virtual Relationships

Figure 10 is a diagrammatical representation of the three steps a facilitator goes through when building relationships with virtual team members. The process presupposes a project or task that must be completed by a virtual team led by the team facilitator.

Figure 10: The Three Steps in Facilitating Virtual Relationships (in context)

These steps cannot describe the unique experience of each trainee, but they do provide a detailed description of the trainees' collective experiences during the training program. These steps accurately portray the process that the virtual team facilitators go through, in varying degrees, when they undertake the task of building relationships with their virtual team members. Although the steps are presented in a linear fashion, the reader must be familiar with all the steps and how they relate to the desired outcome, which is the building of virtual relationships with team members.

An introduction to each of the conceptual components within the three steps follows to assist the reader in gaining a holistic view of this process of *Facilitating Virtual Relationships*.

Step 1 - Assessing Conditions

The concept of *Assessing Conditions* explains the facilitators' collective experience of considering all the factors present when a project or task is undertaken by the facilitator of a virtual team. Any number of factors may be present based on a variety of circumstances. These factors include *Team Issues*,

Boundary Crossing, Organizational Policies and Resources, and Technology. It is unlikely that all facilitators will encounter the same factors: nevertheless, it is important that the facilitator carefully assess the likely impact of those factors present at the initiation of the virtual team in order to have enough information to successfully complete Step 2 - *Choosing Level of Relationship*. Table 18 lists the factors that the facilitator may need to assess in Step 1, *Assessing Conditions*. Table 19 further breaks down the factors into specific subcategories.

Step	Conceptual Component	Factors
Assessing Conditions	Factors Present at the Initiation of a Virtual Team	• Team Issues • Boundary Crossing • Organizational Policies and Resources • Technology

Table 18: Possible Factors in 'Assessing Conditions'

Factors	Subcategories
Team Issues	• Project Goals/Team Tasks/Timeframe • Team Membership/Virtual Team Experience/Training Opportunities
Boundary Crossing	• Organizational (including functional) • Cultural/Language • Time and Distance
Organizational Policies and Resources	• Nature of the Organization • Human Resource Policies • Information Technology Policies • Security Policies • Knowledge Management Policies • Financial Barriers re: Use of Virtual Teams
Technology	• Availability • Compatibility • Competence

Table 19: Specific Subcategories of Factors Present at the Initiation of a Virtual Team

Facilitators can gain an accurate assessment of conditions by carefully looking at the factors present at the initiation of the virtual team. These factors will influence the desired level of relationship the facilitator may choose in Step

2, as well as the strategies a facilitator may create in Step 3. These factors are introduced below and brief scenarios are outlined to give the reader an indication of the importance of the factors in the overall process of *Facilitating Virtual Relationships*. These factors and their potential influence on the process of *Facilitating Virtual Relationships* will be examined in much greater detail in the following three chapters.

Team Issues

An important consideration for the facilitator is to understand the nature of the virtual team's *project goal or team task* as well as the *timeframe* available for completing the goal or task. For example, simple tasks and short timeframes are unlikely to require the same level of relationship building as complicated tasks and long timeframes.

Another important *Team Issue* that concern facilitators involve *how team members are selected* for the virtual team; for example, have they volunteered or were they appointed. This may influence their overall willingness to be on the team and so may require different levels of relationship building on the part of the facilitator. The same holds true for *team member experience with virtual teams*. Those with little or no experience, for example, may require a greater degree of relationship building. Finally, the availability of *virtual team training* prior to the initiation of the team could influence the degree of relationship building necessary. Again these factors will all be examined in greater detail in upcoming chapters.

Boundary Crossing

Boundary Crossing is a term used to illustrate the boundless nature of virtual teams. A virtual team may be *inter-organizational*, with members from different organizations; and *international or intercultural*, with members from different national and ethnic cultures. And of course, a defining characteristic of virtual teams is that they bring members together *over time and distance*. All of these subcategories of *Boundary Crossing* can have a profound effect on the process of *Facilitating Virtual Relationships*. An illustration in point: if a virtual team member is from a culture that values formality in relationships, particularly

new relationships, then the facilitator will need to take this into account when initiating a relationship with this member.

Organizational Policies and Resources

This factor can have a major influence on how a facilitator might go about building relationships with team members. Some of these key subcategories, such as *financial resources* or *security*, will determine which communication channels might be available to the facilitator, while others such as *compensation* for virtual team members or *training and support* might influence team member enthusiasm or competence.

Technology

The *availability* and the *compatibility* of the information and communications technology being used by members of the virtual team, as well as their *competence* using the technology, will influence the process of *Facilitating Virtual Relationships*, particularly when the virtual team is crossing organizational and national boundaries. Organizational preferences for certain communications systems and issues having to do with national communication infrastructure are just two areas that can influence how a facilitator goes about creating strategies for building relationships with team members.

Step 2 Choosing Level of Relationship

After *Assessing Conditions*, the next step in the process of *Facilitating Virtual Relationships* for the facilitator is *Choosing Level of Relationship*. This can be defined as the appropriate 'level' of personal relationship that the facilitator deems necessary to have with a team member in order to accomplish the team's project goal or task. Depending on the *conditions* that the facilitator has *assessed* in Step 1, the facilitator may decide on one of three levels of personal relationship to develop with a team member, *low* - just enough to get the project or task completed; *medium* - enough to build effective two-way communication resulting in project or task completion; or *high* - an appropriate level of trust resulting in project or task completion. Table 20 lists the possible

outcomes of Step 2, *Choosing Level of Relationship*. Table 21 provides definitions of the Levels of Personal Relations.

Step	Conceptual Component	Level of Personal Relationship
Choosing Level of relationship	Level of Personal Relationship	• Low • Medium • High

Table 20: Levels of Personal Relationships Possible when Choosing Level of Relationship

Level of Personal Relationship	Definition
Low	Just enough to get the project or task completed, e.g. name, position, company, etc
Medium	A level appropriate for building effective two-way communication resulting in project or task completion; e.g. varying amounts of personal information based on the individual needs of the facilitator and team members
High	An appropriate level of trust resulting in project or task completion, e.g. a much more intense level of personal and professional involvement, may need to evolve over time

Table 21: Levels of Personal Relationships Defined

To help the reader better understand the *Levels of Personal Relationship* in Table 21, it is probably easiest to illustrate each level with a hypothetical set of conditions as they might be assessed by a facilitator in Step 1 *Assessing Conditions* and relate them to the outcome the facilitator might choose in Step 2 *Choosing Level of Relationship*.

Low Level of Personal Relationship

If the conditions at the initiation of a virtual team are as follows:

- routine project (e.g. data gathering) with a tight deadline
- highly experienced and well-trained virtual team members
- within one organization
- high levels of organizational support

- availability of suitable technology

...then the facilitator may decide that only a low level of personal relationship is necessary, such as text-based introductions including names and professional "bios", or perhaps a referral to a personal homepage.

Medium Level of Personal Relationship

If the conditions at the initiation of a virtual team are as follows:

- somewhat more complex project (e.g. based on set of serial steps)
- team members with little or no virtual team experience
- inter-organizational team
- varying levels of organizational support
- unequal access to technology

... then the facilitator may decide that a medium level of personal relationship is necessary, and may proceed to establish contact with team members through rich channels such as telephone and desktop video conferencing. Repeated contact in this manner may be necessary. The goal for the facilitator is to gain some understanding of the team member; for example, their motivations, their feelings about the project, etc., as well as their communication styles and preferences.

High Level of Personal Relationship

If the conditions at the initiation of a virtual team are as follows:

- complex, non-routine project (e.g. new product development)
- longer time frame
- team members with little or no virtual team experience
- inter-organizational team
- international/intercultural team/different native tongues
- varying levels of organizational support
- unequal access to technology

... then the facilitator may decide that a high level of personal relationship is necessary, and may proceed to initiate face-to-face contact with team members, with frequent follow-up through richer channels such as telephone and desktop video conferencing where appropriate, as well face-to-face, meetings when possible. The goal for the facilitator is to develop enough trust between self and

team members to allow everyone to achieve a level of comfort and confidence necessary to complete the task.

The possible permutations in terms of conditions existing at the initiation of the virtual team are limitless. It is up to the facilitator to accurately assess the conditions and to choose a level of relationship suitable for the conditions that will allow the project or task to be completed.

Step 3 Creating Strategies

After *Choosing Level of Relationship*, the next step in the process of *Facilitating Virtual Relationships* for the facilitator is *Creating Strategies*. For the facilitator the aim of *Creating Strategies* is to create strategies for accomplishing the desired level of relationship. *Creating Strategies* involves the selection and use of appropriate *communication channels* and *message content* followed by the implementation and management of the relationship-building strategies. The selection of appropriate *communication channels* is based on the conditions discussed in Step 1, i.e. availability and compatibility of channels, cultural or organizational preferences, team member training and skills, etc. The selection of appropriate *messages* is based primarily on the level of personal relationship chosen in Step 2, but may also take into account conditions from Step 1 (Table 22); for example, a team member's cultural preference for formality.

Step	Conceptual Component	Based on:
Creating Strategies	- Appropriate Selection of Communication Channels - and - Message Content	- Conditions (Step 1) - Team Issues, Boundary Crossing, Organizational Policies and Resources, Technology - Level of Personal Relationship (Step 2)

Table 22: Factors Involved in Creating Strategies

Again to help the reader better understand factors involved in Step 3 *Creating Strategies*, it is probably easiest to re-emphasize the *appropriate*

selection of communication channels and message content already alluded to in the example given above. Two examples should suffice.

Selecting Appropriate Communication Channels and Message Content

Examples

If the conditions at the initiation of a virtual team are as follows:

- routine project (e.g. data gathering) with a tight deadline
- highly experienced and well-trained virtual team members
- within one organization
- high levels of organizational support
- availability of suitable technology

...and the chosen outcome is a low level of personal relationship,

...then the facilitator may create a strategy based on text-based introductions including names and professional "bios", or perhaps a referral to a personal homepage.

If the conditions at the initiation of a virtual team are as follows:

- somewhat more complex project (e.g. based on set of sequential steps)
- team members with little or no virtual team experience
- inter-organizational team
- varying levels of organizational support
- unequal access to technology

...and the chosen outcome is a medium level of personal relationship,

...then the facilitator may create a strategy based on establishing contact with team members through richer channels such as telephone and desktop video conferencing, with repeated contact in this manner as necessary. Message content would be based on the need for the facilitator to gain some understanding of the team member; for example, their motivations, their feelings about the project, etc., as well as their communication styles and preferences.

Implementing and managing the strategies the facilitator has created is the final part of the relationship-building process and an on-going one. It begins

with the implementation of the facilitator's chosen strategy. If the strategy that the facilitator created is the correct one and the chosen level of relationship is developed, then the relationship building process has been successfully completed and the project or task may begin, with the facilitator continuing to manage and maintain the relationship as necessary. In a complex, long-term project, where a higher level of personal relationship is desired, the strategy created may include continuous relationship building taking place concurrently with project or task implementation. However, should the relationship building strategy fail in its desired outcome or should conditions change or new conditions come to light, then the relationship building process may need to be revisited. Should new members join the team, the facilitator will also need to repeat the process with each new member.

5.3 Chapter Summary

This chapter is an intentionally brief overview of a grounded theoretical framework of how facilitators build relationships with virtual team members. The purpose of the overview is to make the reader aware of the whole theoretical framework before introducing the details and supporting data of each of the individual components. From this overview, it can be seen that this model represents a potentially significant framework to assist practitioners and researchers in understanding important elements affecting virtual team interaction, particularly facilitator-led relationship building. Chapter 6 - 8 will present details of this framework in an expanded version of *Grounded Theory of Virtual Facilitation: Building Relationships with Virtual Team Members*. The next chapter begins with a detailed description of the first theoretical component, *Assessing Conditions*.

Part 1 The Nature of the Research Problem	Chapter 1 - Introduction
	Chapter 2 - Review of Prior Relevant Literature
Part 2 The Research Act	Chapter 3 - Research Methodology
	Chapter 4 - Specific Research Procedures
Part 3 The Research Findings and Conclusions	Chapter 5 - A Grounded Theory of Virtual Facilitation
	Chapter 6 - Assessing Conditions
	Chapter 7 - Choosing Levels of Relationship
	Chapter 8 - Creating Strategies
	Chapter 9 - Implications, Conclusions, and Limitations

Chapter 6

Assessing Conditions

6.0 Chapter Overview

Chapter 5 described the overall theoretical framework: *Steps in Facilitating Virtual Relationships* and its three conceptual components, and briefly described, from the facilitators' perspectives, why building relationships with team members was the essential social process that needed to be addressed before a virtual team could proceed with effective virtual working relationships.

This chapter examines the first of the three conceptual components, the first step: *Assessing Conditions*. (Figure 11). In *Assessing Conditions*, a facilitator considers all the factors present at the start up of a virtual team project or task that may affect relationship building between the facilitator and team members. Any number of factors may be present based on a variety of circumstances. These factors include *Team Issues*, *Boundary Crossing*, *Organizational Policies and Resources*, and *Technology*.

All of the participants in the training programs either went through this step during the training program, or if they were in a later phase of their virtual team cycle were able to recall the conditions present at the initiation of their team. In any case, the participants' collective experience provides a rich source of data supporting the essential step of *Assessing Conditions* when *Facilitating Virtual Relationships*.

Relevant data was collected at all stages of the training sessions: in pre-training interviews, during training sessions in semi-structured interviews and free conversations, and after training sessions in follow-up interviews.

Figure 11: The Components of 'Assessing Conditions'

6.1 Assessing Conditions

From the moment a virtual team project or task is initiated, the facilitator begins *Assessing Conditions*. The participants in the training programs were a very varied group with different levels of virtual team experience. They came from different kinds of organizations and were engaging in projects or tasks of varying complexity. They were facilitating different types of virtual teams at different stages of development with unique membership, crossing different sets of boundaries, and with different kinds of technology available to them. Yet all of them either at the start of their virtual teams, while facilitating their teams, or after evaluation and reflection of their experiences facilitating a virtual team, realized the necessity of assessing all the conditions present at the initiation of a virtual team. It is not assumed that all conditions possible at the start of a virtual team are presented here, but those that are should be fairly representative. In any case the contention that *Assessing Conditions* is an important step in *Facilitating Virtual Relationships* should not be diminished.

6.2 Factors Present at the Initiation of a Virtual Team

The next four sections describe the various subcategories, with supporting data, of the four main factors present at the initiation of a virtual team. The four factors and related subcategories are listed in Table 23.

Factors	Subcategories
Team Issues	• Project Goals/Team Tasks/Timeframe • Team Membership/Virtual Team Experience/Training Opportunities
Boundary Crossing	• Organizational • Cultural/language • Time and Distance
Organizational Policies and Resources	• Nature of the Organization • Human Resource Policies • Information Technology Policies • Security Policies • Knowledge Management Policies • Financial Barriers re: Use of Virtual Teams
Technology	• Availability • Compatibility • Competence

Table 23: Specific Subcategories of Factors Present at the Initiation of a Virtual Team

The facilitators came into the training program with different levels of experience with both conventional and virtual teams. These prior experiences had a significant impact on the ability of the facilitators to list and assess the conditions present at the initiation of a virtual team that could affect relationship building between themselves and their team members. Those with conventional team experience tended to focus on those factors that they were familiar with from their face-to-face team experiences, although they all realized that there were likely to be other factors they were as yet unaware of. This was, of course, an important reason why they volunteered to take part in the training programs. Two of the facilitators had significantly more virtual team experience and were able to list and assess more factors that could affect relationship building between themselves and their team members. This was particularly true of one facilitator with experience working in a large organizational context. In any case, all the facilitators after initiating and/or facilitating their virtual teams came to

realize that there were factors present at the initiation of a virtual team that could and would affect relationship building with their team members. These are explored in detail below.

Team Issues

The category *Team Issues* was developed from the data to encompass all the factors that the participants perceived to be important at the start up of a virtual team that could be conceptualized as team related. These include such concepts as team membership, member experience, training opportunities, tasks and/or project goals, and timelines. Some of these concepts could also be found, and in some cases are found, under other categories. For example, virtual team training is found under *Organizational Policies and Resources* as well as *Team Issues*. In this case, making training available is an organizational issue, while the effects of having or not having such training available will be felt at the level of the team. The classification of concepts will become clear as they are discussed and examples are given.

Project Goals/Teams Tasks/Timeframe

The participants facilitated teams that were responsible for a variety of projects with varying timeframes (Table 24).

Participant	Project	Timeframe
DW	Initiate a project within the international partnership	Completely open
BC	Treaty negotiation between government and indigenous group	Politically-driven deadlines, but project timeframe was well over a year
SC	Construct web page, followed by management of web-based assessment center	Flexible
RB	Initiate virtual communication channels with branch office	Completely open
RW	Manage a political campaign in California	Three months until election
AR	Develop and write a strategic plan for Southeast Asian government ministry	Limited amount of time with irrevocable deadline
JJ	Open and organize a branch office in Vietnam	Early stages of project, no apparent deadline

Table 24: Participants, Their Team Projects and Project Timeframes

Project Goals/Team Tasks

The nature of the project or task that the virtual team must complete can affect the degree of relationship building needed. The greater the complexity of the project or task, the greater the need for monitoring on the part of facilitators (Everisto & Scudder, 2000) and the greater the likelihood the need for a higher degree of relationship between the facilitator and team members (Jackson, 1999). One measure of project/task complexity is based on the level and pace of interaction between the facilitator and the virtual team members. For example, in a simultaneous task, the need for constant and complex (i.e. decision-making) communication will be significantly higher than in a collative task, and so the possibility of a communication breakdown (technical or interpersonal) increases as well. Higher levels of relationship may help mitigate the effects of communication breakdowns and negative attribution bias. Table 25 illustrates the relationship between task complexity and degree of relationship (based in part on the ideas of Grenier & Metes, 1995).

Task	Definition	Relative Level of Complexity	Potential Degree of Relationship Needed
Collative	Facilitator gathers information from team members and collates it	Low	Low
Serial	Facilitator coordinates and links the results of sequential subtasks of team members	Medium	Medium
Simultaneous	Facilitator coordinates and links simultaneous sub tasks of team members	High	High

Table 25: Complexity of Task Types and Degree of Relationship Building

In this model, tasks can be collative, serial, or simultaneous, with the task complexity and need for higher degrees of relationship building increasing accordingly. The projects being facilitated by the participants in this study largely fit this model with some expected overlap in task complexity. Three examples should suffice to demonstrate this.

Example One - A Collative Task

AR's team had to put together a strategic business plan for a Southeast Asian government ministry. There were essentially two parts to the task, researching and gathering information and writing up the strategic plan. The task was basically collative, with virtual team members gathering information and depositing it with AR, who then wrote the strategic plan. The following is an excerpt from a background document provided by AR explaining how the project was to work:

(AR) The idea was to use the consultants already in Asia to run the strategic planning workshops and interviews. Their notes from these sessions together with the reports from the other Ministry projects would be sent to AR to fashion into the Strategic Business and Technology plans. The other offshore consultants would be used to research relevant information and communications technology trends and then to write up the results of their research (and send to AR).

While there was a need to go back and forth between the facilitator and the team members when additional research needed to be done, because of the

looming deadline the project had to be done in a straightforward manner. AR explained:

(AR) This (deadline) means there was virtually no time to be consultative or to brainstorm; instead, a relatively directive style had to be adopted in order to meet the client's deadline.

This team was completely virtual with no face-to-face contact between distributed team members. AR was able to accomplish necessary relationship building with key members of the team through telephone contact.

Example Two - A Serial Task

SC was in charge of the production of a web page. Her team consisted of functional area experts such as a web designer, an accountant and the web host, who were called in when their particular input was needed. The work in this team was basically sequential, with one part of the task needing to be completed before the next one could begin. While much of the ordinary communications took place through electronic communication channels, because the task involved understanding new technology and discussing design ideas, SC found that she was more comfortable meeting team members face-to-face to discuss these issues. She explained:

(SC) I think that relationships are usually initiated face-to-face and then they become virtual. I am interested to meet people who I've had not met before. I think the virtual stuff is sort of like meeting someone in the corridor and is just for the to and fro stuff.

While SC did not ostensibly call these meetings together as a relationship building exercise, in essence the meetings gave her the opportunity to understand team members' personalities as well as capabilities.

Example Three - A Simultaneous Task

This case serves as a negative example, in which the lack of relationship building prior to undertaking a complex project caused several serious miscommunications that could have had serious consequences. RW, while located in New Zealand, facilitated a team that was managing a political campaign in California. Managing a political campaign is a simultaneous task requiring much back and forth communication between team members and

strategic decision making as well as a fair amount of "ego soothing" as the candidate is both the client and a team member. This comment reflects the complexity of the project:

(RW) It may be unique to my situation, but inevitably on the team, the outcome is imposed from without or above - you are the facilitator, here you are, we need this done- the team works on the project but it is not theirs. We always have the client sitting there, around the table, with all their personalities and self-images and all the rest, so there is a whole other set of factors there...

RW goes on to explain how team members, in this case a major stakeholder, can influence team facilitation:

(RW) It's one thing to have money at stake, it's another thing to have a company's reputation at stake, but we're dealing with clients whose personal reputation is at stake. It can get very emotional.

In this case, RW made no special attempt at the beginning of the project or at any other time to build relationships with the team members. The result as stated above was several miscommunications that could have derailed the project on several occasions.

In summary, it is clear from these examples that the nature of the virtual team task will affect the degree of relationship building that a facilitator may undertake with team members. The higher the complexity of the task the higher the degree of relationship building that may be needed. But of course, task complexity is just one factor that a facilitator must assess. In complex situations, another factor, time, will be needed to develop trusting and open relationships (Jackson, 1999).

Project Timeframes

Cramton (2001) suggested that if a virtual team member feels time pressure, they may be more likely to settle for dispositional rather than situational attributes; that is judge the person rather than the situation, which could lead to mistaken judgments and relational stresses. AR's experience mirrors this finding:

(AR) Most projects today have significant time pressures - a lack of proactive communication, especially if it occurs repeatedly, can be exceedingly frustrating for off-site team members. Virtual team members need to be the "eyes and ears" of off-site team members.

The type of project or task that needs to be completed by a virtual team and the timeframe within which it must be completed may influence the level of relationship a facilitator may be able to achieve with team members. If the timeframe is very short and the task urgent, then any relationship building that the facilitator undertakes would have to fit within the given time constraints which could limit the opportunity to build a high degree of relationship.

In BC's case, the project had been a long-term one and relationship building had occurred in the earlier stages of the project. It is interesting to note here that the strong relationships built up in the earlier stages of the project helped make it possible for the quick maneuvering and decision-making using electronic communication channels that needed to be done in the final stages to meet the deadline, further illustrating the central contention of this thesis that relationship building is a necessary prerequisite to virtual working relationships.

Two of the facilitators were working against tight deadlines. These two projects also had somewhat frenzied starts. In RW's case, managing a political campaign, both the disorganized start and the looming deadline mitigated against RW initiating organized relationship-building strategies. As has been pointed out, the lack of relationship building, according to RW, was probably the cause of several serious miscommunications with team members. Again, in his own words, RW explained:

(RW) The two (potential) team members and myself exchanged a lot of e-mails and then I introduced them in an on-line text-chat meeting. Then they went off and started work... It then seemed almost superfluous to telephone Bob (the client) and say 'hi, it's me, how are things'. Thinking back, we probably should have done that.

AR's project also got off to a hurried start. Due to personnel changes in the consortium undertaking the project, the writing of the strategic business plan for the client was way behind schedule; in fact it had not even begun. AR explained:

(AR) The team selection was extremely ad hoc. The job was chronically behind. It was just a case of 'you do this'.

The deadline was based on the client's budgetary cycle and could not be changed. In spite of the looming deadline, AR made conscious attempts to build relationships with key team members using the telephone. The project was completed on time, and AR is convinced that the time and effort made in relationship building was a good investment. In this regard, she said:

(AR) ... by having some kind of phone contact up front in which I explain that we work in a pressurized environment ... Maybe even have some kind of ground-breaking type of conversation. Like I have found that there are sticking points when I am not tuned into a person. At least with a phone call I can get a feeling for them and they can get a feeling for me. But also by getting to know them I can find out what their motivations are. It just makes things easier to get some kind of grasp of who you are working with.

The other participants were involved with projects that were either open-ended or where the timeframes were more relaxed. In these cases, the pace of relationship building was more relaxed and the strategies different. For example, RB's primary team member was the general manager of the new branch office in Australia, someone RB had met on a number of occasions. RB's project was to establish ways of bringing the manager from Australia into the head office's regular meetings. He proposed to do this through an Internet-based video conferencing link. According to RB, one of the important objectives of this project was to build both interpersonal and intra-organizational relationships between the two offices. As he explained:

(RB) I don't mean trust in a professional level of trust, but just getting to know the person, building a relationship with Graham in Melbourne. To my mind, that's the key output or objective of a lot of this.

Another interesting example concerns DW's efforts to initiate and facilitate a project with a globally distributed volunteer-based team membership. The timeframe for this project was open-ended and high on DW's agenda was the desire to build "a team culture of cooperation", something he believed would require solid interpersonal relationships between himself and team members. He attempted to achieve this using ICQ, a free software that allows its users to know when (in this case) virtual team members anywhere in the world are connected to

the Internet. It then allows one member to contact another directly and to open up a chat box to hold synchronous typed conversations. DW believed this system would allow team members to hold informal and spontaneous "corridor" or backstage (Goffman, 1990) conversations that naturally build relationships and also spur the project onto completion.

To summarize, it is clear from these examples that project timeframes appear to be a factor that can influence the extent of relationship building that a facilitator may want to or be able to undertake. This influence is a particularly strong factor in urgent, deadline-driven projects and in long term relatively complex projects.

Team Membership

Another important factor that can influence the degree of relationship building a facilitator may decide to undertake concerns the team membership. As with the other conceptual categories, team membership can include many other elements, including the number of team members, how the team members are recruited, their virtual team experience, etc. Table 26 lists more of these elements.

Subcategory	Elements
Team Membership	• Number of Team Members • Nature of Team Membership - i.e. core or extended - i.e. voluntary or forced • Virtual Teaming Experience, Training and Expectations

Table 26: Elements of Team Membership

Team membership could also encompass subcategories, *cultural/language* and *organizational*, listed under the factor Boundary Crossing. These two areas will be discussed in greater detail in the section on *Boundary Crossing*. However, it can be briefly stated here that a team member's culture and language and their organizational affiliation could be very significant factors in a

facilitator's need for relationship building, particularly if the facilitator's and team member's language/culture and organization are different.

Number of Team Members and Nature of Team Membership

The number of team members in a team may affect the degree and nature of relationship building a facilitator chooses to undertake to the extent that more team members will require more time and expense on the part of the facilitator. Those facilitators strapped for time and financial resources may have to be selective as to which team members they build relationships with. Although RW acknowledges the need to build relationships with his team members, his organization, simply cannot afford international phone calls to "have water cooler types" of conversations. He is looking to Internet-based phone services and desktop videoconferencing to help establish relationships with team members in a cost-effective manner.

AR worked for a large international organization that could afford international telephone calls and she used this channel to build relationships with key team members in Australia, New Zealand and Southeast Asia. These key team members acted as supervisors for the other researchers at their locations. Using this "hub" system, AR was able to build and maintain relationships with those team members she had never spoken with. This "hub" structure will be discussed in more detail in Chapter 8, *Creating Strategies*. According to AR, recruitment onto her team was assisted by an organizational culture of consultant collegiality (discussed in the Boundary Crossing section below). But this only went so far and AR had to resort to cajoling potential team members. She explained:

(AR) I had to sort of enrol them a bit, because the other thing I had to be aware of is that the motivation in our company is billable time and there are all sorts of performance bonuses based on billable time. But in this project there was no billable time for them. We all have to do some of this work from time to time. I had to whittle away at them and call in my heavenly credits.

In BC's case, the team consisted of numerous members, including his own government office, which took the lead role in the negotiations with the claimant group, which also in a very real sense were part of the team. Other team members included other government departments and ministries and consultants,

some hired by the Government and others by the claimants. With so many team members, with both core and extended affiliations, it was not always easy to build and maintain relationships. Most of the relationship building effort went to the claimants as they were the key team members that could make or break the success of the project. As stated earlier, numerous face-to-face meetings were held with them to build the necessary relations and trust for good faith negotiations. Results of relationship building attempts with other government departments were more variable and will be discussed further in the *Boundary Crossing* section (below).

DW's initiation of a global virtual team involved a call for volunteers from among the dozens of independent companies that made up the global partnership under whose auspices DW was running the project. Many people, most of them CEO's, volunteered to be a part of team in order to learn more about virtual teams. Because they were highly motivated, DW's major preoccupation had to do with maintaining team momentum and the sense of accomplishment. He saw the need for relationship building to the extent that it would result in a "culture of cooperation" among team members. Since communication between such a globally distributed team would be primarily Internet-based, DW introduced ICQ with the intention that it would lead to informal, spontaneous conversations that would build a team culture of cooperation.

Virtual Team Experience, Training and Expectations

Virtual teams are such a new phenomenon that relatively few people have much, if any, experience working on them, although many people have experience working with the primary communication channels that support virtual teams, the telephone and e-mail. Virtual team experience can be understood to include all the skills, abilities and knowledge related to the structures and processes of working in virtual teams. These may include experience with the processes and norms for establishing team objectives, member roles and communication protocols essential for successful virtual teams (Warkentin & Beranek, 1999). The virtual worker is process-oriented, can coordinate and synthesize work, collaborate with team members from culturally

diverse backgrounds and make collective decisions and negotiations based on mutual trust (Traunmuller, 1995).

Training in virtual team competencies is also rare, but could be very important in relationship building. Warkentin & Beranek (1999) found that specific virtual team communication training improved member perceptions of the interaction process, with specific regard to trust, commitment and frank expression. Tullar & Kaiser (2000) found that virtual group training resulted in higher levels of social support, greater participation rates, greater satisfaction and significantly more accurate judgments. None of the participants in this study had any formal virtual team training prior to this study, nor did any of their team members.

In this study only two of the participants had significant virtual team experience, but their team experiences may be indicative of the kinds of conditions that facilitators will have to routinely and accurately assess when choosing levels of relationship and creating strategies. Previously, AR had worked in a virtual team for a student assignment. She, in New Zealand, and other students in Hawaii had to complete a project. Their main communication channels were e-mail and fax. When progress on the project stalled, AR made the decision to telephone the team members in Hawaii to try and establish contact. In the course of that phone call, she discovered, among other things, that the Hawaiian students had different motivations for doing the project and that their access to the fax machine and e-mail was very limited. Because of AR's phone call, the team members were able to better understand each other's situation. She explained:

(AR) I found all this out from ringing them up. (I) had a long talk with them, and when I discovered that they had a different purpose and different motivation, it made all the other stuff, the preparation, so much easier, because you understood where the other person was coming from. And so you just naturally worked around that. After that it was very successful. Initially I had thought their objectives, their purposes, and their motivations were the same as ours.

Besides gathering important information, the phone call was essentially a relationship building exercise that in AR's mind was instrumental in making the team project a success. As a virtual team facilitator, AR has drawn from this experience and incorporated its lessons into her strategies as a virtual team

facilitator. For example, she now actively seeks to understand the personal and professional situations of her team members at the start of the virtual team.

Another lesson that AR had learned related to the low-context or lean nature of e-mail (Daft & Lengel, 1986). If a team only relies on e-mail, then everyone will need to understand just how much attention needs to be given to communicating the 'whole picture' to others in the team. According to AR, this may be a virtual team training and selection issue, but in this comment she describes what it is like to facilitate a team without all the information she needs:

(AR) I think he (a team member) needed to be aware that one of the fundamentals in a virtual team is communication. ...when you're working virtually, you are really flying blind. You are dependent on other people for keeping you up to date with what's happening on their side. There was the one guy on site who I have already talked about, who I was endlessly trying to get to see this point. I could not see what was happening there and he had to tell me. He had to be aware of the fact that he needed to let me know what was going on or if the situation had changed. Otherwise I would be proceeding in the wrong direction. I often felt, quite visually, that I was flying around at night without night vision goggles on. You had your maps here and you were working to that, but meanwhile if somebody had shifted something on the ground and they didn't tell you, you would not know until you hit it.

RW has had many years of experience using e-mail and text-based chat to communicate with others in one-on-one and virtual team contexts. But in his case, all this experience had some negative outcomes on the facilitation of his campaign team. According to RW, he is very comfortable and competent in the use of these electronic communication channels and he can establish personal relationships as well as talk about business through these channels. The problem was he made the assumption and had expectations that his team members were equally comfortable working in this manner. He was wrong and several miscommunications were the result. After reflection, he realized not everyone can work through these channels in the same way that he can, and that he will need to make adjustments, particularly when it comes to relationship building. He explained:

(RW) It's been interesting that my level of comfort with the technology has been deluding me about how other people feel about it.

Another participant, BC, made the point that his team members had varying levels of competency and comfort with electronic communication channels. The claimant group had very little experience with electronic communication channels and they were much more comfortable in face-to-face situations. He related:

(BC) They do not appear to be up on the Internet. They have to come up to speed on a lot of stuff, not just the technical and communications stuff.

Not only was the important work done in meetings, but the whole critical process of relationship building was primarily accomplished through a series of face-to-face meetings, perhaps in part to cultural preferences (discussed further in Boundary Crossing section below).

On the Government side of the team, BC noticed that individual departments and Ministries used electronic communications channels quite differently. The Department of Conservation was quite comfortable using e-mail to relay information back and forth and even "discuss significant issues", perhaps according to BC, because they had so many employees working in the field and so were experienced with these channels. In contrast, another Ministry¹⁰, according to BC, simply did not reply to e-mail or telephone correspondences and only produced information at face-to-face meetings. Besides the factor of experience with and daily use of electronic communication channels, BC thought that these differences in the use of communication channels were also influenced by differing office cultures (discussed further in Boundary Crossing section below).

To summarize, in all these cases, the implications for building relationships are clear. A facilitator will need to assess virtual team member experience and training, as well as preferences for and proficiency with electronic communication channels before creating relationship-building strategies, as choosing an inappropriate channel to build relationships with a team member may doom the effort from the start.

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¹⁰ BC has requested that this Ministry remain anonymous.

Boundary Crossing

Boundary Crossing is the term used to encompass all the factors that the participants believed to be important at the start up of a virtual team that conceptualize the boundless nature of virtual teams. By definition, virtual teams work across time and distance. The practical effect of working across distance means that teams can effectively comprise members from different departments, offices (e.g., head and branch offices), and organizations, as well as different countries and cultures¹¹. Indeed, access to different organizational, functional and cultural perspectives is one of the key reasons for using virtual teams (O'Hara-Devereaux & Johansen, 1994). These 'differences' represent an important set of conditions that a facilitator will most likely have to assess before choosing an appropriate level of relationship and creating strategies to build relationships with team members. Table 27 illustrates the different boundaries that participants needed to address in their virtual teams.

As can be seen from the table the facilitators in this study were facilitating teams that crossed boundaries of time, distance, culture, language and organizations.

For example, RW's virtual team with members in New Zealand and California crossed time and distance boundaries; SC's team crossed a number of organizational boundaries; BC's team crossed departmental and cultural barriers; and JJ's team crossed language and cultural barriers.

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¹¹ Gender differences in teams could also be considered a type of boundary crossing, but this issue did not arise in the data. In this study three of the seven participants were women.

Participant	Organization	Team Composition	Boundaries
DW	New Zealand-based advertising company - part of an international partnership	CEO's of independent companies from around the world	Inter-organizational, cultural, language, time, distance
BC	New Zealand Government Department	Representatives from government departments and claimant group	Inter-organizational, departmental, functional, cultural, language, distance
SC	New Zealand educational consulting company	Local, Wellington (NZ) based, independent contractors	Organizational, functional, distance
RB	New Zealand software and business development consulting company	Members in New Zealand and Australia-	Intra-organizational, cultural, time, distance
RW	New Zealand-based political consultancy operating worldwide as a virtual organization	Members in New Zealand and California	Inter-organizational, functional, cultural, time, distance
AR	New Zealand office of international consulting company	Members in Southeast Asia. Australia and New Zealand	Inter & intra--organizational, functional, cultural, language, time, distance
JJ	New Zealand Trading company	Members in Vietnam, New Zealand and Australia	Intra-organizational, cultural, language, time, distance

Table 27: Boundary Crossing in Participants' Virtual Teams

The subcategories in Boundary Crossing (Table 28) may also be closely associated with Team Issues and Organizational Policies. For example, a virtual team may consist of members from different organizations and/or cultures, and teams that comprise members from different organizations may have to operate within parameters set by organizational policies (these issues are discussed further in the Summary and Discussion section of this chapter). Team issues that concern boundary crossing are mostly addressed in this section. Some issues at an organizational level are addressed here, while others are in the *Organizational Policies* section. When relevant, these placements are noted in the text.

Factor	Subcategory
Boundary Crossing	• Organizational (including functional) • Cultural/language • Time and Distance

Table 28: The Subcategories of Boundary Crossing

Organizational Boundary Crossing

Included under *Organizational Boundary Crossing* are intra-organizational boundaries, such as working across functional departments and branch offices, and inter-organizational boundaries that include teams with members from different organizations. Different organizations may have diverse work cultures as manifested by deeply held core beliefs and assumptions (Kayworth & Leidner, 2000). These differences can affect team member performance and hence team performance (Duarte & Tennant-Snyder, 1999). For the facilitators in this study, who were all working across organizational boundaries of at least one kind, the differences that tended to manifest in a significant way often had to do with issues of organizational culture and organizational policies. Wiesenfeld, Raghuram, & Garud (1998) suggested that organizational identification would be the psychological tie that binds virtual workers together into an organization, preventing workers from thinking of themselves as independent contractors, operating autonomously. AR, who was facilitating a virtual team with members from a global consortium of organizations, saw clearly where things are heading with regard to *Organizational Boundary Crossing* and the issue of identification. She said:

(AR) The other thing is working across organizations. In the future we're going to increasingly be working across organizations, even virtual organizations. And that becomes more difficult again, because when you were within an organization even though you may be in different countries there is at least a general organizational culture, there are at least some norms you can relate to. They may be implemented differently in different parts of the world, but there are some rules. But when you're working inter-organizationally, there can be a whole number of things that you have to suss out at the beginning. So in fact one employee in one organization could be working with different organizations at the same time each operating slightly differently in each of the different joint ventures.

An example of trying to maintain an organizational culture in a global organization is RB's project, where one of the driving factors to virtually bring the manager of the new Australian branch office into the management team's Monday morning meetings was to develop and maintain the organization's culture. RB explained:

(RB) It's not just the passing of information. It's making Graham feel a part of the Novus team in as many senses of that word as possible, because he will go off and do his own thing, and he will do that well and he will build up the Melbourne office and he will do all the things that are important to the company anyway, regardless of whether we are in constant communication with him. I mean he is a capable manager and he will grow that business. But trying to keep the flavor of the culture of Novus and trying to spread that to Melbourne is one of the key products of trying to get this thing between us going. It's kind of like that old saying "he who grows alone, grows crooked". I know that Graham on his own without regular contact with us would go out on his own tangent. His divisional location would have a different culture than ours. I see that as being quite important an objective in all of this to try and build some synergy in the cultures. ... and it will just become much more obvious that we are an Austral-Asian organization and we need to think like that.

Having a strong organizational culture would appear to make a large difference in the level of relationship building that might be necessary in a team composed of members from within the same organization, even if they are located in different countries. A strong organizational culture is exemplified by institution-based trust relationships (Nandhakumar, 1999; van der Smagt, 2000) and an anticipation of future association (Powell, 1990). AR illustrates this point when she commented on recruiting team members for her virtual team:

(AR) Really it was collegiality in a way. We are in the same organization. There is quite a bit of collegiality among consultants. It is a sense of belonging to the same organization, collegiality that motivated them to get the work done.

The degree of relationship building necessary and the strategy for going about it are likely to be quite different when your team starts with this kind of collegiality. In this case, AR was able to use phone calls to achieve a degree of relationship with team members in different countries that led to the on-time completion of the project.

DW's case was somewhat unique. He was initiating a virtual team within a global partnership of independently owned and operated businesses, and the people he was trying to recruit as team members were busy CEO's from around the world. The favorable response he received to what was an e-mailed proposal indicates a rather high level of commitment to the partnership on the part of the independent operators. This was enough (along with the opportunity to experience something new) for DW to build a team on. Indeed, the basic degree of relationship needed to facilitate the team already existed. DW's efforts went into creating what he called a "culture of cooperation".

BC's project highlights many of the issues involved when working across organizations. His team consisted of the claimants and other government departments and ministries. The claimants were very different from the government members of the team. They were an indigenous cultural group with their own beliefs, values and protocols. These differences affected team interaction. According to BC, the claimant group had definite preferences for certain communication channels, including face-to-face and formal letters. Whether these differences are considered to be cultural, or organizational¹², they still needed to be assessed by the facilitator when building relationships. According to BC, the other members on the Government side of the team required varying degrees of boundary crossing. On the one hand, they were all part of the New Zealand government bureaucracy, as BC explained:

(BC) Government departments are used to working with each other and we can immediately assume that we can trust each other. We are all on the same side. And we could get a lot done without having to meet.

On the other hand they exhibited unique ministerial or departmental cultures as BC further explained:

(BC) Definitely office cultures and protocols need to be sorted out in that they are of such importance. ...The Department of Conservation is particularly good at working virtually. I think it's because half of their organization is out in the field, in conservancies around the country. There are really very good working on e-mail, responding, and actually saying what they think on e-mail and they are getting a lot of work done that way. ... One Ministry's (anonymity requested) culture seems to be

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¹² It is supposed that a case could be made that the differences are either cultural or organizational or perhaps a combination of both, but this question is beyond the scope of this thesis and doesn't really affect the contention that boundaries are being crossed.

not e-mail based at all. I haven't seen an e-mail from them, I have not seen any paper from them (laughter). I don't know if my personal experience is typical but they seem to be 'talking' people and they seem to have got quite a strange culture of people there.

The above quotes from BC illustrate another aspect of organizational boundary crossing, which is the particular preferences of certain organizations for certain technologies, in this case, communication channels. Many of the participants recognized this factor, citing organizational or departmental preferences for e-mail or voice mail when leaving messages. RW experienced many difficulties trying to agree on common communication platforms with his team members, and made this observation about the relative ease or difficulty of resolving this issue from an organizational perspective:

(RW) Obviously in an organization, which is single ownership you can work these issues out more easily than if you are all in separate organizations.

As RW's and BC's cases show, facilitators may have to assess these preferences for particular communication channels at the organizational level, as well as the team member level (as discussed previously).

In summary, inter- and intra-organizational boundary crossing amongst virtual team membership is likely to increase the complexity and the time needed for a facilitator to build relationships. All of these differences need to be factored in by the facilitator when choosing levels of relationship and creating relationship-building strategies.

Cultural/Language Boundary Crossing

Another subcategory of *Boundary Crossing* is *Cultural/Language Boundary Crossing*. This kind of boundary crossing will most likely take place in global virtual teams, however it may also be a factor in national or even local virtual teams. The key point is whether a facilitator is working with a team member from another nationality or ethnic culture¹³. The effects of culture in

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¹³ National and ethnic culture are often the same thing, but in some cases they differ; for example, Maori in New Zealand generally consider themselves to be ethnically Maori, but still part of New Zealand's national culture.

virtual team settings can be profound, and include among other important issues, how individuals relate to each other (Kayworth & Leidner, 2000).

Misinterpretations or distortions may occur as team members and facilitators interpret communications through their own cultural programming (Lewis, 1996). The facilitators in this study had a number of experiences illustrating the importance of assessing culture as a key factor when choosing an appropriate degree of relationship and when creating relationship-building strategies.

BC's case is a good example of a nationally based, culturally diverse team. His project concerned the negotiation of a land settlement case with an indigenous Maori group. Because of the cooperative nature of this government-claimant case, the claimants were considered to be on the team, rather than the opposing side. Although the claimant group members are New Zealand citizens, they retain their own cultural identity. Hence, negotiations with them were to some extent cross-cultural negotiations. In any case, as members of the team the facilitator needed to assess cultural differences. Toward the end of the training program, BC was able to pinpoint some of the key factors that needed to be addressed in his interactions with the claimants. First and foremost was the need for the claimants to develop a close relationship with the Government team members before getting down to business. BC remembered that at the very beginning of the negotiation process with the claimants they came down to Wellington and had a face-to-face meeting with BC's government office although no meeting was really required. They reported on what they had been up to and asked a few questions. In retrospect, BC concluded:

(BC) I guess they just wanted to meet with us. It was more than was required and more than what any other groups had done. But it built up some sort of rapport. It was just a little bit unusual at the very outset.

The importance of melding different cultures together when working together was a key learning for BC. He explained:

(BC) There are two sorts of cultures that we need to bring together, between the claimant negotiators and the key Government negotiators, who are going to meet and be making hard judgments based on what we are telling them. And that requires a huge level of trust, which we are able to build up through a whole lot of face-to-face meetings over long periods of interaction, two years. We have got to the position where they

can trust us as Government negotiators to be acting in their best interests. We are not going to be running them short, to try and get something from them. That requires a close cultural melding in a sense.

In BC's case, face-to-face was the only channel suitable for building relationships with the claimant group. In this case it was the claimants that initiated the contact and the relationship building process. There may be several reasons why this was so. A simple explanation may be the relative proximity of the two sides (about 150 kilometers), which made it relatively easy to arrange face-to-face meetings. However, it is very likely that a cultural preference for the use of face-to-face communication was the most significant reason. By the end of the training program, BC concluded:

(BC) Face-to-face was much more relevant than might otherwise have been the case. It's the way that Maori operate, by talking and looking at you.

This conclusion is in line with Hall's (1976) theory of high and low context cultures, which states that for some cultures communication is more about context than the actual verbal message. In high-context cultures, messages have little meaning without an understanding of the surrounding context, which may include the backgrounds of the people involved, previous decisions, and the history of the relationship. People from low-context cultures prefer more objective and fact-based information. The message itself is sufficient. As this case makes perfectly clear, a virtual team facilitator will need to take into account cultural preferences or even requirements for relationship building as well as preferences for communication channels when choosing a degree of relationship and relationship-building strategy.

AR also experienced the effects of cultural boundary crossing in her team to different effect. AR's virtual team consisted of New Zealand and Australian members, and Asians and an Englishman on location in Asia. She did not consider the New Zealanders (she is one herself), the Australians or the Englishman to be culturally very different from herself, and she thought that as a group she understood their communication styles. So when her e-mails on critical matters to the Englishman went unanswered time after time, rather than come down hard on this team member, she checked before she "sent an obnoxious e-

mail", thinking "maybe the guy's wife is sick". So AR consciously made an effort to keep the lines of communication open. Her "softly, softly" approach yielded an "astonishing" reply.

(AR) I telephoned him. Please tell me if I have offended you in some way. He said, well I am a Yorkshireman and we go quiet when we're thinking. I was astounded by this. I felt like saying I don't care if you come from Mars, I need this stuff.

This Englishman had been hired as the lead consultant on the project at the last minute and AR had not attempted to build a relationship with him. She had assumed, until she learned otherwise, that she understood him, not only because he was an Englishman, but also because he was a professional consultant like herself.

Her approach to the Asian team member was, from the beginning, very different than to that of the Englishman. Her experiences from her student project with Hawaiians¹⁴ were revisited when she worked with team members from the Southeast Asian country in her project. When she led her virtual team, AR tried to communicate respect in her virtual communications with her Southeast Asian team members. The contrast in this respect between her Southeast Asian team members and the Australian and New Zealand members was pronounced. She recounted:

(AR) The Southeast Asian consortium partner and the clients have very different attitude toward authority. They were more respectful. In the West being critical doesn't have to necessarily mean a negative criticism. Putting forward arguments can be positive, without being rude. The Southeast Asians have a very respectful attitude.

AR pointed out that communicating via technology could be an added barrier when working across cultures. When working through a text-based or an audio channel, you do not have the visual cues with which to judge people's true feelings. As AR said:

(AR) In some cultures people will smile even when they're angry at you. Of course this is the problem of your only using one channel. If you're not getting the other cues, it makes things much more difficult.

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¹⁴ According to AR, her Hawaiian team members were from ethnically Chinese and Japanese backgrounds and demonstrated characteristics associated with those cultures, such as respect for authority and higher degrees of formality.

Even using an audio channel, where you can judge the nuances, the coloring, and inflections of a voice (Perey, 1997) and perhaps can tell whether people are feeling frustrated or angry, the problem remains that you must know the person or their culture very well in order to form an accurate interpretation.

AR explained:

(AR) Some cultures may get very excited when speaking while others may speak calmly and slowly. Each could be misinterpreted by the uninitiated.

Cultural tolerance and empathy is a basic condition for communicative openness (Boutellier et al., 1998), and AR's experiences show the danger of making wrong assumptions about culture as well as the benefits of taking into account cultural differences.

In summary, successfully crossing cultural and language boundaries represent a critical challenge to facilitators when building relationships with team members, and both AR's and BC's experiences demonstrate the importance of cultural factors in relationship building. Facilitators will need to consider the degree of personal relationship necessary to get the working relationship underway, as well as the use of appropriate communication channels along with appropriate messages delivered in an appropriate manner.

Time and Distance Boundary Crossing

Time and distance are the classic boundaries that a virtual team crosses. The effect of distance on relationship building strategies is proportional to how far the facilitator and team members are from each other. The further away, the more difficult the use of face-to-face communication, which could be problematic in situations where face-to-face communication is the best or maybe only option, as shown in BC's case. BC's case also pointed out that when team members are close enough to get together for face-to-face meetings it might be unnecessary to resort to relatively sophisticated technology such as desktop videoconferencing. He related:

(BC) The other reason for the claimants of the huge benefit of face-to-face over a chat room or even a video conferencing is that there really not

that far away and it doesn't really cost much for them to come down and talk to us.

The effect of time on relationship building strategies concerns the challenge of working across time zones. This may have little impact on the degree of relationship building that may be necessary, but a large effect on creating strategies to build relationships, as the time differences can restrict the kinds of communication channels available to the facilitator. If a team member is on the other side of the world, '12 hours away', synchronous communication using the phone or videoconferencing is bound to inconvenience one or both of the parties involved. This is probably not an issue that will make or break a virtual team of professionals, but it is one of the conditions that must be carefully and fairly assessed by the facilitator before creating relationship-building strategies. As DW put it, "everybody has to be awake."

If asynchronous communication channels, such as e-mail, are used the problem of pacing communication exchanges can become a serious consideration (Kimball, 1997). Response times between facilitators and team members may differ: constraining communications, causing uncertainty and negatively impacting trust (Warkentin & Beranek, 1999; Jarvenpaa & Leidner, 1999; Kayworth & Leidner, 2000). Time lags due to technical infrastructure and technological breakdowns, if not known by the people involved, can cause the facilitator or team member to attribute non-communication with lack of manners or conscientiousness, which can then seriously affect relationships (Cramton, 2001). 'Absence unavailability' (Sarbaugh-Thompson & Feldman, 1998) may also be a factor. This is when people are not co-present and do not use communication technology to bridge this gap. This kind of unavailability is very ambiguous as it may or may not be intentional. How people deal with this ambiguity can affect relationship building. These kinds of problems arose often in this study as this comment shows:

(SC) I can never be sure when I will receive an e-mail reply. I think, have they got the message? Has it got there? And why haven't they replied? In other words they have the control over the reply. Why are they withholding it, why are they exerting this control? Why don't they just reply? It's not such a difficult request I sent them. It's a feeling of powerlessness.

AR echoes this sentiment:

(AR) From the start of the project, I kept a key person in Asia updated on the project. It was three weeks before I realized I hadn't heard anything from him ... .. When working virtually it sometimes takes a long time before it filters through to you that something's wrong. And then all of a sudden you're kind of thinking where is that guy... .. When I called him, I found out he had not received any of my e-mails. He was somewhat upset, having thought I was ignoring him. Evidently the e-mails I was sending him were being forwarded to the wrong address. When I told him, I really did send him e-mails, he was, like, 'yeah, yeah'. It was not a great start to the relationship, but we sorted it out.

The kinds of problems associated with crossing time and distance have the potential to greatly disrupt relationship building in a virtual team, particularly with inexperienced team members. It is necessary for the facilitator to carefully assess these potential obstacles before creating relationship-building strategies, as well as respond in a fair and considered way should problems that may be caused by time and distance arise, much as AR did in the quote above when she telephoned her team member.

Organizational Policies and Resources

The term *Organizational Policies and Resources* was developed from the data to encompass all the factors that the participants perceived to be important at the start up of a virtual team that could be conceptualized as organization related. These included a number of concepts, which are listed in Table 29. As in the previous sections, some of the concepts listed may also relate to other areas. For example, the financial resources of an organization will likely affect the kinds of technology (discussed in the next section) they can make available to their facilitators and team members.

Factor	Subcategories
Organizational Policies and Resources	• Nature of the Organization • Human Resource Policies • Information Technology Policies • Security Policies • Knowledge Management Policies • Financial Barriers re: Use of Virtual Teams

Table 29: Organizational Policies and Resources and Related Subcategories

In this study, participants came from a wide range of organizations (Table 27): a New Zealand government department, two New Zealand-based management and technological consulting companies, a large Austral-Asian holding company, a Wellington advertising company - part of a global partnership, a one-person, globally-oriented virtual organization, and an independent consultant contracted to a small organization. Most of the organizations faced issues that had some direct effect on how facilitators managed relationship building with members of their virtual teams. In some cases the organizational effect was positive, in others negative.

Nature of the Organization

"My company lives in cyberspace. That's all we are in a lot of ways."

RW

The use of virtual teams in the participants' organizations reflects various trends in the wider world as organizations grapple with competitive new global realities and the introduction of new information and communications technologies. Virtual teams may be an ad hoc response to a current task that doesn't require formal change to the organization (Vickery et al., 1999), or as in RW's case may be the functional core of the organization.

With the exception of RW's virtual consultancy, the other participants' organizations are in various stages of virtual team use, some intentional, others ad hoc. DW's global partnership was supportive of his attempt to initiate a global virtual team to look at ways virtual teams could be used within the global partnership. SC's project to create an online virtual assessment center managed by a virtual team was a last minute change - reflecting current trends - to the original project, a traditional office-based assessment center.

AR pointed out that in her organization virtual teamwork is an ad hoc affair, although more and more of the organization's consultants are working that way. She pointed out that the project discussed in this study could only have been completed on time using a virtual team:

(AR) In point of fact, while it is good to have people by your side, if we had tried to get all these people up to Asia, we probably would never

have met the deadline. Although people are shipped out almost overnight, there's still that week or two when people get their families organized, get their visas, get this, get that, get tickets. All these things take time. In this project the deadline would have been months longer. Also having me here, although in many ways it would have been good to have been Asia, was actually better because I was able to be a sort of a mentor, I suppose, to the people here. If I hadn't been here to give them some sort of an overview of the project and keeping them together and on track, I think again the whole project would have folded. I think being here was actually quite pivotal.

BC's government department appears to be generally unaware of the role virtual teams currently play in their organization. But BC has observed:

All our permanent staff are at one location in Wellington, and we employ consultants, particularly chief negotiators and other specialists, like environmental specialists, and they're located around the country. What has been happening, I have observed, people will come down here for a meeting when things are moving fast, maybe once a week and then the rest of the time we communicate with e-mail and by telephone, and the effect is that they are here at the office almost.

According to BC, his department is constrained in some ways by the nature of its mission and political realities.

RB's project to link the various divisions in his company together and the new Australian branch office was a pioneering effort in his organization. He also sees potential virtual links with customers and vendors. At RB's organization, the management team was generally enthusiastic about bringing their Australian counterpart into the weekly meetings via desktop videoconferencing technology. He explained:

(RB) I have had quite a positive response from the people I have been talking to at our company about the idea of virtual teams. At several levels they like the concept of developing good cohesive teams. ... We have been taking this across the divide to include Melbourne and our secondary office in Wellington.

In summary, the overall effect of organizational policies on virtual team facilitators is that those organizations moving into virtual team work with their eyes open are more likely to be supportive of team facilitators and members, while those working in an ad hoc fashion may be unintentionally but negatively

affecting their virtual teams' performance (Vickery et al., 1999). The following sections address this issue in more detail.

Organizational Policies for Virtual Teams

According to the participants none of their organizations had a cohesive and coherent policy regarding the use of virtual teams. This finding supports the results of a 1998 survey on virtual team use in New Zealand organizations that found just 17% of respondents had organizational policies on virtual teams (Pauleen, 1998). This comment on BC's organizational policy illustrates this point:

(BC) In terms of policies, in terms of working virtually there is no sort of strict policy that you should do this or do that.

At best they have policies regarding the use of e-mail and the company intranet, and even these are not necessarily known to employees as BC explains:

(BC) It might change, because we have a formal e-mail policy, which few people abide with. Our formal policy, I haven't actually seen it written down somewhere, says that anything that goes out of the office has to be properly QA'd. (be quality assured). Everyone is sending e-mails without oversight.

If there is any organizational policy toward the use of virtual teams in BC's organization, it is a negative one: that is an understanding that the use of virtual communication channels will not be pushed on the claimants. This policy appears to be for political and cultural reasons. As BC explains:

(BC) Definitely we do not (have a policy where they will try and improve communication technology with the people they are dealing with). The reason why is that we are careful, being the Government, we do not want to force certain things on the claimant communities. Obviously, if they have it, it's an advantage, but we don't really push them on that sort of thing. We offer help in the sense that we offer Government funding, more than enough for them to go and get computers and stuff, but we are sort of limited in saying this is the way we want to communicate. We have to come to them where they are at, especially as the Government we cannot be in a situation where we suggest how things are done....

RW's organization, a small global virtual organization that relies on the work of virtual teams for its existence, has developed protocols for initiating

virtual teams that include the negotiating and signing of contracts with virtual clients and consultants and at least one initial on-line meeting to introduce the team. But in the case followed in this study those protocols were not followed because of the rush to get the team underway. This led to the following reflection on the part of RW on the importance of developing and following organizational policies:

(RW) A very fundamental lesson is that there has to be some norms.... There is an associate agreement that covers all these things ... None of that happened for this campaign. We were just thrown into it.

According to RW, there is a need for an orientation and implementation stage at the organizational, team and individual level to get a clear understanding of what is expected and what can be delivered by the virtual team. Not having these can put the facilitator (and in RW's case, the managing director) under severe pressure, as this comment attests to:

(RW) That's why I am wearing myself out hovering over the thing all the time and double checking everything because our reputation is on the line. In this team everything has been OK but only because I've been up three or four the morning checking everything out. It really woke me up, having to put down on paper, what are my criteria.

His criteria for team members included among other things: personal Internet access (i.e. can collect e-mail at some place other than the library, a friend's, or a cybercafe); the ability and willingness to check for e-mail several times a day; a clear understanding of the benefits and strictures of teleworking and ideally some experience of having worked this way; a willingness to not only passively await assignment but also to seek work from local campaigns, as well as an adeptness with not only e-mail but other ICT such as chat, teleconferencing, and maybe video conferencing.

Human Resource Policies

HR policy as it relates to virtual teamwork is probably an important issue that will need to be seriously addressed by organizations making use of virtual teams. Based on her study, Cramton (2000:49) suggests "that designers of virtual teams aggressively explore in advance potential differences in incentives and situations that will affect team members" and go on to say that "goals, incentives

and situations should be aligned whenever possible". Another study (Robey et al., 2000) concluded that managers needed to support virtual teams with appropriate rhetoric and reward systems. From this study it is apparent that issues of training, recruitment, compensation and promotion as they relate to virtual team members, are all critical areas that need to be looked at. None of the participants' organizations had any specific policies on recruitment or compensation except RW's virtual organization, and no organization offered virtual team training, although again RW would teach new members how to use Internet chat technology if they needed it.

AR's case is illustrative as it relates to virtual team member compensation, which according to AR can be a powerful motivator to any employee, including virtual team members and facilitators. Billable hours in AR's organization equal performance pay. In AR's virtual team, members in Australia and New Zealand did not receive billable hours or performance pay although the work they did for the project was in addition to their regular work. Those in the project on location received billable hours and performance pay since this was their only work. So there was a definite economic disparity in this virtual team that HR policy was not addressing. As a facilitator, these disparities in economic incentives could have a negative impact on AR's efforts to recruit and facilitate the team in general and to build relationships with team members in particular. According to her, this kind of policy could create a two-tier team reducing the incentive for some virtual team members to perform. She explained:

(AR) What we found in this project is that we had a lot of people offshore working on it getting all these high allowances, but the people in New Zealand and Australia received nothing, just the normal packages, no bonuses. So there is an issue there with both groups working the same hours but one group is getting a substantially better package. The other issue was that the people in Asia were able to build up their time in the project, which contributes to their billable hours and their performance bonuses. Whereas the people in New Zealand and Australia who were called on to help out were not able to bill our hours even though a large part of the document was written here. So those sorts of things can be quite different and difficult and could cause resentment.

According to AR, the issue here is not that people who work overseas get bonuses, but that in virtual team where you are all working together and doing fairly equal work some people are getting bonuses and other people are not. This

is an issue that doesn't normally come up in the conventional workplace. According to AR, these are the issues that organizations have to think about if they are going to go virtual. As she explained the consequences could be great:

(AR) In the future we will be working in a number of virtual teams some within the organization and some outside of it. If you're being rewarded differently, where do you put your loyalty and your effort? If you're working outside of the organization and you earn billable hours, but here you're working within the organization and you are not, you may have divided loyalties.

These disparities could greatly affect a facilitator's efforts to build relationships with team members who are working extra hours without compensation. Their motivation might be very low and difficult for a facilitator to overcome.

RW experienced another kind of HR issue unique to global virtual teams, one of recruitment. As part of a small organization, he does not have the resources to fly around the world to interview the consultants he needs to hire to work on his virtual teams. He can hardly even afford the phone calls to interview them. So in many ways he is flying blind when it comes to the people he has to recruit and facilitate. And of course, not being able to meet the team members or telephone them often also rules out important communication channels when it comes to creating relationship-building strategies. Here he explained how his virtual team came together for this project:

(RW) The difficulty is in a virtual environment, especially one so far away where you are not employing the person full-time and therefore the pool of people from which you can draw is more limited, you're actually down to sometimes no choice. For instance in this campaign, which is very low budget, there is no way I could put somebody on to it who is going to charge several hundred dollars an hour. It just so happened is inexperienced, younger woman arrived on the scene looking for a job just when we were looking for someone. So I had quick look at her CV, e-mailed one reference and put her together with the client and just let it happen. It wasn't as if I could say she was a match. ... That's just a luxury and I do not have. I did have a phone call with her, and I thought elderly conservative Jewish man (the client) and young newly graduated American woman. Not exactly my ideal match in heaven, but there was no nobody else except a guy who would have gotten along better with the client but who would have blown his budget in the first two hours. So there was no option, and I did not have the luxury to think what are my criteria for virtual team members. Geographical location, a pulse - you're on.

The difficulties in recruitment of team members for RW and other small, under financed virtual organizations are obvious, those having to do with unequal compensation among virtual team members are less obvious. In both cases, however, building relationships with team members in these situations could be problematic.

Information Technology Policies

Not much data concerning the participants' organizations' information technology policies was forthcoming. This may indicate that in small organizations like RW's and SC's, IT policy was simply a question of whether there was enough financial resources to buy or develop technology, while in the larger organizations, such as BC's, DW's and RB's, IT policy concerned security issues. Only in JJ's case was there a discernible IT policy, which involved the evaluation and installation of compatible technology in the Vietnam branch office. JJ explained:

(JJ) We have asked people in our company, IT experts, to determine the requirements of the Vietnam office to tell the Vietnam office what they should have. Then we supply it to the Vietnam office. At the moment we are worrying about infrastructure. So they will ask IBM or H-P to design the LAN - that kind of thing, to connect their computers together and their computers with our computers.

The effect on how facilitators go about creating appropriate relationship building strategies will depend to some extent on IT policies. A more integrated IT infrastructure in intra-organizationally-based teams should lead to more reliable communication channels at the disposal of the facilitator from which to choose from. For example, DW had at his disposal a secure Internet-based intranet created and maintained by the global partnership's IT department that he could have used with his virtual team members.

Security Policies

Organizational security as it relates to virtual teams was an issue that most of the participants in their role as facilitators only dealt with in passing. Security was one issue that RB had not thought of in regards to his project to use

desktop videoconferencing to link up his organization's new Australian office until it was raised in the training session. He discussed several possible solutions and concluded, "security is a valid point, something I hadn't thought of."

RW was considering Internet-based intranets as an inexpensive organizational "virtual office". These intranets are often free, and they provide calendaring services, document achieving, chat and messaging functions and often much more, and they don't require any special software. RW's only concern is security. He said:

(RW) It would seem to me that this is probably the answer, except you have to have concerns about security.

BC points out that his department has a policy concerning Internet security stating that no sensitive material shall be sent unsecured over the Internet. But as BC observed:

(BC) We don't have it (encryption) and there is no reason why we shouldn't have it, but we don't. People do it all the time. They couldn't really work otherwise. They are flouting the policy, but it seems to be efficient.

BC also mentioned that all letters leaving his department must pass a QA (Quality Assurance) check, but that e-mail does is not yet subject to this policy. The effect is that letters carry more weight than e-mails in the eyes of the senders (i.e. departmental staff). Of course, the receivers of this department's letters and e-mails might not be aware of these policies and take the content of an e-mail to be as binding as a letter. BC explained:

(BC) Everyone is sending e-mails without oversight. There is a general understanding that these don't carry any particular weight or authority in the office. But there may be some misunderstandings there potentially as claimants may interpret a different level of authority then we are intending.

Finally, BC mentioned that it would not be a good idea for his organization to use communication channels that would leave a written record of what was discussed. He mentioned Netmeeting and chat technology. He explained:

(BC) The other disadvantages of a Netmeeting for us specifically it would leave potentially an electronic recording of exactly of what we have

discussed. We don't want that. Everything we say and put down on paper we want to have Q A so we have the assurance that what we're saying is right. ... (Also) ... because it loses the frankness of conversation. ... and definitely a chat room would not be appropriate if people were able to save a record of what was discussed.

As these examples indicate, organizational security policies have the potential to affect relationship building in virtual teams, particularly with regard to Step 3, *Creating Strategies*. Organizations that limit the kinds of information that can be released to those outside the organization will limit the kinds (and content) of messages that a facilitator may send. This might particularly affect the development of trust-based relationships, which may require greater disclosures of information. Also, if the organization has policies restricting the use of communication channels, this can also affect the facilitator's choice of appropriate communication channels when creating relationship-building strategies.

Knowledge Management Policies

None of the participants reported any formal knowledge management policies as they are understood today: the capturing, storage and retrieval of knowledge, both tacit and explicit, of business processes (Hahn & Subramani, 2000), although knowledge management systems can aid access to resources of non-collocated individuals (Davenport et al., 1998).

Both RB and BC reported that they gave presentations to co-workers and management about what they learned in the training program about virtual teams, but there was no attempt to "capture" their experiences for the benefit of the organization. AR thought about the challenge of capturing virtual team experiences and knowledge in some depth. She explained the situation in her organization:

(AR) I guess on the consulting side of things, it tends to be organized around the client so much. And we tend to forget that there are a lot of in-house things, that there is the what you do and how you do it. The what you do is really for the client, but how you do it are really your own internal H.R. policies, processes and all sorts of things. If there are debriefs and we do PQA's (professional quality assurance) again it tends

to be focused on the what - the deliverable for the clients. Seldom if ever do we look at the how - how did we run this, how can we do it better, etc.

AR goes on to explain:

(AR) But that (evaluation and reflection) doesn't figure in our focus, which is on billable hours. So if you are reflecting, how you as an organization, handle something you're not getting billable time for it. It's a short-term view rather than a long-term view. The short-term view how do we get more dollars, the longer-term view looks at how we can do things more effectively. When the focus is on performance bonuses and billable hours, that's what people are concerned with. There's no payoff for thinking about processes and I guess that comes back to human resource policies.

Although knowledge management was not an issue for these facilitators, if it were it could certainly affect the relationship building to the extent that facilitators were required by company policy to use certain communication channels that left permanent records of team interactions. In fact a negative case of knowledge management occurs in BC's situation. His organization does not want verbatim records of discussions held between claimants and the Government, and so BC does not think Internet-based text chats could ever be used as a team communication channel.

Financial Barriers to the Use of Virtual Teams

For the larger companies that manage sound HR practices, such as recruitment and training, as well as affording the latest technologies there were few financial barriers to using virtual teams. For example, it was a relatively easy process for RB to get his organization to look at the introduction of new technology, in this case desktop conferencing, to support virtual teams. However, for the smaller organizations, financial limitations often played a significant part in the resources facilitators have at their disposal (Boutieller et al, 1998). This was particularly true for RW, who could not afford to hire technical or administrative assistance. He explained:

(RW) Another thing is the company structure. We are at that growth phase where we need to take the risk of some permanent administrative employees, but there isn't quite the guaranteed level of income to justify

that, but if we don't take that step then I won't be freed up enough to make sure that does happen. We are in a Catch 22.

Due to limited resources, he initiated and facilitated a global virtual team for three months almost exclusively by e-mail and Internet-based text chat. RW discussed this problem:

(RW) ... But again the business is so small that international phone calls to have "water cooler" type of discussions are a bit out of the question. I tend to call them to initiate projects and to discuss all the fine detail, which would take me too long to do by e-mail. But they tend to be very focused discussions and I still don't get a very real sense of the person at the other end. It's all very businesslike.

As RW explained, team member selection is also severely hampered by financial limitations, as it is impossible to arrange face-to-face interviews with prospective employees. RW comments:

(RW) It's one thing to do virtual teamwork in the way most corporations do; they have the resources and the money to hire someone in remote locations. ...So there was no option, and I did not have the luxury to think what are my criteria for virtual team members. Geographical location, a pulse - you're on!

SC an independent contractor working for a small consulting company, made similar observations about the lack of resources to upgrade to technology conducive to virtual team work, in this case a shared web-based file sever. She said:

(SC) I think we're moving forward, we are getting better at it all the time. I think the major constraints are costs, cost of technology, ie increasing our use of the Internet. I think that's our next step to try and aim for something where we are linked, where we are on a network, where we have a server.

Clearly, for the smaller organizations, especially those operating global virtual teams, financial limitations play a large role in what communication channels a facilitator has available when creating relationship-building strategies.

Technology

The primary technological issues concerning the facilitation of virtual teams in this study have to do with access to and compatibility of communication channels amongst team members. The availability, compatibility and capacity of communication channels are three of the most significant factors that a facilitator must assess at the initiation of a virtual team as these factors can greatly influence a facilitator's relationship building strategy with team members. For example, IT infrastructure capabilities among the geographic regions where virtual team members are located can lead to problems transmitting information in a timely and effective manner (Kayworth & Leidner, 2000; Cramton, in press). The participants in this study experienced a number of issues relating to the availability and compatibility of communication channels.

Availability of Communication Channels

As shown above, the availability of communication channels may be limited by financial considerations as in RW's case. And of course when working across organizations, the availability of communication channels will be an issue at each team member's location. Availability may not only be limited by financial considerations, but also by issues of national infrastructure. AR had to contact some of her team members through their supervisor who was on location in Southeast Asia, because extended team members that she might have otherwise contacted directly did not have e-mail access. She explained:

(AR) The Asian translators did not have e-mail. In fact at site in terms of e-mail they don't have a LAN or anything like that. The person has to dial up to an ISP whenever they want to get their e-mail.

The manager of the Vietnamese branch office in JJ's case was unable to obtain a business Internet connection in Vietnam, so they used his personal account. JJ related her experiences:

(JJ) We do not have an e-mail connection with them (our Vietnamese office), so our GM in Vietnam now has his personal e-mail address so we're just using that. That's easier than using fax, because infrastructure's still not very good in Vietnam and it's hard to fax things. You may need to try five or 10 times. So e-mail is easier.

SC related several incidents where she had difficulty communicating with a team member who was traveling overseas in locations with less developed infrastructure. Here's an example of the difficulties she experienced:

(SC) We take it so much for granted, but there are large parts of the world where you have trouble accessing people via e-mail. Two team members were at a conference in Eastern Europe and for a week it just did not work. It wasn't until they went over to Italy that they were able to clear their mail. Between here and Australia it's fine, but if you have people on the other side of the world, where it's not so good, where it's hard to reach them, where the telecommunications standards are not very good...

In more developed areas, the unavailability of high bandwidth channels may in effect limit the application of such channels as desktop videoconferencing in virtual teams. RB's efforts to set up a desktop video link with his Australian office was delayed until they could get access to an affordable high bandwidth link:

(RB) We are actually setting up a Netmeeting or some other service on our own network so we don't have to go on Glazier or the others (servers). Kind of waiting for a couple of other pieces to fall together before that happens. The one drawback is that he is on a modem line at the moment, so we won't be able to do an awful lot until he moves on to a highspeed network. But that's not all that far away. Melbourne's has a city link similar to here. If was to go onto that then all of a sudden we would have several meg between us, which would be more than enough.

Compatibility of Communication Channels

Compatibility of channels is another issue that can affect a facilitator's choice of communication channels. In this study, compatibility issues generally involve team choices in communications software. For DW it was immediately evident that compatibility and access to common communication channels was one of the key issues in getting his virtual team up and running. The independent members who belonged to the global partnership DW was working with often have a preference for Macintosh computers. DW quickly realized e-mail was the one Internet channel that would work for his global virtual team, at least until something else became necessary. He explained his strategy:

(DW) Lets work with the e-mail platform until it's not working for us and then later it may well be that we need documents or that kind of thing and a more complicated system. My attitude was the old KISS; keep it simple

stupid. So use e-mail because we do not have cross platform problems. Works on Macintosh, works on PC's. When you start looking at some of the software solutions there are none that I know of that are at an equal point in terms of versions for the for PC and Macintosh. Usually it's developed for PCs these days and the PC version is five steps ahead of the Mac in terms of functionality. So it's an issue.

However, the fact is e-mail is not yet "universal". Two of the participants reported limited e-mail access for team members or potential team members and one participant reported "connectivity" problems when sending and receiving e-mails with team members who were traveling in Eastern Europe. And as explained above, e-mail may not be available in some locations.

Within an organization, policy can determine which communications software will be used. This conformity can often be extended to international offices. Problems can arise, however, when the virtual team consists of members from outside any single organization. This is the issue that RW faces working with independent consultants and various clients. When he attempted to initiate communication channels other than e-mail, such as synchronous text chat or desktop videoconferencing, he ran into a host of problems getting team members to agree on a common platform. He explained:

(RW) I did say look let's try to get something like this going, and then of course an immediate debate started about which kind of technology. Some people said I prefer this, that and the other. At one point, if you count Netmeeting, I had four various sorts of clients sitting on my machine, Walk and Talk and all these other things. Everybody was trying to convince everybody else about the superiority of his or her preferred method. So the debate started to focus on the technology rather than the contents of the discussion.

RW, an experienced e-mail user, also experienced a cross-platform compatibility problem when opening an e-mail attachment. It was an eye opener for him and sensitized him to the problems other less-experienced e-mail users might face:

(RW) I never had a problem until something arrived the other day something.nzt. I just stopped and I thought I have no idea what it is and what do I open it with. So I commenced a big long Internet search to try and find out what the program was. And I thought I kind of now realized how people who don't know that F H means Freehand feel when I fire a Freehand file at them and say have a look at this. I don't usually do that. I try to send stuff in Acrobat or the more common programs but even then

a lot of people have troubles. I tend to get quite contemptuous of people who don't know how to do this.

Team Member Competence with Technology

Another issue that can be a factor is team member competence or preference in using various technologies. This may be an organizational training issue, but in some cases it may be a member-selection issue as some people may have a psychological dislike for certain communication channels. A lack of training and personal preferences may have been factors in BC's case, where the claimants showed strong preferences for more traditional channels such as face-to-face, letters and telephone. Although this appears to be a cultural difference, it may also be a technological training issue as BC's comments indicate:

(BC) Specific issues around some of the claimant groups not being technologically savvy as people in Wellington are, ... they do not appear to be up on the Internet, This limits the means by which we communicate. ... It's just working around these issues and looking at them.

RB, as a facilitator and technology user, expressed concern about his own competence with certain technologies and colleagues' expectations of him:

(RB) One of the things I am conscious of is that for example when I get Graham involved in this he's going to have some expectations about my competence with this technology and is going to expect me to deliver. If I am unable to deliver or hit snags there is a credibility problem.

RB also believed that technology, as a whole, might not be completely effective until users become more familiar with it. When that happens, technology in and of itself will no longer be an issue. He explained:

(RB) It's like the telephone has been around long time and we are all familiar with the telephone ... As I say, advances in technology, it may be that I have not done enough with personal videoconferencing yet, and so when that's enough I think it will make a big difference. ... I am very conscious that I am still trying to understand the options available with the technology. ... I think it takes, not discipline, but just the need to get into the habit of doing it. ... I think after a while it would become part of your working habit. ... The technology will become much less of an issue.

Research findings (e.g. Campbell, 2000) support the notion that systems developers often underestimate the importance of creating systems that are easy

to use. RB, in his efforts to implement Internet-based communication technology within his organization, was concerned with making the technology accessible to everyone, even the non-technical staff. He explained:

(RB) Clearly my objective at Novus is to have it set up in such a way that the other managers, who are not particularly technical - some are rather non-technical, for them it's a no-brainer. If someone calls them up, they say okay it's there, and it kicks in. I guess the technology will be my limiter. It's got to be that good, otherwise it won't be used, and therefore you lose a lot of the benefit of it. An important piece of this is to make the technology familiar, so when my chief executive is meeting with Graham in Melbourne, the technology makes the way he looks and sounds familiar to him, so it's not off-putting, he is just doing business. He's not thinking what a pain; the screen is that size or whatever.

Both the availability and compatibility of communication channels, along with members' technical skills and preferences, should be high on the list for facilitators when assessing conditions that can influence relationship building with team members, particularly as they apply to choosing appropriate communication channels in Step 3, *Creating Strategies*.

6.3 Chapter Summary and Discussion

There has been a pressing need for rigorous conceptual and empirical work to examine factors that influence virtual teams (Pare & Dube, 1999). It is only in the most recent literature that there have been systematic attempts to look at how the conditions present at the start up of a virtual team affect virtual team success. Pare & Dube (1999) proposed a comprehensive conceptual framework for the study of virtual teams that predicated project success on four key factors conditions, including: project context, ICT (information and communications technology), team dynamics and processes, and project management strategies. Under each of these four factors were a number of subcategories. For example, under ICT are the subcategories *choice*, *implementation*, *adoption* and *use*. Another recent model of dispersed collaboration (Cramton, in press) lists factors such as available communication media, task requirements, group identity and time frame present at the start up of a virtual team that are crucial to team performance. Likewise a study by Maznevski & Chudoba (2000:489) lists structural characteristics, such as technology, task, organizational environment

and group as conditions likely to affect team interaction and outcomes, and concluded:

Understanding GVT (global virtual team) effectiveness required a complete description of process and structure, of technology and social systems, and of the interaction among these dimensions over time.

Many of the factors and subcategories in these conceptual frameworks are similar to the ones that have emerged in this grounded theory study, under Step 1 *Assessing Conditions*. Based on the collective experiences and comments of the participants in this study, these conditions have been categorised under four main factors, *Team Issues*, *Boundary Crossing*, *Organizational Policies and Resources*, and *Technology*. These factors and their subcategories represent the wide scope of conditions present at the start of a virtual team that the facilitators in this study considered when *Facilitating Virtual Relationships*.

Although these factors and subcategories are presented as separate conditions that need to be assessed by facilitators, as mentioned in this chapter they are often closely intertwined. For example, the effectiveness of a virtual team crossing organizational boundaries may be highly influenced by organizational policies. When crossing organizational boundaries, conflicting allegiances becomes a critical issue that can have an integral effect on team outcomes (Vickery et al., 1999). Allegiance may be to the team member's department, organization, or to the team performing the task at hand. Conflicting allegiances may be an obstacle to relationship building attempts by facilitators.

Organizations that support virtual teams can be expected to result in increased team member allegiance to the team, while those organizations that are unsupportive of virtual teams can expect the opposite effect. Both situations need to be recognized by the facilitator. Supportive organizational policies that strengthen virtual team autonomy, recognize the value of virtual team work and reward team member contributions should make it easier for facilitators to build relationships with team members. On the contrary, ad hoc virtual teams working in haphazard and unregulated ways, without organizational support will likely prove difficult environments for relationship building. From the data presented in this chapter we saw that most of the facilitators were operating in organizational environments with little in the way of organizational policies supporting virtual teams. As AR indicated in her organization, organizational policies seem to be

running behind the virtual environment. The result for facilitators may be increased difficulties building relationships with team members, contributing to less than optimum team performance.

An important finding by Maznevski & Chudoba (2000) that boundary crossing increases message complexity - from simple, single dimensional messages to complex, multidimensional messages - may be another concern for facilitators. As AR alluded to in this study, assumptions and information tend to be shared within a single organization. This is also the case where location, culture or professions are shared (Schein, 1984). In such shared contexts, messages may be simpler. However, messages that cross boundaries are inherently more complex, but according to Maznevski & Chudoba (2000) can be made simpler if members build strong, trusting relationships. This contention seemed to be recognized by the facilitators in this study, particularly AR, BC, RB and RW, who realized that boundary crossing was an important condition present at the start of their virtual teams: one that required a higher level of relationship building between themselves and their team members.

Maznevski's & Chudoba's (2000) finding that structural characteristics of virtual teams can also affect relationship-building efforts is another start-up condition that facilitators need to assess. The more effective virtual teams used richer media when crossing boundaries and deliberately addressed relationship building to develop shared views and trust across all types of boundaries and that these 'boundary-spanning activities' were more frequent and intense the greater the nature and number of boundaries. The lessons for facilitators are clear: more boundaries between facilitators and team members at the start of a virtual team will probably mean that facilitators will need to choose a higher level of relationship with team members and create more intensive relationship-building strategies. This being the case, facilitators will need to sure that the necessary communication channels are available to team members.

Looking at technology in light of organizational policies, Kettinger & Grover (1997:514) stated:

Given the inevitable trend to electronically connect individuals interorganizationally, managers must decide appropriate policies and levels of investment in Internet technology to facilitate organizational computer mediated communication.

In this study, it was evident that small organizations face significant barriers in buying and developing technology to support virtual teams, and while large organizations can make the necessary investments in technology, they may not actually have policies supporting the kind of ICT- mediated communications that support virtual teams. The result in both cases often limit the communication channels that facilitators have available at the start up of a team with which to create and manage relationship-building strategies. Technical infrastructure and compatibility for team members is another area of concern for global virtual team facilitators in this study. This is supported by recent research suggesting that "virtual team 'designers' must consider the relative strengths and weaknesses of the infrastructures represented by the various regions of virtual team members" (Kayworth & Leidner, 2000: 191). Additionally, Kayworth & Leidner, (2000) suggested that various political (transborder data flow regulations) and economic (transmission costs) considerations be factored in when assessing virtual team technology selection and use.

Throughout this chapter it was mentioned and on occasion illustrated that the conditions present at the start of a virtual team can affect the process that a facilitator undertakes when building relationships with team members in two ways. That is, some of the conditions will be particularly relevant in the way a facilitator addresses Step 2, *Choosing Level of Relationship* while other conditions will have particular import in the way a facilitator addresses Step 3, *Creating Strategies*. Some conditions will affect both Steps 2 and 3. Figure 12 illustrates this contention.

Figure 12: The Specific Conditions in Step 1 Affecting Step 2 - Choosing Level of Relationship and Step 3 - Creating Strategies

Chapter 7, *Choosing Level of Relationship*, will discuss in detail the levels of relationship a facilitator may choose to build with team members and how the conditions discussed in this chapter can affect that choice.

Part 1 The Nature of the Research Problem	Chapter 1 - Introduction
	Chapter 2 - Review of Prior Relevant Literature
Part 2 The Research Act	Chapter 3 - Research Methodology
	Chapter 4 - Specific Research Procedures
Part 3 The Research Findings and Conclusions	Chapter 5 - A Grounded Theory of Virtual Facilitation
	Chapter 6 - Assessing Conditions
	Chapter 7 - Choosing Levels of Relationship
	Chapter 8 - Creating Strategies
	Chapter 9 - Implications, Conclusions, and Limitations

Chapter 7

Choosing Level of Relationship

7.0 Chapter Overview

After *Assessing Conditions*, the next step in the three-step theoretical framework, *Steps in Facilitating Virtual Relationships* for the facilitator is *Choosing Level of Relationship*. *Level of Relationship* can be defined as the appropriate 'level' of personal relationship that the facilitator deems necessary to have with a team member in order to accomplish the team's project goal or task. This chapter will define three levels of relationship that a facilitator may choose to develop with team members and the way the various conditions present at the start of a virtual team can affect that choice (Figure 13).

Figure 13: Levels of Personal Relationship Possible When Choosing Outcomes

All of the facilitators in the training programs acknowledged the importance of having some level of personal relationship with their team members before commencing working relationships, and several were able to associate an appropriate level of relationship based on some of the conditions discussed in Chapter 6. The participants' collective experience provides a rich

source of data supporting the essential step of *Choosing Level of Relationship* when *Facilitating Virtual Relationships*.

Relevant data was collected at all stages of the training sessions: in pre-training interviews, during training sessions in semi-structured interviews and free conversations, and after training sessions in follow-up interviews.

7.1 The Importance of Building Relationships with Virtual Team Members

Stronger relational links have been associated with higher task performance (Warkentin & Beranek, 1999) and the effectiveness of information exchange (Warkentin et al., 1997). According to Lau et al. (2000), effective communication is the key to successful virtual teams, and one of the keys to effective communication is how well team members are able to build and maintain their personal relationships. Kimball (2000:4) states, "the purpose of building and maintaining relationships in teams is to ensure that individuals develop at least enough harmony to be able to get their group work done". According to Walther & Burgoon (1992), strong relational links are associated with enhanced creativity, and motivation, increased morale, better decisions and fewer process losses. For a facilitator, relationship building can result in improved team management (Kayworth & Leidner, 2000). Clearly, the building of relationships with virtual team members is of fundamental importance to a virtual team facilitator.

Upon reflection, and after evaluating their various experiences working in face-to-face and virtual contexts, the participants concluded that having some level of personal relationship with the people they are working with would be an essential precondition for a successful virtual team. RW came to this realization after his virtual management of a political campaign on the other side of the world was complete and he reflected on several serious miscommunications he had had with his team member/client. He said:

(RW) One thing I learned in the last couple of weeks on the facilitation side of things is now that the campaign in California is over both the client and consultant are talking about what we did right and what we did wrong. A lot of issues are coming up as I said before that hadn't come out before because we did not know each other well enough.

Figure 14 illustrates the premise that the collective experience of participants before, during, and after the training sessions and their own facilitation of a virtual team led them to conclude.

Figure 14: Personal Relationships are a Critical Prerequisite for Successful Virtual Working Relationships

As a team facilitator, having a personal relationship with a team member resulted in several advantages that would lead to better working relationships. For example, two important advantages include a better understanding of how to effectively communicate with them and to learn what motivates them. Table 30 lists all the reasons why the facilitators in this study believe it is critical to build relationships with team members at the start of a virtual team.

Basic Social Process	Potential Advantages for a Virtual Team Facilitator
Relationship Building	• Understand team members' - personalities - communication styles - relevant experiences - motivators - backgrounds - skills - cultural differences - organizational situations • Better working relationships based on: - greater familiarity - higher levels of trust

Table 30: The Advantages of Building Relationships for a Virtual Facilitator

Another important reason for relationship building is one that extends beyond the life of the team, that is the need to maintain and strengthen professional relationships. While many teams come together to fulfill the requirements of a particular project and are then disbanded (Jackson, 1999), others may be reconstituted or continue in loose affiliations known as

communities of practice maintaining professional and social relationships (Joy-Matthews & Gladstone, 2000). Having made the investment to develop trust relationships, organizations may want to hold on to them. According to Jackson (1999:331), "it may be one or two projects down the line before such teams start to reap the benefits of these investments". For virtual team facilitators, as a result there may be a need to continually strengthen and maintain relationships with people that they are likely to work with in personal, team or organizational contexts in the future. RW, who is both a facilitator and managing director of a virtual organization, said:

(RW) I am constantly striving for a higher level of communication (relationship) with these people, because I will have to work with them again. I need the people coming out of the team feeling good because they are the people who go prospecting for the next jobs that we are going to do.

For the facilitators it was clear that there were obvious immediate and long-term advantages in developing relationships with virtual team members, and it was up to them to choose an appropriate level of relationship to develop with each team member.

7.2 Choosing Level of Relationship

After a facilitator has assessed all the conditions present at the start up of a virtual team as discussed in Chapter 6, the facilitator's next step in the relationship building process is to choose an outcome - a level of relationship with individual team members - that will improve the chances of success of the project or task being undertaken by the team. For the sake of theoretical simplicity, three basic levels of personal relationship can be described: *low*- just enough to get the project or task completed; *medium* - enough to build effective two-way communication resulting in project or task completion; or *high* - an appropriate level of trust resulting in project or task completion. Table 31 lists the possible outcomes of Step 2, *Choosing Level of Relationship*. The next section, 7.2, will develop and describe the definitions of the three levels of relationship in more detail. Section 7.3 will then look at three examples, which support the contention that facilitators can consciously choose an appropriate level of personal relationship to develop with a team member based on the

conditions existing at the start of a virtual team, and that the development of the chosen relationship can affect the outcome of a virtual team project.

Step	Conceptual Component	Level of Personal Relationship
Choosing Level of Relationship	Level of Personal Relationship	• Low • Medium • High

Table 31: Levels of Personal Relationships Possible when Choosing Level of Relationship

The Levels of Personal Relationship in Virtual Teams

The levels of personal relationship - Low, Medium, High - have been chosen to describe rough gradations of the kinds of personal relationships that a facilitator may have with team members in a virtual team and are defined in Table 32. These gradations are based on the descriptions of the relationships given by the participants in this study. The rest of this section will describe and develop these levels using the participants' descriptions and supporting material from the literature and relate the appropriateness of the different levels with the conditions present at the start of a virtual team.

Levels of Personal Relationship	Definition
Low	Just enough to get the project or task completed, e.g. name, position, company, etc
Medium	A level appropriate for building effective two-way communication resulting in project or task completion; e.g. varying amounts of personal information based on the individual needs of the facilitator and team members
High	An appropriate level of trust resulting in project or task completion, e.g. a much more intense level of personal and professional involvement, may need to evolve over time

Table 32: Levels of Personal Relationships Defined

Low Level of Personal Relationship

A low level of personal relationship can be defined as knowing just enough about a virtual team member to get on with the task at hand. This is

commonly termed a 'working' relationship, which may consist of a name, position title, location, and functional and/or organizational affiliation. Additional information of the kind found on a CV or as passed on by a colleague or associate may also be included. One international consulting firm, has set up an intranet, called Knowledge on Line (Cambell, 1998), which keeps detailed CV's of personnel on-line. Before joining a team, a new member can learn about the other team members. Such systems can incorporate rich contextual media on team members such as video and audio. A low level of relationship between a facilitator and team member could be a very appropriate outcome depending on the conditions at the onset of the virtual team.

In AR's team, discussed below (Section 7.3) in more detail, she had three team members in Australia who were working primarily as virtual part time researchers and who were all employees of the same organization. Two of these team members were working under the supervision of the third, who was in direct contact with AR. Based on the assessed conditions - task, same organization, tight timeframe, etc - and the way AR was able to set up her virtual team using a hub system, AR did not really feel compelled to know anything more about these team members than their names and positions. She explained in her own words:

(AR) But I had to extend out a little bit and there were at least three people in Canberra. I had them working pretty much as a self-contained group over there. And I dealt mainly with just one of the people over there. I had him look after the other two. It made my life a bit easier. So although everyone did not know each other and the people in Asia really did not know any of the other people in New Zealand or Australia, because we were operating sort of as a couple of different virtual teams, working through hubs, trust was maintained in that way. That was quite good.

In this case it is quite clear that it was enough to achieve a low level of relationship with these team members. To try and build a higher level of relationship would not have furthered task completion and would have been time wasting in a highly deadline-driven project as this.

Medium Level of Personal Relationship

A medium level of personal relationship can be defined as enough to build effective two-way communication resulting in project or task completion. Tavistok researchers, Higgins and Jessup (1965), when asked how communications might be improved, concluded:

An improvement in relationships between the parties is likely to improve communications more effectively than any changes in communication techniques. (quoted in van der Smagt, 2000:156).

Effective two-way communication can be defined as mutual communication based on shared co-orientation (Sahay et al., 1999) A medium level of personal relationship is not quite as simple to build as a low level. It develops from "a common frame of reference, or shared mental models of how team members think and behave based on respective social norms, personal values, and past experiences" (Sahay et al., 1999:35). Kayworth & Leidner (2000:192) found that effective team leaders were able to "engage in activities to build team cohesiveness, in part by getting to know their teammates better" through the sharing of personal aspects of their lives. The better a facilitator knows a team member, the less monitoring of that team member may be necessary, leaving more time to work on tasks (Everisto & Scudder, 2000).

What is enough to build effective two-way communication is likely to vary substantially between people. Some may equate a personal relationship with a working relationship and may only require clear team-based ground rules and communication protocols to initiate effective two-way communication. Others may need to "see" a person to gain enough sense of a person to build a relationship. For others, it may involve learning to varying extents about team members' interests, hobbies, education, family life, career goals and the like. It is likely that different people with different personalities and experiences and those from different cultures will have different requirements for personal relationships before engaging in effective two-way communication.

Many of the participants' comments support the notion of a medium level of relationship involving a common frame of reference or shared mental models to learn about their team members. Here are four such comments by the facilitators explaining what they are looking for:

Understanding

(AR) I talked about my need to sort of get inside of people's heads and to discover what they are really about, what they are after, how they work, and how best to communicate with them.

Familiarity

(RB) I think that is an important element of any virtual team, starting off knowing people well enough, having met people, can make such a difference to a virtual relationship.

Trust

(AR) One of the issues, which is certainly in the forefront of my mind is the issue of virtual relationships, kind of building the trust and building the relationship between people at a distance.

Motivation

(RB) Yes, but also by getting to know them I can find out what their motivations are. ... by finding out their goals .... as individuals and about their backgrounds. It just makes things easier to get some kind of grasp on who you are working with.

Many of the participants' comments support the notion and the importance of effective two-way communication. AR's comments are representative:

(AR) I think he needed to be aware that one of the fundamentals in a virtual team is communication and when working virtually you have to specifically be told, because you literally cannot see what's going on. ... So you have to be much more aware of the others I think.

AR calls this kind of communication 'proactive'. She explained:

(AR) What came to me was the idea pro-active, be pro-active in communication. Because we're without all the sensory cues in face-to-face communication, you really have to let people know what's going on.

Achieving a high level of communication with and understanding of team members is clearly an important goal of the facilitators in this study, one that is supported by the literature. At first glance, it would seem that many virtual teams will require a medium level of facilitator-team member relationship building as many virtual teams will have start up conditions that will require this level of

relationship, i.e. temporary, short to medium timeframes, working across boundaries with important task/project outcomes.

High Level of Personal Relationship

A high level of personal relationship can be defined as an appropriate level of trust resulting in project or task completion. The concept of trust in personal and business contexts has been much researched and has been explained in a number of ways (Handy, 1995; Lipnack & Stamps, 1997; Jarvenpaa et al., 1998). Essentially it comes down to having confidence in another person's competence, steadfastness, honesty, loyalty and the like. Levels of trust have to do with combinations and degrees of these qualities. Achieving trust requires a deeper understanding of someone's character than what would be found at a medium level of relationship, which is more about knowing 'facts' about people.

How trust is developed is another important facet of relationship building. According to Lipnack & Stamps (1997), trust between virtual team members will develop because it is so important, but this explanation may be facile. Handy (1995) believes trust needs to be managed. Trust may be attained through personal reputation or referral by others who are trusted (Jackson, 1999; Benson-Armer & Stickel, 2000). Another view is that trust is institution-based, generated through more formal organizational mechanisms (Nundhakumar, 1999; van der Smagt, 2000). From the perspective of a team leader, trust can be increased by reducing team members levels of perceived uncertainty and vulnerability (Benson-Armer & Stickel, 2000). Developing trust across cultural, functional and organizational boundaries may be more problematic (Duarte & Tennant-Snyder, 1999). What does seem to be clear is that higher levels of trust result in greater team cohesiveness, satisfaction, and perceived effectiveness (Jarvenpaa et al., 1998).

An appropriate level of mutual trust between a facilitator and a team member that will allow the completion of the team project or task will rely on the individuals' perceptions measuring each others individual qualities against the perceived risk of trusting that person. Personal experiences and cultural attitudes and values are all going to affect perceptions of trust and processes for acquiring it. Facilitators who need to build high level relationships with their virtual team members will have to carefully understand and assess both their own and their

team member's standards of trust and expected ways of earning it. Many of the participants referred to the need for trust in working virtually and several different levels were discussed, as were the ways of building trust.

The need for trust in a virtual team context was on the mind of several of the participants. RB was interested in increasing the level of interorganizational trust by improving the relationship with his organization's overseas branch manager. As he explained:

(RB) The two most significant things have to do with the "building team identity" and virtual trust. .... It has occurred to me in the last two weeks setting up the technology to link the Melbourne and Wellington office, how beneficial a better trust between the two centers would be to the organization as a whole. I don't mean trust in a professional level of trust, but just getting to know the person, building a relationship with Graham in Melbourne.

RW is struggling with developing trust in a nearly completely virtual environment:

(RW) All the people working with me, with the exception of two people in New Zealand, I have never actually met. I deal with them mainly online and occasionally by telephone and it's difficult to put a great deal of trust in somebody with a relationship that tenuous. I have to somehow work through the technology to be able to establish the kind of relationship I want to be in had I the resources to do it the other way.

The following three comments reflect the various levels of trust that may be available at the start of a virtual team and the level of trust that may actually be required to complete the team project or task:

Basic Trust

(RW) There's a basic level of trust (based on presumed competence), which until the pressure comes on is still untried and untested.

Referred Trust

(AR) I had never actually met him (someone the facilitator was now working virtually with) when I was in Asia. But I had met a number of his colleagues so through them I had a sort of referred trust.

Earned Trust

(BC) The first is between the claimant negotiators and the key Government negotiators, who are going to meet and be making hard

judgments based on what we are telling them. And that requires a huge level of trust, which we are able to build up through a whole lot of face-to-face meetings over long periods of interaction, two years. We have got to the position where they can trust us as Government negotiators to be acting in their best interests.

There were many descriptions by the participants on how trust could be built in a virtual context. AR discussed two ways she was able to build trust with her team members. The first way was by reputation, which according to her is a relatively easy and fortuitous method. She explained:

(AR) I met many of the client people and I also met many of the consultants up there. Also I had a track record, having worked on the bid that won the job in the first place, so people knew that I could deliver on very short time frames. The level of trust people had in me, rightly or wrongly, was fairly high.

Another more intentional way that AR built trust was by structuring the team's communication channels and lines of authority. She explained how this worked:

(AR) So although everyone did not know each other and the people in Asia did not really know any of the other people in New Zealand or Australia, because we were operating sort of as a couple of different virtual teams, working through hubs, trust was maintained in that way.

Finally, RW had these views about building trust - essentially developed by sharing experiences and "going through tough times together". He explained:

(RW) The building of trust is interesting - it's one thing to have money at stake, it's another thing to have a company's reputation at stake, but we're dealing with clients whose personal reputation is at stake. ... The incident (a personal attack on the client/team member and the swift and in-depth response by RW on behalf of the client/team member) actually built up a lot of trust between the client and me. There was a distinct shift in the relationship between us when I jumped to his defense from a journalistic point of view. We got an apology from them in the end. Because we had sort of been through the fires, the trust level between the client and I increased. I thought about it and could not see how other than over time that this trust could be built. That's my conclusion about building trust. As in any relationship trust can only happen over time, through actually being tested. ... It's a dynamic process. You can't orient somebody in trust; it is too ephemeral.

These three descriptions confirm that what is involved in the building of trust can vary enormously from person to person and case to case. In some instances one's personal or professional reputation may suffice, while in others trust can only be achieved in time and with shared experiences. Accomplishing this in a virtual context can be problematic as these two comments by RB on building trust based on professional competence indicate:

(RB) I noticed this before, one or two (co-located) teammates may disagree. One has been here Novus for a while, while the other team member did not have as much experience. They had a couple of instances of crossing of swords on particular issues. In time, the newer team member established some credibility in the team and the first guy understood this new guy knew what he was talking about and his opinion became much more noted, much more relevant. Instead of the older chap saying to the newer guy I disagree with that, he would stop and think about it and give the guy some credit, maybe in coming up with an alternative solution. In a virtual team that kind of peripheral understanding of another person's ability is not going to happen. It's much more likely that they will say the guy does not know what he is talking about....

... If that task (done in a virtual team) is obvious to other team members then they will be credited for it. If it's not for some reason, especially in support where there is quite a diverse range of things that people have capability in that might not be so obvious. In Melbourne they may be rushing off doing a fantastic job in an area that nobody here can see. So when they make some comment, which is not of general interest, we may not take as much notice of that.

In this section the three different outcomes of relationship building have been defined based on the participants' descriptions of their experiences. The next section will document how three participants chose different outcomes based on the conditions existing at the start of their virtual teams.

7.3 Examples of Facilitator-Chosen Outcomes

To illustrate the contention that a facilitator can consciously choose an appropriate level of personal relationship to develop with a team member based on the conditions existing at the start of a virtual team, and that the development of the chosen relationship can affect the outcome of a virtual team project, three examples based on the training programs facilitators' own experience are presented. The second and third cases presented indicate that the proper

relationship was developed according to the conditions present at the start up of the facilitator's virtual team. The first case, however, is somewhat more complex. Although the facilitator chose the level of relationship he did based on the conditions present at the start up of the team, after the project was completed he realized that he should have made an effort to develop a higher level of relationship with his team member. Figure 15 lists the conditions that will be discussed in each case.

Figure 15: Conditions That Can Affect the Level of Personal Relationship Chosen

RW's Case - Managing a Political Campaign Virtually

As previously mentioned, this case is somewhat complex with mitigating factors. Nevertheless, it can be clearly demonstrated that the conditions present at the start of the virtual team directly led to the facilitator choosing the desired level of relationship he had with his team members. What this case also shows is that sometimes facilitators face conditions that they may not have much control of, and that these conditions may greatly affect the level of relationship that a facilitator can build with team members, which can ultimately have an adverse effect on the project outcome.

As discussed in previous chapters, RW owns a small New Zealand-based virtual consultancy that operates globally via the Internet. The organization

offers advice on political campaigns as well as manages them. The team RW facilitated in this study was managing a political campaign in California. Taken together the conditions present at the start up of the team resulted in RW choosing a level of relationship with his team members that can be classified as low, just enough to complete the project. Although in hindsight, RW realizes the project would probably have had a better outcome if he had been able to build a higher level of personal relationship with his team members at the outset of the team. Table 33 lists the conditions present at the start up of RW's team.

Factor	Subcategory	Specific Conditions
Team Issues	Project Goal	• Complex - Manage a virtual political campaign
	Time Frame	• Limited - 3 months • Other - Chaotic start of team (see text below)
	Team Membership	• Three core members, one extended member - one paid member, one client, and facilitator • Virtual team experience - facilitator - yes, others - no
Boundary Crossing	Organizational	• Yes
	Culture/language	• Different cultures, same language
Organizational Policies and Resources	Policies	• Yes, but not followed due to frantic start
	Resources	• Lack of finance - no administrative help - limited communication options

Table 33: Conditions Present at Start up of RW's Virtual Team

RW's team project was complex involving not just strategic but very personal considerations concerning a team member who was also a client. The complexity of this project should probably have called for a higher level of relationship than RW established, and at the end of the project after reflection and evaluation he came to this conclusion. But at the team start up, conditions were such that they effectively pushed him to choose a low level of relationship.

Although the team project was complex, three other factors existing at the start of the team seemed to have the greatest effect on the level of relationship that RW chose to have with his members. These were the frenzied nature of the start up of the team, the financial limitations of RW's organization, and perhaps most influential of all RW's personal experience with electronic communications. These three factors will be looked at in detail.

A Disorganized Beginning

The start up of the team was circumstantial and unorganized. A potential client got in touch with RW and asked him if RW could manage the client's campaign in California, which was just getting under way. Not having a consultant available in the client's area that could manage this campaign, RW delayed his response to the prospective client. The client persisted with his inquiry, and then suddenly RW received an e-mail from a young graduate student in political science in the client's area who was looking for work. RW checked out the student's references, exchanged e-mails with her and then told the client he would take the job. He explained:

(RW) It just so happened an inexperienced, younger woman arrived on the scene looking for a job just when we were looking for someone. So I had a quick look at her CV, one e-mail to a reference and put her together with the client and just let it happen. ...So there was no option, and I did not have the luxury to think what are my criteria for virtual team members. Geographical location, a pulse - you're on!"

RW then got the team together in an Internet-based text chat meeting and the team and the campaign were underway. From the first client contact with RW to the start of the team, just two weeks elapsed. Lost in the shuffle of the start up of the team were the usual procedures that RW would have undertaken, including a phone call to the client. RW explained:

(RW) I would not know what the guy's voice sounds like. We had a chat room communication and a tremendous amount of e-mail, but no phone calls. Again thinking back about why that actually happened- again because of the rushing we just exchanged e-mails saying yes we can do this job, meet me in a chat room, and I will bring the consultant in. Then they went away and started work. It then seemed almost superfluous to telephone and say hi Bob it's me how are things. Thinking back, we probably should have done that. That is normal procedure with a client once I feel they're serious about retaining our services and it's probably

worth the money to telephone them, I'll pick up the phone and start talking to the client. Because of the rush we did not do that in this case.

Other normal procedures were also forgotten in the rush. One incident concerned the sending out of contracts to both the client and consultant. RW recalled:

(RW) And so when the check had not arrived, I went back over that administrative structure and realized that I had just left that behind in the day-to-day campaign of press releases and other things. So last night I got contracts off to both of them for review.

The other case involved the orientation of the consultant into the organization's procedures and protocols. In RW's words:

(RW) We were just thrown into it. Dana (the consultant) and I exchanged e-mails, and in the first on-line chat we had included the client. So we just had to throw Dana into it without any of this preliminary stuff.

Clearly the nature of this start up resulted in confusion and the abandonment of normal procedures. Although not deliberate, the lack of contracts and the absence of the usual phone calls at the start up must have had some effect on relationship building, if only in the eyes of the client and consultant.

Financial Limitations

Being a very small organization, financial resources are limited affecting RW's facilitation of his virtual teams in at least two ways. One is he not yet able to afford administrative help, which means he does everything himself thus taking up time he could be using on the team's behalf. Perhaps more importantly financial limitations prevent him from using a fuller range of communication channels with his virtual team members. Most of RW's communication takes place through e-mail and Internet chat rooms, which are relatively inexpensive ways to communicate with global team members. Due to cost, face-to-face meetings with distant team members are most unlikely. According to RW, the purchase or development of new technologies such as advanced web pages with imbedded secure intranets is not yet possible. Social telephone calls to

international team members are not affordable, and even business calls are strictly limited. RW explained in these two comments:

(RW) But again the business is so small that international phone calls to have telephone conversations to have "water cooler" type of discussions are a bit out of the question with 40 people. I tend to call them to initiate projects and to discuss all the fine detail, which would take me too long to do by e-mail.

(RW) They tend to be very focused discussions and I still don't get a very real sense of the person at the other end. It's all very businesslike.

In the above quote RW notes that even the few phone calls he does make are business focused, with no real effort being made to engage in relationship building.

RW's Experiences with Electronic Communications

In spite of the effect of the factors discussed above, it appears that RW's greatest difficulties with relationship building in his team were based on his own experiences using electronic communication channels. For one thing, he feels electronic communication channels when used in business are by their very nature task-based channels and to use them for relationship building is somehow a misuse of them as this comment indicates:

(RW) It's a mindset thing - if you fire off an e-mail or you come into a net meeting, time is precious, we're using all this great technology, we better get down to business.

He goes on to point out how task-focused electronic communication can be to the exclusion of social conversation:

(RW) Another thing I am finding out is that the nature of virtual communications is very focused. You don't just send an e-mail or convene a meeting or even just pick up the telephone and say hi how are you, did you have a good weekend, all those sort of water coolers things that go on in a real office. Rather you immediately launch into it, hope you had a good weekend, here's today's load of problems or tasks to be undertaken.

(RW) And because everyone is aware that a meeting is being convened on-line and everybody is in different time zones, people think, yes I will stick to the point, which may be the next week's strategy

Furthermore, because of his years of experience with e-mail and text-based chat, he has a high comfort level with these channels and he assumes that others are equally comfortable with them. He believes he can develop personal relationships using text-based channels if that is the objective of the communication between people. He said:

(RW) I don't think there's anything lacking particularly in an on-line chat when you are responding in real time as you would in a conversation, in a very informal way.

And he goes on to explain his intuitive feel for the medium:

(RW) ...I know your opinions on issues and the way you work, think, whether you are in a good mood or bad mood. I can almost tell by the speed that the letters appear on the screen. I pick up those nuances and I assumed that everybody did....

RW pointed out that were times in his virtual team that he believed he could understand one of his team members better through e-mail than the other team member could in phone or face-to face contexts. He said:

(RW) I found interestingly that I was more aware of the nuances of how this client was feeling than was the consultant (Dana), because I think he was putting more in the e-mails to me than he was in a phone call or face-to-face with the consultant.

These attitudes were apparently preempting any attempts on the part of RW to try and build higher levels of personal relationship with his team members. His own psychological interactions with electronic communication channels was blinding him as to how others feel about these channels when it comes to relationship building. During the course of the training, he was able to reflect on his attitudes and to understand that not everyone shared them as he explained here:

(RW) It's been interesting that my level of comfort with the technology has been deluding me about how other people feel about it.

He now understands the value of relationship building in virtual teams and he will likely be making changes in the way he develops it. He said:

(RW) It's now an intention of mine to push quite strongly on the business side, and even with my personal contacts, that we shift some of our communications into that (Netmeeting). So that they will feel more familiar or comfortable - that they can say things, because it's a voice conversation, that perhaps they wouldn't type. Like I said, I am not like that and I am having trouble understanding why they feel this way - this difficulty with it. But clearly we have to find a way around it. There is no point in ignoring those feelings. ... and so I had been tossing around for the future some way of saying, 'oh well let's meet for the hell of it'.

In this example, we see how a facilitator chose a relationship outcome based on the conditions present at the start up of the virtual team. Subsequent miscommunications between the facilitator and a team member (the client) show that the low level of relationship that was chosen was probably not suitable. This comment by RW seemed to indicate that he and the client had not built a relationship suitable for the conditions of the project:

(RW) One major lesson that I have learned now that the campaign is over is that the candidate, our client, is more able to talk about misgivings than he did when we were actually in the middle of things. .... the interesting thing from a virtual team point of view is that he is now coming out with things that he was not able to come out with before, because even though he was writing the checks he thought, RW is the expert, and I'm not going to argue with him. He did mention his misgivings in the first instance, but he did not put it out there very strongly and I dismissed it.

Because the project was complex and the client's reputation was at stake, a middle level, if not a high level, of relationship was probably required.

AR's Case - Researching and Writing A Strategic Business Plan

AR's case is relatively straightforward. She is an experienced project manager with virtual team experience. Her project was researching and writing a strategic business plan for a South East Asian government ministry. Her virtual team members, some of whom she recruited, were located in three countries. Based on the conditions listed in Table 34, AR consciously chose levels of relationship with her team members that she believed would support the efficient

completion of the project. She chose to develop different relationships with different team members.

Factor	Subcategory	Specific Conditions
Team Issues	Project Goal	• Collative - Collect information and write report
	Time Frame	• Deadline driven, non-negotiable • Other - Chaotic start of team
	Team Membership	• Members from different organizations, newly transferred members, core and extended • Virtual team experience - facilitator - yes, others - perhaps
Boundary Crossing	Organizational	• Yes, a consortium of companies, plus S.E. Asian government ministry
	Culture/language	• Different cultures, report needed to be completed in two languages
Organizational Policies and Resources	Policies	• None regarding virtual teams • HR policies worked against some virtual team members
	Resources	• Not an issue

Table 34: Conditions Present at Start up of AR's Virtual Team

All three levels of relationship existed in AR's team. Because she had previously worked on location in Southeast Asia, many people there already knew her and her work. With these people who already knew her she held a level of trust based on her reputation (Jackson, 1999). With others, some of whom were on her team, she earned a kind of referred trust (Jackson, 1999) through mutual colleagues. She explained:

(AR) In terms of building trust, we were quite lucky. I had been to Asia. I met many of the client people and I also met many of the consultants up there. Also I had a track record, having worked on the bid that won the job in the first place, so people knew that I could deliver on very short time frames. The level of trust people had in me, rightly or wrongly, was fairly high. That was fortunate.

As discussed earlier in this chapter, AR decided to develop a lower level of relationship with team members working on "hub" teams under the

supervision of others. It is with these team members who had supervisory roles as well as some other team members that AR chose to have a medium level of relationship with, that is a relationship that would promote effective two-way communication resulting in project or task completion. The conditions leading to this medium level of relationship will be looked at here.

Conditions at the Start up of the Team

AR's team was working on a very important project to a tight, non-negotiable deadline, but the project itself was relatively straightforward involving the research and writing of a strategic business plan. Team members were from different organizations and cultures and located in different countries. For the most part these were not issues, although AR did pay special attention in her dealings with her Asian team members based on her previous experiences.

Recruitment was ad hoc, and some key members joined at the last minute. Organizational resources were not an issue. E-mail, telephone, audio conferencing were available. Even face-to-face meetings were an option, but because of the tight deadline these were not considered. Organizational policies, particularly HR policies regarding compensation, were not supportive of some virtual team members, but this was not apparently an issue in this team, although as discussed in Chapter 6, AR believed this could become a significant organizational issue should the use of virtual teams increase.

For AR, the most significant of all these conditions was the deadline. She had to complete this project on time, but rather than bypass relationship building to immediately get to the task, she made a conscious effort to contact key team members to build and maintain relationships. She knew effective communication would be the key to a successful project outcome, and she realized, based on her previous experiences working virtually, that she needed to understand her team members to ensure good communication with them.

During the training session, she came to term this kind of communication "proactive" communication. Here she explained what proactive communication means to her:

(AR) I was thinking how to express what had occurred. What came to me was the idea pro-active, be pro-active in communication. Because we're without all the sensory cues in face-to-face communication, you

really have to let people know what's going on. ... You need to be proactive, because if something changes you have to let the people know.

She then illustrated what proactive meant with an example from her team:

(AR) I found that they (two members on location in Asia) would keep me posted and I found they regarded me as one of them and were very proactive. But the third person I found I had to keep pushing all the time. I would not get anything from him unless I initiated it. Otherwise I would get stuff back after the event. And I found I had charged down the wrong path on the basis of an understanding I had with him. But in fact the situation had changed and he did not update us. Obviously he did not appreciate some of the things that are necessary in working virtually.

She believed proactive communication was the key to successful virtual teamwork and that the way to achieve proactive communication was through a shared understanding of the conditions surrounding the project and the team, including the team members. Here are four examples of the kinds of things AR wants to share with her team members:

Empathy

(AR) ... And when you are actually on the other side of the world it's not part of your environment, so all you can go on is what was agreed on. So you have to be much more aware of the others I think.

Motivation

(AR) I have felt on previous projects when I didn't understand the motivations or the commitments of the other people, I had to go out of my way to discover what they actually were. ...

Team Purpose

(AR) It's really the same thing as I said before about a team purpose, what are we there for and what everybody's roles are. You also need to have commitment to that. ...That's what it's all about, having this purpose, getting commitments and buy in saying yes this is the purpose, these are the roles. This sort of predetermines what the communication is and how it happens. That's what we need. With out this we are just foundering around.

Emotional Cues

(AR) The other point that I want to make is about the social side of things. What you can pick get out of an audio channel that you cannot pick out of the text base channel is that you can hear the nuances, the coloring, and inflections of a voice. You can then tell whether people are feeling frustrated, angry or whatever, and you can make little notes to yourself to call them and find out what the problem is. Of course this become more difficult if you do not know the person at all or you do not know the culture. In some cultures people will smile even when they're angry with you. Of course this is the problem of your only using one channel. If you're not getting the other cues, it makes things much more difficult.

As a fairly experienced virtual team facilitator, AR had clear ideas about what was required in terms of relationship building with her virtual team members. For her, appropriate relationship building resulted in an understanding of her key team members necessary to ensure effective communication, which she considered essential in a virtual team. AR's concept of proactive communication mirrors Cramton's (2001) description of situational attribution, in which an understanding of a dispersed team member's situation can support communication through the reduction of generally negative dispositional attribution, particularly when things go wrong. AR also understood that choosing to have different levels of relationship with different team members was appropriate given the conditions at the start of her team.

BC's Case - Negotiating Treaty Claims with Indigenous Group

BC's case, the negotiation of treaty land claims between the New Zealand government and an indigenous Maori group, must be considered a complex project. It involved many team members, organizations, cultures, with large amounts of money and land at stake, and all taking place within a historical and political context (Table 35). It was not surprising then that a high degree of personal relationship building was necessary before the team members could get down to work. Although not strictly a virtual team based project, the lessons learned by BC certainly lend themselves to virtual scenarios, where some of the same conditions may be present.

Factor	Subcategory	Specific Conditions
Team Issues	Project Goal	• Complex - Negotiate a land claim settlement
	Time Frame	• Long-term with a deadline
	Team Membership	• Members from different organizations, • Virtual team experience - some with experience of electronic communication channels, others with none
Boundary Crossing	Organizational	• Yes, claimants and government, different government departments
	Culture/language	• Different cultures, different languages on occasions
Organizational Policies and Resources	Policies	• Policies on e-mail, QA policies on letters sent outside the office
	Resources	• Claimants have relatively few electronic resources

Table 35: Conditions Present at Start up of BC's Virtual Team

This project was unique because although two sides, the Government and the Claimants, were involved in the negotiation, it was basically a collaborative rather than a confrontational negotiation. So in a real sense the project consisted of two teams working toward a common goal, a settlement. The defining condition in this project appeared to be the amount of boundary crossing that needed to be addressed - not only the cultural differences between the Government and claimants, but also the organizational differences on the Government team, which consisted of a number of government departments including the Office of Treaty Settlements (BC's office), the Department of Conservation, the Ministry of Fisheries, the Ministry of Justice as well as consultants.

It was the effect of this boundary crossing in all its aspects that BC made special efforts to evaluate. For example, toward the end of the training sessions, BC remembered that at the very beginning of the negotiation process with the claimants, that they came down to Wellington and had a face-to-face meeting with the Office of Treaty of Settlement side although no meeting was really

required. They reported on what they had been up to and asked a few questions. In retrospect, BC concluded:

(BC) I guess they just wanted to meet with us. It was more than was required and more than what any other groups had done. But it built up some sort of rapport. It was just a little bit unusual at the very outset.

These face-to-face meetings were a regular aspect of this negotiation and provided an opportunity to bridge cultural differences. According to BC these face-to-face meetings were instrumental in building up the high levels of trust needed to successfully conclude the negotiations. He related:

(BC) There are two sorts of cultures that we need to bring together. The first is between the claimant negotiators and the key Government negotiators, who are going to meet and be making hard judgments based on what we are telling them. And that requires a huge level of trust, which we are able to build up through a whole lot of face-to-face meetings over long periods of interaction, two years. We have got to the position where they can trust us as Government negotiators to be acting in their best interests. We are not going to be running them short, to try and get something from them. That requires a close cultural melding in a sense.

The other cultures BC referred to in this quote, which needed to be brought together, were the diverse organizational or office cultures on the Government team. BC continued with his explanation:

(BC) The other is to get a culture within the Government team that includes the Departments of Treasury and Conservation, the Ministry of Fisheries for example, where we can at the end of the day get decisions from them very quickly which would normally take a long time to get through their departmental processes. We have to develop a different kind of culture than the usual departmental way of dealing with them.

Cultural melding in the sense that BC is referring to requires a high level of relationship building: a level of trust, between the claimants and the Government side, in which the claimants believe their interests will be looked after by the Government. On the Government side, cultural melding means that all government parties on the team can develop a level of trust that will facilitate the transfer of information and joint decision making.

The building of an appropriate level of relationship also influenced the use of virtual communication channels in the team. BC thought that the possibility of working virtually was good in the sense that the claimants operated very well with letters, as long as at the same time periodic face-to-face meetings were scheduled to take care of the "emotional" side. BC explained:

(BC) I think just on our side, we are telling the claimant that we don't need to meet as regularly on every single issue as we have been in the past. Because once we have done that emotional stuff, all the detail, you know the process, we are talking about property transactions and things are straightforward. So we are encouraging them to go more virtually. And they are happy.

The claimants are happy because most of what had been talked about was falling into place for them. Working virtually was speeding up the negotiations, which was what the claimants wanted. Though it is important to note that even at this stage when e-mail and phone were being used quite often, face-to-face meetings were still being held every two weeks. But it also became evident to BC, that when the final deadline was upon the two parties, that they were able to use electronic channels to settle some final, difficult issues. Again, BC believed that this was possible because they had already developed trust and strong personal relationships. He elaborated:

(BC) The last four weeks before the signing of the Heads of Agreement was frantic and involved a different way of working together virtually. After a series of critical face-to-face meetings to work out some difficult points and with just a couple of days to go communication took place primarily by phone and e-mail. Important issues, normally dealt with face-to-face, were resolved virtually and they performed admirably on their side under that regime. This kind of tells me that although the preference might be there for face-to-face, when the costs are too high they work very fine with other scenarios.

This example supports the contention that a high level of relationship is necessary when conditions support it. In BC's case, organizational and cultural differences were some of the most important conditions at the start of his team, and these could only be overcome with a systematic and concerted effort to build strong relationships that fostered high levels of trust. Although these efforts at building relationships were primarily led by the claimants, the facilitator went along with the process, and by the end of the training program came to realize

just how important the relationship factor was to the process and outcome of the negotiations.

7.4 Chapter Summary and Discussion

This chapter has introduced Step 2, *Choosing Level of Relationship* in the three-step theoretical framework, *Steps in Facilitating Virtual Relationships*. Reasons why building personal relationships with virtual team members were discussed, with the most prevalent reasons being the belief that having a personal relationship with a team member will improve working relationships and ultimately the success of the team. Several specific advantages such as improving communication and developing trust were also discussed. According to the literature, there is an established link between virtual team effectiveness and team member relationships (Lau et al., 2000; Warkentin & Beranek, 1999; Warkentin et al., 1997; Walther & Burgoon, 1992). Personal relationships also serve as a valuable governance mechanism. For example, personal relationships can lead to trust between parties involved in an economic exchange, which in turn reduces the likelihood of opportunistic behavior (Granovetter, 1985; Uzzi, 1997). Building relationships with virtual team members is clearly of fundamental importance to a virtual team facilitator as people generally rely on personal relationships to resolve problems and deal with unusual situations (Krackhardt, 1992).

Relationship building and communication effectiveness between team members appears to be mutually supportive; that is, relationship building improves communication and communication improves relationships (Figure 16), and according to the literature and the results of this study overall virtual team effectiveness increases.

Figure 16: Relationship Building and Communication Support Team Effectiveness

While it may not be the case in the future, there is a current, common and probably safe presumption that virtual teams are a novel form of interaction (Robey et al., 2000), and because of this facilitators and team members will need to learn to 'rebuild interpersonal interaction' as the face-to-face channel is replaced by electronic channels (Townsend et al., 1998). Although the literature on virtual organizations is dominated by discussion of organizational structure and information technology, in many cases personal relationships, not ownership or technology, may be the key mechanism for coordinating complex business processes. In this study, it became very apparent throughout the training sessions that facilitators believed that building relationships with their team members was the key process if a virtual team was to be successful. In the context of a study based on a grounded theory approach, this emphasis on building relationships was the core conceptual category to emerge in this study.

For most of the participants, the need for building relationships was based on their previous experiences and seemed to center on the need to establish some kind of "contact" with team members. Participants used phrases such as "eye them up" or "get into their heads" when discussing the need to know the people they were working with. Participants related experiences where a working relationship became much stronger after they had finally met someone who they had previously been dealing with exclusively through electronic communication channels.

In this chapter, three levels of possible relationship building outcomes were described and supported by the participants' comments and were placed into

the context of the three-step framework. How facilitators choose a level of relationship based on the conditions they have assessed in Step 1 was illustrated with three examples from the study data. The possible permutations in terms of conditions existing at the initiation of the virtual team are limitless. It is up to the facilitator to accurately assess the conditions and to choose a level of relationship suitable for the conditions that will allow the project or task to be completed. It is also important for facilitators to consider that there might be a need to build, strengthen and maintain relationships with team members that they are likely to work with in personal, team or organizational contexts in the future. As has been shown, the accuracy of their assessment will be heavily influenced by their own personal experience.

The next chapter, *Creating Strategies*, will discuss the ways the facilitators went about building the relationship outcomes they chose based on the conditions they were operating within.

Part 1 The Nature of the Research Problem	Chapter 1 - Introduction
	Chapter 2 - Review of Prior Relevant Literature
Part 2 The Research Act	Chapter 3 - Research Methodology
	Chapter 4 - Specific Research Procedures
Part 3 The Research Findings and Conclusions	Chapter 5 - A Grounded Theory of Virtual Facilitation
	Chapter 6 - Assessing Conditions
	Chapter 7 - Choosing Levels of Relationship
	Chapter 8 - Creating Strategies
	Chapter 9 - Implications, Conclusions, and Limitations

Chapter 8

Creating Strategies

8.0 Chapter Overview

After *Assessing Conditions* and *Choosing Levels of Relationships* the final step for the facilitator in the theoretical framework, *Steps in Facilitating Virtual Relationships*, is *Creating Strategies*. The aim of *Creating Strategies* is to create strategies for accomplishing the desired relationship building level and involves the selection and use of appropriate *communication channels* and *message content* (Figure 17). The conditions that are assessed in Step 1 can also influence the creation of the relationship building strategy. After *Creating Strategies*, the facilitator must then implement and manage these strategies.

Most of the facilitators in the training programs were able to create or at least plan for strategies for building these relationships based on the level of relationship chosen in Step 2 and the conditions as they were assessed in Step 1. The participants' collective experience provides a rich source of data supporting the essential step of *Creating Strategies* when *Facilitating Virtual Relationships*.

Relevant data was collected at all stages of the training sessions: in pre-training interviews, during training sessions in semi-structured interviews and free conversations, and after training sessions in follow-up interviews. In most cases transcripts of conversations between facilitators and their team members were not available, thus limiting data in the area of message content to what the facilitators could recall¹⁵.

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¹⁵ Transcripts were not available for several reasons, most prominent of which was the privileged organizational and personal information involved.

Figure 17: Creating Strategies for Relationship Building

8.1 Creating Strategies

Creating Strategies involves the selection and use of appropriate *communication channels* and *message content* and the implementation and management of the relationship-building strategies. The selection of appropriate *communication channels* is based on the conditions discussed in Step 1, i.e. availability and compatibility of channels, cultural or organizational preferences, team member training and skills, etc (Table 36). The selection of appropriate *message content* is based primarily on the level of personal relationship chosen in Step 2, but may also take into account conditions from Step 1, such as culturally expected levels of formality and address. The implementation of the relationship-building strategies begins when the facilitator contacts team members.

Step	Conceptual Component	Based on:
Creating Strategies	Appropriate Selection of Communication Channels and Message Content	- Conditions (Step 1) - Team Issues, Boundary Crossing, Organizational Policies and Resources, Technology - Level of Personal Relationship (Step 2)

Table 36: Factors Involved in Creating Strategies

Section 8.2 discusses the kinds of communication channels generally available to the facilitators in this study as well as conditions that might influence their selection and use. Section 8.3 examines the kinds of appropriate message content that might be delivered by a facilitator to a team member based on the facilitator's chosen level of relationship. Any relevant conditions existing at the start of the team will also be examined. All discussion will be supported by the participants' comments and experiences.

Section 8.4 will analyze specific examples of how three of the participants engaged in *Creating Strategies*. Section 8.5 will consider some of the issues faced by the facilitators as they implemented and managed their relationship-building strategies.

8.2 Selection and Use of Communication Channels

Computer-mediated communication technologies are, by and large, general purpose tools that help individuals communicate, share information, and make decisions in a broad range of settings. Because these settings are specific and the tools are usually general, customization of the technologies and their use is typically needed to make them relevant to contexts of use. In the new and fluid organizational forms now emerging in the face of rapidly changing environments, contextualization of technologies will be a critical mechanism for helping communication norms and work place practices adapt. (Orlikowski, Yates, Okamura, & Fujimoto, 1995:443)

As Orlikowski et al. (1995) suggest, the selection and use of communication channels in virtual teams for the purpose or relationship building is likely to be a critical factor. In their study of virtual teams, Kayworth & Leidner (2000) found that teams that adopted multiple computer-mediated communication systems (CMCS) to accommodate a variety of communication needs were much more satisfied with their ability to communicate in their team. They go on to suggest different types of CMCS might be appropriate depending on specific communication needs. As a group, the facilitators in this study had access to most traditional and Internet-based communication channels (but not dedicated collaborative technologies such as GSS) that are generally used to link virtual teams, that is these channels were potentially available to them. In fact, the choice of channels was limited either due to conditions beyond the

facilitators' control, or because the facilitators judged that certain conditions present at the team's start up weighed against the use of certain channels. RW's reflection on his choice of text-based communications channels and some of the relationship-building difficulties he encountered because of his choices bears repeating:

(RW) It's now an intention of mine to push quite strongly on the business side, and even with my personal contacts, that we shift some of our communications into that (Netmeeting), so that they will feel more familiar or comfortable - that they can say things because it's a voice conversation that perhaps they wouldn't type. Like I said, I am not like that and I am having trouble understanding why they feel this way - this difficulty with it. But clearly we have to find a way around it. There is no point in ignoring those feelings. And for the moment, until full bandwidth video is available, Netmeeting is probably our best option. So yes we have done a technology audit. It's been interesting that my level of comfort with the technology has been deluding me about how other people feel about it.

The variety of ICT has enabled the creation and spread of virtual teams, though they may not completely replace face-to-face meetings in all situations (Robey et al., 2000). The greater variety of choices in communication channels available to facilitators may lead to more flexibility, creativity and responsiveness in creating relationship building strategies, but also perhaps to confusion and complications. It is up to facilitators to assess the conditions that may influence the selection and use of communication channels. Table 37 lists the communication channels that were available to the facilitators in this study and the conditions that influenced their selection and use. These conditions and the ways they might influence selection and use were derived from the participants' data and were discussed in some depth in Chapter 6.

Communication Channels	Primary Conditions Influencing Selection and Use
Face-to-face	Project complexity and timeframes Distance Culture Security Financial resources/availability
Letter	Project timeframes Culture
Telephone	Project timeframes Distance Financial resources
E-mail	Project timeframes Distance Financial resources Knowledge management Availability
Internet-based Channels - Desktop videoconferencing - Intranets - Text chat	Project timeframes Distance Financial resources Training Knowledge management Availability and compatibility

Table 37: Factors Influencing Selection and Use of Available Communication Channels When Building Relationships

In the following sections, these channels and the reasons why they were or were not used in relationship building strategies are discussed from the facilitators' perspectives.

Face-to-Face

Most of the facilitators, particularly those with little virtual team experience, believed that face-to-face communication was the best way to build relationships. There seemed to be a need to establish some kind of "contact" with team members. Participants used phrases such as "eye them up" or "get into their heads" when discussing the need to know the people they were working with as these three comments suggest:

(SC) Probably much of our communication is through the eyes and we lose a lot of the dynamics of a relationship virtually.

(RB) Well this is what we are used to; interacting with people close by, because that's the only way you could up until now. Maybe I am quite

wrong on that need but it seems to be that you can only get to a certain level without seeing someone.

(AR) I think there must be something in humans that requires visual contact at some point in a relationship to establish a better relationship. I think it's innate. I think it's important somehow to be able to visualize the person accurately at some point in the relationship, not at the end of the relationship, but in those early stages.

Facilitators believed that "seeing" a team member was the best way to gain an understanding of him or her and that an informal chat over a beer or a cup of coffee was an effective way to get to know about the hopes and motivations of team members. Here RB explains how he can learn about what motivates a team member in an informal face-to-face context:

(RB) You can find out what motivates them, what makes them tick. That's what I think forms part of my thoughts on why you need to meet face-to-face. You may have a much richer sense of what is important to the person. I would find it much easier to say over a beer what is important to you than in a chat room. I am saying this with a lot of experience with teams, but not very much experience with virtual teams and the potential.

This comment shows how RW got to know someone in regular face-to-face meetings that excluded business matters:

(RW) I know the client in Wellington very well now because we had lunch several times and talked about everything but politics.

And JJ related that meeting face-to-face can help her understand people better and make it easier to get tasks done:

(JJ) You understand that person's personality better. Having met face-to-face it's easier to put an action plan together and to get things done.

SC believed that while a team could function virtually, a psychological need still existed for face-to-face communication. She said:

(SC) Eighty percent of your work can be done virtually, but 20% needs to be personal contact purely for psychological reasons. I think it's possible to work virtually without meeting anybody, but it may not be the ideal way to do it in all situations.

Participants related experiences where a working relationship became much stronger after they had finally met someone who they had previously been dealing with exclusively through electronic communication channels. These two comments mirror several others:

(RB) I think of the times I have talked to people over the phone and some months later I met them. The relationship changes quite significantly.

(SC) ... and yet meeting someone changes that dynamic quite significantly with people I have had to deal with on the phone. It's much easier to deal with them on the phone once you have met them.

BC reported how at the beginning of the negotiations between the New Zealand government side and the claimants, the claimants came down to Wellington to meet with the government side. It became obvious to BC just how important face-to-face meetings can be in relationship building:

(BC) They actually came down and had a face-to-face meeting with us one after the other when really none was required. I guess they just wanted to meet with us. They reported on what they had been up to and asked a few questions and things. It was more than was required and more than what any other groups had done. But it built up some sort of rapport. It was just a little bit unusual at the very outset.

Although it may be the preferred channel for relationship building, face-to-face communication was not always an option for these facilitators because of existing conditions. RW was working with a global team under very tight financial circumstances. Flying from New Zealand to California to meet his client and consultant team members was simply not an option. Although AR's organization could have afforded to fly global team members to one location, there wasn't time to do so. On the other hand, according to BC the claimants in his project clearly required face-to-face meetings to build trust relationships with the Government side. BC's team was unlikely to have succeeded without the face-to-face channel being available.

Letters

Psychologist Thomas Moore (1994) described letters as a 'technology of intimacy', requiring artfulness and thoughtfulness of expression. Today, letters are often perceived to be an archaic communication channel, having been

surpassed by fax and e-mail. Rarely, if at all, are letters ever mentioned in research dealing with communication channels in virtual teams. In this study, letters only appeared as a significant channel in one facilitator's team, but they were critical. Although electronic communication represents the latest in technology, in many parts of the world letters still are the primary means of written communication. For some people they carry more weight than other forms of communication because of their permanence, formality and intimacy. BC's experiences confirm this:

(BC) Before I was talking about how letters have a little bit more status and it's obvious in the claimants mind that that is actually the case. There were a couple of critical issues on the very final day that they did not agree with us on. They wrote us a letter on letterhead and faxed it down to us. We tried to change their mind or persuade them by telephone. That did not work. But when we wrote the same thing down in a letter and sent it, they then accepted it.

As this example indicates, letters remain a potentially important communication channel in global virtual teams and may still play an important role in relationship building much as they once did. As a communication channel, letters figured prominently only in BC's team. This is because the claimant group tended to appreciate the formality and permanence of the written word on paper. BC had this to say about his organization's use of letters:

Letters are quite interesting. A lot of times we use the mail to give something a bit more significance, a bit more finality. In our office, the official record is a hardcopy.

Because the claimants were close by, they preferred face-to-face communication as a relationship-building channel. However, it could easily be imagined that if face-to-face were not so readily available then letters might have been an important relationship building channel in this case.

Telephone

The telephone is generally available around the world and it seems to be a reliable standby for facilitators when it comes to building relationships with virtual team members. Most facilitators and team members are comfortable using this channel when getting to know people, although it may not be a sufficient

relationship-building channel by itself in all cases. With the use of the phone being second nature, the facilitators feel that they can pick up paralinguistic clues such as tension or uncertainty in a team member's voice, which can assist in relationship building (Perey, 1997). Phone calls are often used at the formation of a virtual team in order to get know some one quickly. AR found these initial phone calls useful for "groundbreaking types of conversations". She explained:

(AR) With a phone call I can get a feeling for them and they can get a feeling for me.

Because AR's project was working under such a tight timeframe, the telephone was the best channel for her to use to build relationships as it offered availability, compatibility and enough context to be able to get to know team members. She recalls what she said in these telephone conversations:

(AR) I'm probably going to pester you, but initially it's really important for me to understand how you work as individuals so I can like think inside your head.

Picking up the phone may seem the obvious solution in getting to know team members when working virtually, but for RW it was problematic. Because of his organization's financial situation, he finds international telephone calls a major expense and he has resisted using them as a means to build relationships with clients and consultants. Although he generally uses phone calls to initiate business relationships, he believes the time and expense to use phone calls to build relationships is not practical. He also feels quite awkward calling people he is involved with professionally to "chat about life the universe and everything". He explained:

(RW) These are busy people and when you use virtual communication it is expected that you will 'get down to business'.

E-mail

In this study, e-mail was the most commonly used virtual communication channel. In some cases, due to financial limitations, it is the only channel available. As Fulk & DeSanctis (1995) suggest the use of e-mail can have both positive and negative results, and in this study a number of its advantages and disadvantages in building online relationships emerged from the data. According

to the facilitators it is a universal platform, cost effective, generally accessible, and easily learned and used by most team members. Its advantages include fast, succinct messaging with the added benefit of being able to send attachments quickly and efficiently.

Those facilitators working with geographically distributed team members saw e-mail as the basis of their virtual teams, effectively linking their teams. However, in most cases they believed e-mail was a channel more suitable for communicating information and coordinating projects than for building relationships, conclusions supported by Kettinger's & Grover's (1997) research. However, under the right conditions, e-mail can be the essential link in a virtual team as AR's experiences indicate:

(AR) It (the project) was a huge effort, done in a very short space of time and would have been completely impossible to have been achieved without e-mail.

However, without building relationships first, relying strictly on e-mail could have serious consequences, and according to the facilitators many of the apparent benefits often carry a down side. For example, RW did not make any special effort to build a personal relationship with his team members before commencing a work relationship and relied almost totally on e-mail in his communications with team members. Because he is very comfortable using e-mail, he made the assumption that his team members were as well. This led to some serious miscommunications. In one instance he made an ironic comment in an e-mail that gave great offense to the team member, who was also the client. Had he built a relationship with this client and better understood his personality, he probably would not have been so glib. He related the incident:

(RW) ...I meant it in a light-hearted way. He got upset with my tone. I was not able to convey my underlying humor to him in an e-mail, even with an emoticon and he took it as a rather harsh reprimand of his campaigning style.

Both RB and SC pointed out that an important issue involving the use of e-mail is the user's attitude to the medium. Many treat it as a very informal communication channel, which is reflected in the form and content of the messages they compose (Barnes & Greller, 1994). SC explained her own use of e-mail:

(SC) When I am creating a document in Word, I am prepared to take the time to get it right. With e-mail I seem to be in a hurry, even when I am not online. I find the whole style changes. I have noticed that I send off e-mails that I am not comfortable with.

RB expanded on this thought:

(RB) I guess writing a letter is more formal, signing your name at the bottom. There is a bit more effort involved than sending an e-mail, couple seconds, a couple lines, press send and it's gone. And I think that's part of the danger in e-mail. For instance in the office people will often send e-mail very quickly and therefore without much thought. How many times have you typed a letter, printed it and not read it and posted it - we don't, whereas with e-mail, of course, you type it and send it and never know - actually it's appalling.

E-mail messages tend to be short and to the point and even brusque. Not taking care and consideration when sending e-mails could affect communication and relationship building efforts, RB's experience shows:

(RB) I have seen incredible e-mail, aggressive e-mail that does not consider the needs or feelings of the recipient.

Other conditions that limited the use of e-mail, for relationship building or otherwise, in this study included organizational security policies and lack of accessibility to e-mail in team members' countries.

Internet-based Channels

Internet-based communication channels are increasingly being used to link virtual team members. These channels include a variety of free software programs that can facilitate virtual teamwork. Some of these programs, including text chat and synchronous messaging, were used by the participants in this study. Other programs, such as desktop videoconferencing and Internet-based intranets were being tested or were under consideration by participants. These channels are discussed below.

ICQ

One of the most interesting findings in this study was the way facilitators used Internet-based messaging and chat programs such as ICQ to set up

opportunities for informal, spontaneous communication between facilitators and team members. This kind of casual access has been termed 'presence availability' (Sarbaugh-Thompson & Feldman, 1998) and can be an important factor in socialization processes (Hage, 1974). ICQ is a free software that allows its users to know when (in this case) virtual team members anywhere in the world are connected to the Internet. It then allows one member to contact another directly and to open up a chat box to hold synchronous typed conversations. By its nature, ICQ can lead to spontaneous, informal conversations between team members that the facilitators believed could help to strengthen relationships (Carletta, Anderson, & McEwan, 2000) as RW indicates:

(RW) It's a mindset thing - if you fire off an e-mail or you come into a net meeting, time is precious, we're using all this great technology, we better get down to business. But you are right ICQ is just seen as this keeping in touch with friends thing, so therefore you start using it with a hold different frame of mind. If somebody wrote me a real formal message on ICQ, I would say what, although this message might be entirely appropriate with e-mail.

RB explained how ICQ's informal spontaneity might benefit task processes as well:

(RB) It's an interesting dynamic. ICQ takes away the need to schedule it (communications), always having it available. I guess there is an advantage in dealing with an issue as it arises.

For DW, with no opportunity for face-to-face meetings, the informality and spontaneity engendered by the use of ICQ was an important relationship-building channel, which complemented the more task-oriented e-mail channel. He actively encouraged the downloading of ICQ as one of his first actions in the initiation of his virtual team. He explained his motives:

(DW) The idea of ICQ was not as a group meeting thing, but to get some conversations going between the people in the group. And if they were using ICQ properly they would know when anybody else in the group was online. In fact the few conversations with people I had that were on line at the time were more time of day conversations, how are you type, not about anything substantial. But the thought was and it may well bear fruit in the longer term, was that if everybody was on ICQ and if we kept going with this process than the opportunity was there for people to talk privately. And I felt the ICQ thing could provide the corridor type of relationship where tasks can progress without the use of planned meetings.

Essentially, DW was using ICQ to encourage informal encounters to create a common frame of reference between himself and team members as well as between team members. He was trying to build a medium level of relationship that would support group work exclusively through Internet-based communication channels. This shaping of other users' use of communication technology resembles the concept of technology-use mediator introduced by Orlikowski et al. (1995).

Desktop Video Conferencing

The facilitators in this study saw great promise in desktop videoconferencing as an affordable alternative to face-to-face meetings. They believe that "eyeing" people is an important part of relationship building, particularly when the only alternative is e-mail or synchronous text-based meetings. RB thought that an easy to use desktop video conferencing system could positively affect team dynamics:

(RB) If the technology works and you can get that easy in, it would create quite a powerful effect on the dynamics of the team. If you can see the people and you can talk, and you don't have to think about that side of things, there is some real richness that can bring as I was mentioning before. People can be little more frank and a little more honest then is sometimes possible in a group meeting

In the past videoconferencing was expensive, but new Internet-based desktop videoconferencing technology is bringing the cost down. Netmeeting, a free software program by Microsoft, is one of the most common desktop applications. Netmeeting allows two people anywhere in the world to see and hear each other, as well as share and work on documents via their computers.

Most of the facilitators are very interested in incorporating Netmeeting into their virtual teams and some experimented with it during the training program sessions. For those facilitators working with global teams and tight financial budgets, desktop video conferencing holds a lot of promise as a relationship building communication channel. RB's project centered on the setting up of an Internet-based video conferencing communication channel with an overseas branch office. He believed this channel would build personal

relationships resulting in greater personal trust between geographically separated organizational members thus strengthening the organization as a whole. As he explained:

(RB) I don't mean trust in a professional level of trust, but just getting to know the person, building a relationship with Graham in Melbourne. To my mind, that's the key output or objective of a lot of this.

The system RB was planning would include an internal online Netmeeting type of system in which the PC's of his company's managers would be connected to the company server. This system would allow Graham at any point to connect to that server and see who's on line, contact them and have a video conference one to one with them, which RB thinks would be a very powerful tool for Graham. He explained:

(RB) It's as close as we will get to the corridor chat we were talking about last time.

According to RB, managers will always be on the server, from when they start their PC in the morning. Graham will come online and see a manager's name and ring him as he does with the telephone and if the manager is there he will pick it up. He went on to explain:

(RB) The whole idea is that it is easy for him to access us. It's one more vehicle for us to call him if we need to, but I think it's him having access to us, which is much more powerful. We have access to other people in the group; we can have conversations with people about relevant things easily. This brings Graham into the fold.

RB also considered that such a system could be open to people outside his organization, by letting selected people know that it exists:

(RB) They can come in on it - just like you have my phone number and you can call me at work, and I can decide to accept their call or not. That would make it easier than trying to get through some firewall or something. It shouldn't be any different than if they rang us, so why should it be an issue.

As with DW's introduction of ICQ, RB's plan to make desktop video conferencing an accessible communication channel in his organization appears to place him in the category of a technology-use mediator.

RW tried to get the consultants working with his organization to use Netmeeting, but immediately ran into a compatibility problem. Each of his consultants argued for their own program preference. RW explained:

(RW) It is difficult finding a system all his consultants can agree on. It seems they all have their favorites and nobody really wants to switch.

So although cost-effective Internet-based communication channels hold a lot of promise as communication channels that can assist facilitators in building relationships with team members, conditions such as technology compatibility and security especially in inter-organizational teams could be barriers to their use.

Synchronous Text Chat

RW was the only facilitator to make extensive use of text chat technology. His familiarity with the technology misled him. Although he believed he could get to know a person through strictly textual means, his associates did not necessarily feel the same way:

(RW) I was just explaining that I don't think there's anything lacking particularly in an on-line chat when you are responding in real time as you would in a conversation, in a very informal way. This associate in a comment to me said that it was extremely inadequate. She felt that she could not know somebody until she had met them. I said it was ridiculous - I know your opinions on issues and the way you work, think, whether you are in a good mood or bad mood. I can almost tell by the speed that the letters appear on the screen. I pick up those nuances and I assumed that everybody did. She said, you're not a stranger to me, but the relationship between us is completely different from someone I go and meet every day.

Also, RW experienced a lot of difficulties trying to moderate text chat meetings, which could be problematic when using this channel to introduce and get to know team members. He explained:

(RW) Yes it's all text based. It's kind of like that thing where people get trapped saying things about the boss in their e-mails: people will never speak across you at a face-to-face meeting, but will do it in a chat because they think it's just a line and people will know I'm talking to Bob and will ignore it. It doesn't work. It just gets confusing. People are trying to scroll backwards and the chat box is trying to scroll forward. It gets completely out of hand.

In summary, the facilitators selection and use of communication channels with which to build relationships with their team members was heavily affected by the conditions present at the start of the team. These conditions included financial limitations, distance, and organizational and cultural preferences for particular channels. When key relationship-building channels such as telephone and face-to-face are unavailable, a facilitator must really think creatively and work hard to build relationships. DW seemed to be on the right track with his use of ICQ, as is RB with his plan for "easy access" desktop video conferencing, while RW's subsequent miscommunications with team members seemed to indicate a miscalculation on his part when he neglected to invest in even just a few phone calls as part of an intentional relationship building strategy.

8.3 Selection and Use of Message Content

Message content is an important element in relationship building and so forms a key part of *Creating Strategies*. In their three-stage dialogue technique to facilitate shared understanding in virtual teams, Tan, Wei, Huang, & Ng (2000) found that guided dialogue can enable virtual team more quickly enhance their relational development. The three stages involve providing team member background information, sharing good communication practices, and building a team communication model. The first stage of this technique is called 'small talk', in which team members provide background information about themselves (e.g., name, gender, education and hobbies). According to Tan et al., (2000:154) "the purpose of such light and informal conversation is to help team members to put aside their formal roles and mentalities so as to communicate more openly with each other". Informal, intuitive dialogue techniques may have been part of the facilitators' strategies as they endeavored to build relationships with team members.

For the facilitators in this study, appropriate message content is primarily based on the level of relationship that was chosen on Step 2. Table 39 shows the basic message contents and how they relate to the chosen level of relationship.

Level of Relationship	Appropriate Message Content	Other Factors
Low - to get the project or task completed	Basic personal and organizational information	
Medium - to build effective two-way communication	Degrees of personal and organizational information as required	
High - to build necessary level of trust	Higher degrees of personal and organizational information as required	Timeframe Reputation Referral

Table 39: Chosen Level of Relationship and Selection and Use of Appropriate Message Content

Facilitators usually have a choice as to the content of the messages they send to their team members, particularly when content is of a personal nature. Content of a personal nature appears to play a large role in relationship building, particularly at the medium and higher levels. However, the content of organizational-related messages, which may also play a role in relationship building - particularly in the development of trust relationships - may be limited by organizational policies. The rest of this section will describe appropriate message content in more detail.

Appropriate Message Content in a Low Level of Relationship

As described in Chapter 7, a low level of relationship can be defined as knowing just enough about a virtual team member to get on with the task at hand. The message content in this case may only consist of a name, position title, location, and functional and/or organizational affiliation. Additional information of the kind found on a CV or as passed on by a colleague or associate may also be appropriate. This kind of relationship building message content is likely to be a part of the facilitator's first message to a team member, and may be part of a larger message that includes project details as well.

This was the case for DW, who initiated his project for a global partnership of companies with an e-mail to prospective team members introducing himself and his project proposal. This proved to be quite enough as he received many positive responses. The conditions at the onset of this project

supported his approach: the supportive organizational culture of the partnership, the professional outlook of the potential participants, and the high level of currency of the project proposal, which provided sufficient motivation for prospective team members. As mentioned in Chapter 6, after DW got team members on board he did seek to build a 'culture of cooperation' between himself and team members and amongst team members using ICQ, which he believed would promote and maintain informal relationship building.

As discussed in Chapter 7, RW chose to have a low level of relationship with his team members, partly in response to the confusion at the start of the team and partly because of his own nature. His relationship building message content was in the nature of "Hi, how are you. Now this is what we have to do." Because of the lack of depth in his message content and because he wasn't seeking to understand his team members, miscommunications occurred in his team. These two comments at the end of his project reflected his real need for a relationship building strategy and his realization that he hadn't had one:

(RW) It's one thing to have money at stake, it's another thing to have a company's reputation at stake, but we're dealing with clients whose personal reputation is at stake. It can get very emotional.

(RW) A lot of issues are coming up as I said before that hadn't come out before because we did not know each other well enough.

Accordingly, in the future RW is prepared to budget funds for relationship building by phone and is also looking at alternative channels such as desktop video conferencing to enhance relationship building. His planned use of these channels is discussed in more detail in Section 8.5.

Appropriate Message Content in a Medium Level of Relationship

As discussed in Chapter 7, a medium level of personal relationship can be defined as enough to build effective two-way communication resulting in project or task completion. Effective two-way communication was defined as mutual communication based on shared co-orientation, which develops from a common frame of reference, or shared mental models. Different people will feel comfortable enough to communicate with others based on the development of different levels of shared co-orientation. A facilitator will have to determine how

much message content will be enough to effect a shared co-orientation and promote effective communication. It may be very little more than is necessary for a low level relationship or it may well be an ongoing process of sharing and disclosure.

AR chose a medium level of relationship with several of her team members and used the telephone as her main communication channel. Although she did not record the content of her talks with team members, she does report on what it was she was trying to learn about them:

(AR) I like to get to know the person and to understand their motivations. This is quite important for me, the sense of the person. Although there are many people I have never actually met, some I have never spoken to on the phone, but I always try to get some sort of sense of the person so that I can almost see them in my mind. I find that once that happens everything gets much shorter, because I sort of know where the person is at.

Although RB did not have much experience facilitating virtual teams, he expressed concern about getting to know team members in a virtual environment. He believed an important element of any virtual team was starting off getting to know people well. He explained:

(RB) In my mind this is an essential component of virtual teams, being able to keep everyone understanding what the goals are, and the path the group is taking to achieve those... so that everyone is kind of singing from the same hymn sheet. That strikes me as being the biggest challenge with virtual teams.

RB proposes achieving this shared understanding in a virtual environment through regularly scheduled meetings using video or audio conferencing, some for business and some for relationship building. He explained:

(RB) Maybe one meeting a week for important business, and maybe a couple of half hour meetings each week to chew the fat and build the dynamics of the team. Because if there isn't that casual interaction, I think it would be very cold or static to have meetings once a week when you have no other contact with the team.

The use of regular virtual meetings for relationship building was also a suggestion of AR's. She said:

(AR) The other thing I can suggest, and I agree how hard it is to have that kind of social interaction, is to have people report weekly and then maybe

there's a chance for some social contact, although you would not call it that, but there would be time for some socializing. It's a work call, but also a social call. It's hard to do it but it is worthwhile.

It is clear that for several of the facilitators a medium level of relationship will be an appropriate and comfortable level to build with their team members. They realized they would need to establish this relationship through the sharing of information through regular and timely communications. Establishing a relationship allows the facilitators to understand their team members better, which will help them to establish more effective working relationships and a better team outcome.

Appropriate Message Content in a High Level of Relationship

As described in Chapter 7, a high level of personal relationship can be defined as an appropriate level of trust resulting in project or task completion. As with developing a medium level of relationship, selecting the appropriate message content for a high level of relationship can vary greatly. If not conferred through reputation or referral, trust can take time to develop regardless of message content. In any project where the stakes are high, ample time will be needed to build an appropriate level of trust. This was the case with BC's project where nearly two years was spent building the trust to a level where important and binding decisions could be made. RW also believes time is a critical factor. He explained:

(RW) As in any relationship trusts can only happen over time, through actually being tested. And trust can increase or decrease. If you start to mistrust somebody that will increase as well. It's a dynamic process. You can't orientate somebody in trust. Trust is too ephemeral.

RW related an incident where he came to the defense of his team member, who was a candidate for elective office, after that team member had been attacked in the press. The result of his RW's efforts was an increase in trust. He explained:

(RW) There was a distinct shift in the relationship between us when I jumped into his defense. We got an apology from them in the end. Because we had sort of been through the fires, the trust level between the client and I increased.

For a facilitator, saying and doing the right things to build trust requires not only a careful assessment of start up conditions, for example cultural differences, but also a lot of personal and professional experience relating successfully to people. Also in inter-organizational teams, trust will most likely need to be evident at the organizational level to support trust at the team level.

8.4 Examples of Facilitator-Created Strategies

To illustrate the contention that a facilitator can consciously create strategies to build a chosen level of personal relationship with a team member given the conditions existing at the start of a virtual team, three examples based on the training program's facilitators' own experiences are presented. The examples from Chapter 7 will be extended to include the strategies facilitators created to build their chosen relationships. As with the examples in Chapter 7, the second and third cases presented indicate that effective strategies were created according to the chosen relationship and the conditions present at the start up of the facilitators' virtual teams. The first case as detailed in Chapter 7 is somewhat more complex and will be explored in more detail below.

RW's Case - Managing a Political Campaign Virtually

As discussed in Chapter 7, this case served as a 'negative' example, showing the level of relationship RW chose to have with his team members was lower than he later realized it should have been. He chose a low level of relationship primarily because he believed his team members shared his high comfort level with virtual work. Other conditions that supported his decision were the disorganized start of the team, which kept him from having even the usual initial telephone conversation with his team members, and financial limitations, which prevented the possibility of regular phone calls. For all of these same reasons, he chose e-mail and Internet-based text chat for his communication channels, and restricted the content of his message to task-oriented content.

After completing the training program and his project, he realized that he had made incorrect assumptions that led to him to choose an inappropriate level of

relationship with his team member, which caused him to select and use inappropriate communication channels. He realized that in future virtual teams he would need to more carefully assess the conditions at the start of the team, not least of all his own assumptions about working virtually. And yet RW was still baffled as to how he might really get to know some one deeply through wholly electronic channels:

(RW) I don't know what electronic media, even video conferencing, which is still an extremely unnatural set of circumstances, could have led me to the inner psyche of this guy who has a large inferiority complex about a white man standing for office in a black seat. He would never have said anything like that unless perhaps it had got late and we were relaxing a little.

RW's comment above expressed the difficulties he and some of the other facilitators grappled with when working virtually - how to create a virtual environment that allows the facilitator and the team members to relax and share personal information, the kind of information that can build and cement stronger relationships.

AR's Case - Researching and Writing A Strategic Business Plan

As explained in Chapter 7, AR's case was relatively straightforward. She consciously chose levels of relationship with her team members that she believed would support the efficient completion of the project. She chose to develop different relationships with different team members. One of her strategies was to create a "hub" structure for the team (Figure 18) to work through key team members in Australia and New Zealand so she could choose a low level of relationship with the researchers in the sub teams.

Figure 18: Relationship Building Strategies in AR's Team

Another strategy of AR's was to use the 'referred trust' and 'trust by reputation' she had previously earned to build relationships with key core and extended team members on location in Southeast Asia. Finally, she chose to build a medium level of relationship with key team members using the telephone as the primary relationship building channel, along with message content that would allow her to understand enough about her key team members to ensure effective two way communication. AR used telephone calls to have what she termed "groundbreaking" conversations with her team members. AR was one of the more experienced virtual team facilitators in this study. She was facilitating a highly deadline-driven global virtual team with members in Southeast Asia, New Zealand and Australia and she made a conscious and determined effort to get to know all her key team members at the beginning of the project cycle. In this case she picked up the phone, called the team members and told them:

(AR) I'm probably going to pester you, but initially it's really important for me to understand how you work as individuals so I can like think inside your head.

For AR it was very important to gain some kind of empathetic understanding of her team members. This comment further illustrate what she was after, the need to get into her team members' heads and so avoid potential misunderstandings:

(AR) I talked about my need to sort of get inside of people's heads and to discover what they are really about, what they are after, how they work, and how best to communicate with them. It's easy to give offence with an e-mail when no offence is intended. Maybe we are being flippant or ironic. We need an understanding of the people and the people have to be clear about what their individual role and purpose is.

By getting a sense of the person and understanding their motivations, AR finds that getting the work done becomes simpler and faster:

(AR) I like to get to know the person and to understand their motivations. This is quite important for me, the sense of the person. Although there are many people I have never actually met, some I have never spoken to on the phone, but I always try to get some sort of sense of the person so that I can almost see them in my mind. I find that once that happens everything gets much shorter, because I sort of know where the person is at.

AR also realized that she, as a facilitator, had to align team member expectations regarding the project and communication channels. She explained how she did that:

(AR) The other thing is having some kind of phone contact up front in which I explain that we work in a pressurized environment and have found that e-mail is quick and efficient.

In addition to the selection and use of appropriate communication channels and message content, AR realized that the tone of the message being communicated was also important. She realized from her past experiences working with Asians that she needed to make a special effort to accommodate the cultural differences of the Asian core and extended team members in her project.

(AR) One of the companies in the consortiums in the project I was in was a Southeast Asian company. This company and the Southeast Asian clients have a very different attitude toward authority. They were more respectful. Putting forward arguments can be positive, without being rude. Those people have a very respectful attitude.

When she led her virtual team, Angela had to communicate respect in her virtual communications with her Asian team members. She dealt with one man in particular, someone she had not met previously. The strategy she used to communicate respect was to mirror the format of this man's e-mails.

(AR) I suppose the only difference I found with him was that he used to send me e-mails saying, Dear (AR). So I naturally sent e-mails to him saying Dear (Pang Ching Chan). Whereas with other people in the group I send e-mail us saying hello or hi or just their name. So it was just sort of a different way.

In her team, AR was successfully able to create strategies to build her chosen relationship even though these varied depending on the team member. She did this by selecting appropriate channels, message content and message tone according to the conditions she had assessed. She also was able to structure the team into sub teams with members that could work effectively and with whom AR only needed to build low levels of relationship using e-mail.

BC's Case - Negotiating Treaty Claims with Indigenous Group

As described in Chapter 7, BC's case was complex with a fairly long timeframe and much cultural and organizational boundary crossing. The level of relationship needed to successfully complete this negotiation was very high. All the conditions at the start of the team supported the selection of face-to-face meetings to build relationships: a long timeframe, close physical proximity of the parties, the lack of high technology on the claimants side and their lack of experience with it, as well as their strong preference for traditional channels such as face-to-face and formal letters. No records of the content of the face-to-face meetings was available for this study, but BC gave some indication of what was discussed in this comment:

(BC) I guess they just wanted to meet with us. They reported on what they had been up to and asked a few questions and things. It was more than was required and more than what any other groups had done. But it built up some sort of rapport.

It seems that the content is not really that important, it is more a question of the claimant's gaining a familiarity with the Government through repeated physical contact. According to BC:

(BC) Face-to-face was much more relevant than might otherwise have been the case. It's the way that Maori operate, by talking and looking at you.

Towards the end of the project when working virtually was speeding up the negotiations, which was what the claimants wanted, BC noted that, even at this stage when e-mail and phone were being used quite often, face-to-face meetings were still being held every two weeks.

It seems that in this high stakes, complex project there really was a need to develop a high level of relationship between the team members. In this case, the claimants took the lead in relationship building by insisting on regular face-to-face meetings, whether or not tasks actually had to be done. The benefits of this concerted effort at face-to-face relationship building eventually led to greater use of virtual communication channels as the negotiations progressed and eventually concluded as BC explained in these two comments:

(BC) And that (making decisions virtually to impending deadlines) requires a huge level of trust, which we are able to build up through a whole lot of face-to-face meetings over long periods of interaction, two years

(BC) I think just on our side, we are telling the claimant that we don't need to meet as regularly on every single issue as we have been in the past. Because once we have done that emotional stuff, then the detail, you know the process, property transactions and those things are straightforward. So we are encouraging them to go more virtually. And they are happy.

In summary, these three cases illustrate the contention that facilitators are in a position to create strategies to build relationships with team members. Conditions present at the start of the virtual team as well as the level of relationship chosen by the facilitator will in large measure determine the appropriate selection and use of communication channels and messages.

8.5 Implementing and Managing Relationship-Building Strategies

If we analyze how effective virtual team leaders spend their time for the first few weeks of the project, we notice that often no "real work" is completed. Activities are focused on establishing links across boundaries and networking. (Duarte & Tennant Snyder, 1999:84)

Implementing and managing the strategies the facilitator has created is the final part of the relationship-building process and an on-going one. It begins with the implementation of the facilitator's chosen strategy. If the strategy that the facilitator created is the correct one and the chosen level of relationship is developed, then the relationship building process has been successfully completed and the project or task may begin. In a complex, long term project, where a higher level of personal relationship is desired, the strategy created may include continuous relationship building taking place concurrently with project or task implementation, which was the case in BC's negotiation with the indigenous group.

Managing relationships can be as critical to the success of a virtual team as initiating relationships and should be part of the facilitator's overall strategy. RB believed that to sustain the dynamics of a team and to prevent relationships from becoming cold or static over a long period of time required the team getting together on a regular basis, and he realized managing relationships virtually would be a challenge. He explained:

(RB) Primarily it's just to chew the fat. To discuss any issues that have come about. That is easy to do in half an hour or in an hour. You can stave off any sort of issues, misunderstandings or things like that. Whereas I think virtually making sure that all people are of like mind as far as the tasks at hand - that has got to be much harder to do. I haven't quite figured that out, I think that's an issue, but I don't know how much of an issue.

This comment mirrors those of Maznevski & Chudoba (2000) who found that effective virtual teams were distinguished by strong, repeating temporal patterns, usually involving face-to-face coordination meetings or videoconferences. Such meetings involved an intense and full agenda of activities, one of which was the reinforcement of ongoing relationships. They found these meetings served as the 'heartbeat' of the team, pumping new life into them and providing long-term stability. They also found that one of the most difficult challenges for global virtual teams was managing social interaction and relationships, and that it was the best teams in their study who 'rhythmically'

scheduled relationship building and interaction. BC found that this occurred with regular face-to-face meetings every two weeks. He noted:

(BC) ... the claimants are more willing to conduct business virtually, by phone and e-mail as it means more things can get done. It means we can do more stuff in between meetings.

With AR's project facing looming deadlines there was no time for regular face-to-face meetings or even regular conference calls. She relied on regular communiqués using e-mail and information exchange to enhance relationships by maintaining team member confidence. She explained:

(AR) What I tried to do, although I did not get it back from the others, was try to give everybody an update every other day, all the things and where they were. Just bullet points down, it took a bit of doing, but I needed to keep on top of things anyway. The project director was extremely grateful for that. It also gave him confidence. In an e-mail to him I might write, this is not ready but this particular person is working on it and I have utter confidence that it will be ready by whenever, because I knew what the person was doing. That was asking a lot of the project director who had never met me and he was having to accept my word that I had utter confidence in another person, somebody once removed, that he did not know about him, was going to deliver.

However, should the relationship building strategy fail in its desired outcome or should conditions change or new conditions come to light, then the relationship building process may need to be revisited. Should new members join the team, the facilitator will also need to repeat the process with each new member.

The following section will look at one instance in this study where the relationship building process was revisited during the project and one instance where the participant's original relationship building strategy was reevaluated after the project was completed

Revisiting the Relationship-Building Strategy

Several of the facilitators in this study experienced communication difficulties with team members. Technical problems, 'difficult' personalities, cultural misunderstandings and the poor selection and use of communication channels caused some of these difficulties. Two cases in which the facilitators needed to revisit the relationship building process are particularly instructive. In

AR's case, the 'difficult' personality of an uncooperative team member became apparent while the project was still underway. In RW's case, he revisited several miscommunications with a team member caused primarily by a lack of relationship building and the poor selection and use of communication channels, in hindsight, as part of his the training program review and evaluation of his virtual team project. These two cases are described below.

AR and the Member who Refused to Communicate

AR had one team member who was extremely unresponsive when it came to replying to AR's e-mails for crucial information and who neglected to keep AR informed of changing task requirements. This team member was from England and was brought on to the team as the on-site lead consultant just as AR's project began. In assessing the conditions at the start of the team, AR assumed that because this man was English and a professional consultant hired by her organization that he would work to the same standards as New Zealanders and Australians, and that AR would be able to count on him to act in a professional and responsible manner. Unfortunately, as AR related in the following instance, this team member caused her problems:

(AR) He had left me hanging there doing all this work (many hours of rewriting) unnecessarily, although not long before he had told me this work needed to be done. All that work I had done was wasted. Apparently they had not had a problem at all. ...Yet he told me there was a problem and I told him what I would do. He did not realize the import that we had an agreement and I would do this and that I was working to this agreement, hearing nothing else to the contrary. And I had rung him as a courtesy to tell him when I would be done and then he tells me it's not necessary.

AR went on to describe another incident, this one involving an extended silence:

(AR) In another incident, he had basically gone off the air for two or three weeks, although it seemed really unusual in this very urgent project that he was not communicating although I was sending him repeated e-mails requesting information. ... I telephoned him. Please tell me if I have offended you in some way. He said, well I am a Yorkshireman and we go quiet when we're thinking. I was astounded by this. I felt like saying I don't care if you come from Mars, I need this stuff.

According to AR, the lead consultant never did come around and communicate proactively. She explained:

(AR) I found the lead consultant to be not particularly communicative. He did not seem to understand what was involved. I told him that doing this project by e-mail was like night flying, you only had the instrument dials. The other person could pick up so much just by what was going around him.

After investigating, she discovered the people on location were having similar problems with this man. When she realized the extent of this problem, AR reassessed the conditions and decided this team member could not be relied on, and given the approaching deadline she did not believe there was time to rebuild the relationship with this team member. Instead she made an Asian consultant who was also on site her main line of communication to the site project. She elaborated:

(AR) The lead consultant was working directly with the people on location. I understand there were similar sorts of issues there except they weren't probably quite as pronounced because the others had the visibility (to see what was happening) than I did not have.

AR then explained the steps she took to deal with the situation of the uncommunicative consultant:

(AR) I only started to talk to the Southeast Asian gentleman sometime after this problem with the lead consultant. I got onto him and thereafter I used him as my main communication channel. I found he was much better at keeping me updated. I did not have to ring him very often at all. Maybe I only rang him a few times.

From this incident, it can be seen that AR did not accurately assess the conditions concerning this lead consultant. She made assumptions about his professionalism and consequently believed a low level of relationship with him would be adequate. When she discovered that she did not understand him well enough to engage in effective two-way communication, it was already too late to build a suitable level of relationship. In the end, she decided to work around him and in this way was still able to complete the project on time.

RW and Team Member Miscommunications

As has been discussed in Chapters 6 and 7, RW experienced miscommunications with his team members that were caused by the facilitator choosing the wrong level of relationship to develop with his team member. This was evident when RW made offensive comments in e-mails to his team member and client. One incident concerned the lean, task-oriented channel, e-mail and highlights how ineffectual and even dangerous e-mail can be when trying to convey humor or emotions. The client was not very outgoing for a political candidate. RW was constantly telling him he had to "kiss babies and shake hands" if he was going to be elected. RW asked the client to send him his plan for the last two weeks of the campaign. The client's plan consisted of "dropping brochures here and there and putting them under car windscreen wipers". So RW responded with a sarcasm-laden e-mail:

(RW) ...saying something like cars don't vote for people, people vote for people. I meant it in a light-hearted way. He got upset with my tone. I was not able to convey my underlying humor to him in an e-mail, even with an emoticon and he took it as a rather harsh reprimand of his campaigning style.

According to RW, if he had made the effort to build a higher level of relationship with his team members, then he either would not have made a comment like this, or else the team member would have had a better idea of RW's humor. As discussed elsewhere, financial limitations, the disorganized start of the team, and RW's own comfort level with e-mail and text-chat were conditions that heavily influenced his decision to build a low level of relationship and use the channels that he did. By the end of his project, which coincided with the end of the training program, RW was able to see that there were holes in his relationship building process in the first three steps. His understanding came about after receiving revealing comments from his team members after the election, and by the issues raised in the training program and by the other program participants as well.

Assessing Conditions

Building virtual relationships was a great challenge for RW. Because he faced budget constraints he could not afford to fly around the world to meet his consultants and clients. He found that even making phone calls to socialize was not financially possible. But he now realized that he would have to budget for relationship building phone calls:

(RW) I tend to call them to initiate projects and to discuss all the fine detail, which would take me too long to do by e-mail. But they tend to be very focused discussions and I still don't get a very real sense of the person at the other end. It's all very businesslike. I'm going to have to try, I guess, to budget in some general team talk kind of stuff I suppose.

Again, his comfort level with technology was blinding him to how his team members might feel about it as he finally came to realize. He explained:

(RW) Like I said, I am not like that and I am having trouble understanding why they feel this way - this difficulty with it. But clearly we have to find a way around it. There is no point in ignoring those feelings. It's been interesting that my level of comfort with the technology has been deluding me about how other people feel about it.

Choosing Level of Relationship

Because he was very comfortable working strictly on a task-based level, RW assumed others were as well, so he never considered choosing a medium or high level of relationship. Now he realizes that by investing in relationship building up front, he can reduce the potential for serious communication problems as he indicated in this comment:

(RW) One thing I learned in the last couple of weeks on the facilitation side of things is now that the campaign in California is over both the client and consultant are talking about what we did right and what we did wrong. A lot of issues are coming up as I said before that hadn't come out before because we did not know each other well enough.

Creating Strategies

RW sees that his near total reliance on e-mail as *the* team communication channel is problematic, although it is still his preferred mode of communication given the time constraints he works under:

(RW) I just had a meeting with a client that went on for 70 minutes and the business could have been taken care of in an e-mail. So this is why I

rely heavily on e-mail. It actually does strip away the social niceties and having coffee and allows you to get to the point. I'm not sure what to do. I cannot afford the time it takes to talk to people, but I can see that there are holes in the e-mail model that need to be addressed.

But his experiences have made him realized that he needs to make adjustments. Now he is looking for additional communication channels as this comment shows:

(RW) That spurred me even further to think about and explore some of these other technologies- Netmeeting and its derivatives. ... Netmeeting seems to be the closest thing to a standard that everybody has. ... It's now an intention of mine to push quite strongly on the business side, and even with my personal contacts, that we shift some of our communications onto that (Netmeeting), so that they will feel more familiar or comfortable - that they can say things because it's a voice conversation that perhaps they wouldn't type.

He also realizes that he will need to select appropriate message content: adding some social relationship building messages to his previously task-based focus, as he indicated here:

(RW) It then seemed almost superfluous to telephone and say hi Bob it's me how are things. Thinking back, we probably should have done that.

By the end of his project RW was able to see why he needed to improve the quality of his relationship building with his team members, and how he could do this through a more realistic assessment of conditions at the start up of his team as well as a more appropriate selection and use of communication channels and message content.

Closure

Although not normally associated with initiating and managing relationships, closure can be an important part of the relationship-building process, particularly in instances where the team members may work together in the future, or where the organization as a whole is trying to build up trust between employees. Closure in virtual teams can be a difficult prospect where people are separated by distance. Here AR explains her feelings about closure:

(AR) There's an unwinding professionally, but often there's an unwinding personally as well. You don't need it on all jobs, but when a job has

called for a huge amount of commitment, there's the personal side of things as well. Sometimes it's very difficult to have closure - you know you have been working 120 hours a week, and then all of a sudden it's delivered. I tell you that it is actually something quite hard virtually. Because the people out there are still in with it, they are still with the client, they are still talking and this sort of thing. But it is a funny feeling here, because all of a sudden, you were working until 6 in the morning, and then suddenly it's finished. ... So I was careful not to put my need for closure on to those people, because they still had the final stages to complete. So you're left with a funny feeling of being done but not done.

RW also wonders how to wrap up a virtual team in a way that is meaningful for him and his team members:

(RW) It will be weird to get up tomorrow morning and not think about California. You're right, there is this feeling of a lack of closure. And feel I should pick up the phone to the client and say that was hell let's get out of the office and have a drink. That's not going to happen in a virtual situation. I'm thinking of the consultant, she's young and she did a good job. I should be telling her these things, but how do I do that? Send her flowers? I could give her a call. There needs to be some acknowledgment, to unwind with people, to talk it over. It's all very well to put down on a piece of paper what we have learned, but just to unwind and say, "Wow, it's over".

These two comments give some indication of what the facilitators had to grapple with at the conclusion of a team. As with building relationships, ending them also represents a challenge to facilitators in a virtual environment.

8.6 Chapter Summary and Discussion

Media choice is a complex process that is not influenced by simply one set of factors even though some factors will be more salient at times than others. Characteristics of the task, the medium, and the social environment relate with one another to produce a 'fit' between the communication task, the available media, and what is expected or deemed appropriate by the social system (Karahuna 1995:8)

This chapter examined how facilitators selected and used appropriate communication channels and messages in order to develop a chosen level of relationship with their team members and how they implemented and managed their relationship-building strategies. With an increasing number of media choices, facilitators must methodically select communication channels from a

mixture of old and new technologies. Some of these new electronic media may actually reduce the incidence of social conversations that can build relationships (Sarbaugh-Thompson & Feldman, 1998), leaving it up to facilitators to take the lead in creating purposeful relationship-building strategies.

Recent media choice research discusses the importance of social context and social processes as important determinants when choosing communication channels (Markus, 1994; Ngwenyama & Lee, 1997). What this means is that sometimes a telephone rather than an e-mail will be used to convey relatively straightforward information because the sender wants to engage in social conversation as well. Two facilitators in this study pointed out that one way to get to know dispersed team members would be through telephone calls that were ostensibly made to talk about business, but were in fact an opportunity to "chat".

Maznevski & Chudoba (2000) found examples of social context and social processes influencing choice of communication channels, noting that successful culturally diverse virtual teams tended to use telephone and face-to-face channels when discussing important issues such as responsibility. They also found evidence that individual members and cultures as a whole had personal preferences for certain media for certain tasks and that successful teams tended to cater to team member preferences. It is also important for facilitators to remember that a poor fit between medium and task may negatively affect team members' perceptions of the medium (Chidambaram & Jones, 1993).

Personal preferences may relate to the varying levels of difficulty users experience with information technology in both technical and psychological terms; for example, the inability to send and receive e-mail messages or difficulties operating desktop videoconferencing programs. There is evidence that variance in team members' level of skill or familiarity with information technology may play a significant role in team success in utilising rich CMC (Kayworth & Leidner, 2000); for example, RW's difficulties maintaining the integrity of Internet chat processes.

In relation to facilitator selection and use of appropriate communication channels, Schwartz & Te'eni (2000) found two fundamental influences on the effectiveness of electronic communication: cultural and organizational norms and sender-receiver distance - a matter of personal background, experience, company role and other context-forming criteria. Chapters 6 and 7 discussed the

relationship of these factors to creating strategies and concluded that cultural and organizational norms and sender-receiver distance were critical and needed to be carefully assessed by facilitators.

Successful virtual teams often use different technologies to enhance the breadth and depth of their communication (Lau et al., 2000). Nunamaker et al. (1991) described the benefits and barriers of electronic communication as 'process gains and losses'. Facilitators in this study realized that for the most part they would have been unable to operate virtual teams and accomplish their project tasks without electronic communication channels. At the same time they understood that the use of these channels as the main working communication channels in their virtual teams would be problematic, without having first established personal relationships with team members. The development of personal relationships, according to one facilitator, would make the building of a team "culture of cooperation" more likely. In order to build relationships, facilitators need to strategically use the communication channels they have available to them (Pauleen & Yoong, 2001).

The facilitators considered e-mail to be the basis of their virtual teams, effectively linking their distributed teams (Kettinger & Grover, 1997). However, they are unlikely to agree with Finholt's & Sproull's (1990) contention that e-mail can enable a team to create and sustain its identity without a shared physical setting, at least not by itself. Although, e-mail is one of the basic communication channels in their virtual teams, the facilitators saw it as a channel more suitable for communicating information and coordinating projects than for building relationships. This view seems to support those held by some researchers who have theorised that e-mail is less likely to be effective in communication tasks that require greater social interaction or social presence, such as getting to know someone (Kettinger & Grover, 1997). Perhaps, new systems such as kMail (Schwartz & Te'eni, 2000), which seek to contextualize e-mail messages with personal information will be helpful in this regard.

The telephone seems to be the old reliable standby for facilitators when it comes to building relationships with virtual team members. It is apparently more comfortable to use this channel when getting to know people. With the use of the phone being second nature, the facilitators feel that they can pick up paralinguistic clues from their team members, which can assist in relationship

building (Perey, 1997). The telephone is also the backup channel of choice when other channels such as e-mail fail or when sensitive issues need to be discussed.

The facilitators in this study saw great promise in desktop videoconferencing as an affordable alternative to face-to-face meetings. They believed that "eyeing" people is an important part of relationship building, particularly when the only alternative is e-mail or synchronous text-based meetings. Lau et al. (2000) argue videoconferencing can enhance social relationships by putting a face to the name. Perey (1997) states conscious and unconscious communications supported by two-way video can build and nurture relationships.

However, a recent study looking of the effects of desktop videoconferencing on improving trust relations in virtual teamworking projects suggest information and communication technologies, such as Netmeeting, appear to be inadequate for building "trust relations", primarily because they do not support 'backstage' access, normally found in face-to-face environments (Nandhakumar, 2000). In any case, the use of Internet-based video conferencing communication is still problematic, as access to sufficient and reliable bandwidth is a significant barrier to many potential users.

One of the most interesting findings in this study was the way facilitators used Internet-based messaging and chat programs such as ICQ to set up opportunities for informal, spontaneous communication between facilitators and team members. Carletta, Anderson, & McEwan (2000:1249) state that "teams can best be supported by technology that favors opportunistic interactions that all team members find easy to initiate". This use of ICQ also mirrors suggestions made by Kraut et al. (1993) that informal encounters create a common context and perspective that support group work. They explain informal communication often occurs spontaneously between random participants and results in richer content. Without informal exchanges, "collaboration is less likely to start and (be) less productive if it does occur" (Kraut et al., 1993:313). ICQ may facilitate socialization processes that allow team members and facilitators to participate in activities happening at the 'backstage' where they can exchange feelings and emotions (Goffman, 1990). This approach facilitates building and maintaining relationships and minimizing feelings of isolation that can lead to reduced intrinsic involvement in the team (Finholt & Sproull, 1990).

Finally, another interesting and important finding is the notion of facilitator as technology-use mediator (Orlikowski et al., 1995). DW's introduction and use of ICQ is an example of this as is RB's plan to introduce desktop video conferencing to his organization's management level. These introductions of technology at the team level have the potential to "contextualise technologies in use" thus supporting dynamic organizational forms and practices (Orlikowski et al., 1995). This is an issue that will be expanded on in Chapter 9 in the context of implications for practitioner and researchers.

As alluded to in this chapter, the skill and effectiveness with which a facilitator creates strategies will, in the final analysis, largely rest on his/her experiences and sensitivity in dealing with people. While face-to-face meetings are the preferred way to build relationships and in general deal with sensitive and complex situations, it is possible with the skillful and thoughtful application of virtual communication channels to facilitate a completely virtual team. Research has found that computer-mediated teams do share relational information and are likely to develop relational links over time (Walther, 1997; Chidambaram, 1966; Warkentin et al., 1997). Nevertheless, strictly virtual teams potentially face a much greater strain on communications as they attempt to interact, share meanings and build relationships in the absence of face-to-face interaction (Kayworth & Leidner, 2000). In this study for example, one facilitator, AR, was successful in choosing and building an appropriate level of relations with team members using strictly virtual communication channels and one, RW, was not. Special training in virtual team communications may also be of help (Warkentin & Beranek, 1999). Indeed, it was the training provided in this study that helped the participants to realized the importance of relationship building strategies.

Effectively implementing and managing relationship-building strategies during the life of the team is, of course, crucial if the facilitator is to maintain a high level of communication and keep the project on track to completion. By creating and maintaining a 'storehouse of credibility and trust' (Benson-Armer & Stickel, 2000), the facilitator can, for example, assure continuity when time differences and technical problems may make it difficult to achieve consensus before decisions are made.

As has been mentioned in Chapter 7, another important reason for managing relationships in the team is the need to maintain and strengthen

personal and professional relationships as they may be called upon in future teams (Jackson, 1999) or as part of an overall strengthening of organizational trust (Handy, 1995). For virtual team facilitators, there will always a need to continually strengthen and maintain relationships with people that they are likely to work with in personal, team or organizational contexts in the future.

This concludes the development and discussion of the main elements of the three-step theoretical framework, *Steps in Facilitating Virtual Relationships*. Chapter 9 will look at the implications of this framework in practice and research, as well as the limitations and conclusions of the study.

Part 1 The Nature of the Research Problem	Chapter 1 - Introduction
	Chapter 2 - Review of Prior Relevant Literature
Part 2 The Research Act	Chapter 3 - Research Methodology
	Chapter 4 - Specific Research Procedures
Part 3 The Research Findings and Conclusions	Chapter 5 - A Grounded Theory of Virtual Facilitation
	Chapter 6 - Assessing Conditions
	Chapter 7 - Choosing Levels of Relationship
	Chapter 8 - Creating Strategies
	Chapter 9 - Implications, Conclusions, and Limitations

Chapter 9

Implications, Conclusions and Limitations

9.0 Chapter Overview

This dissertation has reported on a study of the many issues facing facilitators of virtual teams. More specifically, this study examined how virtual team facilitators build relationships with their virtual team members. The report developed a model, which represents the process that facilitators undertake when building virtual relationships. The research methodology used in this study was grounded action learning, an integration of grounded theory and action learning, a variant of action research. It both guided the design of the virtual team training programs and the collection and analysis of the research data.

This chapter begins with a review of the three steps in facilitating virtual relationships and then examines the following implications for practitioners: Facilitators in Virtual Teams, and Virtual Teams in the Organization, with special attention paid to virtual team training and intercultural issues in virtual teams. The second section discusses the implications of this study and its findings for researchers in two areas: Virtual Team Facilitators as Technology-Use Mediators and Virtual Team Facilitation and Action Learning. The chapter ends with the concluding statements of the study, followed by the limitations of the study.

9.1 Implications for Practitioners

This study asks the question:

How do facilitators of virtual teams build relationships with their virtual team members?

The outcome of this study is a *Grounded Theory of Virtual Facilitation: Building Relationships with Virtual Team Members*. *Facilitating Virtual Relationships* explains how virtual team facilitators build relationships with their virtual team members. The grounded theory approach has provided a rigorous and creative approach to theorizing the participants' experiences and skills as they initiated and facilitated their virtual teams within each of their

organizational contexts. The research findings from this study, which occurred in the one action learning training program setting, are inductively derived from what took place during it. Although the findings and the model derived from them are 'local' in the sense that they took place in one location, the facilitators were a diverse group working in a wide range of conditions. It is therefore possible to draw out lessons that should apply in a more general sense.

This section of the thesis first reviews the model, *Steps in Facilitating Virtual Relationships*, and then looks at two implications for this model: Facilitators in Virtual Teams and Virtual Teams in the Organization with special attention paid to virtual team training and intercultural issues in virtual teams.

Steps in Facilitating Virtual Relationships

The link between team effectiveness and team member relationships is an important area of research in virtual teams and the implications for practitioners are significant. The single most important process to emerge in this study was the need for facilitators to first build personal relationships with their team members before proceeding to the team task. This study and the supporting literature references clearly demonstrate that the benefits of building relationships with team members are manifold and that they manifest at the personal, team and organizational level and are both immediate and long-term.

At the team level, stronger relational links have been associated with higher task performance and team effectiveness (Lau et al., 2000; Warkentin & Beranek, 1999; Warkentin et al., 1997; Walther & Burgoon, 1992) and the effectiveness of information and knowledge exchange (Warkentin et al., 1997; Cramton & Webber, 2000). According to Lau et al. (2000), effective communication is the key to successful virtual teams, and one of the keys to effective communication is how well team members are able to build and maintain their personal relationships. Kimball (2000:4) states, "the purpose of building and maintaining relationships in teams is to ensure that individuals develop at least enough harmony to be able to get their group work done". According to Walther & Burgoon (1992), strong relational links are associated with enhanced creativity, and motivation, increased morale, better decisions and fewer process losses. At the personal level, relationship building leads to more empathy and less negative attribution bias (Cramton, 2001), greater

understanding of cultural differences (O'Hara-Devereaux, & Johansen, 1994), and increased personal trust (Jarvenpaa et al., 1998), and have the potential to lead to stronger future associations (Jacson, 1999) and increased organizational trust (van der Smagt, 2000). For a facilitator, relationship building can result in improved team management (Kayworth & Leidner, 2000), with less time needed for monitoring team members and more time for the task.

Facilitating Virtual Relationships is the three-step process that facilitators go through when building relationships. It is the main outcome of this exploratory study and one that has important implications for practitioners. This theoretical construct serves to bridge the gap that currently exists between virtual team research and practice. Although derived in a local setting from a limited number of facilitators, the model provides practitioners with a cognitive model of how relationship building with virtual team members can be approached - through the three steps of *Assessing Conditions*, *Choosing Levels of Relationship*, and *Creating Strategies*.

The wide variety of conditions at the start of a virtual team and their potential impact on various team processes and outcomes are just beginning to be discussed in the most recent literature (Pare & Dube, 1999; Cramton, in press; Maznevski & Chudoba, 2000). From this study it became evident that facilitators need to assess all the conditions present at the time the team forms. After this assessment facilitators can then choose an appropriate level of relationship to build with team members and finally create strategies to build and manage that relationship. In this study these conditions are classified as *Team Issues*, *Boundary Crossing*, *Organizational Policies and Resources*, and *Technology* and they are listed in Table 39 along with their potential effects on the facilitator led relationship building process. All of these conditions have been described in detail in Chapter 6 and are discussed in terms of their impact on facilitator-led relationship building in Chapters 7 and 8. Most experienced virtual team facilitators looking at the conditions at the start of their team will be able to work through this list and assess their potential impact on relationship building with their team members as was done by the facilitators described in this study.

Factors	Subcategories	Possible Effects on Relationship Building Process
Team Issues	• Project Goals/Team Tasks/Timeframe • Team Membership/Virtual Team Experience/ Training Opportunities	Required Level of Relationship, Selection and Use of Communication Channels and Message Content
Boundary Crossing	• Organizational (including functional) • Cultural/Language • Time and distance	Required Level of Relationship, Selection and Use of Communication Channels and Message Content Selection and Use Choice of Communication Channels
Organizational Policies and Resources	• Nature of the Organization • Human Resource Policies • Information Technology Policies • Security Policies • Knowledge Management Policies • Financial Barriers re: Use of Virtual Teams	Can Support or Hinder Overall Relationship Building Process Selection and Use Choice of Communication Channels and Message Content
Technology	• Availability • Compatibility • Competence	Selection and Use Choice of Communication Channels

Table 39: Specific Subcategories of Factors Present at the Initiation of a Virtual Team and Their Effects on Relationship Building Process

Choosing an appropriate level of relationship to build with team members will vary with the conditions. The facilitators in this study described three different levels of relationship that met the conditions they encountered in their virtual teams. These were termed - low, medium and high, and were defined and discussed in the context of facilitating a successful team. This study showed that

facilitators believe that there may be a basic level of goodwill available at the start of a virtual team similar to the concept of "swift trust" put forth by Jarvenpaa et al. (1998). Swift trust explains how virtual team members may be able to accomplish tasks without first having developed personal relationships and how this might be enough given certain conditions. However, such trust appears to be fragile and temporary, and this study showed that the facilitators tended to believe that they needed to develop higher levels of relationship that were usually appropriate given the conditions present at the start of the team. One notable exception was in AR's case where she used a 'hub' structure making use of sub teams. In this case she was able to get by with a low level of relationship with sub team members by building a higher level with sub team leaders.

A medium level of personal relationship was defined as enough to build effective two-way communication resulting in project or task completion. Effective two-way communication was defined as mutual communication based on shared co-orientation (Sahay et al., 1999). Communication is an essential element in virtual teams. Empirical studies support the important role communication plays in virtual teams (Robey et al., 2000). Many studies have emphasized the importance of communication in accomplishing team requirements for coordination and efficient task execution (DeSanctis & Poole, 1997). The facilitators in this study believed this medium level of relationship was an important level of relationship because the communication achieved at this level allowed them to gain an effective understanding of their team members. This resulted in many of the benefits discussed earlier such as less attribution bias, increased morale, better decisions and ultimately a successful team outcome. It is likely that facilitators will find this level of relationship the most commonly required in virtual teams, since good communication is fundamental to effective virtual team processes and outcomes (Lau et al., 2000; Kayworth & Leidner, 2000).

High-level trust relationships were found to be an essential element in virtual teams involved in complex tasks that crossed significant boundaries. Having enough time is one of the defining conditions when developing high-level relationships. However, since many virtual teams are project or deadline driven, there may not be the opportunity to allow relationships to develop over

time. This presents a significant challenge to virtual team facilitators. Several facilitators in this study could see no practical way to get around the time and effort needed to build effective virtual relationships, particularly genuine trust-based relationships, and especially when significant boundary crossing is involved. Facilitators saw the benefits of 'referred' trust, trust by reputation and strong organizational cultures that engender trust in order to build relationships with team members and complete team tasks on time. As a group, the facilitators saw they could in the long term capitalize on these kinds of trust at personal, team and organizational levels by making efforts to build and manage relationships in the short term during the life of their virtual teams (Jackson, 1999; van der Smagt, 2000).

Facilitators in this study who made incorrect assumptions about the level of relationship needed or who allowed difficult conditions to override efforts at relationship building often suffered the kinds of miscommunications and misunderstandings with team members that could potentially derail a team.

After choosing a level of relationship, facilitators need to select and use appropriate communication channels and messages in order to build the relationships. Most of the facilitators in this study believe it was preferable to build relationships with team members in face-to-face settings, and this tends to confirm research that shows it is easier to complete relationship-building activities in a face-to-face context than in a strictly virtual one (Warkentin et al., 1997). This may be explained by media richness theory, which explains that the lack of contextual cues and timeliness of feedback inherent in computer-mediated communication can negatively affect the building of relationship links (Daft et al., 1987).

Face-to-face meetings may be the preferred way to build relationships and in general deal with sensitive and complex situations in virtual teams. However, at least one facilitator in this study showed it is possible with the skillful and thoughtful application of virtual communication channels to facilitate relationship building in a completely virtual team. Research has found that computer-mediated teams do share relational information and are likely to develop relational links over time (Walther, 1997; Chidambaram, 1966; Warkentin et al. 1997). In cases where enough time is not available to build strong relational links it may still be possible to develop strategies to build a high

enough level of relationship to begin the task and then to manage and 'grow' the relationship while moving the task forward.

To summarize, the facilitators in this study believed relationship building was a prerequisite to a successful virtual team. Their richly described experiences suggest a model for relationship building that other virtual team facilitators should be able to benefit from. The supporting literature also suggests that practitioners need to pay special attention to relationship building when planning, designing and implementing virtual teams. Given the numerous interpersonal and team benefits that may be accrued through intentional and appropriate relationship building, particularly at the medium or higher levels, it is clearly in the interests of facilitators and team members to actively engage in relationship-building strategies as part of a virtual team lifecycle. Organizations as a whole would also seem to profit by supporting relationship building in virtual teams. Benefits include better performing teams as well as possible increased organizational trust amongst employees.

Facilitators in Virtual Teams

In Chapter 1, a virtual team facilitator is defined as the person who functions as the hub of the team, holding it together. Kayworth's & Leidner's (2000) study suggests that a facilitator's ability to manage virtual team issues has a significant impact on the perceived success of the team's performance. In the literature, particularly the practitioner-based literature, facilitator responsibilities may include all or some of the following: selecting team members, establishing communication and team protocols, setting team tasks and team member roles, facilitating interpersonal and team communication, handling conflict, and managing technology (for example, Duarte & Tennant-Snyder, 1999; Kimball, 1997; Lipnack, J. & Stamps, 1997; Kostner, 1996; O'Hara-Devereaux & Johansen, 1994). They may also be the person interfacing with stakeholders and extended team members such as direct and indirect managers, customers and suppliers. So defined, a facilitator may also be termed a team leader, project manager, coordinator or coach.

The role of virtual team facilitator entails a different level of skills needed to make virtual teams successful. Leaders can no longer control the work processes of virtual teams with traditional means and need to develop a different

set of coordination and control mechanisms (Pare & Dube, 1999). Virtual team facilitators must be able to 'read' all the possible personal and contextual nuances in a world of electronic communications (O'Hara-Devereaux & Johansen, 1994). They must be able to understand the possible causes of silence, misunderstandings, and slights (Cramton, 2001), and do it as one of the participants in this study described, "while flying blind", without any of the usual signs to guide them. Facilitators must be sensitive to the 'flow' of team processes, paying attention to the smallest matters to head off potential troubles that could derail the team's task. According to Kimball (1997:5), "energy dynamics are greatly influenced by the nature of the media ... and facilitators need to pay attention to how interaction feels in different media".

Facilitators, therefore, must not only manage the project tasks and occasional personality conflicts normally associated with a co-located team, but must also be able to guide a team of geographically-distributed, and often organizationally and culturally different individuals in creating a common purpose, which often means aligning individual goals with team goals.

Where will these facilitators learn these skills? The results of this study suggest that effective facilitator skills are going to develop appropriate skills and knowledge primarily through experience. At least one facilitator (AR) demonstrated that it was the lessons she learned in her previous experiences working in virtual teams that provided her with the skills and knowledge she needed to successfully facilitate a virtual team. She was able to assess the conditions at the start of her team, and for the most part choose appropriate levels of relationship with her various team members and then create effective relationship building strategies through the correct selection and use of electronic channels and message content. When she did make a mistake in judgment, she was able to correct it in midstream and work around it and still complete the project on time. Training is another way for facilitators to gain the skills, knowledge and abilities they will need to facilitate virtual teams. Although training may seem an obvious way to address the need for facilitation skills, as shown in this study not many organizations offer such training. Training as an organizational issue is discussed in detail in the *Virtual Teams and Organizations* section below.

Facilitators as Technology-Use Mediators

Experienced virtual team facilitators can be an important asset to the wider organization as technology-use mediators (Orlikowski et al., 1995, see *Implications for Researchers* below for a more detailed discussion of technology-use mediation). By assisting the adoption, adaptation and use of ICT at the team level, facilitators may be invaluable as role models for the wider organization. Facilitators as ICT role-models is also suggested in adaptive structuration theory (DeSanctis & Poole, 1994), where the introduction of technology into a team setting provides an opportunity for the team to create new norms. In turn, the imposition of group team norms may guide the manner in which the new technology is adopted. The presence of an experienced facilitator may guide the mutual adaptation process and lead team members to adopt new norms consistent with the features and opportunities afforded by the new technology (Niederman & Volkema, 1999). These new norms may then, if appropriate, be introduced into the wider organization.

Several of the facilitators in this study acted as technology mediators and role models in their roles as virtual team initiators and facilitators. Here are three examples:

- 1) DW's use of ICQ as an informal backdoor communication channel to strengthen personal relationships and add impetus to task completion. It is possible that his organization may pick up his use of ICQ and encourage it use throughout the wider organization.
- 2) BC's investigation and use of electronic communication channels in a traditionally face-to-face organizational environment may compel his organization to further investigate and perhaps eventually implement and enforce policies and procedures for the use of electronic communication channels in the organization.
- 3) RB's plans to introduce desktop video conferencing, particularly his plan to put it on everybody's computer like an 'ever-on' phone system, if successful has the potential to greatly change communication traditional phone and face-to-face based communication channels.

To be effective in the wider organizational sense, facilitators of virtual teams must not only fulfill task expectations, but also meet other social outcomes like satisfaction, organizational commitment, organizational identity, cultural understanding, and trust (Robey et al., 2000). The ongoing contextualization performed by virtual team facilitators as mediators working in the new and uncharted waters of the virtual environment adds value by keeping technology usage aligned with user conditions and organizational circumstances. Particularly in the early stages of virtual team use in organizations, virtual teams represent potential communities of practice (Joy-Matthews & Gladstone, 2000), in which learning is situated in practice. This has implications for both practitioners and researchers (as discussed below in *Virtual Teams and Action Learning*). For facilitators it represents an opportunity to capture virtual team processes that can then be incorporated into future teams or dispersed to the organization as a whole in more formal training programs, a process of explicit structuring of genres (Yates, Orlikowski & Okamura, 1999).

Facilitator experiences with virtual social and work processes and ICT are invaluable, and their organizations could be making a greater effort to tap into and make use of this knowledge and experience, particularly if these organizations believe that ICT are going to be the backbone of new and fluid organizational forms

Virtual Teams in the Organization

Virtual teams are figuring more and more prominently in today's organizations (Maznevski & Chudoba, 2000; Mowshowitz, 1997; Grenier & Metes, 1995). However, many organizations are not acting quickly enough to provide proper support (Jackson, 1999) and indeed seem to be hindering the effectiveness of their virtual teams with inadequate and often self-defeating policies. In this study it became quickly apparent to many of the facilitators that organizational policies could severely hamper facilitator efforts to produce effective virtual team outcomes. A lack of training in ICT, virtual communication and virtual team processes and intercultural communication for facilitators and team members can cause poor team member participation, communication breakdowns, and poor facilitation techniques (Warkentin & Beranek, 1999; Kayworth & Leidner, 2000; Lewis, 1996). Poor organizational

identification and trust can result in team members who are not team players (Wiesenfeld et al., 1998; Nandhakumar, 1999; van der Smagt, 2000). Traditional human resource policies - inadequate compensation, incentives, and career advancement for virtual workers can result in a lack of commitment, motivation and performance in team members (Cramton, 2000; Robey et al., 2000). Inadequate IT infrastructure, incompatible technologies and software can result in inadequate communication channels options (Kayworth & Leidner, 2000, Cramton, in press; Boutieller et al., 1998). Finally, non-existent or inadequate knowledge management policies will leave no opportunity for continuous learning at the team level (Robey et al., 2000).

Because virtual teams may be an ad hoc response to a current task that doesn't require formal change to the organization (Ocker & Fjermestad, 2000; Vickery et al., 1999), many of these conditions listed above are the result of an ad hoc, poorly planned organizational approach to virtual teams. Virtual teams are a new, unpredictable but potentially very beneficial organizational entity and organizations that want to make effective use of them will need to support them in any way possible. This includes supportive HR, Training, and IT and Knowledge Management policies, as well as general management initiatives. These are discussed in more detail below.

HR Policies

Based on her study, Cramton (2000:49) suggests "that designers of virtual teams aggressively explore in advance potential differences in incentives and situations that will affect team members" and go on to say that "goals, incentives and situations should be aligned whenever possible". Another study (Robey et al., 2000) concluded that managers needed to support virtual teams with appropriate rhetoric and reward systems. From this study it is apparent that issues of training, recruitment, compensation and promotion as they relate to virtual team members, are all critical areas that need to be carefully looked at. None of the participants' organizations had any specific policies on recruitment, compensation or training.

HR policies supportive of virtual team members and facilitators are an essential element in any organizational effort to support virtual teams. A key issue for the organization will be to ensure fairness and equity within team

operations (Jackson, 1999). Further organizational support of virtual teams will entail the design of new management, measurement and control systems, including rewards based on team performance (Wilson, 1996). Because virtual team members are often located in different countries these HR practices may need to take into account the impact of national culture on compensation practices based on status, performance and benefits (Schuler & Rogovsky, 1998). As one facilitator in this study (AR) pointed out, some of her team members were working on her virtual team in addition to their regular organizational work. They received no additional performance pay, compensation or organizational recognition for their efforts in spite of the long hours they put in to help accomplish an important deadline driven project, while team members on location did receive these benefits.

These kinds of HR issues may be part of the wider picture concerning virtual work, as organizational policies are not yet in place (Pauleen, 1998). Because it is not always written into job descriptions and because it is often ad hoc, the work virtual team members do often goes unnoticed or unregistered by managers, particularly if the team project does not fall under their manager's purview. The result is that virtual work is often not considered in compensation and career advancement formulas by organizations. This could lead to serious morale problems amongst virtual team members and facilitators. Organizations must make serious efforts to appropriately recognize and reward virtual teamwork.

Training

Focusing on people issues will dramatically increase the possibility of team success (Coleman, 1997). Virtual team training is an area that organizations may want to invest considerable resources in. Virtual team processes and dynamics are very different from those of co-located teams and require special facilitator and team member skills, particularly for first time members. Without effective self-leadership skills, which is essentially the ability to work independently based on intrinsic motivation, individuals and teams in virtual environments cannot begin to realize their full potential (Oakley, 1998). As the training program used in this study demonstrated, training can help facilitators gain the skills, knowledge and awareness needed to facilitate virtual teams. The

findings of this study, as well as that of the research and practitioner literature (Duarte & Tennant-Snyder, 1999; Kimball, 1997; O'Hara-Devereaux, & Johansen, 1994; Tullar & Kaiser, 2000; Warkentin & Beranek, 1999) suggest that training in any number of areas will be useful. These areas include training in virtual team communication (Warkentin & Beranek, 1999) and virtual processes (Tullar & Kaiser, 2000), ICT selection and use (Duarte & Tennant-Snyder, 1999), cross-cultural communication (O'Hara-Devereaux, & Johansen, 1994) and relationship building, general boundary crossing and networking skills (Yan & Lewis, 1999). Indeed, almost any training that increases a team member's flexibility and ability to handle the kinds of ambiguity, such as silence, that often arise in virtual teams will be valuable.

If an organization is serious about developing its own in-house training capabilities, it may want to develop and use situated learning or action learning methods (discussed further in the section, *Virtual Teams and Action Learning*) and combine these methods with an organizational knowledge management system as proposed below in *IT and Knowledge Management Policies*. There were several examples of action learning in this study. One was when AR reflected on the problem she had with one of her team members and was able to understand that she had made assumptions about this team member that caused her to choose an inadequate level of relationship. Another example was when RW also made incorrect assessments when choosing levels of relationship with his team members leading to several serious miscommunications. He was also able to identify them in the training program. Based on his experiences and his reflections he is likely to become a more effective facilitator.

However, traditional forms of training also seem to hold promise as a way for facilitators and team members to gain the skills, knowledge and awareness needed to facilitate and participate in virtual teams (Tullar & Kaiser, 2000; Warkentin & Beranek, 1999). Standard training methodology generally incorporates four phases: needs assessment, training design, training, and reflection and evaluation (Nilson, 1989), and Figure 20 shows how a systematic training program can be accommodated into a virtual team project cycle by incorporating training methodology into the overall management of the project. What is needed above all is an organizational commitment to creating a learning environment. Resources and time must be incorporated into the virtual team

project cycle, something that the organizations in this study did not appear willing to commit or perhaps have not yet realized were important.

Figure 19: Placing Training in the Virtual Team Project Cycle

As mentioned above, based on the findings of this study as well as the literature there are several skill and knowledge areas in virtual teams where training might have a particularly efficacious effect on virtual team outcomes. These include ICT selection and use, virtual communication and virtual team processes, boundary crossing, networking and relationship building skills and intercultural communication.

ICT Selection and Use

As indicated in this study, ICT selection and use is a critical part of creating relationship-building strategies. It is also essential in fostering good communications, facilitating socialization broadcasting and gathering information, and making decisions (Kayworth & Leidner, 2000; Wilson 1996;

Kettinger & Grover, 1997). A poor fit between medium and task may negatively affect team members' perceptions of the medium (Chidambaram & Jones, 1993).

Selection and use of ICT in virtual teams will be limited to varying extents by financial and technical conditions, including infrastructure, as well as organizational security and knowledge management policies. However it is essential that team members and facilitators be trained in their proper and effective use in virtual teams, facilitators in particular as they will often be acting as role models. This includes synchronous and asynchronous channels and groupware systems where available. Training may cover everything from writing e-mails and leaving voice mails that are clear and informative with an appropriate level of politeness to being able to set up available desktop conferencing systems and text chats and understanding how to use them effectively. Facilitators will need to be trained more extensively in selecting appropriate communication channels for different purposes, such as relationship building, information sharing and decision making. Media choice theories based on information richness (Daft & Lengel, 1986) and social presence (Short & Christie, 1976) are good starting points for guiding channel selection.

Virtual Communication

Communication is a key element in a successful virtual team (Robey et al., 2000; Lau et al., 2000). Effective two-way communication or dialogue results in team socialization, improved cultural understanding, development of trust, and task completion (Tan et al., 2000; Kayworth & Leidner, 2000; Robey et al., 2000; Jarvenpaa & Leidner, 1999). Training in virtual communication skills is an essential component in a virtual team training program for facilitators and team members and the underlying premise should be how to get tasks done while building and maintaining social relationships. As has been discussed in this study, many people need to have at least some level of personal relationship with their team members. Without it task completion may falter.

Training should focus on the process and content of virtual communications. Without face-to-face interaction it is up to the facilitator and team members to make the effort to go beyond the 'mundane' and to try and keep communications rich and meaningful when ever possible. Although there are likely to be more messages going back and forth via phone, fax and e-mail,

communication should focus on quality rather than quantity. Both facilitators and team members should be made aware of 'push-pull' strategies when it comes to communicating information. Push strategies such as e-mail and phone calls target information at particular people, while pull strategies such as databases and electronic message boards allow people to access the information when they need it. Finally, fluency in team member languages could go a long way in improving communication.

Virtual Team Processes

Both virtual team members and facilitators will need training in a wide variety of virtual process skills and knowledge. In the second virtual team simulation discussed in Chapter 4, the facilitators in this study came up with the five P's of virtual team success - Purpose, Planning/Preparation, People/Personnel, Participation, and Protocols. Facilitators were expected to be able to take the lead in all of these processes. Most of these virtual team processes have been well covered in the practitioner literature (Duarte & Tennant-Snyder, 1999; Kimball, 1997; Lipnack & Stamps, 1997; Grenier, & Metes, 1995; O'Hara-Devereaux, & Johansen, 1994) and what follows is a summary of the essential objectives of virtual team process training:

Facilitating Space and Team - facilitators will need to engage in team building. They will need to create team identity and team spaces both in virtual and physical space and establish shared team purpose by merging individual and team goals. Along with team members, facilitators will need to be able to develop workable team norms, which support communication, relationship building and task completion. They will need to support and maintain a 'line of sight' team structure making the whole available to everyone, so team members can see where they fit in. Facilitators will need to know how to facilitate rapid and systematic team transitions, acknowledge contributions, share and celebrate success, and manage tasks all in a virtual environment. They will also need to create a public team face to the organization so team and team member efforts are publicly recognized.

Facilitating Time - facilitators will need to allow longer time frames for communication and task preparation. They will need to keep members notified of all activities as well as start and finish dates. Facilitators will need to work with time zones and be aware of international holidays and working hours when scheduling tasks and establishing synchronous and asynchronous communication.

Facilitating Interaction- facilitators will need to know how to run synchronous and asynchronous meetings - by carefully planning agendas, preparing participants and materials in advance, breaking meetings into manageable tasks, choosing appropriate and available technology, establishing meeting and communication protocols and having contingency plans.

Of course facilitators and team members will also need traditional team skills such as conflict management, consensus building and decision making, but with the knowledge of how to facilitate and participate in these virtually.

Boundary Crossing/Networking /Relationship Building

As discussed in this study, virtual teams cross many boundaries, including functional, organizational and cultural. Virtual team activities are focused on establishing links across boundaries and networking (Duarte & Tennant-Snyder, 1999). Team members and particularly facilitators, will often need to play multiple roles as negotiators (with customers), network and coalition builders (with other teams), lobbyists (with top management), and motivators (of team members) (Yan & Louis, 1999). A facilitator's credibility is, in large measure, perceived to be directly related to the extensiveness of his or her network and the ability to obtain resources across traditional organizational lines (Duarte & Tennant-Snyder, 1999). Clearly, to be effective facilitators will need training in boundary crossing, networking and relationship building skills (Yan & Louis, 1999).

The skills necessary to accomplish boundary crossing and relationship building are covered to a large extent in the three steps of the *Facilitating Virtual*

Relationships model developed in this study. Other networking and boundary crossing skills discussed by Duarte-Tennant-Snyder (1999) include:

- ambassadorial - ensuring the right messages are sent at the right time to people vital to the team
- horizontal communication - communication with other functions, partners, organizations and groups to harmonize team efforts with outside activities; and
- scouting - surveying and obtaining information from sources (e.g. customers, stakeholders, experts, etc) related to the team.

Intercultural Communication

Intercultural communication is a relatively new field of study: its formal beginning dating back to 1959 and the publication of Edward T Hall's, *Silent Language* (Hoopes, 1981). A definition of intercultural communication relevant to this research is communication that occurs whenever a message produced in one culture must be processed in another culture (Samovar and Porter, 1994), with culture being the prism through which people see, understand and act within the world. Culture is learned from birth from our family, schools and society. In two IT inspired definitions, Hall and Hall (1990) define culture as a system for creating, sending, storing, and processing information, while Hofstede (1991) defines culture as collective programming.

Effective intercultural communication has been an important consideration to business. O'Hara-Devereaux and Johansen (1994:35) summarize the importance of intercultural competency in business:

In the 1990's the art of managing cultural interfaces has become an everyday business challenge at every organizational level. In the twenty-first century, the ability to communicate and collaborate among racial, national, corporate, and functional "tribes" will provide an essential competitive edge.

In multicultural teams, expectations of authority, peer relations, group planning and workflow, information sharing, styles of communication – all operate on different assumptions (Schneider and Barsoux, 1997). In virtual teams, cultural challenges will be compounded because contextual clues may be

lacking, and language interpretation and translation are more difficult to implement. According to Cukier & Middleton (1996), cultural diversity affects the cultural context for the implementation of electronic team communication.

Those aware of the intercultural issues in face-to-face business situations will most likely also be cognizant that these issues will still exist, and be compounded, in virtual environments (Simons, 1997). However, the awareness of intercultural communication issues with regard to the facilitation of virtual teams may not always be so clear, particularly as ICT are making it easier and ever more likely that people from diverse cultures will be interacting more often - many of them without ever considering the differences they will be encountering.

Much intercultural miscommunication results from subconscious cultural blinders, which is the result of a lack of conscious attention to cultural assumptions and a lack of cultural self-awareness. This can lead to 'projected similarity' or seeing people as being more similar to oneself than they actually are (Adler, 1986). After all, virtual team members will be sitting at their own desks, surrounded by their own people and eating their own food. For multicultural virtual teams, there is a strong need to develop cultural awareness as well as culturally appropriate strategies to manage social and work processes (Schneider and Barsoux, 1997). Intercultural training can go a long way to easing many of the cultural differences likely to be encountered in virtual teams.

Several dimensions of culture have been developed over the years that have come to form a foundation in intercultural training. These include dimensions of Power Distance, Uncertainty Avoidance, and Individualism-Collectivism developed by Geert Hofstede (1980). Later Hofstede added another dimension called Long-term-Short-term. A final dimension, developed by Edward Hall (1976) is called High-Low Context. These dimensional differences were recognized by those facilitators in this study who facilitated multicultural teams. It is not practical to discuss the full impact of these dimensions on virtual teams here, but they are briefly described below and discussed in the context of relationship building. Facilitator and team member training will need to focus on the existence of these dimensions, their impact on team interaction, and how they can be worked with at the individual and team level.

It should be noted here that Hofstede's model has been criticized on a number of counts, including that the results were based on a single organization (IBM) and may not be widely applicable (Shore & Venkatachalam, 1999), it is dated and not recently substantiated (Burn, Davison, & Jordon, 1998), and that the research instrument was developed in Western countries and is essentially a European construct and hence may not accurately measure values elsewhere (Alcoff, 1995). In spite of these shortcomings, Hofstede's conceptualisations have been widely cited in both practitioner and research literature throughout the years and continue to be influential in the study of global multicultural virtual teams (e.g. Maznevski & Chudoba, 2000; Kayworth & Leidner, 2000; Jarvenpaa & Leidner, 1999; Duarte & Tennant-Snyder, 1999; Oakley, 1998; O'Hara-Devereaux and Johansen, 1994).

Power Distance

Power distance refers to the degree of inequality among people that the population expects and accepts. Conceptions of power vary from culture to culture and may be based on rank, skill, knowledge, and connections. Effects on virtual teams will include expectations about leadership styles, the roles of leaders, mixed (hierarchical) team membership, levels of appropriate formality and address and the ability to freely participate in discussion and challenge decisions. The impact of power-distance on virtual team dynamics could be substantial. For example, in relationship building strategies a facilitator will need to carefully assess this dimension to create a proper and effective approach to team members - much as AR was more formal with her Southeast Asian team members and less formal with her Australian and New Zealand members. Not understanding or working with power distance differences could easily set back relationship building efforts.

Uncertainty Avoidance

Uncertainty avoidance is the extent to which members of a culture are comfortable with uncertainty or ambiguity. High uncertainty avoidance cultures seek detailed plans and predictable outcomes. Low uncertainty avoidance cultures are more comfortable with ambiguous, free wheeling plans and processes. Uncertainty across cultures can be heightened due to differences in a

number of fundamental areas, such as: language, communication styles, decision making rationales, communication patterns in meetings, and even concepts of time. High uncertainty avoidance cultures are going to be very concerned with developing a relatively high level of relationship with team members. The better they know team members, the less uncertainty they will feel, much as the Maori claimant group felt the need to meet regularly with the New Zealand government representatives in BC's case in this study. The preference for the face-to-face channel on the part of the claimant group also reflects the need to reduce uncertainty by relying on information-rich channels.

Individualism/Collectivism

Individualism/Collectivism is the degree to which people prefer to act as individuals rather than members of a group. Cultures that are highly individualistic will be comfortable with loose informal ties with team members, while highly collectivist cultures will value a strong identity with the team. In a virtual team these differing expectations will mean significant challenges for a facilitator particularly in managing and maintaining effective intra-team relationships. AR seemed to have got a handle on this when she broke her team into subteams. The individualistic Australians and New Zealanders worked independently, but AR was able to keep the whole team cohesive by issuing regular progress reports to the key Southeast Asian members, keeping them informed of what everyone was doing.

Long-term-Short-term

Long-term-Short-term defines the future orientation of cultures. Long-term cultures are oriented to the more distant future, while short-term cultures are looking toward the immediate future. These orientations may affect virtual team members' motivations. The challenge for facilitators will be to align these individual motivations with the team's purpose. When it comes to relationship building, team member orientations will need to be assessed by facilitators when choosing a realistic level of relationship to build. In this study, it appeared that many of the facilitators saw the long-term potential of relationship building and worked toward creating high levels of relationship. This was RB's purpose in establishing videoconferencing links with his company's branch office. Without

closer ties between the offices there was a danger that the organizational culture would diverge in the two offices.

High- Low Context

The High-Low Context variable may be one of the most important in virtual teams. It refers to how people perceive the importance of different cues in communication. In high context cultures messages have little meaning without the contextual cues, particularly those cues that derive from high levels of relationships, such as the background of the people sending the message. In low-context cultures the message itself is a sufficient level of communication. Whether a culture is high or low context can significantly impact the choice of communication channels that a facilitator will want to use when building relationships with team members. High context cultures will prefer rich channels such as face-to-face interactions especially at the start of the team. Low context cultures may be comfortable working via e-mail and other lean channels. The data in this study seem to bear out these ideas. Both BC and AR who were working with team members from higher context cultures used richer mediums to successfully build relationships with their team members. Table 40 was developed from the data in this study, Hall's theory of high and low context cultures, and media selection theories such as Daft & Lengel (1986) and summarizes the link between high and low context cultures and channel selection.

Culture	Preferred Channel		
		Native Speaker	Non-native Speaker
High Context Cultures relationship-oriented, tend toward formality	media rich, synchronous, f2f, phone, video/audio conferencing	media rich, synchronous, asynchronous	f2f , w/interpreter, asynchronous written w/editor
Low Context Cultures task oriented, tend toward informality with notable exceptions, e.g. Germans)	flexible, as above plus e-mail, fax, computer conferencing	all channels, synchronous or asynchronous	all channels with translator or interpreter as necessary

Table 40: Guidelines for Using Culturally Appropriate Communication Channels in Virtual Teams Based on High-Low Context Dimension

Beyond these generally static trait-based perspectives of national or ethnic culture are other views of culture as dynamic and malleable: something that can be influenced by other contextual elements. In the context of a virtual team, these elements may include the organizational and functional cultures of the team members as well as their personal experiences and the task at hand. Varner (2000:43) argues that while business people from two different cultures interact bring together their own backgrounds with them, “they also step outside their own cultural and business environment and create a new context.” Bell (1992: 452) calls this new culture a “transactional culture”. In virtual teams, members must find a new way – a transactional culture- that is acceptable to all the members as well as their organizations. Facilitators must take into account the national culture, general business culture, functional culture and the specific organizational culture, as well as the individual communication styles of his/her team members to optimize communication and relationship building. As Varner point out, transactional culture is never static and in virtual teams will reflect a diverse mix of participants.

Clearly, global multicultural virtual teams present real and compelling challenges to facilitators, but they also present unparalleled opportunities for teams to expand on perspectives, approaches and ideas (Adler, 1986). Training and experience can go a long way to helping facilitators determine and work with the cultural differences that may be present on their team. Cultural differences can affect team processes and performance in so many ways. To ignore them is an invitation to team failure. O’Hara-Devereaux & Johansen (1994:49) probably best summarize the questions a facilitator must always keep in mind when working in global multicultural virtual teams:

What are the various cultural influences of this situation?

How can they be understood so that a good people-oriented environment is maintained and productivity is enhanced?

Perhaps, the ultimate challenge for facilitators, particularly in long-term or on-going virtual teams is to work to merge the individual cultures of the team members into a transactional team culture. Commenting on the creation of organizational knowledge, Nonaka & Takeuchi (1995) stressed the importance of

sharing tacit knowledge among multiple individuals with different backgrounds, perspectives and motivations. They go on to say:

The individuals' emotions, feelings, and mental models have to be shared to build mutual trust (p.84):

Kimball (1997) suggests this can be done by creating culturally appropriate metaphors and cognitive maps to guide team behavior, support relationships and complete tasks. One of this study's facilitators, BC, referred to this as 'cultural melding' and he understood that it required a high level of relationship building.

IT and Knowledge Management Policies

While enormous resources go into organizational IT, the results of this study and the literature indicate that technological issues can still be problematic to the success of virtual teams. Obviously, team members should be fluent with the use of technologies that support virtual teams; particularly those associated with communications. Use does not only mean turning on the computer and opening the software, but, as discussed above, also knowing what communication channels are most suitable for a given purpose and how to use them. Other significant areas of concern include the compatibility of software and hardware in teams spanning departments, offices, organizations and national boundaries. All of these issues were raised in this study and each has the potential to derail or set back a virtual team.

IT policies should also deal with security issues, particularly when teams span organizations. The consequences of careless information sharing between organizations are obvious, but the consequences of not sharing information must also be factored in when considering relationship building and trust creation between team members.

Finally, knowledge creation and sharing of virtual team processes and outcomes could be a boon to organizations that have the technology and policies in place to retain and distribute individual, team and organizational knowledge. Davenport & Prusak (1998:5) define knowledge as:

A fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information.

Gundry & Metes (1996) state that organizations need to manage the experiences and knowledge of virtual teams, a sentiment echoed by Kimball (1997:1) who said, "organizations need to harvest the learning and experience of members of the organization so it's available to the whole organization". Knowledge is generated as virtual teams attempt social and task activities, and the socio-cultural context that generated that knowledge is a key component of it (Katzy, et al., 2000). Virtual team projects create the necessity to manage knowledge across boundaries. As pointed out in the two sections above, situated learning in virtual teams represents a valuable resource for team members and facilitators if effectively incorporated into organizational training, coaching and mentoring programs. To accomplish this, virtual team project timelines will need to include time for team reflection and evaluation of team member and facilitator experiences, something that this study's facilitators revealed was lacking in their organizations, a finding the literature supports (Katzy et al., 2000).

None of the participants reported any formal knowledge management (KM) policies as they are understood today: the capturing, storage and retrieval of knowledge, both tacit and explicit, of business processes (Hahn & Subramani, 2000), although KM systems can aid access to resources of non-collocated individuals (Davenport et al., 1998). Abell (2000:34) states that organizational capability in KM is created by the following:

- skills and expertise of the staff
- staff's ability to learn and to build knowledge from learning
- processes that enable the staff's skills and evolving knowledge to be applied and share
- culture and values that encourage knowledge building and sharing
- an infrastructure (technology and physical) that supports knowledge sharing building, flow, and sharing
- intellectual assets the organization builds, organises, maintains and exploits

Both RB and BC reported that they gave presentations to co-workers and management about what they learned in the training program about virtual teams, but there was no attempt to "capture" their experiences for the benefit of the organization. AR thought about the challenge of capturing virtual team experiences and knowledge in some depth. She explained how in her

organization there was no focus on how the organization's internal processes (e.g. virtual teams) were handled and how they could be done better. The focus was on the client and billable hours.

Figure 21 shows a KM process an organization might use to capture process knowledge and incorporate it into a virtual team training program. However, organizations must be willing to factor in 'reflection and evaluation' as a critical part of the virtual team lifecycle. (This model was derived from participant comments, my own experience as a trainer and from current technology and knowledge management literature; e.g. Abell, 2000).

Figure 20: Using Knowledge Management Systems to Augment Virtual Team Training

This model is based on Figure 20, which placed traditional training procedures in the virtual team lifecycle. In Figure 21, Step 5 Reflection and Evaluation by facilitators and team members is the jumping off point for a organizational KM system built to capture knowledge and processes generated by virtual teams and to then use that knowledge to support virtual teams. The reflection and evaluation process allows virtual teams to make explicit all of their experiences and insights, many of which would have remained tacit or personal reflections (Nonaka & Takeuchi, 1995)¹⁶. These experiences and insights can then be written up as case studies or critical incidents by trainers and entered into an organizational database. The names of virtual team facilitators and team members may also be entered into databases to be accessed later as mentors or experts. When new virtual teams are implemented within the organization, these resources can be made available in a systematic way through organised training programs and/or freely accessed by team facilitators and members on an as-needed bases at various points in the project cycle.

General Management Initiatives

Virtual teams represent a new way of doing things in organizations. They open up organizational opportunities not previously available, but they could potentially fundamentally change the organization. Yan & Louis (1999) point out how organizational functions are migrating to the work unit or team level under current organizational realities. Virtual teams need to be carefully designed and chosen by management to reflect important contingencies like organizational culture (Oakley, 1998).

For example, organizational culture often presents challenges to the kinds of knowledge sharing that are fundamental to successful virtual teams. In the highly competitive world of consulting, giving one's knowledge to others or admitting that someone else's knowledge or skills may be better than one's own is difficult. Organizations need to address information sharing needs in a way that would be both time- and cost-effective for employees around the world. They also need to do this in a way that helps the organization build a more collaborative and team-supporting culture (Campbell, 1998). According to

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¹⁶Note - this was very much what happened in RW's virtual team when important emotional issues finally surfaced at the end of the project).

Campbell (1998:13), "the greatest barrier to change is rooted in human factors".

He goes on to say:

There is a need to support an organization and culture that supports the sharing of knowledge on a regular basis, the kind of culture where everyone is interested in the content - the firm's best ideas.

According to Oakley (1998), organizations need to develop effective leadership processes at all levels that are aligned with the more flexible nature of virtual team-based organizational structures. If organizations are to successfully use virtual teams, they will need to think long and hard about the kinds of policies and support systems that can be put into place to support virtual teams, team members and facilitators. Virtual teams can be a critical element in a global, networked organizational strategy, and facilitators can play a key role in virtual team outcomes if properly supported by organizational policies.

9.2 Implications for Researchers

This has been an exploratory study. *Steps in Facilitating Virtual Relationships* stands as its outcome, a theory whose development offers several research opportunities.

Perhaps the most obvious opportunity is the theory's confirmation. This could be done in at least three ways. First, a similar study could be conducted: in another location by the same researcher; in the same location by another researcher; or in another location by a different researcher; and all using the same methodology. Different locations could include other geographical areas and organizational contexts - for example virtual team facilitators from a single organization. Second, confirmation could be conducted in parts, for example by focusing on the *Steps in Facilitating Virtual Relationships*. These 'replication' studies would help determine whether the "local" theory developed in this study had a more generalized application. The main disadvantage of these 'replication' studies is researchers' approaches and their relationship to their data may be influenced by the results of this study. Finally, propositions could be made about relationships between the variables identified in the grounded theory and tested in the field using other qualitative or quantitative methods.

Another opportunity would be to extend the grounded theory. Important areas would be to look at facilitator - team member relationship building from the view of team members, as well team member views on relationship building amongst them.

Virtual Team Facilitators as Technology-Use Mediators

Group decision support systems (GDSS) research began in the late 1970s and early 1980s and has become one of the dominant fields of research in information systems focusing on the match between GDSS and group tasks, particularly same-time, collocated decision-making tasks (Kock et al., 2001). By the mid 1990s, many powerful and specialized GDSS tools and platforms became commercially available. According to Kock et al. (2001), most of the research in this area has centered on technological problems or the support of same-time collocated collaboration. Much of the research on GDSS and electronic meeting system (EMS) support focused on the role of specialized facilitators whose task is to mediate communication interaction between participants to ensure efficient and democratic participation and effective decision making.

As the Internet and other network-enabling technology expanded, these GDSS and EMS tools were expanded to handle geographically distributed participants leading very recently to research in distributed facilitation (eg. McQuaid et al., 2000; Qureshi et al., 2000). Distributed facilitation is similar to collocated facilitation in that the facilitator's role is still one of mediating communication interaction and facilitating decision making, but also very different in that now the facilitator must do so with participants who cannot see each other and who may not know each other. Although many large organization may have access to dedicated GDSS and EMS and facilitators trained in their use and that many of these tools may be used in the kinds of virtual team contexts discussed in this study, this research has shown that none of the participants in this study had access to dedicated systems. They were, in fact, working with a variety of unstructured and often freely-available tools such as the telephone, e-mail, ICQ, and desktop audio and video conferencing. As the results in this study indicated, the virtual team facilitators in this study were using these tools in

various ways to accomplish various goals, not the least of which was relationship building with team members.

A further extension of the study using grounded theory approaches or other methods could include the investigation of virtual team initiators and facilitators as technology-use mediators. Orlikowski et al. (1995:425) define technology mediators as:

As organizationally sanctioned intervenors within the context of use who facilitate the establishment and ongoing use of communication technology over time.

Orlikowski et al. (1995:425) suggest that the role of technology-use mediators, by shaping their technology as they use it in particular contexts, can over time and in a variety of ways shape other users of the technology. This process of "shaping other users activities of use" is termed metastructuring. They go on to explain that technology-use mediation is:

... a type of metastructuring that structures users' use of technology by influencing their interpretations and interactions by changing the institutional context of use, and by modifying the technology itself.

Accordingly, Orlikowski et al. (1995) state this type of metastructuring is a particularly powerful mechanism for change in an organization because it is sanctioned, explicit, deliberate and ongoing. The actions of several of the facilitators in this study could be understood in the context of technology-use mediators as they initiated and facilitated their virtual teams; for example, DW's strategic use of ICQ as an informal backdoor communication channel to strengthen personal relationships and add impetus to task completion. To introduce an established 'popular' Internet technology into a global organizational context in order to build and strengthen relationships between virtual team members is an example of technology-use mediation. If the organization eventually adopts ICQ as an information and communication channel within the wider organization based on these efforts, this would be an example of metastructuring.

This research, while noting that facilitators were using technology in new and unique ways, did not pursue this line of inquiry. However, it is clear that facilitators, by assisting the adoption, adaptation and use of ICT in presumably effective ways in their virtual teams are at the 'frontline' of innovative technology

use and are playing a potentially invaluable role as technology use mediators for the wider organization. At least two of the facilitators in this study presented their experiences to the wider organization, while one facilitator observed that current organizational practices inhibited the spread of virtual team best practices within her organization. How facilitators go about 'spreading the word' throughout the organization and how organizations pick up on changes at the level of virtual teams and distribute them through the wider organization would appear to be an area of potentially fruitful inquiry for researchers.

Virtual Teams and Action Learning

Another area of potentially fruitful extension for this study might be in the application of action learning in the study of virtual teams. According to Robey et al., (2000) there is a need for research focusing on the processes whereby members of virtual teams learn as they participate in practice. Their study conceives of virtual teams as communities of practice (Wenger, 1998; Joy-Matthews & Gladstone, 2000) and focuses on learning that is situated in work practice rather than on acquiring knowledge and skills from external sources. They termed this kind of learning, situated learning, and explain that it occurs within communities of practice as members adjust to each other's needs (Robey et al., 2000).

Situated learning in virtual teams presents special challenges as the community of practice is separated in time and space, often involving organizational and cultural/language boundary crossing. Virtual teams must generate "local" knowledge and skills in a virtual context. The challenges appear formidable not only for the team members, but also for designers of support technologies and managers and other stakeholders who depend on teams to perform effectively. It is particularly now in the early stages of virtual team use in organizations that virtual teams represent potential communities of practice, in which learning is situated in practice. How facilitators and virtual team members mediate all the intervening and contextual elements associated with working virtually is a potentially valuable avenue of research.

Until now, no general framework has been produced to guide research on situated learning in virtual teams and according to Robey et al., (2000) there is a need for research focusing on the processes whereby members of virtual teams

learn as they participate in practice. Action learning frameworks like the one used in this study and the one described by Yoong & Gallupe (2001) may serve as a guide in this area of research. Action learning was defined by Revans (1982:626-627) as:

A means of development, intellectual, emotional or physical that requires its subjects, through responsible involvement in some real, complex and stressful problem, to achieve intended change to improve their observable behavior henceforth in the problem field.

Action learning research frameworks such as those used by Yoong & Gallupe (2001) in a GSS facilitation study can help researchers explore and understand complex and personal human-computer interactions. They state that action learning:

- provides learners with the means to combine both experience and reflection as the learning is taking place
- enables the researcher to better understand what the learner is experiencing by enabling the learner to express his/her own thoughts directly
- allows information systems researchers to study learning in complex, technology situations (Yoong & Gallupe, 2001:86-87).

The ongoing contextualization performed by virtual team facilitators working in the new and uncharted waters of the virtual environment present a number of important research questions that may be approached with an action learning framework to capture situated learning. Examples of the kinds of research queries that may make use of action learning include: how do virtual teams (learn to) establish team norms and protocols; how are functional, organizational and cultural boundaries effectively crossed; how are decisions made to appropriate some features of ICT and not others; and how are these technologies reinvented in ways that satisfy local requirements?

9.3 Concluding Statements

This study was designed and implemented to answer the following research question:

How do facilitators of virtual teams build relationships with their virtual team members?

In proceeding chapters I have developed a model based on a grounded action learning approach, which represents the processes that virtual team facilitators undertake when building virtual relationships with their team members. Based on the key social process of building personal relationships, the model is known as *Steps in Facilitating Virtual Relationships* and includes:

1. Assessing Conditions
2. Choosing Level of Relationship
3. Creating Strategies

I believe this study has extended virtual team research in a number of important ways, particularly in the area of virtual team facilitation.

First, this study is one of the first empirical studies done on virtual team facilitation. Until now, primarily consultant-based practitioners have generated what little literature that does exist on virtual team facilitation. This study places facilitators right in the center of virtual team processes and structure. The results suggest those who facilitate virtual teams will need to carefully assess all factors present at the start of a virtual team, including their own skills and experience. The results also suggest that organizations will need to look at whether current policies are supporting or hindering virtual team facilitators.

Second, this study has highlighted the importance of relationship building in virtual teams and the factors and processes involved. Although this study focuses on facilitator-led relationship building, the lessons learned are likely to apply to virtual team members as well and even organizations as they 'virtualizes' more and more of their operations.

Third, the findings in this study suggest a wide range of conditions that can affect not only relationship building in virtual teams, but many other factors that may impact on the success of virtual teams, such as organizational policies, team member and facilitator competencies, boundary crossing issues and national infrastructures. Many of these factors have been previously studied in isolation, but this study (along with several others that have been published in the last year) demonstrates the potential complexity of virtual team processes and structures

and the need for a thoughtful, considered approach to their implementation and use.

Fourth, the grounded action learning methodology makes important contributions in the area of situated collaborative learning that would seem to be of particular importance in such new and often ad-hoc forms of work and social interaction such as virtual teams. The action learning training program might also serve as a starting point for organizational training initiatives. Both the methodology and the training program point to possible ways for organizations to capture virtual team processes as part of a knowledge management strategy.

Finally, I began this research intending to answer a question about facilitating virtual teams and I now find that in the process of answering this question many others have been raised.

9.4 Limitations of the Study

There are several research limitations of this study. One limitation has primarily to do with the consequences of the decision made to use a grounded action learning approach. This primarily concerns the issue of reducing the threat to the rigor, credibility and validity of the study. The other limitation has to do with the consequences of the decision to conduct research with participants who were professionals working within their organizational contexts.

Rigor, Credibility and Validity of Findings

Data were collected from a pilot project and two training programs conducted in one area by the same trainer, so generalizations are limited. However, it is worth repeating some of the steps I took to enhance the rigor, credibility and validity of the findings.

First, I carried out the data collection and analysis in accordance with the specifications of the research methodology leaving a clear 'audit' trail; the procedures of which were described in detail in Part 2. Specifically, this included two procedures. The first was the use of a varied sample of research participants (theoretical sampling), from those with no virtual team facilitation experience to those with experience, working in a variety of organizational contexts. The second was the collection of data until the clear emergence of a core category (theoretical saturation) that could be systematically linked to other data

categories. I have also included thickly detailed descriptions of the data, including case studies of each of the participants' experiences (Appendix 7).

Second, I used time and instrumental 'triangulation', by establishing multiple data gathering cycles, as well as a relatively long engagement with my research participants extending beyond the individual ten-week training programs and using data gathered from multiple data sources.

Finally, I used 'participant checking' procedures that allowed the participants to check and verify the accuracy of the data as it was recorded, as well as the overall relevance and applicability of the theoretical model that was ultimately developed. The participants' comments were positive and included:

Looking at relationship building theory in general and relating it to the work you have done here would provide a facilitator with relationship building tools, which they may not be aware of or using personally.

That (model) would be a very good summation of what we ought to be considering.

This model reflects my experiences and I find it useful.

Research with Professional Participants

One of the most challenging aspects of this research was enrolling and working with participants who were professionals in their own rights, working within their organizational contexts. An important associated issue was the fact that I, as a student researcher, had no reputation to work from and little professional credibility. The result was that it was a huge challenge to recruit and hold onto the research participants. It took at least two years to organize the training programs and collect the data. It would probably have been much simpler and straightforward to use students as research participants, but as Bordia (1997) pointed out applying data collected from student subjects to computer-mediated communication in organizational contexts jeopardizes the applicability of the results.

Deciding to work with organizational professionals in the field also meant that my data would be based on what these facilitators were actually doing within their organizations, subject to the various technologies, policies and economic and business realities of the organization. It was these 'realities' that, in fact,

produced much of the rich data in this study, particularly in Steps One - *Assessing Conditions* and Step Three - *Creating Strategies*. However, in retrospect it became clear that this particular group of participants might not necessarily have been working with the latest communication technologies, such as dedicated groupware or collaborative systems. Of course, much current attention is given to the design and implementation of such systems in groupwork and organizations (Rittenbruch, et al., 1998). On the other hand, from a theoretical perspective the imposition of special collaborative technology would have effectively limited facilitators' choices in creating relationship-building strategies. In any case as mentioned above, the fact that none of the facilitators in this study had access to such technology must say something about the realities of what is actually available in many organizations, a view espoused by media choice and critical mass theory (Markus, 1997). Furthermore, at least one recent study (Carletta, Anderson, & McEwan, 2000) has concluded that virtual teams are better served by relatively modest communications equipment available on their desktop than high technology special-purpose installations.

Appendix 1: Selected Results of 1997 Survey on the Use of Virtual Teams in New Zealand in cooperation with TUANZ (Telecommunications Users Association of New Zealand)

Charts and Tables

Functional Composition of Virtual Teams	
same department	50%
across departments	74%
including customers/clients	45%
including suppliers	37%
including outside consultants/specialists	39%

Table 1: Functional composition of virtual teams

Hardware and technology supporting virtual teams	Currently using	Likely to adopt within 3 years
High capacity networks	68%	11%
Fax	92%	5%
E-mail	95%	5%
Internet	92%	7%
Telephone/fax over Internet	18%	37%
Audio conferencing	60%	11%
Video conferencing	33%	35%
Computer mediated conferencing	8%	18%

Table 2: Current and planned use of technologies

Software applications supporting virtual teams	Currently using	Likely to adopt within 3 years
Group decision support systems	28%	17%
Document management	47%	14%
Collaborative writing/drawing	48%	10%
Scheduling/calendaring	61%	17%
Workflow automation	17%	18%
Shared data bases	75%	8%
Computer-mediated conferencing	8%	18%

Table 3: Current and planned use of software applications supporting virtual teams

Channel	very important	important	less important	never used
face-to-face	52%	23%		18%
post	10%	18%	57%	7%
courier	10%	31%	49%	7%
phone	59%	34%		
fax	36%	34%	23%	
e-mail	79%	12%	5%	
audio conferencing	30%	23%	26%	12%
video conferencing	13%	18%	26%	31%
computer- supported conferencing	7%	18%	8%	50%

Table 4: The relative importance of communication channels in facilitating virtual teams

Perceived benefits of virtual teams	Percentage evaluating as highly likely
Improved communications	76%
Improved information flow	79%
Higher productivity	71%
Cost reductions	52%
Reduced project cycle time	53%
Increased competitiveness	56%
Greater creativity	48%
Better research capacity	47%

Table 5: Perceived benefits of virtual teams

Perceived Barriers	
lack of appropriate software/technology	47%
inability to use technology	42%
resistance to change to new ways	47%
loss of personal contact	52%
fear of the unknown	32%
lack of control	29%
reluctance to share information	24%
surrender of security	10%
other (cost of bandwidth)	16%
none	7%

Table 6: Perceived barriers to using virtual teams

Cultural Background	
European	39%
Australian	48%
Asian	40%
Canadian/USA	45%
Middle Eastern	16%
Pacific Islander	16%
Latin American	15%
African	10%

Table 7: Cultural background of international -based members of virtual teams

Cultural factors	Impact on Productivity				
	decrease	no real effect	increase	don't know	not applicable/ did not answer
language	16. %	19%	6%	5%	53%
use of time	11%	10%	18%	3%	58%
communication styles	8%	16%	16%	2%	58%
meeting styles	10%	18%	13%	2%	58%
goal/task orientation	3%	16%	19%	2%	60%
feedback and evaluation	8%	18%	15	2%	58%
social barriers	8%	21%	8%	3%	60%
trust	5%	23%	13%	2%	58%
responsibility	5%	13%	21%	2%	60%
leadership	5%	15%	19%	2%	58%
decision making	8%	11%	19%	2%	57%
motivation/reward	2%	23%	16%	2%	58%

Table 8: Impact of different cultural factors on productivity in multicultural virtual teams

Appendix 2: Reflections on My Past Experiences as an Initiator and Facilitator of Virtual Teams

1997

In July and August of 1997, I worked on the creation of an on-line, Internet-based course entitled, *Virtual Teams: Managing the On-line Meeting* (VTMOM) for the hydi New Media Education Centre at Wellington Polytechnic (the course is now on-line at <http://www.scim.vuw.ac.nz/projects/vtmom/vt1index.htm>).

VTMOM was created as a short course to give participants a taste of what it would be like to manage a virtual team, in synchronous and asynchronous modes. The course was designed to stimulate discussion on a number of issues likely to face virtual team members and facilitators, and to give each participant a chance to prepare for and lead an on-line meeting. To achieve this, I created several virtual “places” in the course, including the Golf Course, a series of discussion questions run through a hypermail board; the Espresso Bar, a social on-line meeting place, a “training room” that included course outlines and materials, a reference library, the facilitator’s office, and instruction on how to access and use Internet-based groupware such as Netmeeting..

The course was originally designed to be marketed as an on-line course to paying customers. Before marketing the course, I decided to run a pilot course to test several factors including: participant response to the course and potential technological trouble spots. I also wanted to acquire experience in facilitating the course.

VTMOM Pilot Project – October–December, 1997

As Initiator

Within the hydi New Media Education Centre I had complete support from the director and the hydi team, which designed the graphics, html scripts, mailboards and put the course on-line. I also had the Centre’s support in running the pilot.

In implementing the pilot course, I did not have too much trouble finding volunteers to participate. Those I contacted were either personal contacts of mine or director’s. Several potential participants expressed concerns about time commitments and how long the pilot would run (as the December holidays were approaching) and others about having the necessary computer equipment with audio and video capability. I told those with time concerns that their commitment would be limited to a couple of hours a week, which was more than some were willing to commit to. Those without sound and audio capabilities were invited to participate as observers and participants of the asynchronous mailboards.

After some “to-ing and fro-ing”, I got nine people to agree to participate in the project, along with a couple of observers. The nine participants and included:

myself

the hydi New Media Education Centre director

- four academics
- a businessman
- an academic administrator (technical support)
- an industry consultant in managing electronic communications

Geographic distribution is a key feature of virtual teams, and in the pilot four participants were located in Wellington, three in other locations in New Zealand, one in England, and one in the Netherlands.

Organising the participants and fine tuning the course itself took more time than expected and the pilot did not begin until late October. The course was designed as an eight-week course, but due to the late start and the December holidays, I decided to try and run the course in six weeks. This decision was conveyed to the participants.

As Facilitator

I posted a message on the facilitator's "notice board" to tell participants that the pilot had officially begun and to begin to look around the course and post their introductions. There was no response, so I posted similar messages in mail boards in other parts of the course. I also sent a group e-mail to all of the participants notifying them the course had begun. A couple of participants posted introductions after the e-mails. I then sent personal e-mails to those who hadn't posted introductions and several more introductions were posted. Eventually seven of the nine participants posted introductions.

I then asked participants, first via the mailboards and then by e-mail, to look at the Golf Course, series of questions on the issues surrounding managing virtual teams, which formed the "academic" backbone of the course. Over the next several weeks, several participants contributed in an on-going asynchronous dialogue over several of the posted questions. One of the active participants was one of the pilot "observers".

The next part of the course was to organise on-line synchronous meetings. On several occasions I posted messages asking for participants to volunteer to propose, organise and lead a virtual meeting, but only one participant expressed interest (through an e-mail to me) in taking this next step. So no on-line meetings were organised or held.

By this time it was December and it became clear that the pilot project had run its course. I thanked everyone, both on mailboards and by e-mail, for their time and effort and solicited feedback on the course. Participants that responded liked the course but pointed to work-related commitments and an overall lack of time to properly participate. Some wondered if the objective of the pilot had been spelled out clearly enough.

The pilot project ended, as did the year. The director and I discussed possible plans for the course for the following year and then went on holiday.

VTMOM – The Second Coming, March – May, 1998

In February, 1998, the director of the hydi New Media Education Centre and I discussed how we should proceed with VTMOM. Because the Centre was developing other on-line course for tutors at Wellington Polytechnic, it was decided that we would run an “in-house” training course for tutors who intended to develop and teach on-line courses. We believed that these tutors would gain experience from participating in an on-line course.

As Initiator

We announced the training course to all those we knew who either had developed an on-line course or who were interested in doing so. We strongly suggested that those tutors with whom the hydi New Media Education Centre were involved should participate in the course.

Four tutors, and a head of department agreed to participate. The director and I also took part. Because we were all co-located at the Polytechnic, we began the training course with a face-to-face meeting. This was done to discuss our individual and training objectives and to introduce the VTMOM course and its features.

As Facilitator

From the beginning, problems similar to the pilot occurred. I posted messages on the mail boards asking for participants to post their introductions, but with only a limited response. I e-mailed the participants as a group and individually, as well as leaving telephone messages. Five of the seven finally posted introductions.

Via the same channels, I requested participants to contribute to the questions in the Golf Course. Only three contributed regularly, including the director, the head of department and myself. No amount of cajoling on my part could increase the rate of participation. Most claimed busy schedules and time constraints.

Eventually, the end of the course rolled around, and the three of us who continued to participate agreed to hold an on-line synchronous meeting via the hyper mail boards to discuss and evaluate the course. This meeting was scheduled for a lunch hour and went very well with all of us offering our views about what worked well and what didn't. It was thought that the benefits of the course were not made clear to the participants. There was also some discussion as to whether the participants had felt coerced to take part in the course, and that this may have discouraged participation.

The on-line meeting was followed up with a face-to-face meeting with the head of department, the director and myself. We discussed the course and VTMOM in more detail and discussed whether a research project could be devised to further explore the issues surrounding the course. One suggestion was to investigate how to move participants from traditional face-to-face meetings to more electronically

mediated meetings, and finally fully on-line synchronous meetings. A proposal was written up, but the would be researcher (me) moved on to work full time on his PhD.

Appendix 3: Virtual Team Implementation and Facilitation Checklist

Pilot Project

Researcher: David J. Pauleen

Checklist for Implementing and Facilitating a Global Multicultural Virtual Team

Contents:

1. Background

2. The Fundamentals for Successful Global Virtual Teams

- ☐ Purpose
- ☐ Roles
- ☐ Relationship Building
- ☐ Team Identity
- ☐ Intercultural Communication

3. Technology

4. Facilitating/Leading Virtual Teams

5. Meeting Preparation

6. Facilitating Synchronous Meetings

7. Summary of Checklist Questions

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1. Background

Global Multicultural Virtual Teams are temporary, culturally diverse, geographically dispersed, electronically communicating workgroups (Jarvenpaa and Leidner, 1998). They can operate synchronously and asynchronously as follows:

- Same Time/Different Place
    - team members join scheduled synchronous meetings from any place with appropriate technology, such as
      - desktop/audio conferencing, phone bridge, online chat
  - Different Time/Different Place
    - team members communicate asynchronously at any time from any place in password protected environments accessible to their team, such as
      - web conferencing, bulletin boards, voice mail, e-mail
- ☐ *How might this team meet? What communication channels are available and which are most suitable?*

2. The Fundamentals for Successful Global Virtual Teams

- ❑ Purpose
  - the team shares a clear, explicit, compelling shared purpose
  - develop short term "mini" goals on the way to the reaching the overall purpose
  - develop a process that allows the team to decide on these short term goals
  - share and celebrate successes
- ❑ *What are possible tasks/projects for this team, which can be completed in a week? Two weeks? A month?*
- ❑ Roles
  - get everyone involved; don't rely on leader to play all roles
  - in a virtual team, more roles are needed; many roles are new and unfamiliar, especially technical ones
  - roles need to be made very explicit as patterns of behavior and interactions are unfamiliar, but need to be flexible to meet the dynamic nature of virtual teams
- ❑ *What roles does this team need? How will we define and share these roles? Will we need a strategy for reevaluating roles as we go along?*
- ❑ Relationship Building

Trust is an important, if not essential, component of any virtual team. The development of interpersonal trust is based on the communication behavior of the people involved, with the level of trust directly related to the amount of communication and level of self-disclosure. Trust strengthens when team members can count on each other to do specific tasks.

  - Off line
    - When possible, initiate global virtual teams with face-to-face interaction
  - On-line asynchronous
    - graphics showing the name and locations of team members. Pictures of participants are helpful.
    - a "knowledge on-line" system where team member profiles can be accessed, ideally containing photographs, audio, video of each member.
    - creation of a virtual "team space"

- create opportunities for members to come through for each other early in the life of the team

synchronous

- a "go around" at the beginning of each meeting where each member says something in turn
-

- ***What relationships between team members already exist? How can they be strengthened given the virtual context? How can the team build trust?***

- **Team Identity**

In the process of positively addressing team relationships, purposes and roles, a solid team identity can be developed, based on the creation of:

- "team rooms" in cyberspace
- team protocols
- shared team metaphors and cognitive models
- make the whole available to everyone - a virtual team must maintain an image of itself as a whole
- maintain "line of site", so that team members can see where they fit in the system
- create a presence in physical space: a team picture, postcards from global members

- ***How can the team create identity in such a fluid and diverse environment as a global multicultural virtual team? How can a group of individuals transform itself into a "group individual", a new level, a team? How do we present ourselves to the organization?***

- **Intercultural Communication**

In multicultural teams, expectations of authority, peer relations, group planning and workflow, information sharing, styles of communication – all operate on different assumptions. Cultural challenges will be compounded in virtual teams, where contextual clues may be lacking, and language interpretation and translation are more difficult to implement.

For multicultural teams, there is a need to develop culturally appropriate strategies to manage tasks as well as process (Schneider and Barsoux 1997). To solve problems of external adaptation and internal integration, teams must create their own cultures (see Team Identity, above). Some key cultural issues that may be faced in a global virtual team include:

- Trust
- Power Distance
- Ambiguity
- Individualism/Collectivism
- Technology
- Trust

- cultures hold different conceptions of trust and link the development of trust with different behaviors.
- ❑ ***What can the team do to develop a concept of trust and appropriate behaviors that will work across cultures?***
- ❑ Power Distance and Levels of Formality
  - conceptions of power and leadership vary across cultures and could be based on rank, skill, knowledge and connections. The appropriate level of formality will follow.
- ❑ ***What "power" issues may develop and how can the team sort them out in a dynamic, ambiguous virtual team context?***
- ❑ Ambiguity (uncertainty avoidance, Hofstede)

Uncertainty across cultures can be heightened due to differences in a number of fundamental areas, such as:

  - communication styles
  - decision making rationales
  - responsibilities for decisions
  - communication patterns in meetings
  - concepts of time
- ❑ ***Which of these areas of cultural uncertainty may impact on this team and what can the team do to reduce uncertainty?***
- ❑ Individualism/Collectivism (Hofstede)
  - some cultures are highly individualistic, others highly collectivist
  - this leads to a wide divergence of views in how and why people work together
- ❑ ***How will these differences affect the development of team identity, culture and teamwork? How can the team deal with them?***
- ❑ Technology
  - technology is one of the defining issues in virtual teams, and cultures view technology differently
  - do relationships and trust proceed technology, or can technology come first?
  - appropriate mediums for types of messages; cultural preferences for certain mediums
  - effects of culturally biased technologies, reflects values of rationality, verifiability, measures of efficiency and productivity, preference for problem solving, etc
- ❑ ***How will cultural differences to technology affect the way team members use the technology at hand? Can culturally and functionally appropriate interfaces and protocols be designed and used.***

3. Technology

There are many facets when considering technology in virtual teams. Technology supports the networked organization by providing tools to solve collaboration oriented problems, but focussing only on technical issues can lead to failure. Focusing on the people issues dramatically increases the possibility of success, not only the people who will use and manage the groupware, but also top management and the corporate culture in general.

- make sure team members share compatible technology
- make sure team members know how to use the technology
- think about backup systems
- use the appropriate technology (see chart below); consider culturally appropriate technology

Media	Effect on Team Dynamics
Electronic mail	What norms need to be established for things like; response time, whether or not e-mail can be forwarded to others? What norms are important about who gets copied on e-mail messages and whether or not these are blind copies? How does the style of e-mail messages influence how people feel about the team?
Decision Making Support Systems	How does the ability to contribute anonymous input affect the team? How can you continue to test whether "consensus" as defined by computer processing of input is valid?
Audio (telephone) conferencing	How can you help participants have a sense of who is "present?" How can you sense when people have something to say so you can make sure that everyone has a chance to be heard?
Video Conferencing	How can you best manage the attention span of participants? Where can video add something you can't get with audio-only?
Asynchronous web- conferencing	How do you deal with conflict when everyone is participating at different times? What's the virtual equivalent of eye contact? What metaphors will help you help participants create the mental map they need to build a culture which will support the team process?
Document sharing	How can you balance the need to access and process large amounts of information with the goal of developing relationships and affective qualities like trust?

Taken from Kimball, 1998

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4. Facilitating/Leading Virtual Teams

Time Frames

- allow longer time frames to accomplish tasks; anticipate members having other commitments. One to two weeks may be needed for asynchronous list building activities such as brainstorming ideas. Data collection could take longer.
  - pace - the term "rolling present" is used to describe the phenomenon in virtual teams where the sense of team-time varies amongst team members. Members who access e-mail four times a day and those who access it once every four days will judge the team's pace differently
- ❑ *What kind of pace does the team need and want? (fast slow, cyclical) How can we develop norms?*

Communication Strategies

- anticipate more communication via e-mail, phone, and fax.
- notify members that an activity has been started and when participation is required
- use **push/pull** systems as necessary; set and maintain standards when using them
- send reminders proceeding critical due dates
- formally close activities by notifying members, eg. "idea generation exercise is complete"
- inform members of results
- focus on the quality of communication, not the quantity - avoid information overload; avoid communication burnout and boredom - switch media for impact
- catalyze rich conversations, get members involved in diverse, complex and meaningful interaction; go beyond boring, although necessary, logistical detail
- build on team momentum

- *What kinds of communication and information systems are available? Which will work best? Who will play what roles in the team's communications?*
- *What are the mutual expectations of being a full active participant on this team? What, when and how much are we going to communicate?*
- *What norms can be developed to ensure safe and constructive feedback via electronic media?*
- *How can we stay in "synch" with each other as a team?*

5. Meeting Preparation

Scheduling

- try to allow one week lead time for scheduling a meeting
- use e-mail, phone or fax to inform team members of meeting times

Distribution of Meeting Materials

- allow sufficient lead time to distribute and receive material
- establish system to verify receipt of materials by all team members
- use overnight mail, fax, e-mail to distribute materials
- at the start of a meeting check that all members have the correct materials

Equipment

- make sure all members are proficient with the technology
- engage in trial runs with individual team members if necessary

- position technical assistants at distributed members' sites if necessary
- be prepared to use back up systems, eg the telephone if Netmeeting goes down

Protocols

- establish protocols that will facilitate communication between members
- eg. have participants identify themselves by name and location each time before they speak - "This is Ming Jing from Shanghai. I want to ask..."
- establish speaking order related to agenda

6. Facilitating Synchronous Meetings

Agendas

- plan agendas carefully; break activities into manageable tasks
- ensure team members do assigned tasks and distribute their materials to other teams members in advance of meeting so everyone is prepared

Equipment Failure

- if a distributed member loses the connection,
  - stay calm
  - have assistant talk to them offline to try and get them up and running, if unsuccessful have them join the meeting by phone
  - try not to interrupt the flow of meeting

7. Summary of Checklist Questions

- ❑ *How might this team meet? What communication channels are available and which are most suitable?*
- ❑ *What are possible tasks/projects for this team, which can be completed in a week? Two weeks? A month?*
- ❑ *What roles does this team need? How will we define and share these roles? Will we need a strategy for reevaluating roles as we go along?*
- ❑ *What relationships between team members already exist? How can they be strengthened given the virtual context? How can the team build trust?*
- ❑ *How can the team create identity in such a fluid and diverse environment as a global multicultural virtual team? How can a group of individuals transform itself into a "group individual", a new level, a team? How do we present ourselves to the organization?*
- ❑ *What can the team do to develop a concept of trust and appropriate behaviors that will work across cultures?*
- ❑ *What "power" issues may develop and how can the team sort them out in a dynamic, ambiguous virtual team context?*
- ❑ *Which of these areas (communication styles, decision making rationales, etc) of cultural uncertainty may impact on this team and what can the team do to reduce uncertainty?*
- ❑ *How will these differences (individualism/collectivism) affect the development of team identity, culture and teamwork? How can the team deal with them?*
- ❑ *How will cultural differences to technology affect the way team members use the technology at hand? Can culturally and functionally appropriate interfaces and protocols be designed and used.*
- ❑ *What kind of pace does the team need and want? (fast slow, cyclical) How can we develop norms?*
- ❑ *What kinds of communication and information systems are available? Which will work best? Who will play what roles in the team's communications?*
- ❑ *What are the mutual expectations of being a full active participant on this team? What, when and how much are we going to communicate?*
- ❑ *What norms can be developed to ensure safe and constructive feedback via electronic media?*
- ❑ *How can we stay in "synch" with each other as a team?*

Appendix 4: Invitation to Presentation of Research Findings to Participants (via e-mail)

Dear Participant

I would like to present my research findings to you before I present them to the public as a way of showing my appreciation for your help in this research. This will also provide an opportunity for you to provide feedback on the model of virtual facilitation I have developed from your data.

I hope you can make this session. If not I would still like to present the findings to you. Let me know if you can come.

Details of Presentation

Wed. 17 January

5:30 - 7:00 (approx)

Commercial Union Building, 142 Featherston St level 9

last minute phone contact - SC - 021 555 555

otherwise contact me by e-mail

Your Case Study

I am attaching a case study (hope the size is not too much trouble) I have written from the data I gathered from you. This will most likely go in the Appendix of the thesis. Please read it and make changes or add things if you wish. You can print out a copy and bring it on Weds or you can make changes electronically (Tools, Track Changes, Highlight Changes) and return by e-mail. If you don't return it I will assume it is okay by you.

Thanks for your cooperation. Hope to see you on Wednesday.

David

Appendix 5: Letter to Participants and Consent Form

41 Bridge Road
Birchville, Upper Hutt

7 May 1999

Dear Participant

PhD Research: Initiating and Facilitating Global Multicultural Virtual Teams: Agreement for Interviews

This letter follows up our recent conversation in which you agreed to a series of interviews by me this year on your experiences and perceptions initiating and facilitating a global multicultural virtual team. Prior to conducting the interviews Victoria University of Wellington requires that I obtain your written informed consent to carry out these interviews.

Purpose of Research

My research will investigate the experiences of an “initiator/facilitator” as s/he goes about organising and running a global multicultural virtual team. You will be participating in a research project, and the information I obtain from interviewing you will be used to further develop my research design, as well as becoming a part of my overall data collection for my PhD and possibly journal articles and conference proceedings. In return, participants receive training, coaching and experience in global multicultural virtual teams. If you wish, you may speak with my supervisor, Dr. Pak Yoong. He can be reached at 495-5233 ext. 8519.

Confidentiality

All raw data will be kept confidential to my supervisor and me, though collected, collated and analysed data may be published. Information will only be attributed to you if agreed in writing by you. There will an opportunity to review any written notes or transcripts of recorded sessions that result from the interviews to ensure factual material is recorded accurately. Throughout the project, raw data will be kept under lock and destroyed when no longer needed. The thesis will be kept in the library, available to the public.

Please note that the University retains insurance cover for claims relating to harm, loss or damages suffered by participation in research projects as a result of any negligent act, error or omission by or on behalf of the university.

The consent form is attached. Please return to me.

Yours sincerely
David J. Pauleen

Ethical Approval for Interview: Consent Form

I agree to be interviewed by David Pauleen for the purpose of his research for his PhD, and I consent to the collection and use of my perceptions, experiences, opinions and information in this research.

I have been informed of the purposes of the research and the confidentiality conditions. I understand that I may withdraw from this research or request anonymity at any time without penalty or explanation.

I agree to be personally identified in the thesis, which will become a public document, or journal article and to have my views and opinions personally attributed to me (tick appropriate box). Note that if yes is ticked then this will be reconfirmed after the interview.

YES

NO

Do you agree to have interviews tape recorded?

YES

NO

Name

Signed

Date

Appendix 6: Communication Strategies Model

Appendix 7: Case Studies of Each of the Participants

Pilot Project

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Pilot Project

DW - Excell Advertising Unlimited - Global Partners

In October 1998, DW, managing director of Excell Advertising Unlimited, a Wellington advertising company, initiated a global virtual team within the context of Global Partners (GP), a global partnership of advertising companies headquartered in the US to which DW belonged. His intention was to gather a team made up of interested members of Global Partners to discuss and eventually implement an organizational project using virtual teams. Unfortunately, soon after initiating the project, DW took ill and as a result of this later sold his company. DW tried to re-establish the team later in 1999, but without success.

Notable characteristics of this project include:

- the project took place within a global intra- and inter-organizational context
- the project was heavily focused on the initiation of the team and project within the above context.
- participation in the team was voluntary

DW was very interested in the use of communications technology and could see it being a useful collaborative tool in a global organization such as GP. He contacted me after reading an article on virtual teams I had written for the local Infotech newspaper. We discussed various ways we might be able to work together within the larger global context of GP. Eventually we agreed on a research format in which he volunteered to initiate and facilitate a virtual team consisting of interested members of GP while I would provide him with training.

In a pre-Pilot interview I explored with DW his motivations for wanting to initiate a virtual team and some of his previous experience. He explained that he believed that being able to work and manage virtual teams would be a necessary skill in the near future and that he wanted to take this opportunity to learn what he could about this new area of business communications. He also expressed an interest in teaching virtual team skills in an academic setting at some later date.

DW's interest in electronic communication dates back to 1994, when he conducted research in an MBA program using Dephi methodology via e-mail. At that time he experienced some of the anxiety associated with wondering if people received your e-mail and then waiting for their reply. He took an active role in encouraging the use of electronic communication in GP. In 1996, he initiated a strategic plan for the Asia Pacific region on the use of Internet communications, and then for GP as a whole. He explains the result of his effort:

I encountered a "yeah yeah yeah" response from the organization, but no follow-up action.

Undeterred, at a 1997 AGM in Beuno Aires, DW assisted in the running of a trial computer-mediated work team. There, he encountered technical problems having

to do with the local technology and a cross-cultural/language issue: the incompatibility of "Windows in Spanish" with Windows in English. In 1997, he participated in this researcher's online class, *Virtual Teams: Managing the Online Meeting* (VTMOM) pilot. He sums up his the virtual aspects of his company:

I engage in lots of "virtual" work in the Agency with consultants, but not really distance stuff.

The pilot program with DW was set up more as a one-on-one consultancy than a formal training program, and in the pre-pilot interview DW was asked about the kind of assistance or training he would consider helpful in preparing to initiate and facilitate his virtual team. He mentioned a number of areas including implementation and technical issues. One challenge he foresaw would be getting organizational "buy in", that is getting people who were committed to the process while having to be diplomatic with important people. As for technology, he commented:

This is a very important, critical area; we need to put time and effort into training practice runs. I would like technical assistance. I have had some experience with Compuserve meeting rooms that was not successful. I am concerned about "pressing the right button" stuff. I am also concerned about Mac PC compatibility issues as many GP partners are Mac based.

Having worked with co-located teams within his business, he was able to call upon these experiences to gauge some of the key issues that he believed would positively or negatively affect the initiation and facilitation of virtual teams. He relates two of these:

Having clear initial goals and guidelines as to what, why and how we will do things. Later these can be changed or fine tuned.

Time is a big issue. Also difficult local market conditions could impact the project.

Because of his previous experience, he believed there were some areas where he would be able to cope. He explained:

I believe I can handle the team processes as I do in the office environment.

Although he also explained that there could be some challenging issues:

I know I need something in the area of intercultural communications, but I'm not sure what. I have experienced cross-cultural issues in the office, mostly having to do with language misunderstandings.

After discussing possible strategies for initiating his team and receiving a final okay from GP headquarters in Colorado USA, I gave DW a Checklist for Initiating a Facilitating Global Virtual Teams that I had compiled based on a review of the literature and what I had learned from running VTMM.

At the end of October 1998, DW formally initiated his project by writing a letterⁱ consisting of an introduction and a project proposal, which he then e-mailed to the membership of GP. (Here it should be noted that DW had met some of the people he was contacting at various regional and global gatherings of GP). His proposal was in two parts; first he suggested that a team of interested GP members be formed to decide upon a formal GP wide project that could be done by a global virtual team, which was the second part of the proposal. In essence, the first part of his proposal was a brainstorming and decision-making task, while the second part would be a more involved task, perhaps something like the development of a regional advertising campaign for a client shared by several of the GP partners. He shared his strategies for facilitating the start up of his team:

I'm wanting to steer a careful path between doing what the group wants to do and guiding the group. I want this group to be fully participatory and to be able to move in any direction which group consensus allows. Equally I see the need for moderation, particularly over the initial stages to get the group up and running effectively. So I propose to be reasonably directive at first but to keep asking questions and seeking the consensus of the group through formal and informal questionnaires and processes.

DW realized right from the beginning that for this project to be successful it would have to offer busy people something of real value. He explains the nature of GP and what might motivate the team members:

About this particular organization, is that it is CEO to CEO organization so everybody is bloody busy.

The best motivation in a commercial setting like this would be that there is a possibility that they would be able to get an economic advantage from the process - ie make some money. I can't see at this point that that would be directly possible but I think it might be important to stress that the learning process could lead to an economic advantage for the firms that they represent in terms of being able to initiate virtual team processes.

Evidently he was offering something of value, because in the first two weeks of November, DW received a number of positive responses from all over, including the USA, Denmark, China and Brazil. Many of the initial responses were already bringing forth ideas for a team project. The team was essentially initiated. At this time, DW was just about ready to send out a Technology Survey to all those who had registered interest. The survey was developed to gauge technical levels of team members and establish hardware and software inventories. Due to the

global nature of the team there was no attempt to incorporate face-to-face meetings. All communication would be done through virtual channels.

Then everything went quiet for two weeks and in early December, DW informed me he had to go hospital for surgery. By the time he recovered, in late January, he had decided to sell his business. Although with the sale of his company, he would no longer belong to GP, he contacted its headquarters and offered to continue with the project. They welcomed the idea, and so in mid-March, he sent another letter to all those partners who had expressed interest in the original team. In the letter DW explained the reasons for the delay in the uptake of the project, outlined all the possible projects that had been brought up, suggested people download ICQ and asked who was still interested in the virtual team project. As he explains:

My strategy has been to remind them of the original request and to try and get them to respond to a number of questions/ action suggestions. This seems to be working to some extent - I've already had two download ICQ and contact me through that. For those who have not yet responded I plan to send them another email. I suppose it's inevitable given the length of time that some may be in a different place now than they were then and their interest may have waned or they may be too busy to participate.

There was still interest, and though out April, 1999 the team was tackling the issue of a common communication platform. DW was quite convinced in a global organization such as GP that simplicity and universality would be the keys to an effective communication strategy when working with virtual teams. He believes e-mail is the channel that meets these criteria. People already knew how to use it and most importantly it worked across platforms, which was particularly important in DW's case because so many of his members used Macs. In his team he discouraged suggestions to work with more advanced or different softwares as long as e-mail was doing the job. He recalls his thinking on this matter:

Lets work with the e-mail platform until it's not working for us and then later it may well be that we need documents or that kind of thing and a more complicated system. My attitude was the old kiss- keep it simple stupid. To use e-mail because we do not have an across platform problems. Works on Macintosh works on PC.

DW observed that many of the software solutions are not at an equal point, with different versions for PC and Macintosh. His view:

Usually it's developed for PC's these days and the PC version is five steps ahead of the Mac in terms of functionality, so it's an issue.

However, in addition to e-mail he also made a special effort to get his team members to download ICQ. DW was a big fan of ICQ and saw a lot of potential

for it in virtual teamwork. He considered it a "back door" channel that could play an important part in building social relationships. It might work as a virtual substitute for the informal "corridor conversation". As he explains:

The idea of ICQ was to get some conversations going between the people in the group. And if they were using ICQ properly they would know when anybody else in the group was on line. In fact the few conversations with people I had who were on line at the time were more time of day conversations, how are ya type not about anything substantial but the thought was and it may well bear fruit in the longer term, was that if everybody was on ICQ and if we kept going with this process than the opportunity was there for people to talk privately." And I felt the ICQ thing could provide the corridor type of relationship where tasks can progress without the use of planned meetings.

He believed that these informal and spontaneous conversations complemented the more formal and reactive e-mail communications. He thought ICQ might be a way to bypass the facilitator in some instances and decentralise communication between team members:

It seems to me a very important thing to bring into the process, not just to have a sort of group e-mail type of process brought back to a moderator kind of thing. But also that sort of "I see you on- line something", more spontaneous than e-mail process which is reactive.

He further elaborates:

ICQ is providing a crosslink if you look at the model of going backwards and forwards type thing. It's a way for people to have a cross conversation the corridor conversation model, the chance conversation.

At this point there was a compiling and distribution of ICQ access numbers among team members and in the flurry of activity to establish common communication channels, one of the team members had difficulty downloading ICQ. DW realized this was as an opportunity to develop a team culture of cooperation, which he considered vital if the team were to be successful. He recalls:

One of my contacts in Denmark had some trouble/downloading ICQ. I sent him an explanatory email. Equally I could have asked the group whether there was anyone with ICQ experience who could help him. I made clear to the group in my recent re initiating mailing that I hope that the group would appreciate the different levels of technical expertise and would be prepared to help each other. This kind of culture will not develop if 1. people are not encouraged to say when they having difficulty and 2. group members are not prepared to share their expertise.

However DW discovered that there could be a flip side to creating a culture of cooperation, and that might be a loss of control for the facilitator. He describes his thoughts as he realized he could release some control:

There's quite a lot of enthusiasm among team members for the process. What I try to do was get them on ICQ. That took a long time. One of the guys actually volunteered to do that. It was quite interesting because I was kind in initiating everything and there was this guy who said I'll do this which was the good you know, but my initial reaction to that was wait a minute I'm losing control of this project. When I thought about it I thought well hell why not.

But in one instance, he related that he needed to be more directive and controlling because of the danger of one team member steering the project in another direction:

There was another participant who I felt I wasn't very happy with the contribution in terms of trying to change the direction of the thing. This was a guy whose personality I knew was very much centered around me, he was the sort of takeover type.

Yet another incident highlighted the fine line between facilitator control and the collective "wisdom" of the team. DW reflects:

The other thing that can be annoying is people getting things wrong, like technically get things wrong. One guy told the whole group that you couldn't run ICQ on Macintosh, which was wrong. Because a lot of our group was using Macintosh and fortunately that was self correcting because somebody came in and said no this is the site on ICQ where you can download a version for Macintosh. That was an interesting sidelight that was self correcting.

Headquarters was also in the process of putting a secure chat room in place on the GP Internet, which the team could use. In discussions with GP's IT Manager, they talked about the need to set suitable meeting times:

As for timing we talked about what would be a good time as most participants are in North America and I think I'm not sure what the conclusions were. She suggested late afternoon, which equates to morning here. That is just (garbled) but it is something you have to bear in mind if you want to do it sequentially. Everybody has to be awake.

Though out April, May and June, DW was involved in the transfer of his business to new owners. The project entered a new lull. He then went on a long holiday, and was out of contact until September. In September and October he

tried to relaunch the project, but this time along the lines of distance education, which he had become interested in. GP management did not support this idea and the project was dead. In December 1999, DW sent an e-mail to all those who had participated in the project explaining the situation and bowing out.

Cycle One Participants

BC - New Zealand Government Office

BC is a senior policy analyst at the Office of Treaty Settlements (OTS), which itself is a part of the Ministry of Justice of the New Zealand government. The OTS's key responsibility is the settling of Treaty of Waitangi¹⁷ claims¹⁸ made by indigenous Maori groups. This project involved the negotiation and settlement of a Treaty claim by Ngati Mea¹⁹.

Notable characteristics of this project include:

- the project was essentially a negotiation between two parties, Crown (represented by the New Zealand Government) and Claimants (Ngati Mea). In a real sense, the Claimants were a part of the team.
- in addition to the OTS members the Crown team consisted of representatives of several other government departments.
- the negotiations were already underway when BC joined the training program and concluded by the end of the training.
- face-to-face meetings figured prominently in this project.
- organizational, technological and ethnic culture appeared to be prominent features of this project.

Prior to the start of the training, BC sums up his experience with virtual teams in this way:

I have a lot of experience in the office using faxes and e-mail and stuff, I have seen the difference of not having e-mail, and having e-mail and the enormous benefits. We essentially work in virtual teams the whole time.

After taking a class on technology in the public sector as part of his Masters of Public Management program, BC realized that there may be benefits in a systematic approach to expanding the use of virtual communication channels his office's processes as well as the negotiation and settlement process with Treaty claimants. He explains why:

More than any other organization that I have been with, we spend a lot on organizational travel and being away for days at meetings. So there are two costs with that, one is the cost of the travel itself and then the cost of the day out of the office. And I am very much aware that there is a trade-off there. At the moment the trade-off is in favour of going off to

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¹⁷ The Treaty of Waitangi is New Zealand's founding document, which was signed in the 19th century between representatives of the British Crown and the Maori, the indigenous people of New Zealand. The Treaty sets out the rights of the two groups.

¹⁸ Currently, there are over 800 claims being made by Maori groups against the Crown. These usually involve land and resources believed to be unjustly taken from the Maori by the Crown over the last 150 or so years.

¹⁹ The Maori group has been called "Ngati Mea" to protect its anonymity. The group resides within driving distance of Wellington.

meetings. We are not as an organization looking at cost-cutting per se, but I guess I was thinking to the extent that savings could be made.

From a personal standpoint BC wanted to become more familiar with virtual team best practices, because he believed these were business management and HR issues. When I approached him with an invitation to join the Cycle One training program, he accepted and explains why:

In terms of what I'm looking for in the training, it covers structural, procedural and technical issues and having a dialogue on intercultural issues and seeing what we come up with.

When the Cycle One training program began on 12 October 1999, Crown negotiations with Ngati Mea were already in progress and working against deadlines. It was not BC's intention to attempt a full-scale virtualisation of this particular negotiation with Ngati Mea. As he put it:

It was not the time to sit down and play with new technology that no one was familiar with or even equipped with.

However, he hoped to be able to implement "virtualness" around the edges of the negotiation process, by encouraging the use of virtual communication channels where possible.

BC made careful observations and reflections of the Crown (represented by the New Zealand Government) and Claimants (Ngati Mea) sides and their ongoing interaction. These were focused by the issues raised in the training program and they led BC to a number of insights on the issues that face a facilitator in a complex, cross-cultural negotiation in which two sides are essentially working as one team.

This project was unique because although two sides were involved in the negotiation, the Crown and the Claimant side, it was basically a collaborative rather than a confrontational negotiation. So in a real sense the project consisted of two teams working toward a common goal, a settlement. The Crown team, which consisted of a number of government departments including OTS, the Department of Conservation, the Ministry of Fisheries, Treasury as well as consultants had access to a greater range of virtual technologies. The Claimant side generally did not.

In the first two weeks of the training cycle, BC relates how he started to become aware of the way communications were being conducted within the negotiation process:

I was very much aware of what we were doing and for what purposes and the sort of information we might find useful out of that.

The real core business is done in meetings, with telephones and e-mail being used to set up and confirm meeting times. He recounts one instance:

We spent about four hours, an exhaustive meeting, going through this huge complex project that we were doing.

At meetings the key issue was getting people to do things, something BC believes is a key challenge in working remotely. Face-to-face meetings have the benefit of getting everyone focussed. BC related one instance where repeated phone calls and e-mails failed to prompt one key team member on the Office of Treaty Settlement side to provide necessary information for the negotiations. As BC explains:

It was only when we got face-to-face with them that they started to do stuff.

Frequent face-to-face meetings were used by Ngati Mea, according to BC, because the claimants did not believe the OTS moved quickly enough or were giving the claimants the priority they thought they should receive. BC explains their strategy:

So they tried to cope with that by meeting with us as that forces us to focus on them and do stuff.

Meetings are also used strategically by the OTS to convey negative responses to claimants:

It's explaining why we can't do things, which is a very important thing to do. It's very interesting, rather than saying no you cannot do this in a letter, most of the time it's easier to talk about it, then we get immediate acceptance of that.

Verbal, face-to-face communication allows for indistinct, but still credible discussions to be held. BC elaborates:

But when we are talking we can explain our understanding of what the Crown policy is, for example, on a certain point. ... when you're talking although you might be focussing on the key point, with your phrasing and the exact nature of what you are saying you can get away with a lot more, maybe in terms of the exactness of what you are saying (compared to when we are writing when we are careful to cover all the conditions and provisos of what we are writing about).

By the middle of the training program, BC was able to inventory the virtual channels at the team's disposal and assess how the channels were being used and to what effect. He believed that using real time electronic meetings (such as video conferencing or on-line Netmeeting) was not appropriate because the two sides were close enough to make the effort to meet face-to-face and would get more done that way (Ngati Mea is based within driving distance of Wellington). He also mentioned that telephones work much better in a one on one situation anyway:

I thought about the on-line conference in this case, a netmeeting type of conference would be less efficient at getting through stuff I think than a face-to-face meeting. It wouldn't be appropriate in this circumstance.

The other disadvantage of a Netmeeting for OTS is that it would potentially (in its Chat function) leave an electronic recording of exactly what was discussed, which they do not want. Not only would there be a loss of frankness in the discussions, according to BC, but everything that is put down on paper in the OTS must be Q A'd, so they are assured that what they are saying is correct. BC explains that the written confirmation of spoken positions is a key process in OTS:

In fact when we do make commitments at meetings we actually follow that up on paper. It's the reviewed position that they have to go by, not what we say.

Other barriers to more fully virtualising communications between the two sides had to do with issues of accessibility. One of the most significant according to BC is that Ngati Mea do not appear "to be up on the Internet". They lack the equipment as well as the training, and perhaps even the inclination at this stage to work more fully through virtual channels. BC pointed out that the claimants are not set up commercially or in a general business sense and that "they have to come up to speed on lot of stuff, not just the technical and communications stuff."

The situation is further complicated by the fact that it would be completely inappropriate, for historical reasons, for OTS to implement any sort of policy to try and encourage the claimants to virtualise their communication processes:

The reason why is that we are careful, being the Crown, we do not want to force certain things on the claimant communities. Obviously if they have it, it's an advantage, but we don't really push them on that sort of thing.

Within OTS itself, all permanent staff is located in Wellington. The Office also works with numerous consultants and specialists from around the country. There is no policy regarding working virtually, but in practice what happens is that these consultants will come down to Wellington for an initial meeting and then

work via phone and e-mail. Once-a-week meetings may occur when negotiations are moving very fast. According to BC, "the effect is that they are here at the office."

On the Crown side, because the various government departments are familiar "with each other, sharing a similar government bureaucratic culture, many issues were handled virtually via telephone, e-mail and fax. The effect according to BC is that "working virtually saved us a lot of time."

The claimants, Ngati Mea, tended to send a lot of letters. BC believed them to be very "written" orientated, because in this way they could compile a formal record of what had been done. Formal letters were also used to get things moving and to generate responses. BC reflects on why the claimants may prefer letters:

I don't know exactly why but part of the reason is they are under a lot of pressure to get us performing. It also means that at the end of the day, if things boil down into disputes, they have a good record to show that they have done everything they can.

At this point in the training, BC stated that Ngati Mea preference for letters did not have anything in particular to do with culture. As he explained:

I think it has something to do with personality because other (claimant) groups don't actually operate in this way. Ngati Mea is very oriented on the process as well keeping good references and being very competent in that area.

The OTS tended to respond verbally because they were not so concerned with recording every step. Also it gave them an opportunity to explain things and then process their responses in a controlled QA protocol. In the end they would respond in a formal letter. According to BC:

Letters are quite interesting. A lot of times we use the mail to give something a bit more significance, a bit more finality. In our office, the official record is a hardcopy.

The telephone is used for exactly the same things as face-to-face, the difference being when something must be dealt with quickly. A lot of important work is done on the telephone. The telephone allows for spirited talk and even argument. But as BC points out:

I guess the time when face-to-face is more preferable to telephone is when we haven't met for a long time, or if a lot of people need to be involved simultaneously in a discussion.

E-mail is often used to confirm details. It possesses the speed of a phone call with the paper trail of a written response. E-mail is also used to quickly transfer working documents back and forth in what is called a template, which is used to build up and agree on components that involve a settlement. At the moment the template is only e-mailed internally on the OTS side.

Although there is a formal e-mail policy in the OTS, few people abide by it. The policy states that anything that goes out of the office has to be properly QA'd. Everyone is sending e-mails without subjecting them to formal QA. There is a general understanding that these don't carry any particular weight or authority in the office. But there may be some potential misunderstandings as "claimants may interpret a different level of authority than we are intending."

There is also an issue of security over the Internet. The policy states that no sensitive material shall be sent unsecured over the Internet. But as BC observes:

People do it all the time. They couldn't really work otherwise. They are flouting the policy, but it seems to be efficient.

BC was able to conclude that in this negotiation process there was a hierarchy of communication practices determined in part by Office of Treaty Settlement protocols and Ngati Mea preferences and in part by whatever seems to work best in a given situation. Letters represent the most formal and permanent communication channel on both sides. Face-to-face meetings are used to build relationships, to work out important issues and to get tasks done. Telephone can also be used to discuss important issues and get agreement. E-mail is officially used to confirm details and also to transmit documents quickly and efficiently. Unofficially, e-mail is used to discuss important matters, although there are unresolved organizational issues regarding its use in this manner. The use of Netmeeting and videoconferencing are problematic as the technology is not available to all parties and is not particularly reliable. There are also security concerns.

Based on his assessment of the available channels and their uses, BC was able to see the need for a virtual team strategy and to begin to formulate one:

I think it is really important that we do have a strategy and we actually haven't developed any formal strategy of doing so. Okay, it seems to me if we were going to develop a strategy, the strategy would have a couple of components; one is maybe a face-to-face meeting to kick it off so we were clear and comfortable about what each other was doing and then the second component of it would be short time frames for finishing blocks of work so we get something back that gives us an idea that they are on track.

After the last few hectic weeks before the negotiations were successfully concluded, BC had additional observations and insights on the way communication channels were used and how organizational and cultural factors

influenced this use. He came to realize that relationship building was an important facet of the negotiation process, particularly for Ngati Meau. BC remembered that at the very beginning of the negotiation process, Ngati Meau, came down to Wellington and had a face-to-face meeting with the Office of Treaty Settlement side although no meeting was really required. They reported on what they had been up to and asked a few questions. In retrospect, BC concludes:

I guess they just wanted to meet with us. It was more than was required and more than what any other groups had done. But it built up some sort of rapport. It was just a little bit unusual at the very outset.

But even within the Crown side, it became clear to BC that a sound relationship was the foundation of successful virtual communications, and that face-to-face meetings were the key to building and maintaining good relationships. Building rapport through face-to-face meetings was demonstrated by OTS's excellent relationship with the Department of Conservation. The two offices held regular relationship building meetings together that would include discussions on protocols for working with each other. This contrasts with OTS's poorer communication with some other departments where there was less effort on the part of either party to build relationships.

The claimants continued to demonstrate a clear preference for face-to-face meetings throughout the negotiation process and particularly at critical times. Toward the end of the negotiations when things became critical, the claimants wanted face-to-face meetings, to as BC put it:

...put everything out, which indicated to me that they have a huge preference for face-to-face meetings.

As BC realized early on in the training, face-to-face meetings have the benefit of getting everyone focussed. Toward the end of the negotiation process when a key issue was holding up progress, the Crown side dropped everything and went up to Ngati Mea's home town for an all day meeting to deal with those issues plus everything else that was on the table. The importance of face-to-face meetings was not lost on BC, who explains:

It was interesting to note that we needed a face-to-face meeting to deal with those critical issues that could make or break the deal.

But it also became evident to BC, that when the final deadline was upon the two parties, that they were able to use virtual channels to settle some final, difficult issues. BC believed that this was possible because they had already developed trust and a strong personal relationships. He elaborates:

The last four weeks before the signing of the Heads of Agreement was frantic and involved a different way of working together virtually. After a

series of critical face-to-face meetings to work out some difficult points and with just a couple of days to go communication took place primarily by phone and e-mail. Important issues, normally dealt with face-to-face, were resolved virtually and they performed admirably on their side under that regime. This kind of tells me that although the preference might be there for face-to-face, when the costs are too high they work very fine with other scenarios.

The importance of melding different cultures together when working together was a key concern for BC. He realized that it was a critical factor in these negotiations. Bringing different cultures, be they ethnic or organizational, together requires effort and patience. BC explains it this way:

There are two sort of cultures that we need to bring together. The first is between the claimant negotiators and the key Crown negotiators, who are going to meet and be making hard judgments based on what we are telling them. And that requires a huge level of trust, which we are able to build up through a whole lot of face-to-face meetings over long periods of interaction, two years. We have got to the position where they can trust us as Crown negotiators to be acting in their best interests. We are not going to be running them short, to try and get something from them. That requires a close cultural melding in a sense.

As for the Crown side, BC concludes:

The other is to get a culture within the Crown team that includes the Departments of Treasury and Conservation, the Ministry of Fisheries for example where we can at the end of the day get decisions from them very quickly which would normally take a long time to get through their departmental processes. We have to develop a different kind of culture than the usual departmental way of dealing with them.

A significant milestone in the negotiation process was achieved during the training project when a Heads of Agreement was signed between the Crown and Ngati Mea. Essentially, BCs' active participation in the project was finished. He continues to work on negotiations with other claimants and will revisit the Crown and Ngati Mea settlement as necessary.

Based on the working communication strategies that the OTS and Ngati Mea had developed, BC thought that the possibility of working together virtually was good in the sense that they operate very well with letters, as long at the same time periodic face-to-face meetings were scheduled to take care of the "emotional" side:

I think just on our side, we are telling the claimant that we don't need to meet as regularly on every single issue as we have been in the past. Because once we have done that emotional stuff, all the detail, you know

the process, we are talking about property transactions and things are straightforward. So we are encouraging them to go more virtually. And they are happy.

BC goes on to explain why the claimant's can work virtually:

The claimants are happy because most of what has been talked about is falling into place and they're comfortable about that. Working virtually was speeding up the negotiations, which was what the claimants wanted. Though it is important to note that even at this stage when e-mail and phone were being used quite often, face-to-face meetings were still being held every two weeks.

However, as pointed out above, barriers exist that hinder a more complete virtual negotiation process, those of access and skills to technology and the political, cultural and historical context, which make it difficult for the Crown side to push too strongly. As BC pointed out:

The virtualising of both the office and the negotiation process is not a matter of policy, rather it simply reflects trends in the wider business community.

BC has been pushing the virtual envelope in the OTS. His team is making as much use as possible of virtual technology, while other negotiating teams rely on face-to-face meetings. The key, according to BC, is the development of trust between team members.

SC - A S Limited

SC is a self-employed consultant contracted to AS Limited(ASL), a company that helps industry training organizations (ITO) meet New Zealand Qualification Authority²⁰ (NZQA) standards. The project consisted of the development of a webpage for an ITO. With the successful completion of the webpage, SC continues on as leader of a virtual team that managed the webpage and the business that was generated by it.

Notable characteristics of this project include:

- the completion of a discrete task (design web page and put it up on the Internet)
- SC organising a team with a number of team members, all of whom needed to complete discrete tasks such as accountant, lawyer, web designer, web host, client and employer, in order for the project to progress
- an IT-based project
- project was started shortly before the training program began and completed after the end of the training.
- SC continued on with a follow up project on which research data continued to be collected.

Prior to the start of the training, SC had some experience working with what she called a "low-grade" virtual team, which she described as essentially a group of employees teleworking to complete administrative tasks. They worked from around the Wellington region and met once every one to three months. SC did not consider this a real virtual team. She explained it this way:

We were not running project by project, we were not developing.

In September 1999 when SC was just getting started in her project, she took part in a workshop on virtual teams that I co-trained. At that time she agreed to join the training program that I would soon be offering. SC wanted to gain a greater understanding of what kinds of issues and challenges she would be facing as she headed a temporary virtual team. She also hoped to get some tools that she could work with:

I have a specific project and I would like to receive guidance and help with structure, procedures and possibly some technical issues.

SC is a self-employed administrator involved with NZQA framework-related training and assessment. ASL gave SC responsibility for a project establishing a web-based assessment center for a national qualifications framework (diplomas, certificates, etc) under the umbrella of the Design and Construction Industry Training Organization (ITO), which consists of designers, architects, quantity surveyors, and the like. The administrative side of the project was a small team

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²⁰ New Zealand Qualifications Authority is a government-based organization tasked with standardising educational standards and curriculum.

based in the Wellington region. The construction of the web page was the first stage of the project. She explains her task and how it changed over time:

My job is to take the raw materials, turn it into a web site, get people accessing it and achieving credit from the framework. Originally they hired me to develop this system for this assessment process that they developed on behalf of the ITO. So I started off doing a paper based system but using e-mail and stuff like that. Then I had the idea to involve the Internet, to set up a web site, so they added on to the contract to develop that.

After the successful completion of the first stage in January 2000, the ASL owners asked SC to stay on to manage the web-based assessment center "to make sure it runs smoothly."

SC's project team was highly dynamic with regards to membership. Early in the project she was working primarily with Angie, who handled word-processing, forms and formatting, and the like. Angie was preparing all the documents that would eventually link into the web site. SC also interacted on a weekly basis with other employees of ASL, some of whom were also working on the this project, but all of whom would be involved with the extended project once the first stage of the work is completed.

Team members outside of ASL include CWA (the web designers), an accountant, the web host, and a lawyer. These people may be termed peripheral team members as they are consulted on an as-needed basis. For example, CWA did some work with logos early on in the project and will probably be consulted again in the future. SC was acting as the hub of a wheel, currently maintaining one-on-one relationships with these other team members, though she realized this could change as the project progresses.

From the beginning of the training, SC did not think intercultural issues would impact on her project. As for her team members, she said:

We seem to be culturally the same. I think we all have quite a broad experience working with a diverse group of cultures, across a diverse group of cultures in the past. It's not something we are working with, cultural.

As for the users of the website she was designing, cultural considerations were not an issue at the moment, although she acknowledged this could change.

Over the course of the Virtual Team Training Sessions, SC reported a number of "ups and downs" in her efforts to move forward with this project. When the Virtual Team Training Program started in October, SC had hoped to have the web site open by the end of the training (December 1999), but it quickly became apparent that this would not happen for a number of reasons. The nature of the

workflow in this project was sequential. After SC finishes her initial work, it goes to someone else. When they are finished it comes back to SC, who will then work on other tasks.

Her main initial task was to produce all the documents and put them a form suitable for a website. Her work was subject to feedback by friends, associates and consultants and this often resulted in major content and structural changes. She explains what she was experiencing:

I had an odd two weeks. The first week I spent writing the contents of this web site and I felt I was quite creative with it and then I had a meeting with our web type adviser people, who took the web pen and a knife to it and refocused me.

At the same time she had to handle planning issues having to do with the process of "virtualising" the assessment process:

The accountant wants to virtualise the accounting process concerned with the fees as well, so we have to bring the accounting system in to parallel the assessment system as well. Thinking about how that can happen, how we can use it, integrating the database with the accounting system and web site. So I am setting up appointments, thinking about the sort of material I'll have to show them. That's really where we're at.

By the fifth week of the training, SC was making observations about the communication channels that she was using to communicate with her team members. Stephaine believes face-to-face meetings are important because humans require visual contact at some point in a relationship to establish a better relationship. They can pick up intangible impressions through visual contact:

I think it's important somehow to be able to visualize the person accurately at some point in the relationship, not at the end of the relationship, but in those early stages.

For SC, face-to-face meetings are held for different reasons. One is when a relationship is just beginning. Face-to-face meetings are more formal:

I think that relationships are usually initiated face-to-face and then they become virtual. I am interested to meet people who I've had not met before. I think the virtual stuff is sort of like meeting someone in the corridor and is just for the to and fro stuff.

Another reason to hold face-to-face meetings is when things need to be looked at and discussed and really understood. SC describes the reason why Ange, the accountant and her got together for a meeting:

...because we needed to develop flow charts and diagrams together and it was considered to be a beneficial use of time to get together.

Also, according to SC, a face-to-face is helpful when a "third mind" is needed to look at things:

Often I find that it's useful, you know two heads are better than one and having somebody there who was involved in the same work, often their contributions are really valuable. And they see things that you don't.

SC thinks that meetings can be more effective than sending documents electronically and trying to discuss them over the phone. However it is ASL's goal to automate as much as they can of the process of their on-going business. SC sees it taking place over the Internet:

It going to be the second stage of the work development. That's the expensive end. Probably going to be a good year away before we get up to that level.

Usual day to day contact with her team was conducted by telephone. Usually lots of phone messages are left. At one point one of the principals of AS Limited(ASL) was in South Africa resulting in more telephone calls than usual:

I think possibly because one partner is overseas in South Africa and forces the ones back here to work more closely than we normally do.

SC was aware that different skills are needed when dealing with people through virtual channels rather than face-to-face, for example on the telephone:

We do conference calling. I have noticed when you were on the telephone you need to listen a lot more, because you do not have the visual response. When I talk to you now you can see when I have stopped. When it's a telephone all that disappears. I imagine you have this seems sort of problem when you dealing with chat technology. You have to find a whole new way of communicating so let people know you have finished speaking.

Extensive use of e-mail on the team is the norm, and SC checks her e-mail twice a day in the morning and evening. She finds her personal response to e-mail quite different from that of typing a letter, using a lot of shorthand, as if she were writing a telegram. She has noticed that she sends e-mail off that she is not comfortable with. She reflects on why it may happen this way:

When I'm creating a document in word on my screen I am prepared to take the time to get it right. With e-mail I seem to be in a hurry, even

when I am not on-line. I find the whole style changes. And you can't bring it back, and that thing at the bottom of the screen is going.

One issue that came up at this time in the training session that seemed of particular concern to SC was the power differences between senders and receivers and the way these differences manifest in virtual communications. With telephone, a caller can leave a voice message, and SC explains, "I have got used to that telephone tag stuff."

E-mail, however, is a concern for her, because she can never be sure when she will receive a reply. She feels a definite loss of control with e-mail and explains it as follows:

I think, have they got the message? Has it got there? And why haven't they replied? In other words they have the control over the reply. Why are they withholding it, why are they exerting this control? Why don't they just reply? It's not such a difficult request I sent them. it's a feeling of powerlessness.

Though she realized her feelings about e-mail may reflect a lack of familiarity with the new technology:

I think it's the newness of it. Your accustomed to the post takes two or three days and you should hear back from them and if you don't you ring them. But with e-mail what are you left with? Something slower.

Questions about someone "having got or not got the e-mail message" may also hinge on technical issues. SC has experienced technical problems with e-mail, particularly with team members who are abroad. Her boss from ASL was in South Africa and unable to receive or send e-mail, possibly due to a big electrical storm. And when her boss was in Eastern Europe they again experienced difficulties with e-mail:

We take it so much for granted, but there are large parts of the world where you do have trouble accessing people via e-mail.

After considering the team's overall communications, SC catalogues her team's use of communication channels as follows:

We don't meet very often, we do a lot of e-mailing, and somewhere in the middle we do a certain amount of phone calling, but we don't call that often actually. If we averaged it out over a year, there are times when we use it a lot and there are times we don't use it at all. I think we're moving forward, we are getting better at it (working virtually) all the time.

Throughout the training attempts were made to introduce new communication channels such as Netmeeting, ICQ and team text chat. Although SC expressed an interest in learning about them, for various reasons she did not fully participate in trial runs, although she did consider how the technology might affect how people communicate:

If you are doing it with a group you will have to develop a whole different way of dealing with things. You have to say things very clearly, for example 'I am going to have to interrupt you now because we have something else to do'. Whereas in a face-to-face meeting you don't do it like that. There are other ways of stopping people, maybe nonverbal ways. In a virtual meeting you will have to be more verbal.

SC related an incident involving the writing of a shared document that she and a consultant were working on using e-mail attachments. Because of a lack of version control, they had difficulties tracking down the latest version. SC believed a shared data base or file server would prevent problems like this. She explains:

I e-mailed the document to one of the consultants on a project. She rang me to say that she thought I sent her the wrong one. I could not understand. My view was that I had created a document and given it a name. I e-mailed it to her, she played with it and e-mailed it back with the same name. I then called it up, worked on it, made some significant changes and send it back to her. Version control was not an issue for me, because it retained the same title. When she saved it she should have been prompted to say you already have a document with this title, do you want to replace it. But she did not realize this was the document I worked on and she did not check. So we had this conversation about whether the document title meant it was the same document or another one. Finally she opened it up. It turned out my view of the process was correct and hers was not.

A major constraint to virtualising communications for SC's team is the cost of technology. She would like to have dedicated lines to the Internet and to develop a wan (wide area network) with a central file server so collaborative documents can be accessed rather than e-mailed back and forth. This issue of investment in technology, along with staffing, while peripheral to SC's virtual team is having some impact:

What we are doing now is a lot of duplicated work, because we haven't got a file server. With a file server we can share documents and only make one copy of a template. But we're at that point we have to make that steps from a small business to a medium-sized business. We need to change job roles or upskill our staff.

SC believes this issue of technology implementation has a great potential to affect a team. The challenge as she sees it is keeping up with new developments and working out different steps in the implementation of its uses for one's particular operation. However given the way she is currently working, she is not getting those opportunities to find out what is out there. She must make a deliberate attempt to talk to people who might be using it.

From the sixth week on to the end of the training program, SC's project shifted into low gear. Several factors contributed to this: delays in task completion from team members working on discrete tasks and delays in feedback on web page content; the decision to completely revamp the objective of the webpage; and the decision that SC would design the webpage rather than contract it out. The impact of all these delays and changes was that SC was becoming a team unto herself. She admits:

Yes I am becoming more of a team of one. The team has been reduced; those with more specialized roles have dropped out. Now it's basically me and the two consultants. I have now got to complete my end, which is drafting the content of the pages. Then I will call in some outside the advice to help me with the programming, then send it to a designer to touch it up. Angie, one of the team, will have to supply all the forms I need. Our virtual team is on holiday.

According to SC she was unable to foresee any of these delays when she began:

I had expected the people that I had consulted with would just suggest some minor changes. I did not sense that they would say you were barking up the wrong tree.

By January 2000, after the training program was completed, SC's project was back on track. By March the website was up and being accessed by the public. This was the second stage of the project, and SC facilitated a virtual team that administered the inquiries, assessment procedures, and billing and payments generated by the website. She explains the process:

Users enter their details onto the website. The host server uploads files and then e-mail them to me. As the e-mail inquiries come in, I will be sorting them into categories and assigning them to the appropriate people to be dealt with. For now I send the accountant bank card details and he handles invoicing. I will be working virtually with the processing cleric, AR. She is responsible for entering the information about the learners or candidates into our training database. That information comes through the Web site to me and I forward it to her. She is also responsible for sending out forms to the learners. We are getting to the point where we will be using e-mail, snail mail, fax and phone, but probably not a lot of

phone with our clients. Also on the team are the ASL owners who function as the knowledge experts.

In some of her final thoughts about working virtually, SC had the following comments:

Eighty percent of your work can be done virtually, but 20% needs to be personal contact purely for psychological reasons. I think it's possible to work virtually without meeting anybody, but it may not be the ideal way to do it in all situations. *There are verifiable reasons for meeting face-to-face. Either the material or the problem call for it. Face-to-face can be the best medium in those situations.*

As if to drive this important point home, in our final interview in June 2000, SC indicated a problem with one of the virtual team members not doing his job promptly enough. She intended to call a face-to-face meeting with the whole team to discuss this sensitive issue.

RB, Novus Limited

RB, Innovus Limited

RB was the general manager of Systems and Support at Innovus Ltd., a company that specialises in software development, systems and support and management consulting in such areas as change management. RB's project involved virtualising communications with a new overseas branch office in Melbourne. (NB: Innovus has subsequently merged with Synergy Ltd)

Notable characteristics of this project include:

- an IT oriented company; Innovus develops software
- an open-ended project initiated by and for management
- involving an overseas office
- project was started during the training program. Most of the data concerns the initiation stage from an organizational and technological perspective. No virtual team was ever formed.
- project has been delayed repeatedly, most recently by the purchase of Innovus by another company.

RB was introduced to the training program through a mutual acquaintance. He agreed to participate in this research project because Innovus was expanding overseas and he saw the need to work collaboratively as a team with the new office. Innovus also had four divisions in the Wellington area and RB expressed an interest in learning to work both more virtually and collaboratively with them. Personally, RB wanted to learn to recognise the pitfalls of setting up virtual teams, see what has been done before with virtual teams, what he needs to do to set up a virtual team and what his technology options are. He has a lot of experience working with co-located teams but not much with virtual teams apart from using e-mail and phone to coordinate and work on projects.

The project RB intended to work on was facilitating virtual communications for a newly established Innovus branch office in Melbourne. When the Virtual Team Action Training Program began on 12 October 1999, the branch office was already operating, but no plan dedicated to initiating a virtual communications strategy was being actively considered. After speaking with RB about the nature of the training program, it became apparent to RB that there were significant opportunities for Innovus to develop a purposeful, coordinated communications strategy for its Melbourne office.

RB was responsible for his own Systems and Support team and is also a member of the management team, which consists of the five general managers (the four division heads and the head of the Melbourne office) and the chief executive. The management team operates in a partly virtual manner using phone and e-mail, particularly with Graham, the head of the Melbourne office. The complete management team meets together once every three months.

As the training proceeded, RB was able to consider a number of issues and options in virtualising organizational communications and fostering virtual teamwork and to prepare an implementation strategy. For the most part, because

of time constraints, the implementation of these strategies was to take place after the formal training program was completed. Much of the data collected from RB involves his conjectures on working virtually.

Right from the beginning of the training, RB was very keen to explore the possibilities of low-cost videoconferencing via technologies such as Netmeeting as an important communication channel with the Melbourne office as well as a way of hooking up the four Wellington divisions in a media rich environment. Much of his effort through the ten-week training program dealt with planning and implementing virtual communication channels, particularly desktop videoconferencing system.

Early on RB bought a desktop video camera and with the researcher experimented with several products, Netmeeting IVISIT and CUSEEME. He realized Innovus' access to the high-speed Wellington Link figures to be a distinct advantage in web-based video conferencing.

One of the main uses for desktop videoconferencing would be to pull Graham, the head of the Melbourne office, closer to the rest of the management team. Desktop videoconferencing would make it much more likely that they would have regular meetings. As RB explains:

We would say OK every Monday morning we have a videoconference to talk about things. That would keep the Melbourne needs much more clearly in focus.

Another possible application for desktop videoconferencing for Innovus involving their Melbourne office would involve sending a systems architect and a business analyst to Melbourne to work closely with a client. They would liaise back with the development team in Wellington who actually do the development work. RB thinks videoconferencing could be a useful enhancement preferable to flying back and forth all the time. It may also be useful on occasion to include a client in a virtual meeting to receive their input.

Although most of Innovus's talent is in house, RB sees the possibility of bringing vendors into a virtual team and pointed to a recent project that they did which required them to go back to the U.S. vendor for a software fix. He conjectures:

That might be an instance where we would want to form a virtual team (they were in Seattle). We were talking to people over there, who were building new versions of the code, and shipping it over to us.

Other possible uses for desktop conferencing may be the use of application sharing in Netmeeting because staff in Wellington can run an application and it can be seen via Netmeeting in Melbourne without loading it onto a database. RB exclaims:

That's quite an attractive concept. There are some interesting possibilities

there.

A distinct downside with Netmeeting is that is only good for a one-to-one videoconferencing. RB needs to explore other multi-point capable solutions such as CUSEEME.

One of the main reason for RB's interest in videoconferencing is his belief that people need to see each other to work together effectively, and he wants to see if videoconferencing has the potential to one day substitute for face-to-face meetings. He is a strong believer in face-to-face communication, particularly in a team context. His thoughts on the subject are discussed below.

In teams operating face-to-face RB says you can make sure that people are working together. Team members know each other's strengths and understand what each other's place is in the team. There tends to be a mixture of experience, expertise, age, gender and the like, which in his experiences all tends to mix well. RB has a real strong sense that teams that can see each other will operate better, and wonders:

In circumstances where some of my team here in Wellington may not have an opportunity to see some of my team in Melbourne, if and when I employed them, I want to be able to work together and if they can see each other with video, I think it will have a significant impact on how well they work together. That's really more of a gut feeling than anything concrete. I don't have any proof, but I suspect that will be true. The proof will be in the pudding.

For RB, face-to-face means sitting down next to somebody, either one-on-one or in a group. From a team point of view, it means getting the group together, which means all the members of the group sitting around a table discussing issues some of which may or may not be relevant for all the members of the group. The benefit of this kind of face-to-face contact is to give all the team members a clearer picture of the overall aims of the group as well as what individual members are working on.

RB also uses face-to-face meetings to keep people up to date with things instead of just sending them e-mail. It is not just in case of pushing information at people. Face-to-face meetings give people a mechanism for raising issues which are important to them, issues that might otherwise fester without a mechanism to properly address them. RB has a strong sense that for a team to work well together they really need to meet together at least once, if not face-to-face, then via an audio or video conference:

I think that is an important element of any virtual team, starting off knowing people well enough, having met people can make such a difference to a virtual relationship.

In fact, RB believes that regular on-going meetings are best, and again he thinks it may be possible to hold these virtually:

I believe that a team needs to get together at some point on a regular basis. So I would suggest that once a team is established, even if some of them are abroad and therefore it is a virtual team, there should be a mechanism for meeting with them, maybe with an audio conference.

He believes that we pull in important information about people through our eyes and that we lose a lot of the dynamics of a relationship conducted virtually. While he acknowledges that work can be conducted over the now familiar and dependable telephone, he finds it much easier to work with someone over the phone after having met him or her once. He reasons:

Well this is what we are used to, interacting with people close by, because that's the only way you could up until now. Maybe I am quite wrong on that need but it seems to be that you can only get to a certain level without seeing someone.

He allows for the possibility that one day technology, particularly video conferencing, may improve to the point where face-to-face meetings are not so critical. And as the technology becomes better and more familiar people may become more comfortable with it and it may mean in a few years when everyone is doing it, it may be considered normal and it won't be so necessary to meet people. This could lead to the interesting dilemma of working with people you don't really know, a proposition that RB sums up by saying:

There is a saying, on the Internet no one knows you're a dog; you could be anybody, you could be a one-man band or a multi-billion-dollar organization, but the person you are dealing with doesn't know that, and everybody is equal.

As the training proceeded, RB was able to consider a number of issues and options in virtualising organizational communications and fostering virtual teamwork and to prepare an implementation strategy. For the most part, because of time constraints, the implementation of these strategies was to take place after the formal training program was completed.

A number of communication channels are available at Innovus and they are discussed in some detail below. Which channel is appropriate for which task, particularly in virtual teams, is something that RB is now grappling with. He has termed this 'using appropriate methods of communication'. Some of his comments follow:

There's got to be an intelligent reason for putting things down into writing. I know if I'm sending an objective to Melbourne to somebody, I might tell them about it and then follow it up in writing, so that they

know exactly what I mean and they can't come back and say 'oh I didn't know.

I guess it depends on what the teams are doing. When there are a lot of emotions wrapped up in the decisions being made, to try and do that via some virtual technology may be unprincipled or at least questionable. If the kind of issue you're dealing with needs a lot of chance for dialogue, that's got to have an impact on a virtual team. I don't know how you can really do that virtually.

I think that's where you need to make a call as to the appropriate technology. E-mail is never going to be good for an in-depth discussion about an important topic or issue. I think you need to be in a room with people with a whiteboard or some electronic equivalent to that.

Early in the training program, RB mentioned that the setting up the Melbourne office had involved a lot of e-mail communication and this had proved a satisfactory way of doing things because there weren't a lot of issues and they didn't need to be dealt with immediately. He predicts, however, that it will "become more and more of an issue as that branch becomes established."

Later on in the training he said that satisfactory was probably not quite the word. He said e-mail was a reasonable method of communication. And he pointed out that not having someone close means that they were not always on your mind and therefore they might not get the attention that they deserved or would otherwise get:

If Graham, the guy from Melbourne, had an office around the corner. If he came around to talk about a matter I would be much more likely to act on it or deliver a solution much more quickly than by e-mail, where he cannot rattle my cage so easily.

RB commented on a number of facets surrounding the use of e-mail. He finds he tends to be in a hurry when he uses e-mail, even when he is not on line. Because of this haste in producing e-mails, mistakes are often made in spelling, grammar and often the clarity of the message. In RB's opinion, e-mails lack the richness of visual communications:

Sometimes I read my old e-mail messages and get quite shocked as to that's not what I really meant at all. What might be quite clear to me as I am typing it may not be at all clear to someone who is only reading the words.

The style of e-mail is very different from formal written communications such as letters. It is very conversational and relaxed. Writing a letter requires more effort than sending an e-mail, and the signature at the bottom of a letter represents a significant investment of self. As RB explains:

I guess writing a letter is more formal, signing your name at the bottom: there is a bit more effort involved than sending an e-mail, couple seconds a couple lines, press send and it's gone.

The casual sending of e-mails without much thought is a risk according to RB, who points to the recent Microsoft -US government court case²¹ in which logged e-mail messages were used as evidence against Microsoft. People do not seem to be worried that e-mails remain as a permanent electronic record that may come back to haunt them.

RB has noticed that some people are very aggressive when using e-mail, writing quick, negative responses, which have clearly not been thought out. They often dig themselves into a deep hole, and what is worse their positions are recorded. According to RB, the "e-mail" persona of a person is often very different from the "face-to-face" persona:

When you talk to them face-to-face they are quite often different, you get a different perception of them, then they sent in e-mail, because they said something they haven't thought about and they don't want to say they got it wrong.

Another issue with e-mail is how to get people to respond to e-mail that is sent to them. RB believes that it is really difficult to legislate response times. He thinks how often people check e-mail is a function of how important they think it is. Some people check once every couple of days, others check it constantly. Although he doesn't believe setting policies or protocols will work, he allows that creating expectations within a team may be helpful:

Setting policies isn't going to achieve that, Regardless of how much you needle people about it. It's really going to depend more on people's perception of the worth of checking it. I guess there is still an element of people needing to understand that it's worthwhile to read their e-mail.

Being of a seemingly technical and inventive mind, one of the first things that occurred to RB following a discussion on e-mail in one of the early training sessions was the possibility of attaching voice messages to e-mail. He asked one of his staff to have a look at how this might be done. His hopes:

To push a button and record something immediately into an e-mail message and then you send it. I think it may have some marketability. We'll see what comes out of that.

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²¹ A recent court case in which the US Government used internal Microsoft e-mails as evidence against the company

Innovus has an intranet and gives staff a lot of flexibility in having access to it to put up work-based material, which is relevant to them: for example, papers they have written on estimations for software development. Staff can not put up personal web pages. There is also an Exchange server, where staff can put messages into public folders, a kind of discussion forum

During the training program, RB paid close attention to the available technologies supporting virtual meetings and virtual teams. He is very conscious that he is still trying to understand the options available with technology. During the training he made incremental progress in introducing the technology into Innovus. Although his final goal is to bring the Melbourne office into a virtual relationship with Wellington, he chose to begin by working with the Wellington-based divisions within Innovus. One of his first steps was linking the new web design division into the Innovus network so that they could share diaries and the like. It's an evolving situation that will take time.

At one point, midway through the training program, while discussing his conviction that teams, virtual or otherwise, needed to meet regularly, he noted:

About this issue, just talking it through, has prompted me to suggest to our management team, that the guy in Melbourne is audio conferenced into our meetings on Mondays. I think that will probably be a useful thing to do.

In mid-November, in the middle of the training program, RB did some testing on desktop videoconferencing. He set up a three-way Netmeeting (with another training participant and the researcher), which was really only a chat and a two way video conference because of the limitations of the product. He started to get a feel for the technology and said he "felt quite encouraged by that."

Just after this, RB secured Graham's commitment to work with him on testing out some of the products, which are available. They are planning on setting up Netmeeting or some other service on their own network and are just waiting for a couple of other pieces to fall together before that happens. Testing may begin in December. The one drawback is that Graham is on a modem line at the moment, so they won't be able to do an awful lot until he moves onto a highspeed network. But that should not be too long as Melbourne's has a city link similar to Wellington's, which would provide more than enough bandwidth.

Another communications system that RB is implementing is an internal online Netmeeting type of system in which the PC's of Innovus managers are connected to the Innovus server. This system will allow Graham at any point to connect to that server and see who's on line, contact them and have a video conference one to one with them, which RB thinks will be a very powerful tool for Graham. He explains, "it's as close as we will get to the corridor chat we were talking about last time."

According to RB, managers will always be on the server, from when they start their PC in the morning. Graham will come on line and see a manager's name and ring him as he does with the telephone and if the manager is there he will pick it up. He goes on to explain:

The whole idea is that it is easy for him to access us. It's one more vehicle for us to call him if we need to, but I think it's him having access to us, which is much more powerful. We have access to other people in the group; we can have conversations with people about relevant things easily. This brings Graham into the fold.

RB also considered that such a system could be open to people outside Innovus, by letting selected people know that it exists:

They can come in on it - just like you have my phone number and you can call me at work, and I can decide to accept their call or not. That would make it easier than trying to get through some firewall or something. It shouldn't be any different than if they rang us, so why should it be an issue.

One issue that RB had not thought of in relation to desktop videoconferencing until it was discussed in the training was the issue of security. He said they would need to start to experiment with private networks, primarily with their other office in Wellington across City Link:

We have set things up at Innovus so we can have an encrypted link back to Innovus, with passwords as if you were on site, which we are going to do experimenting with for Melbourne. Maybe we would use that facility so at least it is encrypted between the two centers. Security is a valid point something I hadn't thought of.

Overall, RB is keen to get on with the implementation of this technology and virtual teaming but he is a bit hamstrung by the fact that one in two people that wanted to get involved in setting up the technology are distracted by "real" work. He says, *"we're all extremely busy and it cuts into other things."*

RB believes that for now limitations in the technology present significant barriers to wide spread implementation across the company. Malfunctions are an added complication, which are unlikely to go away completely, but he believes they will become less of an issue in time. His objective at Innovus is to have it set up the system in such a way that for the other managers, who are not particularly technical (some of whom are rather nontechnical) it's a "no-brainer". He explains:

If someone calls them up, they say okay it's there, and it kicks in. I guess the technology will be my limiter. It's got to be that good or otherwise it won't be used, and therefore you lose a lot of the benefit of it. An

important piece of this is to make the technology familiar, so when my chief executive is meeting with Graham in Melbourne, the technology makes the way he looks and sounds familiar to him, so it's not off-putting. He is just doing business. He's not thinking what a pain, the screen is that size or whatever.

Toward the end of the training, RB commented on what he believed might be some of the key issues when working virtually. Changing team membership is unlikely to be a major issue in the near future although there will be people who move on and others who join the team. There will be new people as Innovus opens new offices in which case new branch managers will join the management team. There may be an issue should the time come setting up a management meeting with a half a dozen virtual participants as well as another half a dozen people co-located managers. RB thinks:

It may be better to have an Australian lead manager with the other Australian offices reporting to Graham, and Graham is part of the management team back in Wellington and he fronts for all the offices in Australia. As I said we haven't worked that one through yet.

Another important team issue that may be difficult to achieve in a virtual context is credibility among team members. RB recalls one time when a long-term team member crossed swords on particular issues with a new team member. Over time the newer team member was able to establish some credibility both within the team and in the office and the first guy came to understand that the new member knew what he was talking about and credibility was established. He thinks:

In a virtual team, that kind of peripheral understanding of another person's ability is not going to happen. It's much more likely that they will say the guy does not know what he is talking about.

In virtual teams credibility may be established based on a team member's ability to accomplish tasks in a timely manner. If the task is obvious to other team members then they will be credited for it. If the task is not obvious for some reason, and here RB points to support tasks, where there is quite a diverse range of things that people have capability in that might not be so obvious, there might be difficulties in establishing credibility. He explains:

In Melbourne they may be rushing off doing a fantastic job in an area that nobody here can see. So when they make some comment, which is not of general interest, we may not take as much notice of that.

RB believed that if the technology worked well, then it might have a powerful effect on the dynamics of a team in other ways. Team members might be more open and frank about matters and there would tend to be more equitable participation with all members having a chance to express themselves. He said:

If you can see the people and you can talk, and you don't have to think about that (technical) side of things, there is some real richness that can be created. People can be little more frank and a little more honest than is sometimes possible in a group meeting.

His reasoning is based on his experiences in face-to-face meetings, where he said:

Quite often a face-to-face meeting is dominated by one or two people, whereas I think in a technology-filtered meeting, people have much more likelihood in being able to say what they want without being so intimidated by other people. Quite often the people who have good ideas are the quiet ones who are thinking about it and not actually pushing them."

One of the issues in the forefront of RB's mind is the issue of building virtual relationships and trust and building between people at a distance. During the training program it occurred to him that setting up the technology to link the Melbourne and Wellington office might build better trust between the two centers and the benefit that may hold for the organization as a whole. He explains:

I don't mean trust at a professional level of trust, but just getting to know the person, building a relationship with Graham in Melbourne. To my mind, that's the key output or objective of a lot of this.

According to RB, building team identity is more than just the passing of information back and forth, it's making Graham feel a part of the Innovus team in as many senses of that word as possible. RB has no doubt that Graham is a capable manager who will build up the Melbourne office and do all the things that are important to the company, regardless of whether they are in constant communication with him. But RB is looking for the technology to do more than facilitate communications. He elaborates:

But trying to keep the flavor of the culture of Innovus and trying to spread that to Melbourne is one of the key products of trying to get this thing between us going. It's kind of like that old saying "he who grows alone, grows crooked". I know that Graham on his own without regular contact with us would go out on his own tangent. His divisional location would have a different culture than ours. But I see that as being quite an important objective in all of this- to try and build some synergy in the cultures.

RB pointed out that there are a lot of ways to support team identity besides technology:

We have already talked about making sure that Graham has our photograph and things like the more non technical aspects of virtual teams that I am keen to pick up on.

The issue of team identity came up in a big way at Innovus recently when they took over what is now their fourth division, a small web-design company, Extrados. When Extrados first joined Innovus, the management noticed that they were losing their identity and it was having an effect on their morale. They did not know who they were any more. They were part of Innovus, but they were not. Eventually management solved the problem by allowing the new division a separate name that gave them their own identity. RB said:

It is interesting to see the difference in morale from just having a name. I found it fascinating they wanted to have an identity, a name that they could call themselves. At Innovus we have our subcultures like my group, Systems and Support - SAS. So they have a strong identity. But we are all part of Innovus and we are familiar with that, but since they had come to Innovus they did not have their own identity. It's just not knowing what to call yourself is quite disorientating.

This got RB thinking about what will happen when Innovus starts forming virtual teams made of members from different offices, functional groups and countries:

We would want to give it a name, something imaginative. People will say something like I am part of the E Commerce virtual team. So that will give them a team identity, bring a flavour of the other subcultures into the team, from the other divisions.

RB has been involved as part of a team or managing a team for quite some time and has had some experience with having team members removed from the main team, but usually not too far. In such cases team members would regularly meet, weekly or biweekly. In his experience, a team performs best when there is a strong, positive culture in the team where everyone is focused on the same goals. In his mind this is an essential component of virtual teams, being able to keep everyone understanding what the goals are, and the path the group is taking to achieve those...:

...so that everyone is kind of singing from the same hymn sheet. That strikes me as being the biggest challenge with virtual teams, not just getting some way to say now we are going to work on this or develop this particular document. Teams are more than that. Trying to get that right is kind of a challenge.

While RB believes tasks can be accomplished efficiently without having met somebody, he thinks that this is quite different from working in a virtual team.

For him, a virtual team involves working together toward common goals over a long period of time. It involves substantial relationship building. He explains:

I think it becomes much harder to sustain the dynamics of it. Unlike doing some task with someone else, building a relationship with that person maybe very difficult over the phone.

Although he has not yet had the opportunity to facilitate a virtual team, RB predicts several issues will be problematic.

There was some discussion on how directive a facilitator might need to be in notifying virtual team members when activities have started or when participation was required. Without the informal "popping" into an office to remind someone, you are left with e-mail or telephone to manage this virtually. With his co-located team it is RB's preference to walk around just before a meeting begins to get people moving. But he believes that an e-mail to virtual team members announcing a meeting would be enough to get them there. He says:

If it were virtual I would be sending e-mails out saying it's on a 4:00. I would feel confident that people would be at their PC ready to go.

He thinks if it were a virtual meeting, it would be much more diarised and because he don't see other people sitting in the office at their desks, they would probably be much more likely to actually log in at 4:00 and be ready.

In a normal team environment, people will quite often just wander up to each other to ask questions, something that can not happen in a virtual team. He feels maintaining good communication channels is going to be much more difficult in a virtual team. RB's response to this would be a greater focus on the scheduling of regular Netmeetings, perhaps two or three times a week to take care of both formal business and to build bridges. He explains:

Maybe one meeting a week for important business, and maybe a couple of half hour meetings each week to chew the fat and build the dynamics of the team. Because there isn't that casual interaction, I think it would be very cold or static to have meetings once a week when you have no other contact with the team.

RB recalls one instance when one of his staff was working off-site for two weeks. He suddenly realized that the guy wasn't even around. If he had been gone for any length of time, RB explains:

You would have almost forgot he even existed. It was like out of sight out of mind. And I think it's important that doesn't happen in a virtual team.

RB thought the possibility of using ICQ (an online software that notifies team members when another member is online, thus facilitating synchronous communication) might eliminate the need for scheduling multiple meetings every week, thus allowing for the dealing with an issue as it arises, as well as the strengthening of interpersonal relationships.

He believes he will need to get into the habit of staying in touch with dispersed team members, just as he has the habit of quite regularly getting out of his office and walking around just to see what's going on. He says:

It's a habit and I think it's important to do that, and I think as you say it would be important to look on every now and make a point of making a comment to them (virtual team members). I think after a while it would become part of your working habit.

However, just as chatting in the corridor can become a time-wasting productivity problem he is concerned the same kind of problem could happen in "virtual" corridors using ICQ and netmeeting technologies. It might even be a greater problem because this kind of computer chatting is not as easily monitored as when it occurs in the office. He surmises:

I bet at the end of the day, providing individuals are productive in what they are doing and you have got some measurability for what they are doing, which I do, then you can measure them by their output not by whether they spend a long time in chat.

Motivating virtual team members is a big challenge for team leaders or facilitators. People respond quite differently to different forms of feedback. Even in co-located teams it takes time to determine what an individual's primary motivator is: money, prestige, recognition, etc. Identifying an individual's motivator is often more challenging than actually delivering it. As RB explains:

Given a couple of months with a new member of the team and I can figure out what their primary motivator is and I can play to that. Once it can be identified, if it's a financial reward based on achievement of goals, you can then set objectives and then reward accordingly.

According to RB it would much more difficult to identify a virtual team member's motivator, "what makes them tick". He feels it would be necessary to meet face-to-face and spend some time with them to get a much richer sense of what is important to them. He says:

I would find it much easier to say over a beer what is important to you than in a chat room. I am saying this with a lot of experience with teams, but not very much experience with virtual teams and the potential for technology

In June 2000, it was announced that Innovus was purchased by another company, thus further delaying any formal implementation of a virtual communications strategy. In RB's own words:

You may have read in the paper that Novus has recently been purchased by Synsystems. Synsystem is another Wellington based Consulting & IT company. I suspect that Innovus (as we know it) will cease to exist in the next few months. Events leading up to this has distracted me for some time. Between Synsystem and Novus we now have two Australian offices (one in Melbourne & one in Sydney). Therefore we will be re-thinking how we best communicate between the centres. The information we covered at in our sessions will be very useful in determining the best way to communicate between these centres.

Cycle Two Participants

RW - Imbrogio Political Consultants

RW is the Managing Director and principle consultant for Imbrogio Political Consultants (Imbrogio Corporation Limited). The company was formed in 1996, with the aim of starting the world's first Internet-based political consultancy. Imbrogio now has over 40 associates based in the U.S., Europe, Russia, Australia, New Zealand, Asia, South America, Canada, and the U.K. The virtual team he facilitated during the training program was managing a political campaign in Oakland, California.

Notable characteristics of this project include:

- a virtual organization that always works via virtual teams
- most of the project ran concurrently with the training program
- the facilitator never met the other team members.

RW agreed to participate in this research project for a number of organizational and personal reasons. He runs a virtual web-based organization that is reliant on the use of virtual teams. Imbrogio Political Consultants has reached the point where the time spent managing the teams is precluding RW's involvement in further growth and he was very keen to pick up anything which would make the task of virtual team management easier. As he explains:

Virtual team working is the very foundation of the organization and also my single biggest headache. As the Director of Imbrogio it's my job to try and assign a suitable Associate to each campaign (which involves a lot of on-line negotiation with both the client and the Associate, who is a free agent) and then to ensure that that Associate gets the support and back-up they need from other Associates and from Imbrogio itself. Managing the virtual teams working on campaigns is by far the biggest consumer of my time.

RW emphasis the virtual nature of his organization:

The team is the organization. Aside from the supplementary PR and political work I undertake in NZ, Imbrogio exists entirely in cyberspace and relies totally on its network of Associates.

RW wanted to expand his comfort zone and find techniques for dealing with people virtually. He feels he is on the precipice a lot working virtually. He needs to be able to empower people he does not really know well and at the same time ensure his clients receive good value:

I feel I need to sit on the shoulders of people all the time. I would hate to leave the client out there hanging.

RW was also looking for the answer to a number of technical issues.

The way Imbroglia operates as a virtual organization can be summarized as follows.

When a client approaches Imbroglia (through its web site at <http://www.Imbroglia.net> or via one of its Associates) they first discuss their requirements with the Director, RW, or Senior Consultant, TH. A 'lead consultant' is then assigned to the campaign - this is usually (but not always) the Associate closest to the geographical position of the campaign itself. That person then becomes the primary point of contact between the client and Imbroglia. The campaign physically operates through paid or volunteer staffers. Imbroglia's role is to act as a 'think tank' providing campaign ideas and strategy through the lead consultant, as well as back-up services online. The lead consultant determines whether they can handle a particular task or problem on their own, or whether to access the Imbroglia network. They can do this by sending a message to a closed e-mail list of all Associates, or to any Associate or group of Associates, as well as to the Imbroglia office in Wellington.

When the training program began, RW's original project idea was what he called the Greek Project. This involved a client who claimed to be a prince endeavouring to assert the independence of a part of Northern Greece, and his claim to be its hereditary ruler via the United Nations and other mechanisms. This involved new territory for RW and he saw it as a big challenge. However after conducting some research on the prospects of the client and the campaign, he realized it was a non-starter.

By the second training session, RW had decided to go with a school board election in Oakland, California that had begun a month before in December, 1999. This was his back up project. School board elections can be highly politicised. RW's client was up against the local mayor's chief of staff, who was backed by a local business PAC (Political Action Committee, essentially a blind trust for campaign funds) to the extent of US\$500,000 for one seat on the school board and to support a measure on the ballot, which would allow the mayor to appoint 3 school board positions to the elected five. If he won this he would have control over the school board. The election was to be held on 7 March 2000.

RW's client was a white Jewish man, which according to RW was seen to be a handicap in what was a predominantly black community. Besides the mayor's stalking horse the other main candidate was a black activist women with strong community ties. RW's client probably never had a realistic chance of winning. His main goal was to oppose the mayor's candidate and the ballot measure.

The project began in a rather sudden and haphazard way. RW received a request from the potential client in Oakland just as he received an application from somebody in the same area wanting to work as a consultant. The client was running for the local school board and the consultant was a graduate student in political science at the University of California, so they were relatively well-matched in terms of client needs and consultant skills. RW put them together in an on-line conference call (text-chat) and within a couple of days they were

working together. The rapidity with which the team was put together meant that none of the normal "infrastructure" was put in place. As we will see later this missing infrastructure caused some problems later on. Even the signing of contracts between Imbrogio and the client and the consultant was neglected. RW explains:

And so when the check had not arrived, I went back over that administrative structure and realized that I had just left that behind in the day to day campaign of press releases and other things. So last night I got contracts off to both of them for review.

The core virtual team for this project team included RW, the on location consultant, Dana, a grad student from Cal Berkeley, in Oakland, the client, Bob, in Oakland. Another senior consultant, Mark, in California, near LA was consulted when RW thought he could be useful. However Mark was usually extremely busy and his billable rates were higher than Dana's, so it was not really cost effective to use him.

At the beginning of the training program, RW made it clear that the biggest issues that he had to deal with were organizational. The financial limitations of being a small business has the greatest impact on RW's implementation and facilitation of his virtual project teams and his business in general.

RW points out that the way he and large companies operate with respect to selecting team members is vastly different. Large companies have the resources and money to hire someone in a remote location. The executives will either go there or the applicants will come to the head office to be interviewed and there is the opportunity to have all the human and nonverbal cues that are so helpful to make selection decisions. RW must rely on applicant web pages, e-mails, references, and if those are positive than synchronous chats and telephone calls. Checking references can be difficult in countries where English is not spoken. RW explains:

All the people working with me, with the exception of two people in New Zealand, I have never actually met. I deal with them mainly online and occasionally by telephone and it's difficult to put a great deal of trust in somebody with a relationship that tenuous. I have to somehow work through the technology to be able to establish the kind of relationship I want to be in had I the resources to do it the other way.

Because RW can not yet afford to hire administrative staff, he must do nearly everything himself, so he is very busy. This has prevented RW from developing the information systems that Imbrogio needs. For nearly a year he has been meaning to set up within the Imbrogio website a secure intranet for consultants so that there is standard documentation that consultants can download, and a message board for internal communications.

Another issue that RW is facing is the structure and size of the company. Imbroglia at a growth phase where it needs to take the risk of some permanent administrative employees, but doesn't quite have the guaranteed level of income to justify that...:

...but if we don't take that step then I won't be freed up enough to make sure that our income grows. We are in a Catch 22.

In the middle of the training program, RW related an incident of what he termed a "great failure of communication". This critical incident highlights a number of the challenges for a facilitator working virtually, particularly the need for team and communication protocols and the difficulty of working geographically apart across time zone. This incident could have had serious implications for the campaign. It involved a press release that went out without RW's okay. It happened because there were no explicit protocols for the writing and release of press releases, only implicit protocols. The reason that there were no explicit protocols was because of the rushed implementation of the team (described above). RW goes on:

As I explained above, we hadn't got these protocols in place. One of the protocols that I assumed they knew was in place, because we had always done it before, was that no press release goes out without me checking it first. Any consultant, no matter what their seniority, must check their press releases with me. If the press release goes out with my name and/or my company's name on it I see it first.

In this case RW was out of contact with the other team members for 12 hours on a Sunday, which he notified them in advance about. RW always tries to keep both the consultant and the candidate aware of his movements. In this incident the consultant wrote a new press release, which was based on an e-mail discussion that RW and the consultant had had going on all day about the mayor's fund-raising - the fact that he was not declaring who was giving him his money. The consultant in the press release used terms such as "were suspect".

This press release went to RW on Saturday (with a copy to the client) and he spent considerable time on Sunday rewriting it using language that was legally safe. RW sent the rewrite back to the consultant, but unfortunately the client, in a burst of enthusiasm, had already released it. He sent RW a single-line e-mail stating, "oops it's gone". RW says:

We had a sweaty-palm, white-knuckle week waiting for the mayor or his gang to take us to a California court.

For RW the fundamental lesson of this incident is that there has to be some team norms or protocols. When somebody joins Imbroglia as an associate, these things are explained. There is an associate agreement that covers all these things. RW will have an informal chat when a campaign comes along to discuss how

will work it. Unfortunately none of that happened for this campaign. He explains:

We were just thrown into it. Dana and I exchanged e-mails, and the first on-line chat we had included the client. So we just had to throw Dana into it without any of this preliminary stuff. It had been doing surprisingly well, up until that point of the press release.

This incident led to a thorough review of team protocols. As it was the client that released the press release, it is clear that the protocols will have to include the client as well. RW says:

And that's why I've spent so much time in the last day or so trying to get some of the norms and protocols ironed out in this team, as well as getting contracts signed and clearer understanding than what we have had. This is really a wonderful example for you and for others of what not to do, of the potential pitfalls in working virtually.

RW had very limited choices when it came to the use of communication channels. Because of financial barriers, face-to-face is not an option. Telephone is only used very occasionally, usually at the initiation stage of the virtual team when he might speak with the client and the consultant. By default, RW facilitated his virtual team by on-line synchronous text chat and e-mail, which happily for him was his communication channel of choice. He also was very interested in working with desktop videoconferencing and setting up a company intranet. Because of his strong personal preference for communicating by e-mail, he seemed to assume others felt the same way as he did. He assumed they also could use this channel as effectively as he did. Over the course of the training, RW was able to reflect over a number of incidences that would open his eyes to the potential hazards of relying on e-mail to convey personal messages. In the end he came to realize the place higher context channels can have in virtual teams.

RW prefers e-mail to other communication channels as he considers it the most efficient, especially given the amount of work he has to do, though he does recognise its limitations. He explains:

I would rather send an e-mail than use the telephone, simply because of the amount of work I am doing. It's quick and efficient. I would rather e-mail some questions and get back written responses than call on the telephone and talk about life the universe and everything.

When I started using e-mail many years ago one thing that used to really annoy me was emoticons. I used to think this trivialized communication, but now I find I am using three per sentence because there's a lack of depth in this particular channel.

RW illustrates his problem with other communication channels with the following incident. It's clear he is facing a real dilemma:

I just had a meeting with a client that went on for 70 minutes and the business could have been taken care of in an e-mail. So this is why I rely heavily on e-mail. It actually does strip away the social niceties and having coffee and allows you to get to the point. I'm not sure what to do. I cannot afford the time it takes to talk to people, but I can see that there are holes in the e-mail model that need to be addressed.

RW is very comfortable sending and receiving e-mails. However, through the course of the training he became more sensitised to its limitations and to the way others view it. These limitations had to do with skills in writing effective e-mails and the lack of media richness with e-mails

A miscommunication over the client's preference not to have his photograph put on his campaign material was primarily caused by an e-mail format/content decision and a lack of contextual cues. The client's preference was conveyed to RW in an e-mail covering several other important issues. RW simply focused on what he took to be the more important points and glossed over the client's misgivings:

He did mention his misgivings in the first instance, but he did not put it out there very strongly and I dismissed it. If he had said that in a face-to-face situation I would have picked up the nonverbal cues how stressed he was about the whole thing. But as a throwaway line in an e-mail on 10 different subjects....

Referring to a point made in the training, RW reiterated:

One topic, one e-mail. In this case one-tenth of the e-mail did not actually get the attention one e-mail would have got on that subject, because it was not expressed as fully as he would have done if he expressed it verbally, so it was dismissed. E-mails can not really deal with that kind of emotion, and emotionally underpinned issue like that.

In another instance during the training but outside of the virtual team, RW discovered the inadequacies of e-mail and on-line chat. He was talking to a friend, with whom the only contact he had was on-line or on the telephone, and he said something to her and she replied, "but how can you possibly know me?" RW was taken back:

But I said we have had conversations on life the universe and everything using those two mediums, and the fact that it was over a cable rather than at dinner in a restaurant - there was nothing missing for me. But clearly she did not feel the same way.

Another downside to using e-mail is e-mail overload, which RW suffers from. This is in part due to organizational issues, particularly being a virtual organization. He is being copied every e-mail message between any two people working under the Imbrogio umbrella, be they consultants or clients. On some matters he would like to be left out of the loop, but he not sure how he can arrange this, as he is the focal point of Imbrogio. As he explains:

I get copied in to every message between any two people that are out there, because they haven't met and the link is even more tenuous between the consultants. I am getting floods of e-mail on stuff. As a courtesy my opinion is quite often sought. I am finding that my two to three hours of e-mail answering is stretching out to eight.

In a real office, even a real office that communicates a lot by e-mail, they would never copy the CEO on every communication and that's kind of what's happening at the moment. I can see it and understand it. I guess I have got to discipline myself to just read it and file it away appropriately without feeling I have to have my five cents worth in it as well.

RW uses the telephone, but because his organization has 40 consultants spread out around the world he can not afford to make international phone calls to have "water cooler" type of discussions. He tends to call consultants and clients to initiate projects and to discuss the fine details, which would take him too long to do by e-mail. The calls tend to be very focused discussions and he does not get a very real sense of the person he is talking to. It's very businesslike. But during the course of the training he became aware of the value of the telephone in building relationships and dealing with emotionally wrought situations.

RW has had some experience with audio conferencing but does not think it is a viable means of exchanging ideas because of its chaired format and the limitation of having one speaker at a time talking. No one else can jump in with a question. He complains,

It's annoying, and as soon as they get the technical issues sorted out so I can still hear the other people who are on the line when I'm talking then I think it'll be a useful tool. Meanwhile when anyone says teleconference I cringe. At least in an on-line chat although it may get out of hand, people can interrupt.

RW has used synchronous on-line text-based chat as his primary "real time" communication channel. It is an Internet "intranet" and documents can be posted and shared among participants. RW uses it to initiate relationships and discuss campaign strategies. It is cost effective, essentially free and provides a written record of the discussions. However there are some drawbacks. It can be very difficult to facilitate discussions and it lacks media richness providing no contextual clues. The ways RW uses chat and some of the issues associated with it are discussed below.

RW finds the difficulties with chat increase exponentially with the number of participants. It is extremely difficult not to have side issues going on. He said:

I have gone into public chat rooms and the list that scrolls up must go up into the hundreds although I never counted. And many times you'll see two people having a conversation and the screen will clear before you see a reply or the response come, so some people try to use different color text. I don't know how they cope quite honestly.

RW led a focused group meeting in a chat room with half a dozen people present and it was chaotic. This meeting took place with people experienced in electronic communications. RW first went through the protocols on how the meeting would run and how participants could contribute. He also reminded participants during the meeting. But still there were often side conversations between participants....:

... and you try to say **excuse me**, but it's like talking across a table when somebody else's speaking. It's very difficult thing to do. The meeting got out of control.

RW observed that text-based chat shares many of the same problems as e-mail where people get trapped saying things about the boss in their e-mails. When using chat people will often "talk" across another conversation:

People will never speak across you at a face-to-face meeting, but will do it in a chat because they think it's just a line and people will know I'm talking to Bob and will ignore it. It doesn't work. It just gets confusing. People are trying to scroll backwards and the chat box is trying to scroll forward. It gets completely out of hand.

RW has heard about a system called, Tele-o-Log which apparently it is working in Saxony for running large group meetings. Somehow in this system you can raise your hand virtually and the moderator will say you may speak:

Something like that might help in synchronous meetings but in my experience so far they are utter chaos.

RW also discovered issues of relationship building in his use of chat. He doesn't think there's anything lacking particularly in an on-line chat when responding in real time as in a conversation, in an informal way. But a woman he knows told him that it was extremely inadequate. She felt that she could not know somebody until she had met them. This was an eye opener for RW:

We had a long and at times heated argument on that topic. I said it was ridiculous - I know your opinions on issues and the way you work, think, whether you are in a good mood or bad mood. I can almost tell by the speed that the letters appear on the screen. I pick up those nuances and I

assumed that everybody did. She said, you're not a stranger to me, but the relationship between us is completely different from someone I go and meet every day, even though I might talk to you for four hours every day.

Intranets are usually associated with internal organizational networks running on LANS or WANS, but they are now available, often free, on the Internet. Anybody can create one. They can be password-protected with an invited membership. A whole host of services are available, including discussion boards, synchronous chat, document posting, group e-mailing and more. RW's use of synchronous chat took place in such an intranet.

In discussing the possibility of making the intranet a team's default web page thus creating a virtual team space, RW points out:

There's a lot of competition for portals on personal computers. You would really have to justify the value of the intranet to capture that elusive homepage.

RW thinks there is potential for programs such as ICQ to provide an informal "backroom" relationship-building channel for teams. ICQ is seen as a way to keep in touch with friends. He relates:

I have never had a serious discussion on ICQ. It is always hi, how are you, or let's meet in a chat room. It does seem to be seen as a social medium, so therefore you start using it with a whole different frame of mind. If somebody wrote me a really formal message on ICQ, I would say 'what?!', although this message might be entirely appropriate with e-mail.

RW is very interested in using Netmeeting or a similar video conferencing product, but he has run into a few problems. The biggest one is the compatibility issue. RW has investigated a number of products and found that there is a complete lack of agreement of standards. It is difficult finding a system all his consultants can agree on. It seems they all have their favorites and nobody really wants to switch. He says:

Netmeeting seems to be the closest thing to a standard that everybody has. Not particularly well marketed, not particularly well understood. If you say let's use Netmeeting, an amazing number of people will say, I have never used that before, what do you have to do?

RW feels Netmeeting would have definite advantages in his virtual teamwork. He believes people will be more comfortable sharing information speaking rather than typing. Although he has no difficulty sharing information and building relationships in a chat environment, during the course of the training he has

become more aware that some people do. He is determined to find away around this problem:

There is no point in ignoring those feelings. It's now an intention of mine to push quite strongly on the business side, and even with my personal contacts, that we shift some of our communications into Netmeeting. And for the moment, until full-bandwidth video is available, Netmeeting is probably our best option. It's been interesting that my level of comfort with the technology has been deluding me about how other people feel about it.

The election for the school board was on 7 March, while the training program continued on for another three weeks. RW was able to use this time to reflect on what he came to consider important issues in facilitating a virtual team. He also began work with a new client located in Wellington and with whom he was able to meet face-to-face. This gave him some instant comparative experiences on the advantages of face-to-face communication, particularly at the beginning of a relationship.

Being geographically separated from his team, RW gets caught up working across time zones. Part of the problem has to do with his clients and consultants being overseas and part with his difficulty in releasing control of projects to his consultants. He explains:

I have been working through until 7:00 am sleeping until 9:00 am and coming into work, and I am quickly realising that I can't keep that up.

In addition to the financial difficulties in selecting and hiring team members as described earlier, RW finds the pool of talent very limited especially when employing people for part time, temporary work. Sometimes there is no choice. In this school board campaign, which was very low budget, RW could not put somebody on to it who was going to charge several hundred dollars an hour:

It just so happened an inexperienced, younger woman arrived on the scene looking for a job just when we were looking for someone. So I had a quick look at her CV, one e-mail to a reference and put her together with the client and just let it happen.

The conditions were probably not ideal. RW couldn't be sure she would be a match for the client. But RW does not have the luxury of advertising, selecting and interviewing employees. He explains:

I did have a phone call with her, and I thought not exactly my ideal match in heaven, but there was no option. I did not have the luxury to think what are my criteria for virtual team members. Geographical location, a pulse - you're on!

This haphazard selection of consultants puts a real strain on RW and a mishap could damage the company's reputation. He tries to make up for it by controlling the campaign closely, but this is a strain as well. He says:

That's why am wearing myself out hovering over the thing all the time and double checking everything because our reputation is on the line. In this team everything has been OK but only because I've been up until three or four in the morning checking everything out.

During the training we did an exercise where RW wrote down what he should be looking for in his virtual team members. It was a valuable exercise and it "really woke him up" having to put down on paper his criteria. He came up with...

... "hands on" experience in political campaigns or a good degree in political campaigning. - Personal Internet access (i.e. can collect email at someplace other than the library, a friend's, or a cybercafe), and the ability and willingness to check for email several times a day. A clear understanding of the benefits and strictures of teleworking -- ideally some experience of having worked this way, though that's not essential - A willingness to not only passively await assignment but also to seek work from local campaigns. Ideally, adeptness with not only email but other comms technology such as chat, teleconferencing, and maybe video conferencing (not that we've used it yet)

Motivating virtual team members is another issue that RW reflected on. The consultants are motivated partly by money, partly by the excitement of being in a political campaign. Some are motivated by the opportunity to gain experience. The challenge is often in getting them to express more enthusiasm and motivation, particularly to the client. He says:

I don't think I have had a problem with motivation. We don't take people who are not motivated. When we interview consultants that's the first thing I can find out about them, whether they're motivated or not.

It's difficult to get consultants to say to the client, I'm motivated I want to help you to win! It's not what people do.

Working virtually, RW has come up with some strategies to motivate his consultants. When he is using on-line chat with a consultant and it is very late their time he makes a point of saying 'hey it's 3:00 in the morning your time', just to acknowledge that they are working then. He explains:

And then the time sheet come in and they will put their six hours on Tuesday and I will say no actually gives me the hours because quite often those are quite late hours. I want to show the client that you were working past midnight because when we bill him he might feel easier

about writing the check, knowing the hours we're working for him to show him we're motivated.

Motivating clients is not usually a problem. They want to win so they are very motivated. Usually the problem with clients is focusing their motivation. The challenge in RW's business is that the client becomes a member of the team, because not only are they the client but they are the product and the service that is being sold:

So you have this highly motivated, but often unwieldy, team member. It's an awkward dynamic, because the client is what is being sold and it can get very personal and emotional.

Relationship building and team reflection take back seats in virtual teams according to RW. He commented that the nature of virtual communications is very focused. There is very little emphasis on social chit chat and relationship building. He explains:

It's a mindset thing - if you fire off an e-mail or you come into a net meeting, time is precious, we're using all this great technology, we better get down to business. You just don't send an e-mail or convene a meeting or even just pick up the telephone and say hi how are you, did you have a good weekend, all those sort of water cooler things that go on in a real office. Rather you immediately launch into it, here's today's load of problems or tasks to be undertaken. I think this is because everyone is aware that a meeting is being convened on-line and everybody is in different time zones, and people think, yes I will stick to the point.

Also because of the emphasis to get things done when working virtually, there is no time for reflection. RW explains:

So reflective "how are things really going, are we doing things right, do we need to pause and take stock" don't actually happen.

The whole communicative experience between RW and the client is indicative of the challenges and traps of virtual communications. Although it is normal procedure to telephone a client once RW feels they're serious about retaining Imbroglia's services, this time because of the rush it didn't happen. RW never spoke with the client by phone. He says, "I would not know what the guys voice sounds like."

They had a chat room communication and a tremendous amount of e-mail, but no phone calls. Thinking back about why that actually happened, RW says because of the rushed way the team came together they just exchanged e-mails, with RW saying 'yes we can do this job, meet me in a chat room, and I will bring the

consultant in'. Then the consultant and client went away and started work. Says RW:

It then seemed almost superfluous to telephone and say hi Bob it's me how are things. Thinking back, we probably should have done that.

RW realized that not being able to build relationships or reflect on how things are going is a serious weakness in virtual communications and he is looking at ways to resolve the problem, but he suspects there will be resistance:

I have been tossing around for the future some way of saying, oh well let's meet for the hell of it. But you really cannot put it like that, because people will think, "heck we do enough of these things and we have real work to get done."

Building virtual relationships is a great challenge for RW. Because he faces budget constraints he can not afford to fly around the world to meet his consultants and clients. He finds that even making phone calls to socialise is not financially possible. Over the course of the training he recounted a number of incidences where the lack of relationship with his client and consultants led to misunderstandings and he came to understand that he will need to invest more time and resources into building relationships. These incidences and lessons are related below.

One incident concerns the low context, task-oriented channel, e-mail and highlights how ineffectual and even dangerous e-mail can be when trying to convey humor or emotions. The client was not very outgoing for a political candidate. RW was constantly telling him he had to kiss babies and shake hands if he was going to be elected. RW asked the client to send him his plan for the last two weeks of the campaign. The client's plan consisted of dropping brochures here and there and putting them under car windscreen wipers. So RW responded with a sarcasm-laden e-mail:

...saying something like cars don't vote for people, people vote for people. I meant it in a light-hearted way. He got upset with my tone. I was not able to convey my underlying humor to him in an e-mail, even with an emoticon and he took it as a rather harsh reprimand of his campaigning style. We have since straightened it out and he made a joke about it in his last e-mail.

This was just another another example for RW about how e-mail doesn't work very well when you're dealing with an emotional issue.

Another incident that was most interesting to RW was that although the client had many concerns and reservations about the campaign strategy he only expressed his concerns on the day of the election and afterwards. RW believes

part of this was because the client deferred to RW's expertise during the campaign. The consultant also had issues that she had not raised during the campaign. RW now believes this happened because they had not formed close enough relationships before and during the campaign. He reflects:

One thing I learned in the last couple of weeks on the facilitation side of things is now that the campaign in California is over both the client and consultant are talking about what we did right and what we did wrong. A lot of issues are coming up as I said before that hadn't come out before because we did not know each other well enough.

Building trust virtually is another big challenge for RW. Although he believes there is a basic level of trust at the start of a relationship, which remains untested, he believes real trust only develops over time and particularly when people come through in the clutch. It's an emotional thing. As he explains:

It's one thing to have money at stake, it's another thing to have a company's reputation at stake, but we're dealing with clients whose personal reputation is at stake. It can get very emotional.

The most emotional time in the campaign was when "some little neighborhood newspaper" did not endorse the client because they said he had dirty hair. Of all the things thrown at him, he took the greatest offense at that. RW went through a great "ego soothing and spin doctoring exercise", writing e-mails to the editors of the newspaper. The incident built up a lot of trust between the client and RW. He says:

There was a distinct shift in the relationship between us when I jumped into his defense. We got an apology from them in the end. Because we had sort of been through the fires, the trust level between the client and I increased.

RW thought about it and could not see how other than over time that this kind of trust could be built. He explains:

As in any relationship trusts can only happen over time, through actually being tested. And trust can increase or decrease. If you start to mistrust somebody that will increase as well. It's a dynamic process. You can't orientate somebody in trust. Trust is too ephemeral.

RW is not sure how trust can be developed up front in a virtual team. He is not convinced that setting up standards and rules of behavior will develop trust. As he says, "words are hollow." This is one area in virtual team work where he can see very little difference from face-to-face team work or any other human interaction. RW says:

You can say anything, but there is always some doubt until you can prove that you will stand by what you have said.

And according to RW, because there are no "visual cues" when working virtually he believes one has to work harder to make sure there is a baseline level of trust:

To go beyond that in any situation I don't think can be done until you stand beside someone.

Due to the global nature of his organizational work and his limited budget, which prohibits travel, RW rarely, if ever, meets his clients or consultants face-to-face. However after his school board project ended, he immediately picked up a local client based in Wellington, who of course he can meet face-to-face. The contrast in managing the teams involved led to some insights. RW came to realized the value of face-to-face relationship building and the near impossibility of building such relationships virtually. He explains:

It's interesting to go from a virtual campaign straight into, almost at the same level, the campaign here in Wellington working face-to-face. We'll have the meeting, get the policy work done, but then the campaign director and I will walk outside and have a chat in the car park about what's really going on. You cannot have a "car park chats" virtually. Every attempt to create that kind of atmosphere artificially in a virtual environment seems to me to be just that, artificial. You cannot open a bottle of wine or even share coffee on-line, and so to say we're going to have that kind of meeting, for me anyway, just seems to be silly. So talking in terms of inspiration and perspiration, the stuff of virtual meetings tend to be the stuff you expend perspiration on, and not the stuff you're looking for inspiration on.

Even with videoconferencing RW wonders if he could have "gotten into the inner psyche" of his client...:

...who has a large inferiority complex about being a white man standing in a black seat. He would never have said anything like that unless perhaps it had got late and we were relaxing a little. It then comes down to the people I am working through and I will have to reevaluate how they relate to clients.

The challenge as RW sees it will be to evaluate his clients through the eyes of his consultants who may be working with the clients face-to-face. Part of the difficulty is that Imbroglia charges by time, and he has always emphasised to the consultant to get in and do the job and make it clear to the client that every billable hour is worthwhile. So it is difficult to bill the client for relationship building time. He ponders:

Maybe what we need to do is to make it clear to the client that over lunch the time is not billed and maybe we go Dutch and in this way develop some social relationships. I am coming to the conclusion that we're missing something.

The effect of cultural differences was another issue that RW stumbled into while working virtually. Throughout the campaign there was some tension regarding issues of race and culture, although RW was unaware of many of them until after the campaign when the client became more forthcoming with his misgivings about the way some things were done. During the campaign the client tended to defer to RW's opinion. It was only after the campaign had started that RW realized that his candidate was a white Jewish man running in a predominantly black area

When he had the chance to work with an Albanian, a culture he did not know at all, he made a great effort to learn all he could by talking with local Albanians, contact the Ministry of Foreign Affairs and the like. However dealing with his client in the US he made some incorrect assumptions concerning the importance of his client spending time at a Black Muslim bakery. The client knew that this was an important constituency, but RW did not. He explains:

In America, you feel you know it, because the culture is imposed on you.... I said to myself, oops, and my client looked askance at my lack of cultural sensitivity. I thought to myself, I don't actually know American culture. American culture is not sitcom land, and you need to do your research.

Race in this country (NZ) is not the same as it is in the United States. There are a lot of things, with a bit more discussion before hand, I would have been aware of, but I was not and I stumbled into a number of holes because of that.

RW's client had some good black endorsements including one of the three founders of the Black Panther movement. But when RW did some material for him, the client said he don't think his photograph should go on it. RW thought that was crazy:

You can't wrap a paper bag around your head in an election campaign. It's no good trying to hide it.

RW firmly believed people take a lot of visual cues from things and he thought his client looked like a sedate trustworthy kind of a person that you would want on the school board, so they went with a photo and RW heard nothing more about it. Later when the campaign was finishing up the client explained a lot more about why he did not want his photograph being used:

He was getting feedback from some people saying this was almost an "in-your-face" challenge in that area. I still have not got my head around some of the dynamics of this African-American area.

AR - SN New Zealand Limited

AR is a senior consultant with SN New Zealand Limited (formally Azimuth Consulting Limited) which is now part of the Intelligroup, an international consulting organization with offices in the USA, UK, Europe, Asia and Australasia. AR's project was part of a much larger SN project with a four-partner consortium working with a government ministry in a South-east Asian country (AR and SN have requested that specific details of the project and the parties involved remain strictly confidential to the researcher). AR's project was to write a Strategic Business Plan for the client, which was completed just before the training program began.

Notable characteristics of this project include:

- the use of a global virtual team
- a facilitator with a fair amount of experience working globally via virtual channels and in virtual teams
- a very tight non-negotiable deadline
- the project was completed before the training program began
- research data is based on a "de-construction"²² of what actually happened.

AR's experience working virtually goes back to 1992 when she took a Diploma in Communications course, which was done via audio-graphic conferencing at three NZ sites. One paper was done jointly with University of Hawaii. This paper required students in NZ to team up with those in Hawaii to undertake a project. AR learned a number of valuable lessons about virtual teamwork from this experience. She explains:

I never actually met the Japanese and Chinese students I worked with at the time, which created some interesting intercultural experiences.

More recently AR contracted to a small multinational firm based in New Zealand that had companies in about seven or eight countries. Her job was to develop a communication and information strategy with them, which was done primarily through virtual communication channels as they regarded travel as a perk. In that position, AR dealt quite closely with a German man in Homburg, who she never met.

AR has been working in the IT field for nearly 30 years - as a developer, manager and consultant and has been a senior consultant with SN (formally Azimuth) for the last 2.5 years. For the last 21 months or so she has been working mainly on a series of related projects for a Southeast Asian as part of a larger consortium of 4 companies. Some of the time AR has been based in Asia and at other times in Wellington. She was on a global virtual team, which wrote the proposal that won the consortium the contract. She recalls:

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²² The term "de-construction" was used by AR. By its use, she means an analysis of her experiences in her recently completed virtual team project.

I was in Wellington, the Azimuth Asia Director was based in the Philippines (but he was constantly on the move throughout Asia and Europe), our Asia business partners were in Asia and the other contacts were in Australia and NZ - it was a huge effort, done in a very short space of time and would have been completely impossible to have achieved without e-mail, etc.

AR sums up her experience and her reasons for wanting to join the training program:

So I have significant interest/experience with virtual teams from different ethnic and cultural backgrounds - but I am no expert - there is still an awful lot for me to learn. Mostly my virtual team experiences have been great - but there have been one or two pitfalls along the way.

I have done much of my work by "the seat of my pants". I would like some kind of structure in terms of learning to set up an organised system, the sorts of things that make a good virtual team, the sorts of things that make things work well, the things that can be done differently. I am particularly impressed with all the other bios I have read from the other participants. I look forward to both learning and contributing.

The project that AR had recently completed and which she was "deconstructing" in the training program involved a global virtual team with members from New Zealand, Australia and the Southeast Asian country where SN's staff were on location with the client. The project's deliverables were a Strategic Business Plan, a Strategic Technology Plan and a Strategic Overview in two languages, English and the client's language. AR was assigned the task of compiling a major portion of the deliverables herself, consolidating and editing the input prepared by the various consultants on-site in Asia. She also had to manage and organise the research and writing of IT Trends, which was shared out to a range of SN consultants in New Zealand and Australia. All this to a very tight deadline. She explains:

Essentially I managed all the offshore work undertaken in New Zealand and Australia. I also maintained a vital communication link via phone and e-mail with a staff member from the Asian consortium partner, who was in charge of the translation effort and who played an important role in gaining client acceptance of the report contents as well as negotiating changes to it.

The deadline was completely non-negotiable because of the need to meet critical dates within the client's annual budget cycle.

According to AR, because of various personnel changes in the overall project team, the project management of AR's project was quite challenging. These changes included a new overall project director being appointed just weeks before AR's project started as well as the transfer in of a new the lead consultant

in strategic planning. Because of the tight deadline, the new project manager took a very hands-on role in the project in both his dealings with the client, AR and through her the other offshore consultants. AR never met either the new project manager or the staff member from the Asian consortium partner. As AR summed up after the successful completion of the project, "this was truly a virtual team".

As this was a "deconstruction "of a completed project, nearly all of the data comprises AR's reflections and analysis of the issues she encountered facilitating a virtual team and the strategies she used. Some of her strategies were "seat of the pants" or intuitive, and only with reflection was she able to measure their level of success and to consider other ways of managing things.

Because AR was working with a global and culturally diverse team, she took special note of cross-cultural issues. During AR's diploma course with the University of Hawaii student's she was working with many students of Asian descent. She soon realized that these students behaved differently with respect to authority figures then did the New Zealand students. They showed great deference towards their academic staff. This was manifested in two ways, by addressing them by their full title and by not really asking them questions. These differences had a significant impact on the virtual group interaction. AR recalls:

Trying to get questions from that side and bringing them into the discussion was a little bit difficult. So you had the respect toward authority which was overlaid with the difficulties with English. Some of them had good English, but let's face it wasn't their mother tongue.

This experience was revisited when she worked with team members from the Southeast Asian country in her project. When she led her virtual team, AR had to communicate respect in her virtual communications with her Southeast Asian team members. Her dealings with the team member from the Asian consortium partner, someone she had not met previously, were particularly illustrative. The strategy she used to communicate respect was to mirror the format of this man's e-mails. She explains:

I suppose the only difference I found with him was that he used to send me e-mails saying, Dear AR. So I naturally sent e-mails to him saying Dear Pang Chung Chai. Whereas with other people in the group I send e-mail us saying hello or hi or just their name. So it was just sort of a different way.

The contrast in this respect between her Southeast Asian team members and the Australian and New Zealand members was pronounced and AR was aware that the effect was more wide ranging then simply addressing e-mail. She recounts:

The Southeast Asian consortium partner and the clients have very different attitude toward authority. They were more respectful. In the West critical doesn't have to necessarily mean a negative criticism.

Putting forward arguments can be positive, without being rude. The Southeast Asians have a very respectful attitude.

AR pointed out that communicating via technology can be an added barrier when working across cultures. When working through a text-based or an audio channel, you do not have the visual cues with which to judge people's true feelings. As AR says:

In some cultures people will smile even when they're angry at you. Of course this is the problem of your only using one channel. If you're not getting the other cues, it makes things much more difficult.

Even using an audio channel, where you can judge the nuances, the coloring, and inflections of a voice and perhaps can tell whether people are feeling frustrated or angry, the problem remains that you must know the person or their culture very well in order to form an accurate interpretation. AR explains:

Some cultures may get very excited when speaking while others may speak calmly and slowly. Each could be misinterpreted by the uninitiated.

A concern that AR brought up early in the training program was with a difficulty she had with the lead consultant, who was on location in Asia. She had repeated difficulty establishing reliable communication with him. A couple of incidences with this team member, which greatly disturbed her, are related below. She discusses the facilitation strategies she used at the time. As a result of this incident, she reflected long and hard about the issues involved and how she as a facilitator might have handled it differently.

The first incident concerned the editing of the strategic plan. The translators (on location) were having difficulty with the sentence structure in one of the chapters. The consultant asked AR to simplify the sentence structure. She agreed and rushed to complete the job, which took "many, many hours". As she was nearing completion of the job, she called the consultant to tell him she was nearly done, to which he relied, "the translators only have about 10 more minutes worth of the chapter to translate."

AR recalls how she felt:

He had left me hanging there doing all this work unnecessarily, although not long before he had told me this work needed to be done. All that work I had done was wasted. Apparently they had not had a problem at all.

When AR asked him why hadn't he let her know that the translators were nearly done, he said he did not think about it. AR analysed the situation in terms of working virtually versus working face-to-face. She surmises:

Previously I did not appreciate some of the things that are necessary in working virtually. I know that I told him a couple of times at that stage that I rely on you to tell me these things. If I were up there in Thailand in the room I could see what was going on. Nobody would have to tell me. Yet he told me there was a problem and I told him what I would do. He did not realize the import that we had an agreement then I would do this and that I was working to this agreement, hearing nothing else to the contrary. And I had rung him as a courtesy to tell him when I would be done and then he tells me it's not necessary.

In another incident, the consultant had basically "gone off the air" for two or three weeks, although it seemed really unusual in this very urgent project that he was not communicating and AR was sending him repeated e-mails requesting information. She concludes:

When working virtually it sometimes takes a long time before it filters through to you that something's wrong. And then all of a sudden you're kind of thinking where is that guy.

Rather than come down hard on the guy, she checked before she "sent an obnoxious e-mail", thinking "maybe the guy's wife is sick". So AR consciously made an effort to keep the lines of communication open. Her "softly softly" approach yielded an "astonishing" reply:

I telephoned him. Please tell me if I have offended you in some way. He said, well I am a Yorkshireman and we go quiet when we're thinking. I was astounded by this. I felt like saying I don't care if you come from Mars, I need this stuff.

Working with this guy really opened up AR's eyes about the challenges of working virtually. She offers this vivid description:

I could not see what was happening on site and he was not telling me. He had to be aware of the fact that he needed to let me know what was going on or if the situation had changed. Otherwise I would be proceeding in the wrong direction. I often felt, quite viscerally, that I was flying around at night without night vision goggles on. You had your maps here and you were working to that, but meanwhile if somebody had shifted something on the ground and they didn't tell you, you would not know until you hit it.

These two incidences led AR to conclude that a facilitator needed to be aware that one of the fundamentals in a virtual team is communication and when working virtually you have to specifically be told, because you literally cannot

see what's going on. She termed this basic function, "proactive communication", and continues:

When you're working virtually, you are really flying blind. You are dependent on other people for keeping you up to date with what's happening on their side. Because we're without all the sensory cues in face-to-face communication, you really have to let people know what's going on. And when you are actually on the other side of the world it's not part of your environment, so all you can go on is what was agreed on. So you have to be much more aware of the others I think. You need to be pro-active, because if something changes you have to let the people know.

She goes to explain the consequences:

Most projects today have significant time pressures - a lack of proactive communication, especially if it occurs repeatedly, can be exceedingly frustrating for off-site team members. Virtual team members need to be the "eyes and ears" of off-site team members.

The lead consultant never did come around and communicate proactively and evidently, the people on location were having similar problems. When she realized the extent of this problem, AR made the Asian consultant her main line of communication to the site project. She elaborates:

The lead consultant was working directly with the people on location. I understand there were similar sorts of issues there except they weren't probably quite as pronounced because the others had the visibility than I did not have.

And then explains the steps she took to deal with the situation of the uncommunicative consultant:

I only started to talk to the Southeast Asian gentleman sometime after this problem with the lead consultant. I got onto him and thereafter I used him as my main communication channel. I found he was much better at keeping me updated. I did not have to ring him very often at all. Maybe I only rang him a few times.

AR's primary communication channels were e-mail and telephone. Her comments about these channels and how she used them mirror her experiences with them, including those with the lead consultant discussed above. AR seemed quite aware of the contextual limitations of e-mail. She recalls:

I found the lead consultant to be not particularly communicative. He did not seem to understand what was involved. I told him that doing this

project by e-mail was like night flying, you only had the instrument dials. The other person could pick up so much just by what was going around him.

She goes on to explain her feelings about e-mail:

In face-to-face meeting people can size each other up and see who is acting like a leader and naturally gravitate toward that person. But with e-mail you can't gauge these things, in fact some people might have no input at all. On the other hand in e-mail people listened to the idea rather than the personality. Also with e-mail, if it is working well, you can have parallel input as opposed to a meeting where only one person can speak at the time.

She was also particularly aware that e-mail was a very poor channel for establishing personal relationships. With this in mind, one of her strategies as a facilitator was to try to make a special effort to develop a personal relationship, generally by phone, with team members. By establishing a personal relationship, AR could also learn more about what motivated her team members, their preferred communication styles, and much more, all of which she found would help facilitate the mostly e-mail-based working relationship. She explains:

The other thing may simply be having some kind of phone contact up front in which explain that we worked in a pressurized environment and have found that e-mail is quick and efficient. Maybe even have some kind of ground-breaking type of conversation. Like I have found that there are sticking points when I am not tuned into a person. At least with a phone call I can get a feeling for them and they can get a feeling for me. But also by getting to know them I can find out what their motivations are. It just makes things easier to get some kind of grasp of who you are working with.

She recalls what she said to her team members:

I remember saying to them first off, I'm probably going to pester you, but initially it's really important for me to understand how you work as individuals so I can like think inside your head. This made it easier for me to e-mail the people. It's quite interesting, I have looked at my e-mails that I have sent to the different people in that project and I actually adopted quite different styles for different people.

Besides using the telephone as a virtual relationship building channel, she also used the phone as a backup channel when her e-mail did not appear to be "connecting" with her intended recipient. She says:

I used calls if I felt I was not getting back the stuff that I needed from them, as in this case. In this case I picked up early on this was going to be a problem.

There were also communication channel issues having to do with a lack equal access to technology among team members in countries with developing infrastructure, which was the case in Southeast Asia. In AR's case, although the Southeast Asian consortium partner she worked with had e-mail access, there were times when perhaps she could have worked more effectively with others on his side, but these people had no e-mail access. AR had to use other channels, primarily telephone, when e-mail was not available. She explains:

The on-site translators did not have e-mail. In fact up in that country in terms of e-mail they don't have a LAN or anything like that. The person has to dial up to an ISP whenever they want to get their e-mail. I was also making a lot of telephone calls up there at this time but I was telephoning four or five or more times a day.

AR discussed the problem she sometimes has when working virtually in getting people to do things in a timely matter. In this regard she believes face-to-face meetings offer advantages. She also again emphasis the need for deliberate and proactive communication when working virtually. She explains:

The other thing is the timing of it all. If it were not virtual, if it were in the office you would have a face-to-face meeting and you come away from him with action steps and things to do. People would know what they had to do. And in face-to-face meeting people can size each other up and see who is acting like a leader and naturally gravitate toward that person.

She further elaborates her point:

There is that small example that I already talked about, the acknowledgment of the report going into the basket in the face-to-face situation. It comes through the lack of something that it becomes more obvious if it's remote, because if it comes through an e-mail or phone call it's more obvious. When it's just around the office it can be just an acknowledgement, like a nod and that does it. If you were not getting acknowledgment in a face-to-face situation, you could easily go to somebody, maybe run into to them at the water cooler, and say did you look it over yet. But if it is virtual it has to be a more deliberate step, and because it has to be more deliberate it's more obvious that the communication has not been made.

Toward the end of the training, AR began reflecting on a whole range of important issues having to do with the initiation and facilitation of virtual teams.

These included team member selection, team building strategies, developing a common team purpose, aligning team member motivation, building relationships and trust, and the like. In some cases these issues were not addressed at the time of the project because of the tight deadline. AR relates what actions she took as a facilitator to manage some of these processes.

AR' experience working with team members from Hawaii on her diploma course provided her with a lesson on the importance of understanding team member motivations and aligning them with the common team purpose. This is a theme she has found to recur again and again when working in virtual teams. She explains:

Speaking of Hawaii, we were enrolled in different courses and they may even have had a different duration. Their course had a slightly different orientation than ours had. The joint assignments, from our point of view in New Zealand, were worth a third of our total grade, whereas from memory the students in Hawaii were not being marked. So there were different motivations, different purposes. When I found this out from ringing them up, and had a long talk with them, and discovered this. Once I found out that different people have a different purpose and different motivation, it made all the other stuff, the preparation, so much easier, because you understood where the other person was coming from. And so you just naturally worked around that. After that it was very successful. Initially I had thought their objectives, their purposes, their motivations, with the same as ours.

AR realized that in her project team, this commonality of purpose was missing, and that this was possibly a major source of the problems she was having with certain team members. She reflects:

I guess that's what I was saying about this recent project on the strategic planning is that my colleague, for whatever reason, was not fully committed to keeping me up to date. He did not see the need for that. That's what it's all about, having this purpose, roles in getting commitments and buy in saying yes this is the purpose, these are the roles. This sort of predetermines what the communication is and how it happens. That's what we need. Without one we are just foundering around. We can list a thousand reasons that we haven't had time to do it, but I think you find that once people are committed they will commit the time needed.

And again, according to AR, when the team member commitment and the team purpose is there, then the communication essential to keeping the team informed will follow.

The selection of team members for this project was generally ad hoc. AR describes the reasons for own selection:

The criterion for picking me was that I was the only one who had been to the site location who fitted the particular bill at the time. I had a lot of knowledge about the client and the project, and I had also been there, so I knew a lot of the people. My role was two parts, one to allocate and manage and resource all the people on the project, the specialists, the research and the write-up. Second part of my job was to take the notes from interviews done on site and compile them into a report based on my understanding

AR was able to select the team members needed for the research and writing of IT trends part of the project. The criterion for AR was people with specialist knowledge. She tried to select members in Wellington where she was located. Although she dealt with them using e-mail, it was logistically helpful to have them nearby as she could call them together if necessary. But AR found it necessary to extend out to Australia for additional help, so she had at least three people in Canberra. She had them working pretty much as a self-contained group. She says:

I dealt mainly with just one of the people over there. I had him look after the other two. It made my life a bit easier.

Out of these groupings of "sub teams" AR was effectively creating a "hub" system with herself at the center and the subteams in Australia, New Zealand and on location working together through her. This "hub" system, which was an unplanned for, ad hoc response to the needs of the project goal, provided several positive outcomes for AR as a facilitator. She explains:

As I said this was really time-pressured stuff. It worked like a virtual team. Again it was sort of like a hub because there was just was no time to work out anything else. The whole thing was in a total panic state by the time it came to me. The easiest way I found was to allocate and manage the people here (in New Zealand) and they were quite happy with that. They have access to me. I was extremely fortunate in having three people in Australia working with me, but I only worked through one of them. I managed the communications with those on location by dealing specifically with three people, although there were many more people involved up there. Those three people had three different roles to play. By and large I tended to deal with each one of them individually. They were physically co-located and acted as a team. Two of the three regarded me as a team member and my membership was distance independent. So although not everyone knew each other and the people in Asia really did not know any of the other people in New Zealand or Australia, because we were operating sort of as a couple of different virtual teams, working through hubs, trust was maintained in that way. That was quite good.

She goes on to say:

I was extremely fortunate in having three people in Australia working with me, but I only worked through one of them. I rang up the other two people after the event and thanked them, but during the project I did not really communicate with them. It worked really well to have it set up like a hub.

Because the project was deadline driven, there was no opportunity for any team building work. Fortunately for AR, the "hub" system negated the need for team building. Essentially, AR acted as a gatekeeper between the three sub teams, which operated quite independently. She says:

So I was like the hub between what was happening in Asia and what all the people here in new Zealand and in Australia were doing. I was trying to keep each side updated, but really there was very little need for interchange. I got the people briefed on as much as they needed to know on Asia and after that it was deadline driven.

The overriding motivation to meet the goals of the project according to AR was professional collegiality and the fact that this was an extremely time-pressured project. She explained that most of the people on the team were in the same organization, SN, and that there is generally quite a lot of collegiality among consultants:

There were huge things at stake contractually. They were part of our organization. It is a sense of belonging to the same organization, collegiality, that motivated them to get the work done.

Nevertheless, as the team facilitator and project leader, AR had to enrol them a bit, because she was aware that the overriding motivation for consultants at is billable time and that performance bonuses are based on billable time. But in this project there was no billable time for them. AR explains:

We all have to do some of this work from time to time. I had to whittle away at them and call in my heavenly credits.

According to AR, high-performance is achieved when everyone is committed together to the same goal, they feel a commitment to each other as well. She says:

I think that is something that's very important to me, I like to have a sense of the person. Some of these people, even though I have never met them, I have a mental picture in my head about them. You feel you have as much commitment to them as to the client or management.

Upon reflection, AR did not recall any special effort at developing a virtual team identity. However, what she did try to do as a facilitator was to try to give everybody an update every other day on the status of all the things being done in the various subteams. She explains:

Just bullet points down, it took a bit of doing, but I needed to keep on top of things anyway.

This strategy had several positive outcomes. For one, the project director was extremely grateful for the updates as it gave him confidence the project was moving forward. AR extended the strategy in a way that extended kudos to team members who were doing a good job, but who might not otherwise be recognised. For example

She might e-mail the project director informing him that "while something was not ready, so and so was working on it and that she have utter confidence that it will be ready by a certain time". Working this way was asking a lot of the project director who had never met AR and who was having to accept her word that she had utter confidence in another person, somebody once removed from the project director. The result was to give team members a virtual presence to other members of the team. She recalls:

What happened with one particular person I remember - his work was so good - in fact what I did was when his work came in I sent it directly to the person in Bangkok. I said normally I would not do this, I would have edited it first, but I just wanted you to see it, how this fellow picked up a complex area in something he previously had no knowledge of and he has done an absolutely incredible job.

AR explains her strategy:

So I guess to create virtual presence, I tried to get each of the team members to know what each of them was doing. With most of the dozen of these people, it was great and with some of them spectacular. Of course there were a couple people I had to push or even help out. I felt it was really important that the people who did a good job actually be recognized for what they had done, because it was a mindless task and they had no actual presence in the project. Otherwise they might feel oh hell I'm coming here and working my butt off, but nobody knows.

In co-located teams, team closure is often an important part of the team experience. But as AR recalls, it can be very difficult to recreate virtually, not only because the team members are in different location, but also because in this project, the team members that are on location are still working. But she clearly senses that closure is important. She explains it this way:

There's an unwinding professionally, but often there's an unwinding personally as well. You don't need it on all jobs, but when a job has

called for a huge amount of commitment, there's the personal side of things as well. But when you work virtually, you have to be careful, because maybe I finished my job, but others are still working on their tasks. In fact after I finished my reports, others had a massive production job to make them presentable and professional. So I was careful not to put my need for closure on to those people, because they still had the final stages to complete. So you're left with a funny feeling of being done but not done.

As for the local New Zealand- based team members, AR recalls:

What we did do here, but a week later, was all go off for lunch, which was quite a lot of fun. And that's a nice way of winding it down, by I was still very conscious that the next day it still felt funny.

As we have seen from AR's comments above, as a facilitator she is very concerned with the development of relationships and trust between team members. She made special efforts to contact people by phone to develop a personal relationship before shifting to an e-mail- based working relationship. She comes up with another strategy:

The other thing I can suggest, and I agree how hard it is to have that kind of social interaction virtually, is to have people report weekly and then maybe there's a chance for some social contact, although you would not call it that, but there would be time for some socializing. It's a work call, but also a social call. It's hard to do it but it is worthwhile.

As AR explains, it is very important for her to know the people she is working with:

I like to get to know the person and to understand their motivations. This is quite important for me, the sense of the person. Although there are many people I have never actually met, some I have never spoken to on the phone, but I always try to get some sort of sense of the person so that I can almost see them in my mind. I find that once that happens everything gets much shorter, because I sort of know where the person is at.

The consequences of not understanding the people she works with, according to AR, could become a problem:

I talked about my need to sort of get inside of people's heads and to discover what they are really about, what they are after, how they work, and how best to communicate with them. It's easy to give offense with an e-mail when no offense is intended. Maybe we are being flippant or

ironic. We need an understanding of the people and the people have to be clear about what their individual role and purpose in.

AR also found that the "hub" system of organising her sub teams helped to create a kind of trust she termed "referred" trust. She believed the team in Australia would get the work done because she trusted her primary contact in Australia. In the same way, she sought to increase the project manager's confidence in the project being completed on time though her attempts to extend her referred trust to the team as a whole.

Another kind of trust among virtual team members, according to AR is based on reputation. She explains how this kind of trust helped her as a facilitator:

In terms of building trust, we were quite lucky. I had been on location in Asia. I met many of the client people and I also met many of the consultants up there. Also I had a track record, having worked on the bid that won the job in the first place, so people knew that I could deliver on very short time frames. The level of trust people had in me, rightly or wrongly, was fairly high. That was fortunate.

In the last session of the training, AR talked openly about both the benefits of her organization using virtual teams and some of the organizational policies at SN that could impact on a virtual team's performance. It was clear to AR that this project would never have been completed by the deadline without the use of a virtual team. She explains:

There are certainly significant savings to the company having people do the work in New Zealand, because the company will certainly be billing for our hours at rate, which incorporates overseas allowances. Virtual teams are a great way to make use of specialists, because they may be needed on the team, but if you have to send them physically overseas, it sometimes means you had your specialists sometimes doing tasks that could be done by generalists."

AR continues:

In point of fact, while it is good to have people by your side, if we had tried to get all these people up to Asia, we probably would never have met the deadline. Although people are shipped out almost overnight, there's still that week or two when people get their families organized, get their visas, get this, get that, get tickets. All these things take time. In this project the deadline would have been months longer. Also having me here, although in many ways it would have been good to have been Asia, was actually better because I was able to be a sort of a mentor, I suppose, to the people here. If I hadn't been here to give them some sort of an overview of the project and keeping them together and on track, I

think again the whole project would have folded. I think being here was actually quite pivotal.

In spite of the benefits of virtual teams to the company, AR thought some of the company's HR policies, those having to do with performance incentives in particular, could discourage team member efforts. These include the convergence of off-shore incentives and performance bonuses based on billable hours. AR explains:

For people who work offshore there are really substantial allowances over and above normal packages. These packages encourage people to go offshore, because we have far more work offshore than we do in New Zealand. What we found in this project is that we had a lot of people offshore working and getting all these high allowances, but the people in New Zealand and Australia received nothing, just the normal packages, no bonuses. So there is an issue there with both groups working the same hours but one group is getting a substantially better package. Those sort of things can cause some resentment.

As for performance bonuses, AR has this to say:

The other issue was that the people in Asia were able to build, up their time in the project, which contributes to their billable hours and their performance bonuses. Whereas the people in New Zealand and Australia who were called on to help out were not able to bill our hours even though a large part of the document was written here. So those sorts of things can be quite different and difficult.

AR hopes the company will take a careful look at policies on virtual teams and compensation. In this case, AR explains, there may have been extenuating circumstances:

It's hard really, because it was a crisis situation and at the time we did not even have an HR manager. Now we have an HR manager and maybe there will start to look at those issues. How do you actually do this in a way that's fair and equal. There are certainly significant savings to the company having people do the work in New Zealand, because the company will certainly be billing for our hours at rates that incorporate overseas allowances.

Another organizational issue that could affect future virtual team performance that AR picked up on concerned the lack of organizational procedures or protocols for mining and managing the experiences and knowledge gained by the company's virtual teams. As mentioned, the use of virtual teams at Sera Nova is ad hoc. No company policies on their use exist. AR analysis the situation in this way:

I guess on the consulting side of things it tends to be organized around the client so much. And we tend to forget that there are a lot of in-house things: there is the what you do and how you do it. The what you do is really for the client, but how you do it is really your own internal H.R. policies, processes and all sorts of things. If there are debriefs and we do PQA's (professional quality assurance) again it tends to be focused on the what - the deliverable for the clients. Seldom if ever do we look at the how - how did we run this, how can we do it better, etc.

AR elaborates on why her organization may be missing out on opportunities to improve itself through some form of a knowledge management system:

If you are reflecting, how you as an organization, handle something you're not getting billable time for it. It's a short-term view rather than a long-term view. The short-term view is how do we get more dollars, the longer-term view looks at how we can do things more effectively. When the focus is on performance bonuses and billable hours that's what people are concerned with. There's no payoff for thinking about processes and I guess that comes back to human resource policies.

When you're in a fire-fighting crisis mode, you tend to use the technologies you're familiar with. You don't have a lot of time to experiment because you can't really afford to. So it's this kind of crisis management, just do it. Again it comes back to longer-term views, human-resources view, looking at what are the things we have learned, how can we do it better, than what sort of training and development, etc do we need.

Finally, AR considered the impact of working in global virtual teams on a regular basis. She realized that in the future people would increasingly be working across organizations and cultures. She says:

And that becomes more difficult again, because when you were within an organization of course even though you may be in different countries there is at least a general organizational culture, there are at least some norms you can relate to. They may be implemented differently in different parts of the world, but there are some rules. But when you're working inter-organizationally, there can be a whole number of things that you have to suss out at the beginning. So in fact one employee in one organization could be working with different organizations at the same time each operating slightly differently in each of the different joint ventures.

Dear Global Partner

If you're like me, you are always open to opportunities to learn that will enhance both your business skills and your life experience. This is one such opportunity. I'm inviting you to take part in a learning experience in working across cultures in a virtual team.

Those of you who attended the World Meeting in Buenos Aires may recall the presentations that I gave to the Board and to the meeting about the necessity for Global Partners to begin the process of working together in virtual teams - teams separated by geography, time and culture but brought together to service the needs of multi-national clients. Quite a lot of what I said at that time had been influenced by some conversations I'd had with David Pauleen, who at that stage was lecturing in cross-cultural communications at a local tertiary institution. David's a Stanford graduate in oriental languages who has found his way to New Zealand (as a lot of very bright people do). He is currently doing a PhD at Victoria University of Wellington looking at communication between global, multicultural virtual teams.

David's interest and Global Partners were meant for each other. We need to learn how to work together in virtual teams. He needs a case study for his research of a global multicultural organization working together in virtual teams. Because I want to learn more about effective working in virtual teams I have agreed to assist David by facilitating a process amongst Global Partners to set up one or more virtual teams to take part in a project that will benefit the participants and Worldwide Partners. Our President Patricia Fiske and the folks at Headquarters, (Margaret Terrian in particular) have endorsed the project.

What we aim to discover and learn about are:

What are the fundamentals for successful global virtual teams?

How to use the technology that's available and what technology works best for us.

How to facilitate and lead virtual teams.

How to prepare for meetings.

How to facilitate synchronous meetings using such technology as "Chat" and "Video Conferencing".

We're looking for participants who can see how taking part can help their business and who are prepared to put a minimum of time and effort into it - perhaps as much as a half hour to an hour a week. I'm hoping those who can see the value will self select. We're looking for a team of up to six or seven people to take part. (If we get more, maybe we can run more than one team.)

Our first task will be to decide on our project. So the first call on team members will be to suggest a project that would benefit Worldwide Partners, that a virtual team from around the globe could develop. The field is wide open. Just respond to this email with your suggestion plus a short paragraph about why you think your project would be worthwhile. I will assemble the suggestions and put the suggestions to the group who wish to participate so we can vote on them. (This process might involve a few

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rounds to sort out the group's preference.)

That's enough for now. If you'd like a fuller explanation of the research process that David is engaged in let me know and I'll get David to respond to you. Otherwise if you would like to participate and take this opportunity to learn new skills that will put you and your company ahead just respond to this email. The email address for this project will be my personal email address - d.w@xtra.co.nz not my company email address. If you've got a suggested project include that but if you haven't but would like to participate, respond anyway. (If it's not for you but there is someone else in your company who would like to participate, please pass this request on.)

I'm heading off to Shanghai on Friday to the Asia Pacific Meeting of Global Partners and I'll be back in New Zealand on the 22nd of November. It would be great to have a stack of email waiting for me.

Thanks for your time

DW

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