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CYBERSENIORS: EXPLORING THE USE OF COMMUNICATION AND INFORMATION TECHNOLOGIES BY OLDER ADULTS

by

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ABSTRACT

This thesis addresses the question, "from the perspective of a holistic model of health and well-being, in what ways do older adults use communication and information technologies and the related services they provide (CITS), and what meanings do CITS hold for older adults who use them?" After discussing literature in this area, two case studies of computer organizations oriented to older adults are conducted. Participants in the case studies appeared to derive the greatest meaning from using their knowledge about CITS to help others, share their experiences in face-to-face communication settings, and feel up-to-date. Some participants also encountered barriers when using CITS, but they seemed willing to tolerate these barriers, or felt it was not their place to overcome these barriers. The possible association between the findings and issues such as ageism, technological utopianism, and technological dependence are also explored.

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TABLE OF CONTENTS

Approval Page ii
Abstract iii
Acknowledgements iv
Table of Contents v
List of Tables viii

CHAPTER ONE: INTRODUCTION 1
Background and Research Question 1
Significance of the Research Question 2

CHAPTER TWO: LITERATURE REVIEW 8
Introduction 8
Part One: Philosophical Perspectives on CITS and Technology 8
Liberalism-Positivism: The Dominant Paradigm 8
Alternative Perspectives 13
Part Two: Aging in Canada 18
Demographics 18
Health Levels 19
Socioeconomic Characteristics 19
Psychosocial Characteristics 19
Anti-Ageism 21
A Holistic Model of Health and Well-Being 21
Part Three: Older Adults, CITS, and Health and Well-Being 22
Benefits of CITS Discussed in the Older Adult Literature 22
Section Summary 29
Potential Barriers to the use of CITS by Older Adults 30
Chapter Summary 32

CHAPTER THREE: METHODS 34
Introduction 34
Phase One: Survey 36
Background and Instrument 36
Recruitment and Procedure 37
Analysis 38
Phase Two: Interviews 38
Member Interviews 39
Peer-Trainer Interviews 40
Staff Interviews 40

CHAPTER FOUR: SURVEY RESULTS 41
Introduction 41

Part One: Baseline Member Characteristics 41
Gender 41
Age 41
Marital Status 42
Education 43
Household Income 44
Employment Status and Primary Occupation 45
Residence 46
Physical, Sensory, and Emotional Difficulties 47
Volunteerism 48
Part Two: General CITS-Related Experiences, Attitudes, and Behaviours 49
Previous Computer Experience 49
Possession of Internet Accounts 49
Attitudes about Computing 51
Computer Applications 56
Part Three: Network Specific Findings 57
ElderWeb 57
Creative Retirement Manitoba 62

CHAPTER FIVE: DISCUSSION OF SURVEY RESULTS AND INTERVIEWS 67
Introduction 67
Part One: Discussion of Baseline Member Characteristics 68
Gender Differences 68
Age Differences 68
Income 70
Marital Status 71
Part Two: Positive Experiences Participants Associated with CITS, ElderWeb, and CRM 72
Volunteerism 73
The Importance and Meaning of Information to Participants 75
Communication and Social Interaction 78
Mental Acuity, Entertainment, Relaxation, and Creativity 81
Potential Benefits for the Homebound 82
Financial Advantages 84
Part Three: Negative Experiences, Challenges, and Barriers Participants Associated with CITS, ElderWeb, and CRM 86
Financial Barriers 86
Human Factors and Training Issues 88
Computer Addiction 91
Inappropriate Content, Invasion of Privacy, and Computer Viruses 93
Lack of Involvement in Decision-Making 94
Obstacles to Political and Democratic Participation 97

Part Three: General CITS Issues 97
Computerization in the Workplace and its Relationship to Older Adults 98
How Participants Felt about Older Adults who do not use Computers 100
Differences Between the use of Computers by Older Adults and People from other Age Groups 102

CHAPTER SIX: CONCLUSION 106
The Research Question Revisited 106
Fruitfulness of the Theoretical Framework 111
Limitations and Methodological Considerations 112
Future Research 115

ENDNOTES 118

REFERENCES 121

APPENDIX A: ElderWeb Member Survey 130

APPENDIX B: Creative Retirement Manitoba Member Survey 135

APPENDIX C: Network Versions of Volunteer Request Form 140

APPENDIX D: Meeting Versions of Volunteer Request Form 142

APPENDIX E: ElderWeb Member Interview Questions 144

APPENDIX F: Creative Retirement Manitoba Member Interview Questions 149

APPENDIX G: ElderWeb Peer-Trainer Interview Questions 153

APPENDIX H: Creative Retirement Manitoba Peer-Trainer Interview Questions 155

APPENDIX I: ElderWeb Staff Interview Questions 157

APPENDIX J: Creative Retirement Manitoba Interview Questions 161

LIST OF TABLES

Table 1. Gender of ElderWeb and CRM Members 41
Table 2. Age of ElderWeb and CRM Members, by Gender 42
Table 3. Marital Status of ElderWeb and CRM Members, by Gender 43
Table 4. Education of ElderWeb and CRM Members, by Gender 44
Table 5. Yearly Household Income Levels of ElderWeb and CRM Members, by Gender and Martial Status 45
Table 6. Employment Status and Primary Occupation of ElderWeb and CRM Members 46
Table 7. Residence of ElderWeb and CRM Members 47
Table 8. Physical, Sensory, and Emotional Difficulties Experienced by ElderWeb and CRM Members 48
Table 9. Volunteerism Among ElderWeb and CRM Members 49
Table 10. Number of Years ElderWeb and CRM Members Used a Computer, by Gender 50
Table 11. Proportion of ElderWeb and CRM Members who Possessed an Internet Account, by Gender 50
Table 12. Computer-Related Attitudes of ElderWeb and CRM Members 51
Table 13. Proportion of Participants who Agreed or Strongly Agreed that Computing was Socially Advantageous, by Marital Status and Loneliness/Depression (both networks combined) 52
Table 14. Proportion of Participants who Agreed or Strongly Agreed that Computing Enhanced their Health and Well-Being, by Age Group and Presence of a Physical, Sensory, or Emotional Difficulty (both networks combined) 53
Table 15. Proportion of Participants who Agreed or Strongly Agreed that Computing was Financially Advantageous, by Yearly Household Income (both networks combined) 53
Table 16. Proportion of Participants who Agreed or Strongly Agreed with Negative Statements about Computing, by Age Group and Presence of at Least One Physical/Sensory/Emotional Difficulty (both networks combined) 55
Table 17. Proportion of Participants who Agreed or Strongly Agreed that Computing was the Main way they Spent their Spare-Time, by Marital Status, Loneliness/Depression, and Sleeping Difficulty (both networks combined) 56
Table 18. Frequency ElderWeb and CRM Members Used Different Computer Applications 57
Table 19. Reason ElderWeb Participants Joined, or were Thinking about Joining, ElderWeb 58
Table 20. Frequency ElderWeb Members Attended Monthly Meetings, by Gender, Marital Status, and Loneliness or Depression 59
Table 21. Frequency Participants used ElderWeb's BBS, by Gender, Marital Status, and Loneliness or Depression 59
Table 22. Reasons Why ElderWeb Members Used the BBS 60

Table 23. Reasons Why ElderWeb Members had not Used the BBS..... 60
Table 24. Components of ElderWeb's BBS Participants Found, or Would have Found, Most Useful..... 62
Table 25. Membership in the CRCC and SIG, by Gender..... 63
Table 26. Frequency Participants used CRM's SCIP Site, by Gender and Marital Status..... 63
Table 27. Reasons Why CRM Participants Used the SCIP Site..... 64
Table 28. Reasons Why CRM Members had not Used the SCIP Site..... 65
Table 29. Components of CRM's SCIP Site Participants Found, or Would have Found, Most Useful..... 66

Chapter One

INTRODUCTION

BACKGROUND AND RESEARCH QUESTION

Currently, Canada is in the midst of what many people call a computer or information revolution. Not only are communication and information technologies and the related services they provide (CITS) becoming increasingly integrated, powerful, portable, and affordable, but they are also becoming more readily available in many of our everyday environments. Described in this manner, a computer or information revolution is purely a technical phenomenon. However, in both academic and popular discourse, it is also frequently associated with several economic, political, social, and cultural consequences. Usually to the benefit of Canadians, it is argued, developments in CITS are radically changing our lives. Often implicit in this usage of the concepts "computer revolution" or "information revolution" is that the positive (and less occasionally, negative) consequences of CITS are universally experienced by all Canadians, including groups such as older adults, handicapped individuals, and various cultural minorities (Traber, 1986).

Despite the popular tendency to characterize CITS as impacting all Canadians, in reality our society is made up of many sub-populations who appear to differ dramatically in relation to matters such as computer literacy, computer learning opportunities, ease of access to computers, and prevalence of computer use. For example, the 1994 General Social Survey found that 36% of people between the ages of 55 and 64, and only 10% of people over the age of 65 were able to use a computer (Frank, 1995). In contrast, 55% of people aged 45 to 54, 66% of people aged 35 to 44, 68% of people aged 25 to 34, and 81% of people aged 15 to 24 stated they were computer literate (Frank, 1995). The same study also found the ability to use a computer was positively associated with household income levels. For example, 28% of people with household incomes under $20,000, 72% of people with household income levels between $50,000 and $59,999, and 86% of people with household income levels greater than $100,000 stated they were able to use a computer (Frank, 1995). A lower prevalence of Internet usage has also been found among many groups, including older adults (Brehl, 1995; Rowan, 1995), women (Leitch, 1995; Rowan, 1995; "Survey", 1995) and people with less than university or college education (Leitch, 1995; Quinn, 1995).

Given the differences in CITS usage among groups of our society, it is perhaps more useful to discuss the meaning of CITS specific to these groups, than to discuss their meaning for Canadian society as a whole. This thesis takes on such an endeavor with respect to a large, but highly understudied group of our society: older adults. In particular, this thesis addresses the following research question: From the perspective of a holistic model of health and well-being, in what ways do older adults use CITS, and what meanings do CITS hold for older adults who use them? In contrast to much of the literature in this area, which has mainly examined CITS that can offer older adults services such as physical health care, safety, and security, this thesis focuses on CITS that can potentially be used by older adults for broader purposes, such as education, entertainment, information, and communication. To complement this focus, "health" and "well-being" are defined holistically as "the extent to which an individual or group is able, on the one hand, to realize aspirations and to satisfy needs; and, on the other hand, to change or cope with the environment" (World Health Organization, 1986, p. 73). Furthermore, "older adults" are defined as members of the population over the age of 50. Although most policy statements usually define older adults as people over the age of 65, a younger age is chosen because factors such as the current trend towards early retirement have motivated many researchers studying older adults to include people over the age of 50 in their subject pools (Wigdor & Foot, 1988).

SIGNIFICANCE OF THE RESEARCH QUESTION

Traditionally, health and well-being were mainly viewed from a medical perspective. Often referred to in the literature as the "Medical Model", this perspective focused on treating, rather than preventing, poor health and well-being (Fries, 1990). In essence it was a reactive, rather than a proactive model of health and well-being. However, particularly in the past few decades, professional and public attitudes towards health and well-being have started to move beyond this model. Possibly the three most significant changes representing this move are: (1) health and well-being are no longer seen as issues to be dealt with strictly by health care professionals, but also by individuals themselves (Fried, 1990); (2) health and well-being are now believed to be related to many social, economic, and psychological determinants (Marshall, 1993); and (3) poor health and well-being can often be avoided, rehabilitated, or alleviated by proper preventive measures (Fried, 1990). Together, these three changes encompass

the basic principles of a "Holistic Model" (or "Preventive Model") of health and well-being.

Although a holistic model of health and well-being has significance for all age groups, it may have particular relevance to older adults. As Kornbluh (1983) states:

> As elderly persons experience major life changes--increasing debilitation, changes in daily routine, modifications to the external environment, and new socio-cultural demands -- wellness becomes more difficult to maintain and illness more difficult to prevent. (p. 426)

This is not to suggest that health and well-being are unattainable goals for older adults, but that older adults, as a group, have unique needs and challenges that are not always pathological. By moving beyond the medical model, the holistic model offers a more reasonable framework for dealing with these needs and challenges.

If we accept the notion that holistic health and well-being is important for older adults, it seems quite appropriate to ask, when we explore the meanings that CITS hold for older adults, whether these meanings are specifically related to well-being in this holistic sense. The relationship between older adults, CITS, and health and well-being has been addressed in the literature, but most studies are limited in at least four ways. First, most studies predominantly focus on CITS that provide physical health care, safety, and security for older adults. Some of these technologies serve diagnostic, rehabilitative, assistive, and administrative functions strictly within health care institutions. For example, computerized patient records enable caregivers to organize and exchange patient medical files, and virtual reality and video conferencing technologies allow doctors to receive assistance while performing operations (Vienneau, 1994; Watkin, Baer, Jones, Hakim, Diouf, & Khalife, 1994; Wauchope, 1994). Others are used both inside and outside of health care institutions, but still mainly offer physical health care, safety, and security to people. Examples of these CITS include: (1) electronic monitoring systems like LifeLine, which allow people to reach help if they are alone (Monk, 1988); (2) security alarms, surveillance cameras, and public access cards, which make people feel more confident and secure in their residences; (3) electronic compliance devices, which remind people to take medication or perform certain activities (Glendenning, Shadbolt-Forbes, & Forbes, 1991); (4) devices that make it possible to gather raw medical data like blood pressure and sugar levels in people's homes, not just

in caregiving institutions (Ogozalek, 1991); and (5) technologies that offer distance therapy and rehabilitation (O'Leary, Mann, & Perkash, 1991). While these types of technologies are important, focusing almost exclusively on them has meant that a large group of technologies that can potentially be used by older adults for more holistic purposes of health and well-being, such as education, entertainment, communication, and accessing information, have largely gone uninvestigated.

Second, the small number of studies that have investigated the use of CITS by older adults for more holistic (i.e. not just medical or assistive) purposes have generally not questioned the assumptions they make very deeply. Perhaps best labeled as "technological utopians", the authors of these studies often assume that CITS will unquestionably provide older adults with benefits such as enhanced security, self-esteem, autonomy, and opportunities to develop meaningful relationships (Kornbluh, 1983; Monk, 1988; the National Association of Area Agencies on Aging, 1992).

Third, reflecting the utopian nature of the literature, many authors also suggest that older adults have no other option but to embrace CITS. Statements such as the following are common in the literature:

> information technology -- personal computers, telecommunications networks, and microprocessor-based devices -- can significantly assist our elderly citizens in reaching their goals with the possibility of reducing the high expenditures our society makes on behalf of its elderly as well. Indeed, there may be no real choice for the aged members of our society. They must begin to "fit into" the emerging information age characterized by a vast array of information-based products, services, and applications. (Kornbluh, 1983, p. 426)

Beyond giving older adults a passive role in technological changes that could affect their lives, the problem with such claims is that little empirical research has actually studied the extent to which older adults currently use, accept, and benefit from CITS. Rather than interviewing or surveying older adults, or observing their behaviours while using CITS, many researchers rely on their own expertise and intuition for supporting the claims they make.

Fourth, the small number of empirical studies that have been conducted in this area are generally quite limited in methodology and in scope. For example, most subject pools in these studies are small, and are often exclusively composed of older adults who have not previously used CITS. The implications of this are that most

studies are limited to studying the attitudes of older adults towards CITS, testing if older adults are able to use CITS, and suggesting how barriers that may prevent older adults from using CITS can be overcome. These issues are also important, and have probably been the main focus in the literature because the study of CITS and older adults is a relatively recent phenomenon (Hoot & Hayslip, 1983). However, there may still be a great deal to learn from studying older adults who are already using CITS.

It is a central tenet of this thesis that the four limitations just mentioned offer an incomplete understanding of the relationship between older adults, health and well-being, and CITS. To move beyond these limitations, several measures are taken in this thesis. Rather than focusing on CITS that older adults can potentially use for physical health care, safety, and security, CITS they can potentially use for purposes such as education, communication, information, and entertainment are of interest. More specifically, three types of CITS are investigated: computer games and end-user applications such as financial analysis programs, word processors, and graphics programs; computer-assisted instruction programs; and computer networks such as local area bulletin board systems (BBS's), commercial on-line services (e.g. America Online), and global networks such as the World Wide Web (WWW). These applications are chosen for two reasons. First, as mentioned earlier, a large body of literature has already examined the relationship between CITS and the health and well-being of older adults from administrative, diagnostic, assistive, and rehabilitative perspectives. Second, in contrast to the applications that are typically investigated in the literature, these applications are not just potentially useful for health professionals, or older adults who are ill or homebound. Focusing on a broader range of CITS will allow the experiences of a wider spectrum of older adults to be considered.

While this thesis describes claims made in the literature about the potential benefits CITS offer older adults, it also critically examines the assumptions many technological utopians advocate. If the application of CITS for the health and well-being of older adults is to be justified in any way, several concerns need to be addressed. This is why the research question is not framed as "because CITS enhance the holistic health and well-being of older adults, how do we get more older adults to embrace them?" but rather, "in what ways do older adults use CITS, and what meanings do CITS hold for older adults who use them? Only if the latter of these two questions is answered in the affirmative does the former become particularly appropriate to address.

A small number of studies have examined issues concerning CITS and older adults from a critical standpoint. Although these studies are reviewed in the next chapter, at this point it is useful to highlight the four main concerns that have emerged from them. First, some people are concerned that CITS may be physically, economically, psychologically, and socially detrimental to older adults (Crimmins, 1983; Kuhn, 1983; Schroots, 1983). Second, because many older adults did not grow up around CITS, or retired before CITS were integrated in the workplace, some people argue that older adults are neither willing, nor able, to use them (Bowe, 1988; Breakwell & Fife-Schaw, 1988; Brickfield, 1983; Kerschner & Hart, 1984). A third concern is that older adults are either willing or able to use CITS, but are being discouraged from using them (Charness & Bosman, 1990; Frydenberg, 1988; O'Leary et al., 1991; Zandri & Charness, 1989). Finally, it is also possible that older adults are being labeled as infrequent and incapable users of CITS, when they may be using them more than some might think (Leslie, 1995; Rafter, 1996). Regardless of which concern is most justified, the possibility exists that older adults will either be ignored and miss out on a range of technologies that can positively affect their lives, or feel pressured to use technologies that are inappropriate for their own needs and interests.

The final way that limitations in the literature are compensated for in this thesis is primarily methodological. As mentioned earlier, most writers do not gather empirical evidence when they discuss the meanings CITS might have for older adults. Furthermore, when they do gather empirical evidence, they typically study older adults who have never used CITS. Although experts in the field and older adults who have never used CITS are certainly important sources of evidence, older adults who are currently using and interested in CITS should not be overlooked.

To study older adults who are already using or interested in CITS, case studies of two organizations in Canada which have developed computer projects oriented to older adults, ElderWeb[1] and Creative Retirement Manitoba (CRM), are conducted in this thesis. These organizations offer a range of computer services to older adults, including training, meetings, and electronic environments where they can obtain information and communicate with others. Generally, the case study approach is utilized because it allows an in-depth examination of the actual users and designers of CITS specifically intended for older adults to be conducted. As Yin (1994) suggests, "the case study allows an investigation to retain the holistic and meaningful characteristics of real-life

events" (p. 3). By studying older adults who are using CITS, it is possible to gain a greater understanding of their characteristics, how they use and make sense of CITS in their everyday lives, and the positive and negative experiences they personally associate with using CITS. Understanding these issues also offers a side-benefit, in particular, the possibility to investigate if members of ElderWeb and CRM say or feel they have experienced some of the claims made about CITS in the literature. While one could argue that investigating if a group of participants in a case study "say", or "feel" using CITS has brought meaning to their lives does not provide evidence about the meaning of CITS for every older adult, or does not mean other factors beyond using CITS might also explain the statements or feelings they offer, such arguments are not particularly relevant from the standpoint of this thesis. Participants in the case studies are not viewed as a statistically representative sample of all older adults, but as experienced informants who can share rich experiences and insights related to the research question of this thesis. Furthermore, what matters most in this thesis are not any "fixed", "predictable", or "certain" consequences CITS might have, but the meanings that people personally associate with CITS. A more detailed discussion of methodological deficiencies in the existing literature, and how the approach taken in this thesis overcomes some of these deficiencies, is offered throughout the next two chapters.

Chapter Two

LITERATURE REVIEW

INTRODUCTION

Many different claims have been made about what the development of new technologies means to society. Not surprisingly, rather than reaching a consensus, people making these claims have differed in their philosophical underpinnings. In the first part of this chapter, some key philosophical perspectives on CITS and technology that have been forwarded by writers outside the field of gerontology are reviewed. This review is necessary, because many of the assumptions we make about the use of CITS by older adults (and about how this issue should be studied) are embedded in larger assumptions we make about technology and CITS in general. Similarly, because many of these assumptions are also related to our views of older adults, some key findings and theories about the "meaning" of aging are presented in the second part of this chapter. Finally, this chapter concludes with a discussion of the small, but growing, body of literature that has integrated these two perspectives, and studied the relationship between older adults and CITS.

PART ONE: PHILOSOPHICAL PERSPECTIVES ON CITS AND TECHNOLOGY

LIBERALISM-POSITIVISM: THE DOMINANT PARADIGM

Particularly in the past two decades, the number of people working in the information sector (i.e. professional, technical, administrative, clerical, and sales positions) has grown (Dordick & Wang, 1993). This growth has led theorists such as Bell (1973) to conclude that many modern cultures are entering a postindustrial age that is radically different from earlier industrial and preindustrial times. Bell (1973) argues that, in contrast to the move from a preindustrial to industrial society, which was characterized by a shift from natural power (i.e. wind, water, draft animal, human muscle) and raw materials to created energy (electricity, oil, gas, coal, nuclear power) and financial capital, we are now entering a postindustrial period where information (computer and data-transmission systems) and theoretical knowledge are key resources. Elaborating on the basic properties of these resources, Bell (1979) states:

> By information I mean data processing in the broadest sense; the storage, retrieval, and processing of data becomes the essential resource for all economic and social exchanges .... By knowledge, I mean an organized set of statements of fact or ideas presenting a reasoned judgment or an experimental result, which is transmitted to others through some communication medium in some systematic form. (p. 168)

And for Bell, the media that play the most central role in this transmission are CITS.

The notion that we are entering a new age has generated a great deal of enthusiasm among liberalist-positivist[2] (hereafter referred to as "liberalist") writers from several professional backgrounds, including the computer and telecommunications industries, government, academia, and mass media. Although these writers use a wide variety of terms to describe this new age, such as "information society", "information age", "computer revolution", and "information revolution" (Kling & Iacono, 1991, p. 63), they frequently make several major assumptions about its normative characteristics. Perhaps most often, liberalists claim that a quantitative growth in CITS necessarily results in economic progress. By embracing CITS, it is contended, we will receive benefits such as lower unemployment rates, greater access to global markets, and improved communication between producers and consumers. Examples of such statements include: "the [information] highway *will* strengthen Canada's information industries sector and others throughout the economy and create a self-reinforcing cycle of innovation, growth, and jobs" (Information Highway Advisory Council, 1995, italics added); "the information highway will enable Canadian businesses, large and small, to redesign their daily operations, redefine their customer base and expand to new markets, while bringing a new level of cost efficiency to their endeavors" (Stentor, 1993, p. 20); and "In the past, distance meant that choice was often limited to locally produced products. The [information highway] becomes a single giant market and, based on widespread access, increases consumer sovereignty" (Potter & Lee, 1995).

Liberalists also commonly suggest that using CITS necessarily results in positive environmental consequences. Some liberalists argue that shifting the focus of our economy from the production of created energy to the management of knowledge and information will help conserve and replenish natural resources that were exploited during the industrial era (Yoon, 1996). Writers such as Hiltz and Turoff (1978) and Levin (1994) have also argued that "telecommuting" (working at home while remaining in contact with clients and colleagues through CITS) can reduce fuel consumption, and

concomitantly, pollution. On the topic of environmental consequences of CITS, one is also reminded of early rhetoric that equated an information society with a "paperless" society. For example, Toffler (1980) stated, "instead of transporting paper, the new [electronic mail] system moves electronic pulses .... How long the paper will be needed is a matter of dispute" (p. 206).

Another assumption prevalent in liberalist writings is that CITS will overcome the "ills" of our political system. Because CITS provide easier access to public information, enable two-way communication, and promote the decentralization of society, liberalists argue, citizens can play more direct roles in political decisions. As Stentor (1994) claims, "Imagine a Canada ... where voters and constituents can communicate directly and openly with their elected officials" (p. 6). Similarly, Toffler (1980) states, "using advanced computers, satellites, telephones, cable, polling techniques, and other tools, an educated citizenry can, for the first time in history, begin making many of its own political decisions" (p. 146).

Liberalists also often assume that sweeping positive social and cultural changes are in progress, or will eventually result from the growth of CITS. In the information age, for example, CITS make leisure time more possible because they will automate routine tasks, reduce compulsory working time, and allow people to telecommute from their homes (Negroponte, 1995; Toffler, 1980). Through CITS, everyone will also have enhanced educational opportunities. As Stentor (1994) states:

> The information highway *will* stimulate the development of an enormous range of education, training and lifelong learning applications that *will* give *everyone* access to courses, libraries, museums, specialized databases and other people, regardless of location. (p. 18, italics added)

Furthermore, several researchers, such as Hiltz and Turoff (1978), have suggested that CITS offer benefits to disadvantaged groups in society -- benefits such as new assistive devices and enhanced opportunities to learn, seek employment, and discuss common concerns.

Another claim liberalists make is that CITS will dramatically enhance the way we communicate. For example, Stentor (1994) states:

> Imagine a Canada where people control directly when, how, why and with whom they communicate; where they create and exchange information in whatever form they wish - voice, text, data or video - from wherever they wish - home, school, office, factory, car, a mountain top or a cottage deck. (Stentor, 1994, p. 6)

To this, writers such as Van Gelder (1991), Kiesler, Siegel, and McGuire (1991), and Rheingold (1993a) have added that computer-mediated communication can be more egalitarian than communication "in real life" (a term sometimes used to differentiate between behaviours off and on computer networks) because characteristics such as age, gender, and ethnicity are difficult to decipher.

Liberalists also believe CITS allow us to restore feelings of community they suggest have been lost in most developed societies. Particularly during the past decade, many computer networks have been established which allow both synchronous and asynchronous communication between users (e.g. USENET, America On-Line, CompuServe). As the popularity of these networks has increased, so too have claims by liberalists that they contain elements of communities or "virtual communities". Rheingold (1993b) defines virtual communities as "social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (p. 5). Based mainly on anecdotal evidence from his experiences on WELL (Whole Earth 'Lectronic Link) Rheingold describes why he feels such computer networks contain aspects of community. For instance, he states:

> In cyberspace, we chat and argue, engage in intellectual discourse, perform acts of commerce, exchange knowledge, share emotional support ... We do everything people do when people get together, but we do it with words on computer screens, leaving our bodies behind. Millions of us have already built communities where our identities commingle and interact electronically, independent of local time or location. The way a few of us live now might be the way a larger population will live, decades away. (Rheingold, 1993a, p. 58)

Rheingold also argues that virtual communities even have advantages over communities in real life. For example, compared to communities in real life, he suggests that online communities are composed of people joined by shared interests and goals, rather than what he calls "accidents of [geographic] proximity" (1993a, p. 65).

Finally, in line with their optimism, many liberalist writers believe we have no other option but to quickly and unconditionally integrate CITS into our lives. Babe (1990) calls this belief "the myth of technological dependence":

> the myth of technological dependence asseverates that we have few options in deploying industrial techniques ... More precisely, the myth of technological dependence encompasses dual doctrines of technological imperative and technological determinism. The former holds that the march of engineered artefacts is necessary, "in the order of things," subject to little human direction or control. The latter posits that all the important human phenomena - cultures, distribution of power, belief systems, industrial structures, and so forth - are explainable by the evolution of the same industrial devices. (p. 9)

Such claims are also prevalent, particularly in literature produced by the computer and telecommunications industries and government. For example, the Information Highway Advisory Council, a committee created to develop a national information highway strategy for Canada, made the following comments in its final report: "the pace of technological change and the new paradigms created by the information revolution *will affect* how citizens and their governments control themselves ... governments have *no choice* but to use information and communication technologies ..."; "the Information Highway *will shape* the future of our nation"; and "to keep pace with the rest of the world, Canadians *must* rapidly invest and innovate" (IHAC, 1995, italics added). And in its vision statement, Stentor, a consortium of Canada's major telecommunications companies, states:

> Canada must act now or get left behind. It is a simple question of survival in this fast-changing world .... If we don't act quickly to make the information highway a reality, Canadian industry will fall steadily behind industries in other countries, Canadian unemployment will suffer and Canadians' standard of living will fall. (Stentor, 1994, p. 8)

In summary, the message is clear: We must adopt and adapt in a technologically driven world, or suffer negative consequences.

ALTERNATIVE PERSPECTIVES[3]

Although there is nothing intrinsically wrong with a positive outlook, the liberalist framework for understanding CITS is limited. Some of the claims made by liberalists are completely justifiable, as many positive changes are occurring that can reasonably be associated with the development of CITS. For example, CITS do offer opportunities for disadvantaged groups in society, and activities such as electronic banking and correspondence by electronic mail (email) have become conveniences for many people. However, because liberalists often portray CITS as uncontrollable, infallible, and universally accessible breakthroughs for human progress, they tend to neglect a number of critical issues. It is only through alternative perspectives of CITS, such as those reviewed in this section, that such critical issues are normally addressed.

Andrew Feenberg's Critical Theory of Technology

In *Critical Theory of Technology* (1991) Andrew Feenberg offers a particularly valuable theory for addressing some of the critical issues that have largely gone unexamined by liberalists. Feenberg situates his theory as an alternative to two broad positions on technology: instrumental theory, and substantive theory. According to Feenberg, the instrumental theory "offers the most widely accepted view of technology. It is based on the common sense idea that technologies are 'tools' standing ready to serve the purposes of their users. Technology is deemed 'neutral', without valuative content of its own" (1991, p. 5). Viewed in this manner, technology is intrinsically amoral, rational, apolitical, and "indifferent to the variety of ends it can be employed to achieve" (Feenberg, 1991, p. 5). If technologies are used for positive purposes, we can thank ourselves. If used for negative purposes, we have only ourselves to blame.

Feenberg takes strong exception to the instrumental theory of technology for several reasons. Most importantly, he is concerned with how the instrumental theory supports the technological imperative, and with what "rationality" truly means:

> Given this understanding of technology, the only rational stance is unreserved commitment to its employment. Of course, we might make a few exceptions and refuse to use certain devices ... [but] there is a price for the achievement of environmental, ethical, or religious values, and that price must be paid in reduced efficiency. (Feenberg, 1991, p. 6)

In other words, because technology is neutral, and because it can be implemented in rational and predictable ways, the instrumental position supports the view that technological developments can be controlled for the betterment of humanity. To Feenberg, however, this largely means that elite interests will control technological developments, and receive the greatest benefits from them.

Beyond the technological imperative, Feenberg is also concerned with how the instrumental position creates a false image of a unified human agency controlling technology:

> Instrumentalist theory of technology (in both its Marxist and non-Marxist forms) shares the common sense assumption that the subject of action - for example, the socialist state- can be defined independently of its means. But in reality subjects and means are dialectically intertwined .... If this is true, socio-technical transformation cannot be conceived in terms of instrumental categories because the very act of using the technology reproduces what is supposed to be transformed. (Feenberg, 1991, p. 65)

This quotation also reflects Feenberg's contention that technologies are not truly neutral, but support hegemonic interests in society instead. Feenberg calls this "the paradox of reform from above: since technology is not neutral but fundamentally biased toward a particular hegemony, all action undertaken within its framework tends to reproduce that hegemony" (Feenberg, 1991, p. 65).

While Feenberg believes that technologies reproduce hegemonic interests in society, he does not support the substantive theory of technology. Substantive theory, most prominently in the work of Heidegger (1977) and Ellul (1964) is defined by Feenberg as the belief "that technology constitutes a new type of cultural system that restructures the entire world as an object of control" (Feenberg, 1991, p. 7). Feenberg is not concerned so much with substantive theory's contention that technology reproduces hegemonic interests (Feenberg clearly feels this is this case), as he is with its conviction that it is impossible to reform the technological status quo for more democratic purposes. This is similar to his critique of how the instrumental theory of technology forwards the technological imperative. However, in the case of substantive theory, the imperative is one of retreat from technology, or submission to it:

> Despite their differences, instrumental and substantive theories share a "take it or leave it" attitude toward technology. On the one hand, if technology is a mere instrumentality, indifferent to values, then its design and structure is not at issue in political debate, only the range and efficiency of its application. On the other hand, if technology is the vehicle for a culture of domination, then we are condemned either to pursue its advance toward dystopia or to regress to a more primitive way of life [e.g. towards economic, artistic, or spiritual simplicity and renewal]. In neither case can we change it: in both theories, *technology is destiny*. (Feenberg, 1991, p. 8)

To overcome these problems Feenberg advocates a third alternative: his critical theory of technology.

Feenberg's critical theory of technology, which is derived in part from constructivism and Jurgen Habermas's (1984) theory of communicative action, attempts to move beyond instrumental and substantive theories. In his framework:

> Technology is not a thing in the ordinary sense of the term, but an "ambivalent" process of development suspended between different possibilities. This "ambivalence" of technology is distinguished from neutrality by the role it attributes to social values in the design, not merely the use, of technical systems. On this view, technology is not a destiny, but a scene of struggle. (Feenberg, 1991, p. 14)

In a further discussion of this theory, Feenberg describes some additional characteristics that enable it to move beyond the "take it" or "leave it" imperatives of instrumental and substantive theories. First, Feenberg feels the critical theory:

> charts a difficult course between resignation and utopia. This theory analyses the new forms of oppression associated with modern industrialism, and argues that they are subject to new challenges. But having renounced the illusion of state-sponsored civilizational change ... it must explain how modern technology can be redesigned to adapt to the needs of a freer society. (Feenberg, 1991, p. 13)

Second, and more importantly, Feenberg argues that the redesign of technology can only be accomplished within the context of a wider, and pluralistic, democratic reformation of society. This democratic reformation should be pluralist in nature and should not merely restructure power in favor of the majority or one community in particular, as advocated in plebiscitory or communitarian notions of democracy.[4]

Feenberg calls the reformation he advocates a "pluralistic model of change" (Feenberg, 1991, p. 134).

Rob Kling's Web Model Of Computerization (and CITS)

Another theory that provides a useful alternative to instrumental and substantive frameworks is Rob Kling's "web model" of computerization (and CITS).[5] Defining this model, Kling (1991a) states:

> Web models conceive of a computer system as an ensemble of equipment, applications, and techniques with identifiable ... capabilities. Each computing resource has costs and skill requirements that are only partially identifiable. Most computer-based information systems do not operate automatically and without human intervention ... Computer systems and their support organizations are also social objects that may be highly charged with meaning. This [web] approach focuses substantial attention on three key concepts: the social contexts in which a computer-based system is [developed] and used, the infrastructure of support for the system (including the social organization of access), and the history of social arrangements within which the computer-based system is developed. Web models view information systems as complex objects constrained by their context, infrastructure, and history. (p. 358)

Avoiding both technological determinism and the technological imperative, Kling's web model allows for people, equipment, and organizations to be taken into account when analyzing the dynamic and interconnected relationships between the social, political, economic, and technological. It is nonsensical to subordinate the technical to the social, or vice versa. While Kling argues that CITS can have certain capacities, he also acknowledges that CITS are simultaneously products of the complex world in which they are developed, diffused, and used. Hence, characteristics such as status and gender are embedded in the design of CITS, and different CITS will often hold different meanings for different people. When studying and describing technology we must avoid making broad, universal, and unsupported claims about CITS, and explore their varied meanings, consequences, and social contexts instead:

> Many social observers and computer scientists have been fascinated by the potential potency of computing to alter life profoundly. Technologies like computing do not "impact" life like "ships colliding at sea", but rather are subtly woven into ongoing social patterns. One hopes that important technologies, such as computing, can be sufficiently well understood by

> many social groups early on, so that important decisions about whether, when, and how to utilize computer-based systems will be more socially benign than would otherwise be the case. (Kling, 1991b, p. 161)

To "piece together" such an understanding, Kling supports research methodologies such as the one employed in this thesis:

> These observations have serious consequences for research designs. First, studies of computing are best conducted in settings where the technology is pervasive .... Second, analysts need to observe closely patterns of computer use, and the sense that people make of computing in their lives. This argues for case studies and other qualitative field studies .... Third, analysts must be especially careful in extrapolating their results across social settings and time. (1991b, p. 161)

Kling (1992) also argues that researchers should go one step further and complement their observations with relevant (i.e. both technical and social) contextual evidence:

> [We need to] link the kinds of fictions about technologies different social actors advance to their interests and social worlds .... We need good frameworks for understanding technical capacities in a socially contingent way. (p. 384)

For the remainder of this thesis, Kling's and Feenberg's theories are put into practice in several ways. First, based on the importance both theorists place on interpreting the meaning of CITS within their social context, information about the social context of aging is reviewed in the next section. Beyond establishing a baseline for critically assessing existing literature about CITS and older adults, such information is important. We need to understand some of the different qualities that "being an older adult" might bring to human-CITS interactions before interpreting the evidence that has been gathered to address the research question this thesis asks. Following the review of the social context of aging, the existing literature that has discussed the relationship between older adults, CITS, and health and well-being is examined. The problematic nature of much of this literature is highlighted, especially how it often makes overly utopian and general claims about the meaning of CITS for all older adults, rather than making more specific and evidence-based claims in relation to categories of older adults as Kling would recommend. Third, based on Feenberg's design critique, the small

amount of literature that has considered the barriers that some older adults might experience when using (and not using) CITS is reviewed. Finally, in the fourth and fifth chapters of this thesis, two case studies are conducted to construct what is argued to be a more thorough and contextually-sensitive examination of older adults, CITS, and health and well-being than most examinations offered in the literature. This examination relies heavily on the accounts of a group of older adults who are currently using CITS, and complements their insights with descriptions of their personal characteristics, and the characteristics of the CITS in question. Using this approach allows for a more localized study of the meanings older adults associate with CITS than the speculative and over-generalized accounts often offered in the literature. It also offers the opportunity to explore if these people feel they have experienced some of the claims that have been made about CITS in the literature, and even if they have used CITS for the democratic purposes advocated by Feenberg.

PART TWO: AGING IN CANADA

DEMOGRAPHICS

Currently, over 10% of the Canadian population is over the age of 65, and this proportion is expected to rise to approximately 25% by the year 2031 (Marshall & McPherson, 1993). Some other relevant statistics are: (1) by the year 2031, 20% of people in Canada are expected to be over the age of 85; (2) about 30% of older Canadians currently live in rural communities, and this percentage will likely increase in the future; and (3) because, on average, women have longer life expectancies than men, the population of older adults in Canada should continue to be composed of more women than men (Marshall & McPherson, 1993). Although these statistics may be interesting, they have little meaning placed outside of their social context. Because of this, some other key findings about aging that have emerged from the literature are reviewed in the following four sections. Several questions are also presented throughout these sections that pertain to the broader research question of this thesis. Due to the complex nature of these questions, however, they are examined later in this chapter, and when the findings of the case studies are discussed.

HEALTH LEVELS

In general, older adults in Canada are healthy. However, in comparison to other age groups, they are still more likely encounter: (1) physical changes such as orthopedic deterioration or chronic health problems; (2) sensory changes such as visual or hearing difficulties; and (3) cognitive changes such as memory loss (Ogozalek, 1991). Also, over half of people over the age of 65 in Canada have some limitation of their major activities, and 3.7% are housebound (Chappel, 1993). These findings raise a number of questions related to the research question addressed in this thesis. Can CITS help ameliorate or prevent any of these conditions? Are older adults who have such conditions more or less likely to use CITS? Can any of these conditions possibly be caused or worsened from using CITS? Again, these questions are addressed at several points later in this thesis.

SOCIOECONOMIC CHARACTERISTICS

Due to the increasing number of older adults in our society, it is often argued that older adults hold tremendous purchasing power (Festervand & Wylde, 1988). Novak (1988) and Marshall and McPherson (1993) oppose this view, and suggest that few older adults in Canada are actually wealthy. They also argue that poor pension and retirement programs have resulted in a minority of older adults in Canada living in poverty, or near poverty conditions. Later in this chapter, the extent to which CITS are accessible to this minority of older adults is questioned.

PSYCHOSOCIAL CHARACTERISTICS

Degree of Loneliness Among Older Adults

Another subject of disagreement in the literature is if older adults are more likely to experience loneliness than people from other age groups. After reviewing the literature, Monk (1988) concludes that many older adults are lonely. However, the problem with this conclusion is Monk uses studies about the fear of loneliness among older adults as evidence, not studies about the actual extent to which older adults feel lonely. Certainly there is a difference between the fear of loneliness and actually being lonely.

In a more thorough review of the literature, Marshall and MacPherson (1993) suggest older adults are just as likely as other age groups to be lonely. However, they

also add that a minority of all age groups experience loneliness. Because older adults are more likely to be limited in activity, retired from the workforce, lose a spouse or friend, live alone, and live in rural areas, they argue older adults who are lonely may have greater difficulties overcoming it. The questions that remain from the perspective of this thesis are: (1) Can CITS help older adults who are lonely; and conversely, (2) Can CITS actually contribute to loneliness among older adults?

The Life Cycle

Unfortunately, it cannot be denied that older adulthood is a stage in the life cycle when many people begin to seriously consider their own mortality. Describing this stage in the life cycle, Marshall and McPherson (1993) state:

> People, or at least most people, do not want to live forever. But they do want to die feeling that their life has been meaningful and dignified. That is why factors such as the ability to remain independent, both physically and economically, and the ability to maintain family and affectionate bonds are so critically important to the aged. (p. 8)

If these needs are not met, then aging can be a stressful and dissatisfying experience. In view of this possibility, one of the key issues related to the research question of this thesis is whether or not using CITS brings additional meaning to the lives of older adults who use them.

Ageism

Earlier in this chapter, the possibility that characteristics such as gender and social status are embedded in the design and use of CITS was discussed. Although we frequently hear about forms of discrimination such as sexism and elitism, something talked about far less often is ageism, or discrimination against older adults. To a large extent, our culture has been conditioned to tolerate discrimination against older adults. One obviously ageist view is that older adults are incompetent, and cannot make substantial contributions to society. Practices such as mandatory retirement have been targeted as ageist by some people as well (Coupland & Coupland, 1993).

With respect to health and well-being and CITS, even older adults can hold "self-defeating" ageist attitudes. For example, some research suggests that older adults often have low expectations about the extent to which their health and well-being can be

improved by their own efforts, or by medical services (Beisecker, 1988; Coupland & Coupland, 1993). Older adults often do not see negative health symptoms they might encounter as possible illnesses, but as inevitable outcomes of aging. It has also been suggested that older adults are more likely than younger people to assume they make mistakes computing when they actually have not (Elton, 1988). Some other possible ways that self-defeating ageism might get played out through CITS, and related developments, are explored in the discussion chapter of this thesis.

ANTI-AGEISM

In reaction to discrimination against older adults, a tradition known as anti-ageism has been developed. Anti-ageists argue that ageism is unique among forms of discrimination. Scrutton (1990), summarizes this uniqueness quite well:

> First, older people do not form an exclusive group, but one of which every individual will eventually become a member ... Second, the discrimination which emanates from ageism can appear to result from the natural process of biological aging, rather than social creation. It is important to emphasize that [the concept of anti-ageism] does not deny the aging process, but rather seeks to distinguish between - on the one hand - aging as a process of physiological decline and - on the other - the social phenomenon which forms the basis of the disadvantage and oppression of older people. (p. 14; cited in Coupland & Coupland, 1993, p.291)

If, as Scrutton suggests, ageism is socially constructed, then it is worthwhile inquiring if the disadvantage and oppression of older adults is played out through CITS. Furthermore, because CITS are social tools, it is also worthwhile considering if they can empower and benefit older adults in any meaningful ways.

A HOLISTIC MODEL OF HEALTH AND WELL-BEING

A view that is quite compatible with anti-ageism is a holistic, or preventive, model of health and well-being. According to Fried (1990), there are essentially three ways to prevent poor health and well-being. First, there is primary prevention, where all possible precautions are taken to prevent the onset of a negative condition. Next, there is a secondary prevention, where early interventions are taken to stop the progression of a negative condition that has materialized. If preventive measures are not taken by this stage, problems can become chronic. Finally, there is tertiary prevention, where

measures are taken to minimize the effects of a negative condition that has become chronic.

At each of these levels, measures can improve a person's health and well-being. This includes things such as education, health habit promotion, disease prevention, screening for early indications and predisposition of diseases, emotional support and understanding from others, and in some cases, rehabilitation and treatment. Any productive model of health and well-being should go beyond disease treatment into health promotion, disease prevention, and encouraging other holistic determinants of health, such as social interaction, proper safety and security, stable housing, financial stability, independence, and leisure. As illustrated in the next section, while CITS definitely show promise in many of these areas, there are also some crucial questions that need to be addressed.

PART THREE: OLDER ADULTS, CITS, AND HEALTH AND WELL-BEING

The existing literature investigating the relationship between older adults, CITS, and health and well-being has overwhelmingly concentrated on two general questions: (1) What benefits do CITS offer older adults; and (2) What barriers may discourage older adults from using CITS, and how can these barriers be overcome? In this section, the answers that have been given to these two questions in the literature are described. However, in keeping with a critical perspective, a number of other issues which have received no, or relatively little attention in the literature are also considered.

BENEFITS OF CITS DISCUSSED IN THE OLDER ADULT LITERATURE

Physical and Mental Health

It is often suggested in the literature that, simply by using CITS, older adults will enhance their physical and mental health. The CITS most often associated with these benefits are computer games. In a comprehensive review of the literature on the use of computer games by older adults, Leroux and Vézina (1991) report a general consensus that computer games benefit older adults by enhancing their "attention, vigilance, fine motor skills, visual-motor abilities, response speed, self-esteem, and personal well-being" (p. 520). However, because of methodological problems, they also argue that the results of these studies should be interpreted with caution. For example, they argue

that people who are unhealthy are often excluded from subject pools. They also suggest that a Hawthorne Effect may account for the findings. In other words, subjects may have responded to the fact they were being observed, or to the increased attention they received from researchers, rather than to the actual use of computer games. Because of such problems, Leroux and Vézina conclude we still know little about the meanings of computer games for older adults who use them, and more importantly, how these meanings relate to specific groups of older adults.

Although they are frequently composed of small sample sizes, and often suffer from the methodological problems highlighted by Leroux and Vézina, some studies suggest that CITS other than computer games can enhance the physical and mental health of older adults. For example, Danowski and Sacks (1980) found that a group of older adults using both computer messaging and computer games reported using such applications gave them greater self-confidence. Other writers have made claims about the ability of computer networking to enhance mental stimulation, self-esteem, and feelings of competence and autonomy in older adults (Czaja, Guerrier, Nair, & Landauer, 1993; McConatha, McConatha, & Dermigny, 1994). Furthermore, based on self-reported comments of a group of older adults learning basic computer programming skills Eilers (1989) suggests that computing is mentally challenging, helps older adults enhance their memory, and helps them gain a sense of control over the environment.

Beyond methodological weaknesses, most studies about the relationship between CITS, older adults, and physical and mental health are still problematic. Few studies investigate the potential negative consequences CITS can have on the physical and mental health of older adults. For example, some research outside of the field of gerontology is beginning to find a correlation between extensive computer use and health problems such as eye strain, poor posture, and Carpal Tunnel Syndrome (Athey & Zmud, 1988; Sheehan, 1996). These problems can be experienced by people of all ages, but evidence suggests some older adults may be even more susceptible to them. For example, Charness and Bosman (1990) argue that people who use bifocals are particularly likely to suffer neck and visual problems when computing.

It is also debatable if CITS will enhance the self-esteem of all older adults. Generally, older adults process information less efficiently and have lower response times than people in other age groups (Czaja, 1988). Because some CITS, such as computer games, may be difficult to learn, or require rapid responses, some older adults

may become frustrated, and even lose self-esteem if they are expected to learn too quickly (Leroux & Vézina, 1991; Ryan & Heaven, 1986). Crimmins (1983) also argues that technological change can potentially cause stress in some older adults, and related health problems such as coronary heart disease. She also adds that, like everyone, older adults who overuse CITS can potentially encounter negative physiological changes such as increased fat levels and reduced muscle strength if their diet or physical activity levels are altered (i.e. if they become computer "couch potatoes").

Education

Another claim made in the literature is that CITS provide older adults with enhanced educational opportunities. At least six assumptions are commonly made throughout this literature. First, CITS enable material to be presented in novel, interactive, visual, and hence, motivating formats (Dennison, Dennison, Ward, & Wu, 1992; McNeely, 1991; Rippey et al., 1987; Ryan & Heaven, 1986). Second, CITS empower older adults, by allowing them to play a more active role in their education (Czaja et al., 1993; Dennison et al., 1992; Office of Technology Assessment, 1985). Third, material presented to older adults through CITS can be demassified, or individualized (Ellis, Joo, & Gross, 1991; McNeely, 1991). Fourth, because computers are tireless, systematic, and objective, educational material can be repeated to older adults more than once, and they can receive immediate feedback if they ask or answer questions (Kornbluh, 1983; McNeely, 1991; Rippey et al., 1987; Ryan & Heaven, 1986). Fifth, using CITS for educational purposes is cost-effective (Ellis et al., 1991; Kornbluh, 1983). Finally, CITS are convenient, patient, and non-threatening educational tools, either because older adults can use them at their own convenience and pace, or anonymously inquire about subjects they might otherwise find embarrassing (Hoot & Hayslip, 1983; Kornbluh, 1983; McNeely, 1991; Ryan & Heaven, 1986).

However compelling these assumptions might be, there is little evidence that supports them. After a review of the literature, McNeely (1991) concludes that only a small number of studies have evaluated the effectiveness of older adults learning with CITS. To this conclusion, it also seems that only one study to date has used a control group to compare CITS with more traditional techniques for educating older adults (Dennison et al., 1992). This study found that CITS are effective learning tools for older

adults. However, it also found no significant differences between an educational program that used CITS, and one that did not.

It is also important to realize that any studies evaluating CITS such as computer-assisted instruction programs only justify the use of the specific programs of interest, not CITS in general. As Lumsden (1975), suggests, "the question we should be asking then, is not, Is programmed instruction effective? A more appropriate and meaningful question is, Is the particular program we are considering for adoption effective?" (p. 101). However, as just mentioned, this question has largely gone uninvestigated in the literature.

Another matter of debate is if CITS facilitate individualized learning. As Lumsden (1975) states:

> if students are not provided additional options in terms of their exposure to other instructional methods, how can we say we are offering them individualized instruction? This is not a moot, academic question. If our research has taught us anything, it is this: There is no single method best suited to the needs of all students. (p. 99)

A related criticism is that older adults with lower education levels may be less likely to use CITS, and may have less favourable attitudes towards CITS, than older adults with higher levels of education (Brickfield, 1983; Kershner & Hart, 1984). Because of such issues, further research is needed about what specific educational techniques are best suited to particular cohorts of the older adult population, and which cohorts of older adults face the greatest obstacles in obtaining educational benefits from CITS.

Information, Knowledge, and Status

Some literature within the field of gerontology has also considered how modernization affects older adults, particularly in relation to their status. Except for a few notable exceptions, most of this literature suggests the status of older adults is higher in preindustrial and postindustrial societies than in industrial societies (Baker, 1988). For example, Danowski and Sacks (1980) argue that, because the main vehicle for the oral transmission of information in preindustrial societies was interpersonal communication, the status of older adults was quite high. Older adults were valued because they possessed the accumulated knowledge essential in the oral tradition. In

industrial times, on the other hand, Danowski and Sacks suggest older adults lost their status:

> Industrial societies have typically given elderly little control over physical production processes, as reflected in age-graded labor force replacement practices. Therefore, by default elderly have been given little control over information resources. Overall, their social status is low. (1980, p.126)

Finally, they argue that the status of older adults may increase once again in postindustrial societies, provided they become computer literate:

> *[In postindustrial societies] computer-based communication systems* enable much smaller groups of people to share the same mediated information ... Furthermore, these systems enable participants to actively control the content of messages exchanged ... Individuals' abilities to manipulate symbolic content in mediated interpersonal interaction and relate it directly to their experiences, appears to sharpen with accumulated experience. Therefore, the status of elderly may begin to increase over levels observed in industrial societies. (Danowski & Sacks, 1980, p.127)

Thus, they believe that using CITS can potentially empower older adults in postindustrial societies.

Although the view that the status of older adults is generally higher in preindustrial and postindustrial societies than in industrial societies is most prevalent in the literature, it has not gone without criticism. For example, Baker (1988) argues:

> In preliterate societies in which hunting, warfare, or physical prowess were important, elderly men lost status when their physical strength and endurance faded. Elderly women may have gained status as they aged, from producing children and successfully rearing them, but after their children were grown and they no longer had the strength to gather food, their status often declined. (p. 57)

Therefore, it is possible that older adults were only highly valued in preindustrial cultures where they played important supportive, religious, educational, social, or political roles.

Elton (1988) also challenges the view that CITS have empowered or enhanced the status of older adults in any meaningful way. Too often, he argues, older adults become passive consumers, rather than active producers of communication and information exchanged through CITS:

> There is still a tendency to make the implicit assumption that sees users of new technologies as people who will want to be "communicated at" by professionals, while underestimating the extent to which users would value being able to create their own messages and receive those of their peers. There is the related mistake of underestimating the value users place on feeling they are in control of technology, rather than the reverse. (p. 568)

In addition to Elton's critique, it is also possible that the status of older adults may not increase in postindustrial societies, simply because many of our major forms of information are now stored in electronic data banks. Older adults may still possess great knowledge and experience, but their role as "carriers" of our major information resources is questionable. The possibility also exists that older adults could not only become passive consumers of information in postindustrial cultures, but information "commodities" themselves. The interactive nature of CITS can potentially allow interested parties to monitor the behaviours of people and compile detailed profiles of their behaviours (Crowley, 1994). Because the proportion of older adults in our society is increasing, and because they are often perceived as having more disposable income than other age groups, they could become major targets of this type of surveillance (Kornbluh, 1983).

Communication and Social Interaction

Another potential benefit often forwarded in the literature is that CITS will help older adults communicate and interact with other people. The majority of people making this claim concentrate on CITS that can assist or rehabilitate older adults with sensory or cognitive difficulties that may affect their ability to communicate (Frydenberg, 1988; Levy & Phillips, 1988; Ogozalek, 1991; O'Leary et al., 1991; Ryan & Heaven, 1986). However, in order of prevalence, the following benefits of CITS have also received attention in the literature: (1) computer networks enable older adults, especially those who may be isolated or homebound, to meet new people or keep in touch with distant friends and family members (Czaja et al., 1993; Furlong, 1989; Kornbluh, 1983; Ogozalek, 1991); (2) word processors help facilitate letter and memo writing (Ryan & Heaven, 1986); (3) older adults can meet new people by becoming involved in computer clubs and courses (Eilers, 1989); and (4) learning about computers provides

older adults with a useful and contemporary topic of conversation, especially with friends and family members (Danowski & Sacks, 1980; Eilers, 1989).

To varying degrees, these four statements raise the interesting possibility that CITS can not only facilitate inter-generational, but also intra-generational, communication and interaction for older adults. However, as noted by Elton (1988) and Ogozalek, Power, Hebhardt, Bullens, and Perrolle (1992), it is also quite conceivable that older adults could potentially become segregated into "electronic ghettos", where they will only interact with people from their own age group. These researchers argue that CITS should not only promote intra-generational communication, but also family and inter-generational communication as well.

Convenience and Physical Independence

Quite understandably, it has been found that older adults, even if they reside in facilities such as nursing homes, prefer to live as independently as possible (Marshall & McPherson, 1993). In the literature, several writers argue that CITS will help older adults attain this goal, by providing them with services such as at-distance banking, home entertainment, and home shopping, particularly if they suffer from restricted mobility (Czaja & Barr, 1988; Gilly & Zeithaml, 1985; Monk, 1988; Ogozalek, 1991; Ryan & Heaven, 1986). However, as Crimmins (1983) suggests, these very same conveniences can also cause negative physiological changes such as increased fat levels and reduced muscle strength in older adults if their diet or physical activity levels are altered. If CITS such as at-distance shopping and home entertainment are utilized by older adults, they will still have to maintain a healthy lifestyle. It should also remain a priority to prevent older adults from becoming confined or isolated in their residences.

Financial Independence and Employment

The final benefit often discussed in the literature is that CITS will enhance the financial independence of older adults, and even provide them with greater employment opportunities. Currently, a wide variety of information is available on computer networks about topics older adults might find financially advantageous. For example, through computer networks, older adults can obtain information about housing, insurance, tax benefits, financial management, estate planning, social security, and legal matters (Kornbluh, 1983; Ogozalek et al., 1992; Post, 1999). Some writers also suggest that

older adults who are computer literate could achieve greater job security if they are employed, or pursue meaningful employment opportunities if they are interested in entering, or re-entering, the workforce (Kornbluh, 1983; Ogozalek et al., 1992; OTA, 1985).

Even if CITS can potentially provide some older adults with the financial opportunities just mentioned, some evidence suggests older adults with lower incomes are less likely to use CITS, and are also less likely to have favourable attitudes towards CITS, than older adults with higher incomes (Brickfield, 1983; Kershner & Hart, 1984). There are several possible explanations for these findings. For example, because CITS are often very expensive, older adults with lower incomes may find it difficult to afford them (Kornbluh, 1983). Ironically, people who may require the greatest financial benefits from CITS may face tremendous obstacles accessing them. Also, one can argue that technological innovation in the workplace is a mixed blessing. While new jobs are often created through the introduction of CITS in the workplace, existing jobs can also become obsolete. In order to keep up with this changing environment, the average worker will have to continually receive retraining throughout his or her lifetime. Some evidence suggests, however, that older workers may be less likely to be selected for retraining than younger workers (Czaja & Barr, 1989). Rather than investing in retraining programs for workers in their late fifties and early sixties, it may be more economically viable for corporations to simply terminate them, or provide them with retirement "incentives". The question that remains is if this corporate philosophy is morally and socially acceptable.

SECTION SUMMARY

In review, much of the literature presented in this section was quite speculative. The benefits and risks many writers associated with CITS were based upon their own suppositions, rather than upon evidence gathered from older adults (e.g. through methods such as interviewing or survey research). Furthermore, in the small number of studies that obtained evidence directly from older adults, important characteristics of participants such as specific age groups, gender, income levels, education levels, previous experience with computing, health levels, and psychosocial characteristics were rarely described. Because participants were all over a certain age such as 55 years old or 65 years old, most researchers assumed these people had identical needs

and characteristics. As illustrated earlier, on average, older adults have some unique needs and characteristics. However, the relationship between age and other characteristics such as gender, income, and health levels should still be investigated in CITS analyses involving older adults. Finally, much of the literature reviewed in this section was utopian. Hoping that older adults will achieve a range of potential benefits from using CITS is commendable, but the potential barriers that may prevent some older adults from deriving such benefits are seldom addressed in the literature. As will now be illustrated, some of these barriers have been discussed in other areas of the literature, but there is still a need for further research.

POTENTIAL BARRIERS TO THE USE OF CITS BY OLDER ADULTS

Negative Attitudes

A large body of research has investigated the attitudes of older adults towards CITS. The majority of this research has found older adults either have favourable attitudes towards CITS, or their attitudes are not considerably different from younger people (Ansley & Erber, 1988; Dyck & Smither, 1994; Jay & Willis, 1992; Krauss & Hoyer, 1984; Temple & Gavillet, 1990; Zandri & Charness, 1989). Despite their consistent findings, these studies are methodologically problematic, and should be interpreted with caution. The most common methodological weakness of these studies is related to subject recruitment. None of these studies used statistically representative random samples, or employed methods such as random digit dialing to recruit participants. Instead, volunteers in all of these studies were recruited from various settings such as nursing homes, computer clubs, continuing education courses, and senior centres. Subjects were also fully aware they were participating in a study about CITS. It is possible that people with less favourable attitudes towards CITS may have been reluctant to volunteer for these studies.[6]

It is interesting that two studies that contacted a representative random sample of older adults through random digit dialing found favourable attitudes towards, and usage of, a range of technologies such as computers were lower among adults aged 45 to 64 than adults aged 65 and over (Brickfield, 1983; Kershner & Hart, 1984). These researchers also found that, in interaction with age, males, older adults with higher incomes, and older adults with higher education levels were also more likely to use and

have positive attitudes towards such technologies than comparison groups. They also argued that access, human factors, and training issues must be addressed if the diffusion of technology is to be more equitable among older adults. These three issues are now examined in greater detail.

Access and Affordability

In order to use CITS, interested older adults must first be able to access and afford them. Computers, modems, software, and Internet accounts can be very expensive. Due to high costs, equipment or services may have to be donated, loaned, or leased to older adults with restricted incomes who are interested. Making equipment and services available to older adults in public places and health care facilities will also be an issue. Finally, interested older adults who live in rural areas should not be overlooked in developments that occur.

Human Factors

It was mentioned earlier that over 50% of people over the age of 65 in Canada have some limitation in their major activities. Because of this, CITS that are used by some older adults may require special design considerations. For older adults with visual problems, magnified monitors and fonts, and large keyboard labels offer somewhat of a solution (O'Leary et al., 1991). If older adults have motor deficiencies, certain technologies can also be useful. For example, head, eye-gaze, mouth, voice-controlled, or eye-gaze systems can help people use CITS (O'Leary et al., 1991). Auditory or speech problems can also be alleviated by devices such as auditory amplifiers and speech synthesizers (O'Leary et al., 1991. Finally, although hardware and software that can help people with memory or cognitive difficulties mainly remains limited to rehabilitation, some assistive developments have occurred. For example, two programs, PowerMenu and SuperKey, provide menus in MS-DOS systems for people who have difficulties remembering commands (O'Leary et al., 1991). Still, there is a need for further research in this area, particularly if older adults are receptive to assistive and ergonomic technologies (Bowe, 1988), if older adults who require such technologies can afford them (Kornbluh, 1993), and if older adults can suggest improvements in their design (Kornbluh, 1983; Shostak, 1993-94).

Training

Even if CITS are accessible, affordable, and well-designed, there may still be a need to train, or retrain, older adults who are interested in using them. When training older adults, it is important to consider that they do not have identical needs. Unfortunately, little research has investigated appropriate training strategies for specific cohorts of older adults. Of the research that has investigated these issues (for older adults in general) some findings are: (1) the discovery method and self-paced learning are often favoured by older adults more than instructor-based learning; (2) older adults often require twice the time that younger people do to learn tasks; (3) older adults are typically less effective than younger people when the task to be learned is novel; (4) older adults seem to learn most effectively when they are given printed material to study before "hands on" training takes place; (5) older adults learn better in multiple, rather than "one-shot" training sessions; and (6) there appears to be individual differences for older adults in regards to the benefit of large group training, as opposed to individual or small group training (Zandir & Charness, 1989). When applied to the older adult population as a whole, these findings are somewhat relevant. This is because most older adults probably did not have the opportunity to learn about CITS in school, and many of them likely retired before CITS became prevalent in the workplace. However, caution is still required before applying these strategies to specific cohorts of the older adult population. Future research is required to offer more insights into appropriate CITS training strategies for particular groups of older adults.

CHAPTER SUMMARY

Throughout this chapter, a number of claims that have been made about CITS in the literature were presented. In the general literature about CITS, and also in literature more specific to older adults, people making these claims often rigidly align themselves with either a "take it", or a "leave it", viewpoint of CITS. People holding the "take it" view of CITS focus almost exclusively on the positive aspects of CITS, and seldom address the possibility that certain groups in society might experience the potential benefits of CITS more easily than other groups. Furthermore, they rarely address the barriers that might prevent some people from experiencing the benefits they envision. People holding the "leave it" view of CITS are more likely to focus on negative aspects of CITS,

but these writers typically suggest our only option is to retreat from CITS, rather than attempt to improve them. However, whether they held a "take it", or a "leave it" attitude towards CITS, writers in this chapter rarely based their arguments upon the insights of people using (or not using) such technologies. Because of this, most writers failed to consider CITS in their human context.

The main purpose of this chapter was to formulate an alternative theoretical framework for understanding CITS that moves beyond the limited approaches often offered in the literature. Together, Andrew Feenberg's critical theory of technology and Rob Kling's web model of computerization (CITS) provide a strong foundation for such a framework. Feenberg's critical theory is helpful for researchers who want to study CITS in human context, but who still strive to discover and reform the inequitable and problematic ways they are sometimes designed and used. While Feenberg formulates a direction of change for CITS, the work of Rob Kling is useful for studying if, how, why, and when, such changes are occurring from the perspective of people using such technologies. Two case studies are now presented which draw heavily upon both Feenberg's critical theory of technology, and Rob Kling's web model of computerization and CITS.

Chapter Three

METHODS

INTRODUCTION

In the previous chapter, three recommendations made by Rob Kling related to designing research methodologies for social analyses of computing (and CITS) were discussed:

> First, studies of computing are best conducted in settings where the technology is pervasive .... Second, analysts need to observe closely patterns of computer use, and the sense that people make of computing in their lives. This argues for case studies and other qualitative field studies .... Third, analysts must be especially careful in extrapolating their results across social settings and time. (Kling, 1991b, p. 161)

In the following two chapters, Kling's recommendations are followed in detail. First, based on his recommendation to study CITS in environments were CITS are pervasive, two exploratory, descriptive, case studies of computer organizations oriented towards older adults are conducted. The first organization is ElderWeb, a local area BBS and computer club established by Edmonton's Grant MacEwan Community College in September 1994. Restricted to people aged 45 or older, ElderWeb offered a range of computer-related services to its members, such as monthly meetings, courses and training, technical assistance provided by volunteer peer-trainers, computer conferencing, and email. To use these services, including the BBS, ElderWeb members paid a yearly membership fee of $69.

At the time research for this thesis was conducted, ElderWeb had approximately 250 members. About 150 of these members were registered to use the BBS. ElderWeb was also in the process of making a transition from a BBS to a WWW site. This transition was partly funded by a $170,000 Health Canada "New Horizons: Partners in Aging" grant in February 1995. The grant was also used for installing the ElderWeb BBS software on federally donated computers in five senior's centres in Edmonton. Older adults who were not members of ElderWeb could access a small portion of the BBS at these "satellite sites", but they were required to purchase a membership to have full access to the BBS. People would also pay the $69 annual membership fee to have full access to ElderWeb's WWW site once the BBS closed down in July 1996.[7]

The other organization included as a case study was Creative Retirement Manitoba (CRM). Based in Winnipeg, Manitoba, CRM offered many of the same services as ElderWeb. For example, volunteer peer-trainers from CRM provided technical assistance to people experiencing computer-related difficulties. CRM also had two computer clubs that met on a monthly basis: the "Creative Retirement Computer Club" (CRCC), which focused on general computer applications, and the "Special Internet Group" (SIG), which focused more exclusively on the Internet. There were an estimated 135 people enrolled in the CRCC, and about 40 people enrolled in the SIG. People were asked to purchase a $10 CRM annual membership and make a voluntary donation of $1 to attend the CRCC and SIG meetings.

CRM also had a computer network called the Senior Computer Information Project (SCIP). In contrast to ElderWeb, the SCIP site was originally developed on the WWW, rather than a BBS.[8] The SCIP site was launched in March 1995 with a grant from Health Canada's "Seniors Independence Program." The SCIP site could be used free of charge by any person (regardless of age) who could access the WWW. With the assistance of the Health Canada grant, CRM also had a computer in place at six local senior's centres, where people could fully access the SCIP site free of charge on a "drop-in" basis.

One of the main reasons ElderWeb and CRM were chosen as case studies for this thesis is that many older adults who are interested in learning about computers may begin their education at such organizations. To various degrees, both organizations were also attempting to address some of the potential barriers that might prevent interested older adults from using computers. Despite these similarities, both organizations were still diverse enough that the absence of either one from this thesis would have been a great loss. Not only did they originally develop two different types of computer networks (i.e. ElderWeb originally developed a local area BBS and CRM developed a WWW site) but they also had considerably different philosophies about matters such as funding, mandatory age levels for members, expansion, and providing access and computers to older adults with low incomes. In the next two chapters, a more detailed comparison of ElderWeb and CRM is provided.

The second recommendation of Kling followed in the case studies is to closely study the ways that people make sense of CITS in their everyday lives, and to link their insights with their characteristics. To meet these goals, survey and interview research is

utilized to gather information about, and directly from people involved with ElderWeb and CRM. Contrary to possible misconceptions about case study research, it does not necessarily restrict researchers to utilizing a single method, a single source of evidence, or qualitative information-gathering techniques such as interviewing and participant observation (Yin, 1994). As Yin (1994) suggests, converging a variety of strategies into a case study may allow a broader, and possibly more fertile analysis to be achieved. The participants, instruments, and procedures involved in the survey and interview research are discussed later in this chapter.

Finally, the results of these case studies are used for making "analytic", rather than, "statistical" generalizations about the research question. Defining the difference between these two terms, Yin (1994) states:

> In statistical generalization, an inference is made about a population (or universe) on the basis of empirical data collected about a sample .... A fatal flaw in doing case studies is to conceive of statistical generalization as the method of generalizing the results of the case. This is because cases are not "sampling units" and should not be chosen for this reason. Rather, individual case studies are to be selected as a laboratory investigator selects the topic of a new experiment .... Under these circumstances, the method of generalizing is "analytic generalization," in which a previously developed theory is used as a template with which to compare the empirical results of the case study. (p. 30-31)

In this sense, the results of the case studies are not only used for gathering rich descriptions from ElderWeb and CRM members about their experiences with CITS, but also for exploring the extent to which the claims made about CITS in the literature apply to them. Furthermore, given the relatively small amount of research that has gathered empirical evidence directly from older adults, considered differences between subgroups of older adults, and investigated more negative aspects of CITS, these case studies will hopefully generate new (and more user-based) propositions as well.

PHASE ONE: SURVEY

Background and Instrument

In the first phase of the case studies, surveys were either distributed through postage mail or administered at meetings to ElderWeb members and users of CRM's CRCC, SIG, and SCIP site (hereafter referred to as "CRM members") who were

interested. Mainly for economic reasons, the possibility of administering the survey on ElderWeb's BBS and CRM's SCIP site was originally contemplated. However, at least three factors prevented the administration of this type of survey. First, because ElderWeb and CRM offer services other than computer networks, members who did not use the networks would be excluded from the study. Second, if the survey was administered on the networks, people other than older adults could complete the survey more easily,[9] or respondents could complete the survey more than once. Third, because most people pay for the time they are online, it was expected they would take more time and effort completing a paper survey, particularly for open-ended questions.

The main purpose of the surveys was to identify issues that would require further explanation during the interviews. In addition to baseline demographic, health, and activity information, the surveys explored two main subjects about ElderWeb and CRM members: (1) their usage, experiences, and attitudes about computing in general; and (2) their usage, experiences, and attitudes about specific services ElderWeb and CRM offered. The surveys were four pages in length, and asked a number of closed, open, and partially open-ended questions (see Appendix A for ElderWeb member survey and Appendix B for CRM member survey). The closed questions were primarily phrased in "yes or no" and "checklist" formats, although a few 5-point Likert questions were also included. Initial plans for a pilot test of the survey were canceled because several ElderWeb and CRM members were "snow-birds", and would be traveling from Canada to the United States during the fall and winter months. None of the questions proved problematic, however, and a number of respondents stated the survey was easy to complete.

Recruitment and Procedure

Volunteers for the survey component of the case studies were recruited through three different stages. First, in September 1995, a "request for volunteers" form was posted on ElderWeb's BBS and CRM's SCIP site (see Appendix C). People who were interested in completing a survey were requested to forward their address and telephone number by email.[10] A draw for prizes was offered to encourage participation, but only a small number of people volunteered to complete a survey in this first stage (10 from ElderWeb and 29 from CRM).

In the second recruitment stage, people attending monthly meetings of ElderWeb and CRM in October 1995 were provided with a brief verbal description of the study. If people were interested in receiving a survey through postage mail, they were requested to complete an informed consent form (Appendix D). Forty-nine additional people from ElderWeb, and 5 additional people from CRM volunteered during these meetings. Six of the 49 additional people who volunteered from ElderWeb were not members, but were allowed to participate in the study based on the assumption they were thinking about joining, or used the limited guest function of the BBS.

In November 1995, the surveys were mailed, along with a pre-stamped and addressed return envelope, to the 59 ElderWeb and 34 CRM members who volunteered during the first two recruitment stages. Fifty-one (86.44%) ElderWeb and 32 (94.12%) CRM members who volunteered at these stages returned the survey.

As a final measure to obtain as many surveys as possible, the monthly meetings of ElderWeb and CRM were attended in May 1996. When people entered the meetings, they were provided with the survey and informed consent form. A brief description of the study was provided at the beginning of the meetings, and interested individuals who had not previously completed the survey and informed consent form were requested to complete them after the meetings. In this stage, 30 additional people from ElderWeb and 57 additional people from CRM completed the survey. Thus, in total, 81 people from ElderWeb and 89 people from CRM completed the survey.

Analysis

Univariate and bivariate statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 8.0, and open and partially open-ended questions were coded on the basis of themes that emerged from the answers. Detailed information about ElderWeb and CRM members is provided in the next chapter.

PHASE TWO: INTERVIEWS

In the second phase of the case studies, interviews were conducted with members, peer-trainers, and staff of ElderWeb and CRM in May 1996.

MEMBER INTERVIEWS

Background and Instrument

The purpose of the member interviews was to elaborate on the survey findings, and compare similarities and differences in the meanings different individuals associated with CITS. The member interviews also explored in greater detail other qualitative issues, such as what motivated people to learn about (or continue learning about) CITS in their retirement, if they felt using or learning about computers had positively or negatively changed their lives in any meaningful ways, why they had or had not used ElderWeb's or CRM's computer networks, and if they felt the organizations could be improved to further meet their needs (see Appendix E for ElderWeb member interview questions and Appendix F for CRM member interview questions). An important goal of the ElderWeb member interviews was to better understand some of the dynamics involved with moving from a relatively small and geographically based electronic community (i.e. a BBS) to a larger and less geographically oriented one (i.e. the WWW).

Recruitment and Procedures

ElderWeb and CRM members who had previously completed an informed consent form during the survey research were contacted by telephone until at least 15 people from each organization volunteered for an interview. Potential interview participants were reminded that that their participation in the survey portion of the study did not require them to be interviewed, that their names would not be published with the comments they provided, and that they were free to discontinue their involvement in the study at any time. In total, 16 people from ElderWeb, and 15 people from CRM volunteered to be interviewed. Of the 16 ElderWeb members, 9 were men and 7 were women. Furthermore, 3 of the men and 4 of the women had never used ElderWeb's BBS. One interview volunteer had just discontinued her membership with ElderWeb, and 1 was not an ElderWeb member, but hoped to join. Of the 15 CRM members who volunteered to be interviewed, 8 were men and 7 were women. Two of the women and 3 of the men had never used CRM's SCIP site. Finally, 3 CRM interview volunteers lived outside the Province of Manitoba.

The member interviews were conducted by telephone, and averaged about 25 minutes in length. Interviewees were requested to have their interviews tape-recorded,

but they were also informed notes could simply be taken if they desired. Only 1 participant requested that his interview not be recorded. After the interviews were completed and transcribed, they were analyzed with ATLAS/ti, a computer-assisted qualitative analysis program.[11]

PEER-TRAINER INTERVIEWS

To understand more about what Kling calls the "infrastructure of support" (i.e. technical support) for ElderWeb and CRM, telephone interviews were also conducted with one peer trainer from each organization. The peer-trainers were older adults, and provided training and technical support to members of ElderWeb and CRM on a volunteer basis. Because they met with ElderWeb and CRM members who required assistance, these individuals provided additional insights about the difficulties members encountered when using CITS and the networks (see Appendix G for the ElderWeb peer-trainer interview questions and Appendix H for CRM peer-trainer interview schedules).

STAFF INTERVIEWS

Finally, face-to-face interviews with one ElderWeb, and two CRM, staff members (administrators) were also conducted (see Appendix I for the ElderWeb staff interview questions and Appendix J for the CRM staff interview questions). Administrators were asked questions about issues such as what benefits they felt CITS and the organizations offered members (not to corroborate the insights of members, but to discover differences in meanings), what the philosophies of the organizations were regarding funding and meeting the needs of older adults in "situations of risk"[12], how the organizations have evolved since they were originally developed, and how the organizations expected to develop in the future.

Chapter Four

SURVEY RESULTS

INTRODUCTION

In this chapter, results from the survey that was administered to ElderWeb and CRM members are presented. A discussion of these results, as well as the interviews that were conducted with members, peer-trainers, and administrators of the organizations, follows in Chapter Five.

PART ONE: BASELINE MEMBER CHARACTERISTICS

Gender

The gender of ElderWeb and CRM members is presented in Table 1. Of the 81 ElderWeb and 89 CRM members who completed the survey, the majority were male (58.0% and 69.7%, respectively). Furthermore, compared to CRM, about 12% more ElderWeb members were female.

Table 1.
Gender of ElderWeb and CRM Members (%)

GENDER	ElderWeb (n=81)
Male	58.0
Female	42.0
	CRM (n=89)
Male	69.7
Female	30.3

Age

On average, ElderWeb members were slightly younger than CRM members (Table 2). The mean age of ElderWeb members was 65.73 years (range 51-77), whereas the mean age of CRM members was 68.00 years (range 52-81). These age differences can largely be attributed to the fact that there were about 22% more men aged 65 to 74, 25% less men aged 55 to 64, and 6% less women aged 50 to 54 in CRM.

In ElderWeb, about 6% of women, but no men, were under age 55. The proportion of people under age 55 was also low in CRM: about 2% of men, but no women, were in this age group. The most prominent age group among ElderWeb men, ElderWeb women, and CRM women was 55 to 64 years. Over four-in-ten men and

women in ElderWeb, and four-in-ten women in CRM, were in this age group. Among CRM men, the most dominant age group was 65 to 74 years (58%), although it was also the second most prominent age group for ElderWeb men, ElderWeb women, and CRM women (about 35%). Finally, only about one-in-ten ElderWeb and CRM members, regardless of gender, were 75 years of age or older.

Table 2.
Age of ElderWeb and CRM Members, by Gender (%)

AGE GROUP	ElderWeb		
	Male (n=47)	Female (n=34)	Total (n=81)
50-55	0	5.9	2.5
55-64	42.6	41.2	42.0
65-74	36.2	35.3	35.8
≥75	14.9	8.8	12.3
No answer	6.4	8.8	7.4
range (years)	55-77	51-77	51-77
mean (years)	66.16	65.13	65.73
AGE GROUP	**CRM**		
	Male (n=62)	Female (n=27)	Total (n=89)
50-55	1.6	0	1.1
55-64	17.7	44.4	25.8
65-74	58.1	33.3	50.6
≥75	11.3	7.4	10.1
No answer	11.3	14.8	12.4
range (years)	52-81	56-76	52-81
mean (years)	68.98	65.65	68.00

Marital Status

In Table 3, the marital status of ElderWeb and CRM members is presented according to gender.[13] In both networks, the proportion of men and women who were married differed dramatically. About eight-in-ten ElderWeb and CRM men were married, compared to only about four-in-ten women.

Gender differences were also found in the proportion of widowers in both networks. Approximately 21% of ElderWeb women, but only 9% of ElderWeb men, were widowed. A similar trend was found in CRM, as about 33% of women, but only 7%

of men, were widowed. However, there were still about 13% more female widowers in CRM than in ElderWeb.

The high proportion of separation or divorce among ElderWeb women compared to other groups is also interesting. Just over 35% of ElderWeb women were separated or divorced, compared to about 9% of ElderWeb men, 11% of CRM women, and 7% of CRM men.

Finally, the only nuptiality category where no large differences were found between networks or genders was among those who were never married. About 6% of ElderWeb men, 9% of ElderWeb women, 7% of CRM men, and 11% of CRM women had never married.

Table 3.
Marital Status of ElderWeb and CRM Members, by Gender (%)

MARITAL STATUS	ElderWeb		
	Male (n=47)	Female (n=34)	Total (n=81)
Married	76.6	35.3	59.3
Widowed	8.5	20.6	13.6
Sep/Divorced	8.5	35.3	19.8
Never Married	6.4	8.8	7.4
No answer	0	0	0
	CRM		
	Male (n=62)	Female (n=27)	Total (n=89)
Married	79.0	40.7	67.4
Widowed	6.5	33.3	14.6
Sep/Divorced	6.5	11.1	7.9
Never Married	6.5	11.1	7.9
No answer	1.6	3.7	2.2

Education

ElderWeb and CRM members were generally well-educated (Table 4). Approximately 6-in-10 ElderWeb and CRM members had university, college, or post-graduate education. Twelve percent of ElderWeb members, and 15% of CRM members, had a trade certificate or diploma. Furthermore, 22% of ElderWeb members, and 17% of CRM members, had high school education. Only about 5% of participants from either network had less than high school education.

Generally, education levels did not vary to a large degree between, or within, ElderWeb and CRM. The largest difference observed was that 32% of ElderWeb women had high school education, compared to 15% of ElderWeb men, 16% of CRM men, and 19% of CRM women. Also, no women from ElderWeb had less than high school education, compared to 9% of ElderWeb men, 5% of CRM men, and 4% of CRM women.

Table 4.
Education of ElderWeb and CRM Members, by Gender (%)

EDUCATION	ElderWeb		
	Male (n=47)	Female (n=34)	Total (n=81)
<High School	8.5	0	4.9
High School	14.9	32.4	22.2
Trade School	10.6	14.7	12.3
University or College	44.7	38.2	42.0
Post-Graduate	21.3	14.7	18.5
No answer	0	0	0
	CRM		
	Male (n=62)	Female (n=27)	Total (n=89)
<High School	4.8	3.7	4.5
High School	16.1	18.5	16.9
Trade School	12.9	18.5	14.6
University or College	46.8	40.7	40.9
Post-Graduate	16.1	18.5	16.9
No answer	3.2	0	2.2

Household Income

Although there was a high proportion of non-responses among attached (married or common-law) women in ElderWeb (42%), there appeared to be fairly large income differences between men and women, and between attached and unattached (never married, widowed, separated, or divorced) individuals in both networks (Table 5). These differences were greatest among people with yearly household earnings greater than $50,000 or less than $25,001. While about 30% of attached men in ElderWeb and CRM had yearly household incomes greater than $50,000, only 8% of attached ElderWeb women, and no attached CRM women, had yearly household incomes in this range. Conversely, 9% of unattached ElderWeb men, and 33% of unattached CRM men, had household incomes less than $25,001. This can be compared to the finding that 41% of

unattached ElderWeb women, and 60% of unattached CRM women, had household incomes less than $25,001. It should be emphasized, however, that the proportion of ElderWeb and CRM members who stated their household incomes were less than $10,000 was 13% or less for both unattached men and unattached women. Furthermore, approximately five-in-ten men and women in ElderWeb and CRM still had yearly household incomes between $25,001 and $55,000.

Table 5.
Yearly Household Income of ElderWeb and CRM Members, by Gender and Marital Status (%)

INCOME	ElderWeb			
	Attached*		Unattached**	
	Male (n=36)	Female (n=11)	Male (n=11)	Female (n=22)
Less than $10,000	2.8	0	0	0
$10,000 - $25,000	5.6	16.7	9.1	40.9
$25,001 - $40,000	22.2	0	45.5	36.4
$40,001 - $55,000	30.6	33.3	18.2	9.1
$55,001 - $70,000	16.7	8.3	9.1	0
More than $70,000	13.9	0	9.1	0
No answer	8.3	41.7	9.1	13.6
	CRM			
	Attached*		Unattached**	
	Male (n=49)	Female (n=11)	Male (n=12)	Female (n=15)
Less than $10,000	0	0	8.3	13.3
$10,000 - $25,000	12.2	18.2	25.0	46.7
$25,001 - $40,000	32.7	27.3	33.3	13.3
$40,001 - $55,000	18.4	45.5	25.0	20.0
$55,001 - $70,000	14.3	0	0	0
More than $70,000	14.3	0	0	0
No answer	8.2	9.1	8.3	6.7

* Individuals who were widowed, separated, divorced, or never married
** Individuals who were married or in a common-law relationship

Employment Status and Primary Occupation

About 95% of ElderWeb and CRM members reported they were retired or semi-retired (Table 6). Before retirement, or in their current employment, 42% of ElderWeb members and 55% of CRM members worked or work in professional or managerial positions. Furthermore 16% of ElderWeb members, but only 5% of CRM members,

worked or work in clerical positions. The proportion of ElderWeb and CRM members who worked or work in any of the other employment categories listed in Table 6 was small, with no single category exceeding 8%.

Table 6.
Employment Status and Primary Occupation of ElderWeb and CRM Members (%)

	ElderWeb (n=81)	CRM (n=89)
Employment Status		
Retired	82.7	82.0
Semi-Retired/Part-Time	12.3	12.4
Work Full-Time	3.7	3.4
Unemployed	0	1.1
Disability Full-Time	1.2	0
No Answer	0	1.1
Primary Occupation		
Professional/Managerial	58.0	69.7
Physical Trade	6.2	7.9
Clerical	16.0	4.5
Technical Trade	4.9	4.5
Homemaker	4.9	1.1
Service and Hospitality	7.4	5.6
Agriculture	1.2	0
Artistic	0	2.2
No Answer	1.2	4.3

Residence

Although all ElderWeb members resided in Alberta, and the majority of CRM members resided in Manitoba (81%) some CRM members who completed the survey also resided in Alberta (1%), other Canadian provinces (14%), the United States, (2%), and Europe (2%) (Table 7).

Table 7.
Residence of ElderWeb and CRM Members (%)

RESIDENCE	ElderWeb (n=81)	CRM (n=89)
Alberta	100.0	1.1
Manitoba	0	80.9
Other Canadian Province	0	13.5
United States	0	2.2
Europe	0	2.2

Physical, Sensory, and Emotional Difficulties

When ElderWeb and CRM members were asked if they experienced any of the difficulties listed in Table 8, the former were generally more likely to answer in the affirmative. About eight-in-ten ElderWeb members had at least one of these difficulties, compared to about six-in-ten CRM members. Most of these differences can be explained by the fact that: (1) 28% of ElderWeb men had hearing impairments, versus 16% of CRM men; (2) 19% of ElderWeb men had hypertension, versus 11% of CRM men; (3) 32% of ElderWeb women had sleeping difficulties, versus 7% of CRM women; and (4) 32% of ElderWeb women were lonely or depressed, versus 7% of women in CRM.

Within ElderWeb and CRM, large gender differences were also observed in some of these difficulties. In both networks, about 20% of men had heart problems, compared to about 8% of women. Furthermore, about three-in-ten women in ElderWeb and CRM had joint or bone problems, compared to about two-in-ten men. Finally, women in both networks were more likely to have sleeping difficulties or to feel lonely or depressed then men. This was most pronounced in ElderWeb, where 32% of women, but only 2% of men stated they were lonely or depressed.

Table 8.
Physical, Sensory, and Emotional Difficulties Experienced by ElderWeb and CRM Members, by Gender (%)

	ElderWeb		
	Male (n=47)	Female (n=34)	Total (n=81)
Joint or Bone Problem	21.3	32.4	25.9
Muscular Problem	8.5	5.9	7.4
Mobility Problem	2.1	0	1.2
Difficulty Driving	2.1	2.9	2.5
Hearing Impairment	27.7	8.8	19.8
Visual Impairment	14.9	8.8	12.3
Speech Impairment	0	0	0
Heart Problem	19.1	8.8	14.8
Hypertension	19.1	20.6	19.8
Diabetes	6.4	5.9	6.2
Sleeping Difficulty	14.9	32.4	22.2
Loneliness or Depression	2.1	32.4	14.8
At least one of the above	74.5	79.4	76.5
	CRM		
	Male (n=62)	Female (n=27)	Total (n=89)
Joint or Bone Problem	16.1	25.9	19.1
Muscular Problem	6.5	11.1	7.9
Mobility Problem	3.2	0	2.2
Difficulty Driving	0	0	0
Hearing Impairment	16.1	14.8	15.7
Visual Impairment	12.9	11.1	12.4
Speech Impairment	1.6	0	1.1
Heart Problem	21.0	7.4	16.9
Hypertension	11.3	25.9	15.7
Diabetes	11.3	7.4	10.1
Sleeping Difficulty	14.5	22.2	16.9
Loneliness or Depression	3.2	7.4	4.5
At least one of the above	54.8	63.0	57.3

Volunteerism

As presented in Table 9, ElderWeb and CRM members were quite active volunteers in their communities. Almost 65% of participants from either network volunteered for at least one organization.

Table 9.
Volunteerism Among ElderWeb and CRM Members (%)

	ElderWeb (n=81)	CRM (n=89)
Volunteer	66.7	65.2
Do not Volunteer	30.9	30.3
No Answer	2.5	4.5

PART TWO: GENERAL CITS-RELATED EXPERIENCES, ATTITUDES, AND BEHAVIOURS

Previous Computer Experience

The majority of ElderWeb and CRM members had used a computer for more than three years (Table 10). However, men had generally used computers longer than women. In ElderWeb, 85% of men, compared to 71% of women, had used computers for more than three years. In CRM, 76% of men, compared to 62% of women, had used computers this long.

It is also interesting that, except for women from ElderWeb, only a small proportion of older adults in either organization did not use computers, or began computing within the previous year. Two percent of ElderWeb men, 5% of CRM men, and 7% of CRM women fell into one of these categories, compared to 18% of ElderWeb women.

Possession of Internet Accounts

Men in ElderWeb and CRM were more likely than women to possess an Internet account (Table 11). Also, a higher proportion of ElderWeb men had Internet accounts than men from CRM. About 50% of women from ElderWeb and CRM had an Internet account. Conversely, about 72% of ElderWeb men and 63% of CRM men had an account.

Table 10.
Number of Years ElderWeb and CRM Members Used a Computer, by Gender (%)

YEARS USED A COMPUTER	ElderWeb		
	Male (n=47)	Female (n=34)	Total (n=81)
Don't Use a Computer	2.1	5.9	3.7
< 1 Year	0	11.8	4.9
1-3 Years	12.8	11.8	12.3
4-6 Years	21.3	26.5	23.5
7-9 Years	12.8	11.8	12.3
10+ Years	51.1	32.4	43.2
	CRM		
	Male (n=62)	Female (n=27)	Total (n=89)
Don't Use a Computer	0	3.7	1.1
< 1 Year	4.8	3.7	4.5
1-3 Years	19.4	29.6	22.5
4-6 Years	12.9	7.4	11.2
7-9 Years	16.1	14.8	15.7
10+ Years	46.8	40.7	44.9

Table 11.
Proportion of ElderWeb and CRM Members who Possessed an Internet Account, by Gender

INTERNET ACCOUNT	ElderWeb		
	Male (n=47)	Female (n=34)	Total (n=81)
Have Account	72.3	52.9	64.2
Don't Have Account	25.5	44.1	33.3
No Answer	2.1	2.9	2.5
	CRM		
	Male (n=62)	Female (n=27)	Total (n=89)
Have Account	62.9	48.1	58.4
Don't Have Account	35.5	48.1	39.3
No Answer	1.6	3.7	2.2

Attitudes About Computing

Participants were also asked if they strongly agreed, agreed, disagreed, strongly agreed, or had no opinion about the ten attitudinal statements about computing in Table 12. Of these ten statements, four were positive in nature (i.e. about benefits of computing) four were negative (i.e. about risks of computing), and two were mixed (i.e. they could be interpreted as negative or positive, depending on one's point of view).

Table 12.
Computer-Related Attitudes of ElderWeb and CRM Members (%)

	ElderWeb					
	Male (n=47)			Female (n=34)		
Positive Statements	A/SA*	D/SD*	No Opinion	A/SA*	D/SD*	No Opinion
Social Advantage	68.1	12.8	19.1	64.7	11.8	23.5
Financial Advantage	65.9	19.2	14.9	44.1	5.9	50.0
Health and Well-Being	55.3	14.9	27.7	55.9	8.8	32.4
Increases Free Time	17.0	70.2	12.8	14.7	52.9	29.4
Negative Statements						
Design Comp. Better	42.6	17.0	40.4	23.5	8.8	64.7
Don't feel in Control	25.6	61.7	12.8	50.0	38.3	5.9
Invasion of Privacy	27.7	40.5	31.9	26.4	47.1	23.5
Computing is Stressful	6.4	85.1	8.5	14.7	70.6	14.7
Mixed Statements						
Like to Know More	100	0	0	94.1	2.9	0
Most of Spare-Time	23.4	68.1	8.5	26.4	55.9	14.7
	CRM					
	Male (n=62)			Female (n=27)		
Positive Statements	A/SA*	D/SD*	No Opinion	A/SA*	D/SD*	No Opinion
Social Advantage	75.8	4.8	19.4	85.2	0	14.8
Financial Advantage	61.3	12.9	25.8	70.4	3.7	25.9
Health and Well-Being	56.4	12.9	30.6	77.7	3.7	18.5
Increases Free Time	21.0	61.3	16.1	14.8	77.8	7.4
Negative Statements						
Design Comp. Better	50.0	12.9	37.1	37.0	22.2	40.7
Don't Feel in Control	29.0	51.6	17.7	33.3	55.5	11.1
Invasion of Privacy	22.6	53.3	24.2	29.6	44.4	25.9
Computing is Stressful	4.8	83.9	9.7	7.4	92.6	0
Mixed Statements						
Like to Know More	96.8	1.6	1.6	100	0	0
Most of Spare-Time	54.5	32.2	12.9	40.7	51.8	7.4

*A=agree, SA=strongly agree, D=disagree, SD=strongly disagree

Positive Statements

Most participants agreed or strongly agreed computing was socially advantageous. However, compared to other groups, women from CRM, and people from either network who were unattached, were more likely to support this view. Eighty-five percent of CRM women agreed or strongly agreed computing was socially advantageous, compared to 76% of CRM men, 66% of ElderWeb men, and 65% of ElderWeb women (Table 12). Similarly, 82% of people who were unattached held this view, compared to 69% of those who were attached (Table 13). The presence of absence of loneliness or depression did not appear to be a strong indicator of varied responses to this statement, as about 75% of people from either group stated computing was socially advantageous (Table 13).

Table 13.
Proportion of Participants who Agreed or Strongly Agreed that Computing was Socially Advantageous, by Marital Status and Loneliness/Depression (both networks combined)

Attached	Unattached	Not Lonely/ Depressed	Lonely/ Depressed
68.5 (n=108)	81.7 (n=60)	72.7 (n=154)	75.0 (n=16)

Participants also typically felt that computing enhanced their health and well-being. Once again, women from CRM were most likely to hold this view. However, age or the presence of a physical, sensory, or emotional difficulties did not make a considerable difference in the responses people provided. About 78% of women from CRM felt computing enhanced their health and well-being, whereas about 55% of CRM men, ElderWeb men, and ElderWeb women felt this way (Table 12). Furthermore, roughly 60% of people from both networks agreed or strongly agreed computing enhanced their health and well-being, regardless of whether or not they were over age 65, or had at least one of the physical, sensory, or emotional difficulties listed in Table 8 (Table 14).

Table 14.
Proportion of Participants who Agreed or Strongly Agreed that Computing Enhanced their Health and Well-Being, by Age Group and Presence of a Physical, Sensory, or Emotional Difficulty (both networks combined)

Less than 65 Years	65 Years or Older	Difficulty	No Difficulty
60.0 (n=60)	56.0 (n=93)	58.4 (n=113)	61.4 (n=57)

When asked if they felt computing was financially advantageous, women from ElderWeb were less likely to agree or strongly agree than men from ElderWeb, and men and women from CRM. About 45% of ElderWeb women felt computing was financially advantageous, compared to 66% of ElderWeb men, 61% of CRM men, and 70% of CRM women (Table 12). In addition, participants from either network were slightly more likely to support this statement if they had yearly household incomes greater than $55,000. Roughly seven-in-ten people with yearly household incomes greater than $55,000 agreed or strongly agreed that computing was financially advantageous, compared to about six-in-ten people with yearly household incomes below this amount (Table 15).

Table 15.
Proportion of Participants who Agreed or Strongly Agreed that Computing was Financially Advantageous, by Yearly Household Income (both networks combined)

< $25,001	$25,001-$55,000	> $55,000
59.5 (n=37)	60.0 (n=85)	67.9 (n=28)

Finally, the only positive statement about computing that most survey participants did not support was "computing increases the time I have to do other things". Only about 15% of women, and 20% of men, from either network agreed or strongly agreed with this statement (Table 12).

Negative Statements

While 50% of men from ElderWeb and 43% of men from CRM agreed or strongly agreed that computers should be designed better, this was concurred with by 24% of ElderWeb women and 37% of CRM women (Table 12). Also, 45% of people less than age 65 felt computers should be designed better, compared to 36% of people who were age 65 or older (Table 16). Responses between people who had and did not have a physical, sensory, or emotional difficulty did not differ, however, as about four-in-ten people in either group felt computers should be designed better (Table 16).

It is also interesting that, in relation to the other groups, more women from ElderWeb, more people aged 65 or older, and more people who had a physical, sensory, or emotional difficulty, did not feel in control when computing. Fifty percent of women from ElderWeb agreed or strongly agreed with this statement, whereas agreement among ElderWeb men, CRM men, and CRM women was about 30% (Table 12). Furthermore, about 38% of people aged 65 or older, and about 35% of people who had at least one physical, sensory, or emotional difficulty did not feel in control when computing, compared to 22% of those under age 65, and 28% of those who did not have a difficulty (Table 16).

Although the meaning of the statement, "I find using computers quite stressful" may seem somewhat similar to the statement, "I don't feel in control when using a computer", far less people agreed with the former. Only 6% of ElderNet men, 5% of CRM men, and 7% of CRM women, agreed or strongly agreed they found computing stressful (Table 12). However, this proportion was higher among ElderWeb women (15%). Furthermore, 10% of people who had at least one of the physical, sensory, or emotional difficulties agreed or strongly agreed with this statement, compared to about 4% of those who did not have one of these difficulties (Table 16).

Finally, just under 30% of men and women from either network felt computers could be used to invade their privacy (Table 12). Larger differences emerged with respect to age across the two networks, however, as 32% of people under the age of 65 felt this way, compared to 19% of people age 65 or older (Table 16).

Table 16.
Proportion of Participants who Agreed or Strongly Agreed with Negative Statements about Computing, by Age Group and Presence of at Least One Physical/Sensory/Emotional Difficulty (both networks combined)

STATEMENT	Less than 65 Years	65 Years or Older	Difficulty	No Difficulty
Design Computers Better	45.0	35.5	39.8	42.1
Don't Feel in Control	21.6	37.6	35.4	28.1
Invasion of Privacy	31.6	19.4	23.9	29.5
Computing is Stressful	6.7 (n=60)	7.7 (n=93)	9.8 (n=113)	3.5 (n=57)

Mixed Statements

With respect to the mixed statement, "I would like to know more about computers than I currently do", the vast majority of participants agreed or strongly agreed. All ElderWeb men and CRM women felt this way, as did 94% of ElderWeb women and 97% of CRM men (Table 12). The other mixed statement to which participants responded was, "computing is the main way I spend my spare-time". About one-quarter of ElderWeb men and women agreed or strongly agreed with this statement, compared to 41% of CRM women and 55% of CRM men (Table 12). Responses to this statement also slightly differed between people who were attached and unattached. Forty-one percent of the former, but about 35% of the latter, spent most of their spare-time computing (Table 17). Also, 49% of people with a sleeping difficulty spent most of their spare-time computing, compared to 36% of people who did not have a sleeping difficulty (Table 17). Responses from people who were lonely or depressed and those who were not did not vary. Thirty-eight percent of people in either group spent most of their spare time computing (Table 17).

Table 17.
Proportion of Participants who Agreed or Strongly Agreed that Computing was the Main way they Spent their Spare-Time, by Marital Status, Loneliness/Depression, and Sleeping Difficulty (both networks combined)

Attached	Unattached	Lonely/ Depressed	Not Lonely/ Depressed	Difficulty Sleeping	No Difficulty Sleeping
40.8 (n=108)	35.0 (n=60)	37.5 (n=16)	38.3 (n=154)	48.5 (n=33)	35.8 (n=137)

Computer Applications

To learn more about how respondents used personal computers, they were asked how often they used the applications in Table 18. Clearly, ElderWeb and CRM members used their personal computers most often for word processing (Table 18). Eighty-five percent of ElderWeb members, and 92% of CRM members, stated they used word processing applications at least sometimes. For the other computer applications, however, usage rates were more varied. In decreasing order of prevalence, ElderWeb and CRM members used their computers at least sometimes for learning about subjects they were interested in (70% and 72%, respectively), accessing other Internet sites or BBS's (62% and 54%, respectively), financial applications (54% and 53%, respectively), playing computer games (54% and 53%, respectively), creating spreadsheets (52% and 45%, respectively), using graphics tools (35% and 54%, respectively), communicating with friends or peers (48% and 54%, respectively), communicating with family members (34% and 47%, respectively), learning about health (25% and 29%, respectively), banking (10% and 13%, respectively), and purchasing products (2% and 10%, respectively). Thus, with the exception of word processing, learning about subjects they were interested in, and accessing other BBS's or Internet sites, greater than 40% of ElderWeb and CRM members used personal computers for the applications in Table 18 seldom, or not at all.

Table 18.
Frequency ElderWeb and CRM Members Used Different Computer Applications (%, calculated across rows)

APPLICATION	ElderWeb (n=81)		
	Never/Seldom	Sometimes	Often/Very Often
Word Processing	13.5	21.0	64.2
Financial Applications	45.7	23.5	29.6
Accessing Other Sites	35.8	19.8	42.0
Computer Games	44.4	29.6	24.7
Communicate Family	65.5	12.3	22.2
Communicate Peers	51.8	30.9	17.3
Learning about Health	75.3	18.5	6.1
General Learning/Info.	28.3	38.3	32.1
Purchasing Products	96.3	1.2	1.2
Spreadsheets	54.3	17.3	27.2
Graphics	64.2	21.0	13.6
Banking	88.9	4.9	5.0
	CRM (n=89)		
	Never/Seldom	Sometimes	Often/Very Often
Word Processing	7.8	5.6	86.5
Financial Applications	46.1	20.2	33.7
Accessing Other Sites	44.9	10.1	43.8
Computer Games	47.2	36.0	16.8
Communicate Family	50.6	22.5	24.7
Communicate Peers	45.0	23.6	30.4
Learning about Health	69.7	21.3	7.8
General Learning/Info.	27.0	23.6	48.3
Purchasing Products	89.9	7.9	2.2
Spreadsheets	48.4	24.7	26.9
Graphics	44.9	28.1	25.9
Banking	86.6	5.6	7.8

PART THREE: NETWORK SPECIFIC FINDINGS

ELDERWEB

Reasons for Joining ElderWeb

When participants were asked an open-ended question about why they joined, or were thinking about joining, ElderWeb, their answers almost exclusively pertained to three major themes (Table 19). First, the most common reason (51%) people joined ElderWeb was to learn about computers, the Internet, or current technological

developments. "Communicating with others" was the second most common reason for joining, which was stated by 42% of ElderWeb participants. Third, 25% of ElderWeb participants joined for general learning or information. Only 5% of ElderWeb participants joined for other purposes.

Table 19.
Reason ElderWeb Participants Joined, or were Thinking about Joining, ElderWeb (%)*

Reason for Joining	Percent (n=81)
Communicate with Others	41.9
Learn about Computers or Internet	50.6
General Learning or Information	25.9
All Others	4.9
No Answer	1.2

*Column percentages total greater than 100% because multiple responses were sometimes provided.

Frequency ElderWeb Monthly Meetings Were Attended

Fifty percent or more of ElderWeb participants attended the monthly meetings often, or very often (Table 20). Cross-tabulations of the survey data also reveal some groups attended more often than others (Table 20). Eighty-five percent of men, but only 59% of women, attended ElderWeb meetings at least often. Furthermore, although more women than men were unattached, 79% of attached individuals attended meetings at least often, compared to 66% of those who were unattached. Finally, 78% of people who were not lonely or depressed attended meetings at least often, compared to only 50% of those who were lonely or depressed.

Table 20.
Frequency ElderWeb Members Attended Monthly Meetings, by Gender, Marital Status, and Loneliness or Depression (%)

Frequency Attend Meetings	Male (n=47)	Female (n=34)	Attached (n=48)	Un-attached (n=33)	Lonely/ Depress. (n=12)	Not Lonely/ Depress. (n=69)
Never	2.1	2.9	2.1	3.0	8.3	1.4
Seldom	2.1	8.8	6.3	3.0	16.7	2.9
Sometimes	10.6	23.5	12.5	21.1	25.0	14.5
Often	44.7	26.5	45.8	24.2	8.3	42.0
Very Often	40.4	32.4	33.3	42.2	41.7	36.2
No Answer	0	5.9	0	6.1	0	2.9

Frequency ElderWeb's BBS was Used

As with the monthly meetings, there were also variations in how often different groups used ElderWeb's BBS (Table 21). Forty-four percent of women, 39% of people who were unattached, and 50% of people who were lonely or depressed did not use ElderWeb's BBS at all. This can be contrasted with 11% of males, 15% of those who were attached, and 20% of those who were not lonely or depressed. Conversely, males, people who were attached, and people who were not lonely or depressed were more likely than comparison groups to use the BBS four or more hours per week. Forty-five percent of male, 21% of female, 40% of attached, 27% of unattached, 17% of lonely or depressed, and 38% of not lonely or depressed participants used the BBS at least four hours per week.

Table 21.
Frequency Participants used ElderWeb's BBS, by Gender, Marital Status, and Loneliness or Depression (%)

Frequency Used the BBS	Male (n=47)	Female (n=34)	Attached (n=48)	Un-attached (n=33)	Lonely/ Depress. (n=12)	Not Lonely/ Depress. (n=69)
Not at all	10.6	44.1	14.6	39.4	50.0	20.3
<1 hour	21.3	14.7	25.0	9.1	8.3	20.3
1-3 hours	23.4	17.6	20.8	21.2	25.0	20.3
4-6 hours	27.7	5.9	27.1	6.1	8.3	20.3
7+ hours	17.0	14.7	12.5	21.2	8.3	17.4
No answer	0	2.9	0	3.0	0	1.4

Reasons Why Participants Used ElderWeb's BBS

Of the 60 ElderWeb participants who used the BBS, the majority (51%) mainly used it for general information or learning (Table 22). Twenty-eight percent of ElderWeb participants mainly used the BBS for communicating with others, and about 12% mainly used it for learning about computers or the Internet. Less than 10% of participants used the BBS for another main purpose, such as curiosity, keeping their minds active, and entertainment.

Table 22.
Reasons Why ElderWeb Members Used the BBS (%)*

Reason for Using	Percent (n=60)
Communicate with Others	27.9
Learn about Computers or Internet	11.5
General Learning or Information	50.8
All Others	9.8
No Answer	13.1

*Universe = ElderWeb members who have used the BBS. Column percentages total greater than 100% because multiple responses were sometimes provided

Reasons Why Participants had not Used ElderWeb's BBS

Although there was a high proportion of non-responses (30%) to the open-ended question that asked the main reason why the 21 ElderWeb participants who had not used the BBS why they had not done so, it is still relevant that 40% had not used the BBS because of technical or equipment difficulties (Table 23). Fifteen percent of participants who had not used the BBS also required additional assistance, and 15% stated they simply had no interest in using it.

Table 23.
Reasons Why ElderWeb Members had not Used the BBS (%)*

Reason for Not Using the BBS	Percent (n=21)
Technical/Equipment Difficulty	40.0
Require Assistance	15.0
No Interest	15.0
No Answer	30.0

*Universe = ElderWeb members who have used the BBS

Preferred Active and Inactive Components of ElderWeb's BBS

At the time the survey research for this thesis was conducted, ElderWeb's BBS had eleven "active" components that had information posted in them, or could be accessed by users (Table 24). The active components available were: (1) the ElderWeb Notice Board, which mainly provided administrative information such as the times and locations of ElderWeb meetings; (2) email; (3) "ElderChat", which allowed people logged on to the BBS to communicate with one another in real time; (4) a technology report; (5) a humor section; (6) international news; (7) travel information; (8) information about local senior centres; (9) bird watching information; (10) weather information; and (11) leisure and entertainment information. In addition to these eleven active components, ElderWeb's BBS had eleven "inactive" components that were not used, either because information providers had not yet posted information in them, because the ElderWeb administration was waiting until the WWW site was developed to activate them, or because they were not used frequently enough by members. The twelve inactive components are also listed in Table 24.

When participants were asked to select the five active or inactive components of ElderWeb's BBS they found, or would have potentially found, most useful, the ElderWeb Notice Board (75%), email (59%), and the technology report (47%) were rated as the three most useful components. However, even though the BBS did not have a health information section on it, participants generally felt this type of information was more useful than any of the other active components that were offered. Health information was selected as one of the five most useful components by 33% of ElderWeb participants, whereas 30% selected humor, 28% selected ElderChat, 25% selected international news, 27% selected travel information, 21% selected information about senior centres, 15% selected leisure or entertainment information, 12% selected weather information, and 11% selected information about bird watching. Other than information about continuing education courses (28%), home and garden information (21%), and local dining information (21%), 15% or less of participants selected the other inactive components.

Table 24.
Components of ElderWeb's BBS Participants Found, or Would have Found, Most Useful (%)*

Active Components	Percent (n=81)
ElderWeb Notice Board	74.9
Electronic Mail	59.3
Technology Report	46.9
Humor	29.6
Chat Forum	28.4
Travel Information	27.2
International News	24.7
Information about Local Senior Centres	21.0
Leisure/Entertainment Information	14.8
Weather Information	12.3
Bird Watching Information	11.1
Inactive Components	
Health Information	33.3
Continuing Education Courses Information	28.4
Home and Garden Information	21.0
Local Dining Information	21.0
Listings of Items for Sale or Trade	14.8
Debate Forum	8.6
Community Associations Information	4.9
Forum for Specialized Conferences	4.9
Federal Government Information	4.9
Shopping Mall (local advertising)	2.5
I Remember	2.5

*Column percentages are calculated across rows. Respondents, regardless of whether or not they had used the BBS, were asked to select the five components they thought were most useful. Active and inactive components were listed together in the survey.

CREATIVE RETIREMENT MANITOBA

Membership in the CRCC and SIG

Sixty-nine percent of men, and 78% of women were members of the CRCC (Table 25). Also, 29% of males and 48% of females were members of CRM's SIG. Seventy-four percent of males were members of at least one of these clubs, compared to 85% of females. Finally, 24% of males and 41% of females were members of both clubs.

Table 25.
Membership in the CRM Computer Club and Special Internet Group, by Gender (%)*

	Male (n=62)	Female (n=27)	Total (n=89)
Computer Club	69.4	77.8	71.9
Special Internet Group	29.0	48.1	34.8
At least one	74.2	85.2	77.5
Both Clubs	24.2	41.0	29.2

Frequency CRM Participants Used the SCIP Site

It is interesting that, similar to ElderWeb, a high proportion of CRM participants never used CRM's SCIP site (Table 26). Forty-two percent of participants never used the site, 20% used it less than one hour per week, 26% used it between one and three hours per week, and 11% used it four or more hours per week.

Other than the fact that men were slightly more likely than women to have never used the SCIP site (44% and 37%, respectively), men and women generally used the SCIP site with equal frequency. More noticeable differences were observed, however, in the usage patterns of attached and unattached participants. Fifty percent of attached CRM participants never used the SCIP site, compared to 22% of those who were unattached. Also, people who were unattached were more likely than people who were attached to use the sites less than one hour per week (22% and 18%, respectively), one to three hours per week (41% and 20%, respectively), and four or more hours per week (26% and 10%, respectively).

Table 26.
Frequency Participants used CRM's SCIP Site, by Gender and Marital Status (%)

Frequency Used the SCIP Site	Male (n=62)	Female (n=27)	Attached (n=60)	Unattached (n=27)	Total (n=89)
Not at all	43.5	37.0	50.0	22.2	41.6
<1 hour	21.0	18.5	18.3	22.2	20.2
1-3 hours	25.8	25.9	20.0	40.7	25.8
4-6 hours	4.8	14.8	5.0	14.8	7.9
7+ hours	4.8	0	5.0	11.1	3.3
No answer	0	3.7	1.7	0	1.1

Reasons Why Participants Used CRM's SCIP Site

Forty-four percent of the 52 CRM participants who had used the SCIP site mainly used it for general learning or information (Table 27). The second most common reason (27%) CRM participants mainly used the site was for obtaining email addresses on "Cyberpals". Cyberpals is a list of people across the world who are interested in communicating with other people through email. Fourteen percent of CRM participants mainly used the site for downloading software, 8% mainly used it for learning about computers, 8% mainly used it for entertainment, and 8% mainly used it for other purposes such as "because of my age", "curiosity", and "to help others".

Table 27.
Reasons Why CRM Participants Used the SCIP Site (%)*

Reason for Using	Percent (n=52)
General Learning or Information	44.2
Communicate with other via Cyberpals	26.9
Download Software	13.5
Learn about Computers	7.7
Entertainment	7.7
All Others	13.5
No Answer	13.5

*Universe = All CRM participants, with the exception of those who did not use the site at all. Column percentages total greater than 100% because multiple responses were sometimes provided

Reasons Why Participants had not Used CRM's SCIP Site

As with ElderWeb, there was a high proportion of non-responses (32%) to the open-ended question that asked why 37 of CRM participants had not used the SCIP site. However, CRM participants stated a wider variety of reasons for not using the site than ElderWeb participants. Sixteen percent of CRM participants did not use the site because they did not have an Internet account, and 14% had not used the site because they "were away a lot" (Table 28). Furthermore, 22% of CRM participants had not used the site because they required assistance, encountered technical difficulties, or encountered equipment difficulties. The final three reasons participants had not used the SCIP site were because they could not afford an Internet account (5%), did not know the site existed (5%), or were not interested in using the site (5%).

Table 28.
Reasons Why CRM Members had not Used the SCIP Site (%)*

Reason for Not Using SCIP	Percent (n=21)
No Internet Account	16.2
Away a lot	13.5
Require Assistance	10.8
Technical/Equipment Difficulty	10.8
Could not Afford Internet Account	5.4
Did not know the Site Existed	5.4
No Interest	5.4
No Answer	32.4

*Universe = ElderWeb members who have used the BBS. Column percentages total greater than 100% because multiple responses were sometimes provided

Preferred Components of CRM's SCIP Site

Regardless of whether or not they had used the SCIP site, CRM members were asked to select five components of the site they found, or would potentially have found, most useful (Table 29). When asked this question, 54% of participants selected the Cyberpals list as one of the five most useful components. After Cyberpals, the five components participants found most useful were the lifestyle section (49%), Senior Times (43%), health information links (37%), links to senior centres and clubs (33%), and special online forums and conferences (29.2%). It is also interesting that less people selected "health line" (25%) than general health information links as one of the five most useful components of the SCIP site. Each of the other components was chosen by less than 25% of participants, with information about special needs (8%), "ask a great granny" (2%), and housing information (3%) being viewed as least useful.

Table 29.
Components of CRM's SCIP Site Participants Found, or Would have Found, Most Useful (%)*

Components	Percent (n=81)
Cyberpals (email pen pal list)	53.9
Lifestyle (e.g. stamp collecting, golf)	49.4
Senior Times (CRM news and announcements)	42.7
Health Information (links to health organizations)	37.1
Senior Centres and Clubs	33.7
Special Online Forums/Conferences	29.2
Health Line (send questions to retired physician)	24.7
Other Senior's Organizations (e.g. Elderhostel)	23.6
Income/Finance (e.g. estate planning, banks, taxes)	23.6
Federal Government Information/Departments	20.2
Legal/Consumer Issues (and associations)	16.9
Advocacy (e.g. Canadian Grey Panthers)	12.4
Manitoba Senior's Handbook	11.2
Special Needs (e.g. meals on wheels, disabilities)	7.9
Housing (e.g. nursing homes, assistive design)	3.4
Ask a Great Granny (retired psychologist/journalist)	2.2

*Column percentages are calculated across rows. Respondents, regardless of whether or not they had used the SCIP site, were asked to select the five components they thought were most useful. All components were active and available on the site.

Chapter Five

DISCUSSION OF SURVEY RESULTS AND INTERVIEWS

Introduction

This chapter is divided into four major sections. In the first section, potential explanations for differences between ElderWeb and CRM members for some of the baseline characteristics presented in Chapter Four are offered. Some of these characteristics are also compared with national averages for older adults in Canada. The purpose of making these comparisons is not to generate universal claims about the meaning of CITS for all older adults in Canada, but to provide richer descriptions about the types of people who are likely to join organizations like ElderWeb and CRM. For example, it would be illogical to state that people who join organizations like ElderWeb and CRM are financially "well-off", without providing some reference point for what "well-off" might mean. In the second and third sections of this chapter, results from the surveys, member interviews, peer-trainer interviews, and network administrator interviews are discussed to more directly address the research question of this thesis: "In what ways do older adults use CITS, and what meanings do CITS hold for older adults who use them? To retain a holistic focus on health and well-being, the second section discusses if participants stated they experienced a range of benefits from using CITS, or joining ElderWeb and CRM. The third section, in contrast, discusses more negative experiences and challenges participants associated with CITS, and joining the two organizations. Finally, mainly based on interviews that were conducted with members, peer-trainers, and administrators, a discussion of three general issues related to CITS and older adults is offered in the fourth section of this chapter: (1) how some participants felt about computerization in the workplace, and its relationship to older adults; (2) how they felt about older adults who do not use computers; and (3) if they felt there are any differences between the use of computers by older adults, and their use by other age groups.

Part One: Discussion of Baseline Member Characteristics

Gender Differences

Given that many studies have estimated that between 65% and 75% of Internet users are male (Leitch, 1995; Rowan, 1995; "Survey", 1995) it is not too surprising that about 58% of ElderWeb participants and 70% of CRM participants were male. However, because there is a higher proportion of women than men in the total population of older adults, especially over the age of 65 (Desjardins & Dumas, 1993; Marshall & McPherson, 1993), these findings raise the interesting possibility that gender differences in Internet and computer usage may be even more pronounced between older males and females, than between males and females in younger age groups. Although a larger, representative, study would have to be conducted to better address this possibility, these findings emphasize how important it is for studies to be sensitive to the multitude of demographic factors that are associated with CITS-related behaviours (i.e. not just age, race, gender, education, or income levels alone). Furthermore, these findings lend additional support to critics who are concerned that women of all ages are being excluded from the computer or information revolution (Gurak, 1997; Herring, 1994; Wajcman, 1991).

The finding that there were about 12% more women in ElderWeb than in CRM also raises a number of questions about gender differences within and between the two organizations. For example, was there something intrinsically different about ElderWeb that encouraged greater interest from women? Did women and men in ElderWeb and CRM participate in each organization's computer networks equally? Did women and men in each organization use computers or the networks differently? These questions are considered throughout this chapter.

Age Differences

Because the proportion of women in ElderWeb was considerably higher than in CRM, and because there are more women than men over the age of 65 in Canada, one might expect that ElderWeb members would be older than CRM members. Conversely, ElderWeb participants were slightly younger than CRM participants. One possible explanation for this finding was that the meetings of the Creative Retirement Computer Club and Creative Retirement Special Internet Group were held only once per month, and always took place in the same location during the daytime. ElderWeb, in contrast,

typically held about five meetings per month in different locations across Edmonton, and at least one of these meetings always took place during the evening. ElderWeb participants may have been younger because ElderWeb meetings were more accommodating to working older adults, who would tend to be under the age of 65. Because of the similar proportions of retired, semi-retired, and employed participants in each network, this explanation is not adequate.

Although the different times of ElderWeb and CRM meetings may not account for the lower age of ElderWeb members, there are still several other possible explanations for this finding. For example, while Alberta is demographically the youngest province in Canada, Manitoba is the second oldest. The proportion of people aged 65 or older in Manitoba is 13.4%, and 9.1% in Alberta (Ulysse, 1997). ElderWeb may have been a younger organization, simply because Alberta has less individuals over the age of 65. The strong provincial focus of each organization supports this explanation.

Another explanation for this finding is the different household income levels of people over the age of 65 in ElderWeb and CRM. Only 8% of ElderWeb members over the age of 65 had yearly household incomes less than $25,001, compared to 20% of CRM members. Because yearly membership fees for ElderWeb were $69, and CRM members paid a yearly membership fee of $10 and a voluntary donation of $1 for each monthly meeting they attended, CRM may have been more affordable to people over the age of 65. This is based on the fact that income levels of most people begin to decrease once they retire (Desjardins & Dumas, 1993; Ulysse, 1997).

A related reason why ElderWeb members may have been younger than CRM members is the two organizations had considerably different philosophies about whether or not they should play a role in providing CITS to older adults with lower incomes, who would normally tend to be older (Ulysse, 1997; Desjardins & Dumas, 1993). An administrator from CRM stated that one of the main goals of CRM was to provide computer access to older adults with limited incomes. CRM had a program called "Computers for Charity", where the staff and members of the organization collected, refurbished, and then distributed hardware to older adults with lower incomes. ElderWeb, on the other hand, did not provide this type of service. According to the administrator of ElderWeb:

> [ElderWeb] is really for computer-using retired people, and from our stats we know that the largest percentage of our people have retirement incomes in excess of $40,000. That's where the basis for most of our membership comes from. I think it's probably up to other organizations to provide some of those services.

With this comment in mind, we will now turn to some explanations for the income findings observed in the survey research.

Income

In addition to estimating that the majority of Internet users in Canada are male, many studies have suggested most Internet users are financially "well-off". For example, a study conducted by Angus Reid in 1995 estimated that about 30% of Internet users had personal incomes greater than $80,000 per year (Leitch, 1995). A study conducted by SRI International in 1995 suggested the median yearly income of Internet users was $40,000 (Quinn, 1995). Similar to these findings, ElderWeb and CRM members also had relatively high incomes. In 1994, the average income of unattached males and females aged 65 or older in Canada was $23,782 and $17,106, respectively (Ulysse, 1997). Greater than 80% of unattached ElderWeb males, 58% of unattached CRM males, 45% of unattached CRM females, and 33% of unattached ElderWeb females had household incomes greater than $25,000. Furthermore, in 1994, the average income of families headed by a person age 65 or older in Canada was $40,183 (Ulysse, 1997). Greater than 61% of attached ElderWeb males, 47% of attached CRM males, and 41% of attached ElderWeb and CRM females had household incomes greater than $40,001.

At this point, it may be evident that the income, age, and gender differences between ElderWeb and CRM involve another paradox. On average, women over the age of 50 in Canada have lower incomes then men in the same age group (Desjardins & Dumas, 1993). There is also a higher proportion of women in Canada over the age of 50 (Desjardins & Dumas, 1993). Based on the lower income levels of CRM members, the older age of CRM members, and the fact that CRM targeted (and may have been more affordable to) older adults with restricted incomes, it would be most logical if CRM had more female members than ElderWeb. Yet, the survey findings of this thesis suggest the proportion of females was actually higher in ElderWeb. When

complemented with the attitudinal findings discussed in the literature, however, this paradox begins to make sense. Because favourable attitudes towards CITS are also positively associated with income levels (i.e. not just gender or age alone), ElderWeb may have had a higher proportion of women because it was oriented towards women who would be more predisposed to have an interest in them (i.e. younger-older women with higher income levels).

Marital Status

One of the most interesting demographic differences between ElderWeb and CRM was that 35% of ElderWeb women were separated or divorced, compared to 11% or less of ElderWeb men, CRM women, and CRM men. The separation and divorce rates of ElderWeb women were also considerably higher than Canadian averages for people in similar age groups. In 1996, the prevalence of separation or divorce was 15.1% among Canadians aged 50 to 64, and 6.4% among Canadians aged 65 and older (Statistics Canada, 1997). Because the issues of divorce and separation were deemed too sensitive to probe in the interviews with participants, potential explanations for the higher prevalence of divorce or separation among ElderWeb members were sought more indirectly through the survey findings.

Compared to losing a spouse through death, losing a spouse through separation or divorce has a significantly different meaning. As Baker (1983) states, unlike widowhood, "former spouses still exist and could ... make their presence felt, which could add stress to ... families" (p. 188). This does not mean that losing a spouse through death is less stressful than through divorce or separation, but that divorce or separation may make it particularly difficult for each spouse to keep in touch with family members such as children and grandchildren. Based on this possibility, and the finding that a high proportion of women from ElderWeb were separated or divorced, cross-tabulations were conducted to discover if these women were more likely than other groups to use CITS for communicating with family members. They were not. In fact, men and women from either network who were separated or divorced were equally, and often less, likely to use CITS for communicating with family members than men and women who were widowed, married, or never married. One hundred percent of separated or divorced ElderWeb men, 83% of separated or divorced ElderWeb women, 67% of separated or divorced CRM women, and 75% of separated or divorced CRM

men used CITS for communicating with family members seldom, or not at all. Comparatively, 66% of all ElderWeb members, and 51% of all CRM members, used CITS to communicate with family members seldom, or not at all. Divorced or separated men and women from either network were also no more likely to use CITS for communicating with friends or peers than other groups.

A number of other cross-tabulations were conducted to discover if there were any other plausible reasons, or strongly associated variables, to explain why such a high proportion of ElderWeb women were separated or divorced. With one notable exception, all of these cross-tabulations were quite inconclusive: *a large proportion of separated or divorced women from ElderWeb were not members of ElderWeb.* As discussed in the third chapter, 6 participants in this study were not members of ElderWeb, but were still allowed to complete the survey. This was based on the assumption that these people were thinking about joining ElderWeb, or used the limited guest capability of the BBS. Upon further analysis, it turned out that four of these six individuals were divorced or separated women. If this finding was anticipated, an important question would have been included in the questionnaire: "Are you attending this meeting with someone else, and if so, what is your relationship to this person?" Including this question would have helped determine if people attended the meetings on their own, or with someone else. The one ElderWeb non-member who was interviewed, incidentally, was female, divorced, and attending the meeting with a close friend. Two of the six ElderWeb non-members who completed the survey also stated they were lonely or depressed, and both of these individuals were separated or divorced women. This at least raises the possibility that these individuals attended the meetings with close friends who were encouraging them to join ElderWeb for social reasons.

Part Two: Positive Experiences Participants Associated with CITS, ElderWeb, and CRM

While it is interesting that the majority of survey participants in this study agreed or strongly agreed that using computers enhanced their health and well-being, a closer examination of the survey and interview findings is necessary to help identify the specific benefits and opportunities participants may have been thinking of when they made this claim. In this section, the positive experiences participants associated with CITS, ElderWeb, and CRM are discussed.

Volunteerism

A topic of extreme importance, but one that has received relatively little attention in the literature (Roadburg, 1985) is volunteerism among older adults. As our society faces a number of challenges associated with increased government cutbacks and an aging labour force that is retiring much earlier (i.e. younger than age 65) than previous years (Wigdor & Foot, 1988) the potential benefits of volunteering by older adults are tremendous. Not only may volunteering provide retired older adults with personal satisfaction, but society as a whole can benefit from the experience they have accumulated throughout their lifetimes.

Statistics Canada found that about 15% of Canadians over the age of 55 volunteered for an organization in the six months before the 1985 General Social Survey was conducted (Stone, 1988). If this finding was still representative of the larger Canadian population of older adults, participants from ElderWeb and CRM were considerably more likely to volunteer than Canadians in similar age groups. About 65% of ElderWeb and CRM participants volunteered for at least one organization.

An issue that is more directly related to the focus of this thesis is if ElderWeb and CRM participants used CITS for volunteering, and if they benefited from using CITS for volunteer purposes. In the interviews, many participants stated they used their computer for volunteer work, or similarly, helping others. Many also derived a sense of satisfaction from using their computers for such purposes. For example:

> Last night, for instance, I gave a presentation at our investment club where I did some research on a stock that had a site on the Internet. I told the girls there that I got all the information off the computer. I have a couple of good friends who are into computers, and that's what's drawn us together.

> I'm a [volunteer] secretary of two clubs, and I use [a computer] to communicate, make newsletters, write minutes, and so forth ... I can write minutes of meetings and make copies and so forth, and do it quicker than any other way.

> One of the main reasons I bought my computer is that I volunteered to do a newsletter for [a teacher's association] ... I feel that I'm contributing something by using my computer for doing this newsletter.

> [Computing] has been wonderful for me because I lost my husband within the last year, and when I'm home by myself I've got an interest there. I just turn on the computer and I can do things for other people. It's kept my interest and stimulated me at the same time, and offered a way of communicating with other individuals. It's been very valuable.

Although some critical issues come to mind, such as "did these people feel they had to use a computer before they could contribute to society?" (this issue is addressed in the final section of this chapter) these comments indicate some participants used their knowledge about computers for helping others and bringing additional meaning to their own lives as well. In a society where so many people, including older adults, seem to feel that people cannot contribute unless they are in the workforce, these comments become even more meaningful.

In addition to volunteering for other organizations in their communities, some interviewees also volunteered for CRM and ElderWeb. Many interviewees also expressed interest in becoming volunteers of the two organizations. As with participants who volunteered for other organizations, interviewees seemed to benefit from volunteering for CRM and ElderWeb:

> [From providing technical assistance to ElderWeb members I derive] the personal satisfaction of seeing the happiness that some seniors are lacking, when, all of a sudden, "holy smokes, I can do this kind of thing!" I enjoy showing other people what ever I can show, passing the knowledge on. I'm just happy helping others.

> I think the greatest benefit [I have received from volunteering for CRM] was it filled in a real void. When my husband died, if I hadn't had all these things to do, I probably could have made myself sick. Now, I'm so busy my family says they have to make an appointment to see me!

> When I got involved [with the SCIP project committee] I thought I would be sitting at the computer doing data entry. I had no idea how much I was going to learn, and how involved I was going to become, and it has been a warm, enriching, experience ... I never expected to become involved and given as much responsibility as it turned out.

These comments reflect the opinions of the network administrators, in particular, that volunteers played an important role in helping ElderWeb and CRM thrive. However, these comments also illustrate that many participants in this study seemed to derive the

greatest benefits when they played an active, rather than a passive, role in ElderWeb and CRM. Ironically, in this situation, these benefits were not typically derived directly from using CITS, but from the satisfaction of helping others, and helping "build" the organizations.

The Importance and Meaning of Information to Participants

Similar to their income and volunteer levels, the education levels of ElderWeb and CRM members were also considerably higher than Canadian averages for older adults. It has been estimated that, by 1996, no more than 13% of people aged 65 or older in Canada would have university education, and no more than 19% would have non-university education such as a trade, college, or a technical diploma (Desjardins & Dumas, 1993). Compared to these figures, roughly 20% of ElderWeb and CRM members had post-graduate education, about 40% were educated at university or college levels, and about 12% had a trade or technical diploma.

The high education levels of ElderWeb and CRM members may explain why so many of them appeared to be strong information seekers. Other than for word processing, survey participants used their computers most often for general learning and information, and accessing other networks besides SCIP and the ElderWeb BBS. Furthermore, almost every ElderWeb and CRM member in the surveys agreed, or strongly agreed, that they would like to know more about computers. Throughout the member interviews, many people stated the greatest benefit they derived from using CITS, or attending ElderWeb and CRM meetings, was obtaining information, especially information that kept them "up-to-date" with technology. For example:

> I'm not sure what attracted me [to ElderWeb] except the general knowledge that this technically progressive age was upon us, and I personally would be left behind that I wouldn't like that.
>
> From going to the meetings I know that I would like to know more [about computers]. I don't want to be an ignoramus who has no computer knowledge, that's no good.
>
> The thing is that, in another 5 years, if you don't understand any of this stuff you will be totally out of the conversation.

> I have a lot of friends who don't know about computers, and they feel very badly because they say, "you're talking in a different language". A friend of mine and I were talking about all these software packages, and all of them didn't know what we were talking about. I certainly wouldn't want to be in that situation.
>
> [Learning about computers] makes me feel more knowledgeable and up-to-date, so I don't feel the world is going past me ... I feel that, even if I don't know that much about computers, I have enough knowledge so that I know I can work with them. I wouldn't be left on the side of the road, if you know what I mean?
>
> The computer, if I didn't have one of those, I'd feel left out. I guess that's one of the main reasons for any of this. You are able to participate. You see it on T.V. all the time, "our home page is at...", "our email address is...". If you don't have access to it, or the means of accessing it, you are missing out on something. Same thing, everyone says, "hey, we are going to the Michael Jackson concert". Not that I'd want to go, but if that was something you were interested in, and you didn't have a ticket, you're going to have to watch everyone go, and you're left out of the whole thing. You aren't able to participate.

In addition, the interview findings also suggest that many participants simultaneously derived a sense of personal prestige, pride, and even power, from the knowledge they acquired about CITS:

> I was out for lunch today, and I was talking with people who know nothing about computers, and they were kind of fascinated with what I was telling them.
>
> I have talked to quite a few people who don't have computers ... it's like spreading the gospel.
>
> I was interviewed on the CBC show just before Christmas and ... I was amazed at my enthusiasm. I was absolutely stunned, and after I was finished, my interviewer said I should be in sales. Yes, I am really enthusiastic about what I can do.
>
> There's a feeling when you're on the Internet. There's a certain satisfaction in knowing that you're on the leading edge, there with people who really know about things.

> It seems to me that, with some effort, you can get that machine to do both research for you and almost talk to you. It's just to say it's a tremendous source of information, and information is power.

There are several interesting issues that emerge from the comments presented in this section, but three particularly stand out. First, it is remarkable how similar many of these comments are to the liberalist-positivist claim that people who do not become computer literate will be "left behind", and not able to participate in society. It obviously cannot be proven that claims forwarded by liberalists "caused" participants to feel this way, but at the very least, liberalists would likely be pleased to know participants in this study agreed with them. Liberalists would also likely be pleased that many people in this study not only agreed with such a claim, but were also actively "recruiting" other people to join the information revolution as well.

Second, but also curiously similar to some of the claims made in liberalist accounts of CITS, it is interesting how some participants felt that "information is power", that people who use computers "really know about things", and even that people who are not knowledgeable about computers are "ignoramuses". This implies that people in this study experienced feelings of status and empowerment from the knowledge they acquired about computers. However, based on factors such as their professional work history, high levels of education, relatively high income levels, and previous years of computer experience, these people may well have held positions of power and prestige before they retired. This emphasizes how easily words like "empowerment" and "status" can be used in CITS-related literature, without addressing more critical questions, such as "what social groups are most likely to be empowered through CITS?", and "why do people have to learn about CITS to feel empowered?"

Finally, while one might be tempted to "write these comments off" as mere "elitism" or "snobbery", the sense of pride and accomplishment they reflect is still difficult to overlook. Even though these comments suggest people in this study were somewhat "buying in" to the technological imperative, and partly used their computers as "status symbols", their enthusiasm, especially when coupled with the fact that they attempted to convince others to learn about computers, indicates they strongly felt using (or learning about) computers benefited them.

Communication and Social Interaction

The survey findings that roughly seven-in-ten participants used their computers for communicating with others seldom, only sometimes, or not at all, yet seven-in-ten still found computing socially advantageous, may appear to oppose one another. However, they most likely reflect the fact that participants derived a broad range of social benefits from using CITS beyond email or conversing with others in real-time chat forums. About half of ElderWeb and CRM interviewees used email. Those who used email typically associated five main benefits with it: (1) it allows more time to compose thoughts before communicating with others; (2) it has faster delivery speeds than postage mail; (3) it costs less than talking with people by telephone; (4) it allows them to communicate with other people, even if they are not in the same place and time as them; and (5) it is useful for storing correspondence for future reference. While such benefits might be expected from email, it is also interesting that they are quite "practical", rather than psychological, in nature. More specifically, few participants mentioned the psychological benefits that are discussed so often in the literature, such as email helps older adults build closer relationships with family and friends, or increases their self-confidence. This does not necessarily mean participants did not experience psychological benefits from email, but it certainly implies that such benefits were either latent, or were of secondary importance to participants.

The results of the interviews unfortunately do not allow a complete understanding of the benefits participants obtained from conversing with other people on chat forums. No CRM interviewees, and only 3 ElderWeb interviewees, used their computers for accessing real time chat forums. Furthermore, the three ElderWeb interviewees who used the chat forum clearly were "lurkers" (i.e. they read conversations of other people, but did not typically converse with them):

> I just do a lot of reading of the information. I have chatted with people a few times, but I don't really use it.

> I get on [the BBS] a few minutes in the evening. Sometimes I am there only a few seconds. I am nosy, so I like to keep track of what's going on ... I haven't really participated to the extent of putting out, I'm not creating any information. I've only answered one request, and I never did get any reply back ... I just enjoy looking to see what other people are doing. If they are on there and communicating, and it's in the open, at least you

> find out what's going on, what's happening, a few things like that. And it does give you the opportunity to communicate if you wish.
>
> [I use the BBS] almost every day. I don't really interchange anything with it so far ... all you have to do is click and watch what is happening. All I do is read through the information that comes through.

The fact that these three lurkers described the conversations they read as "information" raises at least two interesting possibilities that also have not received a great deal of attention in CITS-related literature. First, even if people do not directly converse with other people on chat forums, they still may benefit from the content of the conversations they are witnessing. Second, at least for some people, information that is obtained from the conversations of other people may be preferred over information from fixed sources on computer networks. The administrator of ElderWeb believed many ElderWeb members lurked in the chat forum to acquire more information, and enough comfort, so they could eventually participate more actively on the BBS:

> I think there is sort of your core group, and I think that if you look at any BBS you will find that. They feel comfortable speaking in public so to say, and they enjoy it, and so they become sort of the lifeblood. If they weren't there, then the others would have nothing to read. The others are avid readers, but they are rather shy. It takes a lot of time for them to start to feel comfortable, but they eventually do. Again, it goes back to the old days. If you did something, you did it perfectly. ... you did it right. They want to know and feel comfortable before they'll do anything in public.

Thus, ElderWeb's chat forum seemed to serve a dual purpose. First, it was used as an interactive communication vehicle by more experienced and outgoing members. Second, it was also used as a discreet "information desk" by members who were less experienced or outgoing. This second purpose somewhat weakens arguments in the literature that communication that takes place in virtual environments is necessarily more egalitarian than communication that takes place in real life (Kiesler et al., 1991; Rheingold, 1993a; Van Gelder, 1991). Similar to some conversations that take place in real life, conversations that took place on the chat forums seemed dominated by certain individuals. It is also interesting that the very same people who dominated conversations in the chat forums (a virtual environment) may also have dominated discussions that took place during the ElderWeb and CRM meetings (a non-virtual

environment). As a women from ElderWeb stated, the ElderWeb meeting she attended was "dominated by a few very knowledgeable, or at least, very vocal, people". Similarly, another women from ElderWeb stated, "I can't really say right now [if I find the ElderWeb meetings beneficial] because there's one or two people that sort of talk about other things that nobody wants to hear".[14,15]

Although participants who used email and chat forums benefited from these applications (albeit, in unexpected ways) most interviewees still preferred to discuss the social benefits that using and learning about CITS provided them in face-to-face communication settings. These benefits included developing new friendships, nurturing existing relationships, using their knowledge about CITS as a conversation topic with friends and relatives, and using CITS with friends and relatives:

> I like to be in the company of other people, and [ElderWeb members] seem to me to be such a wide range of very capable people. Often when people get older they consider themselves dead, and those people [at the ElderWeb meeting I attended yesterday] certainly weren't dead ... I met a lady I might travel with...
>
> I like [the ElderWeb meetings]. You meet other people; socializing is a big part of it, especially during the breaks. You meet other people and exchange information.
>
> I was out for lunch today, and I was talking with people who know nothing about computers, and they were kind of fascinated with what I was telling them.
>
> I enjoy the compatibility of the [CRM Computer Club meetings]. There are really nice people there, and all of us are interested in the same kind of thing ... We exchange both computer information and personal information.
>
> I do really like showing my grandchildren around on the Internet. There is some really good stuff for kids on the Internet.
>
> You can exchange ideas with the members at the meetings. You start to know the members more and more, and you pick up a personal relationship with people who have similar interests that you have.
>
> [the CRCC meetings] always have some interesting information. There is always the fact that you can ask questions, and the fact that you have a

> list of all their names and what computers they've got. If there's someone there who has the same [computer] as you, you can contact them if you have a problem. And there, again, you make good friends. I've made a real good friend through the computer club, and now she picks me up and we go to the meetings together.

The finding that many interviewees preferred talking with other people "about" computers, rather than "on" computers, raises another interesting, yet understudied, issue. Most often, CITS-related literature focuses on communication that takes place directly in applications such as email and chat forums. Concentrating on these applications, however, neglects the important ways that people use "technology-talk" for relating to other people, and forming their own identities in real life. Many people in this study used their computer knowledge and experiences for interacting with other people, but also for impressing them. Many people in this study also appeared to feel they were more "up-to-date" than other older adults who were not knowledgeable about CITS. It is debatable if these psychological benefits would have been discovered if the conversations and experiences participants had with other people outside of networking applications were not included as interview topics.

Mental Acuity, Entertainment, Relaxation, and Creativity

Self-confidence, helping others, social interaction, and feeling up-to-date were not the only benefits participants derived from using, or learning about, CITS. Many ElderWeb and CRM members also found using and learning about CITS mentally challenging, entertaining, relaxing, and creative:

> The first thing is that [using a computer] keeps my mind active so that I'm aware of that. It also teaches me that, even now, I can learn new things, and I'm very satisfied with that. [Also] my writing skills have just blossomed because I am precise about words. I was over in Holland, and I had written a journal about it. That journal has gone all over the place, and an enormous amount of very positive feedback from people who have read it. My writing skills have improved one thousand percent!

> I think that [using computers] helps keep me on top of things and it helps me keep my mind sharp. I think when you get old you need an interest. Another reason I wanted a computer at the time was that I was writing a family history ... I couldn't have done it without [a computer] as far as I am concerned.

> Half the trouble is that you get a lot of physical exercise, but you've got to keep mentally active as well. I find it's quite easy to get bogged down in nothingness, and this is where [using computers] helps one heck of a lot, doing a few mental gymnastics here and there.
>
> [Using computers] keeps you sharper. There are so many people that sit back and think they can't do anything anymore, and that's crazy.
>
> I enjoy [computing] very much, so that's probably a benefit right there. There's a feeling of satisfaction that you've accomplished something. There's a creativity in making my posters, it's very relaxing, non-stressful.
>
> I am really looking forward to doing a lot of creative things with the computer, and I am just really excited about it. It is just like taking a deep breath. It's wonderful for me.
>
> [My computer is] a tool that I can become creative on, like with my newsletter. I could never create one similar on a typewriter. So I get some enjoyment out of putting things together that way. Finding images, graphic images, and so on ... I see some of the things on [ElderWeb] and other places ... people are getting out there and staying alive, vital. They are doing something, even though it may not be anything than piling sand from one pile to another, you are still doing it.

Based on these comments such as these, many participants found using and learning about CITS mentally challenging, entertaining, relaxing, and creatively advantageous. It should also be noted, however, that in contrast with popular contentions in the literature, most participants did not associate these benefits with playing computer games. Instead, they typically associated these benefits with computer programming, word processing, and desk top publishing. One trait these three applications have in common is they involve actively creating things, rather than passively consuming things produced by others. Even though participants derived benefits from more passive uses of CITS, such as reading information about technology or lurking, they seemed most pleased when they were able to use such information for producing things themselves, helping others, and talking with other people about their experiences.

Potential Benefits for the Homebound

The survey findings of this thesis suggest that people who joined ElderWeb and CRM were considerably less likely to have difficulties that might make them homebound than other Canadians in similar age groups. Less than 3% of ElderWeb and CRM

participants had difficulty driving, and less than 3% suffered from mobility difficulties. Comparatively, about 41% of males, and 58% of females over the age of 64 had mobility problems in Canada in 1985 (Desjardins & Dumas, 1993). Because of the low prevalence of such difficulties among participants from ElderWeb and CRM, the results of this thesis do not offer the opportunity to investigate the frequent claim made in the literature that using CITS can benefit older adults who are homebound. A related finding, however, is that some participants were learning about CITS in the event they ever became homebound in the future. For example, the administrator from ElderWeb stated:

> A lot of the seniors, when you talk to them face-to-face, will tell you that, although, and they always preface this by saying, "I'm really active right now, but I do realize that in a few years that I might not be, and if I'm on the network and I have these skills, I will still be able to communicate with all my friends." So they realize that that will be extremely important to them.

Some member interviewees expressed similar sentiments:

> I'm 80, and [using computers] keeps my brain going. It keeps you generally up-to-date. You don't know what's coming up that benefits you. Once I can't go out and drive a car, you have something interesting at home.

> Another reason why I wanted to get into computers is that it's sort of a never-ending adventure. I thought, "if I ever get housebound at least I would have something. A good hobby."

The potential future benefits these participants hoped to derive from using and learning about computers seemed as important to them as the benefits they were experiencing in the present. They also seemed to obtain a sense of security in the present, knowing that they would have a hobby if they ever became homebound in the future. On a different level, these comments also provide further evidence about how important the technological imperative was for motivating some ElderWeb and CRM members to learn about computers. Here, the underlying assumption is "join the information revolution, or run the risk of not having something in the future". This does not undermine the

benefits these two interviewees experienced, but it provides additional explanations about why they might have been motivated to learn about computers.

Financial Advantages

The income levels of ElderWeb and CRM members were not strong predictors of whether or not they found computing financially advantageous. Only a slightly higher proportion of people with incomes greater than $55,000 (68%) agreed or strongly agreed computing was financially advantageous than people with incomes less than this amount (60%). This suggests that, once provided with enough opportunities to access and learn about computers, participants with different income levels experienced financial benefits from CITS

While people of varying income levels were just about equally likely to find computing financially advantageous, a closer look at gender differences tells a different, and more complex, story. As presented in the previous chapter, men in both organizations, and women in CRM, were much more likely to find computing financially advantageous (60% or more) than women in ElderWeb (45%). Because women from ElderWeb had higher income levels than women from CRM, this finding was unexpected. However, this may reflect the fact that income, gender, and societal stereotypes about "who should handle money" strongly interacted with feeling computing was financially advantageous, and how participants used computers for different financial purposes. In the surveys, about 45% of men, but only about 13% of women, from ElderWeb and CRM used financial computer applications at least often. Also, in the interviews, men were much more likely than women to talk about the financial advantages they experienced from computing. But what is also interesting, is that men and women talked about different types of financial advantages. When male interviewees talked about the financial advantages they experienced from computing, they exclusively focused on monitoring investments, completing income tax forms, and accounting packages. For example:

> When I look at my stock programs, the benefit is that I can go and control them and make my decisions - that is quite intangible that I use it for. I find it financially advantageous. I can make better decisions than my broker.

> I enjoy using a spreadsheet for analyzing investments, and mutual funds, and so on. It helps me financially, although I don't know if I've made any money.
>
> I'm on [the Internet] regularly. I access some of the financial sites to get the stock reports from the TSE.
>
> The first benefit I got out of [my computer] was to do the income tax. That really simplified things.

Women, on the other hand, exclusively talked about the financial advantages they experienced from advertising items they wished to sell on computer networks, and "bartering" services:

> One time to show how it could be financially beneficial, there was a friend of mine who was doing some interior decorating, and I had asked them if they would paint my bathroom. And they came and said they would paint my bathroom if I would make a flyer for them in return. I thought that was really great.
>
> One way [I've benefited from computing], the last day or two I've advertised items that I've got for sale that are just laying around the house, and I thought [the ElderWeb BBS] would be a good place to start.
>
> The Society for The Retired and Semi-Retired had an ad on that they needed somebody to do crafts. So I do a lot of knitting, so I am now selling stuff through them, a financial advantage.

While it is significant that all of these men and women associated financial benefits with using computers, and some also associated deeper psychological benefits with doing so (e.g. feeling more financial control, helping local organizations, and self-satisfaction), the survey and interview results presented in this section potentially explain why women from ElderWeb were less likely to feel computing was financially advantageous. Because women from ElderWeb had higher income levels than women from CRM, women from ElderWeb may have found a lesser need to use their computers for selling goods and services on computer networks, and bartering computer services for other goods and services. At the same time, women from ElderWeb might also have felt it was not their place to use their computers for the financial applications that seem so overwhelmingly the domain of men.

Part Three: Negative Experiences, Challenges, and Barriers Participants Associated with CITS, ElderWeb, and CRM

Because participants in this study belonged to computer clubs, or were thinking about joining computer clubs, most were very enthusiastic about computers. This enthusiasm made it quite easy to discuss the benefits of computing with people, but probing into their negative views and experiences was considerably more difficult. When participants were specifically asked if they felt using computers involved any risks or negative consequences, most of them disagreed. Some did, however, implicitly address more negative issues when answering other interview questions. In this section, some of the negative experiences, challenges, and barriers participants associated with CITS are discussed.

Financial Barriers

There are many obstacles that may make it difficult for older adults with lower incomes to have the opportunity to experience the benefits described in the previous section. For example, to experience such benefits, older adults with lower incomes must first own, or at least be able to access, a computer system. Any computer system that is able to conduct networking, accounting, or desktop publishing applications may be quite powerful and expensive. In this regard, the results of this thesis provide evidence that programs like CRM's "Computers for Charity", and an organizational mission dedicated to meeting the needs of older adults with lower incomes, can be successful. Even though most participants in this study were financially well-off, there were still a substantial number of people in CRM with incomes less than $10,000, particularly unattached men and women.

The results of this thesis also suggest that, unless an organization like ElderWeb or CRM feels it is a priority to include older adults with lower incomes, these people may find it financially difficult to start (or continue) using their services. Also, because older women tend to have lower incomes than older men, women with lower incomes may even be more likely to experience these financial difficulties. Both of these situations seem to apply to ElderWeb in particular.

As mentioned earlier in this chapter, ElderWeb had more women than CRM, and women in ElderWeb had considerably higher income levels. Furthermore, men and women in ElderWeb had higher incomes than men and women in CRM. These findings

are most likely related to the fact that ElderWeb did not place a great deal of emphasis on meeting the needs of older adults with lower incomes. Normally, it would be very difficult to talk with financially "less-well-off" older adults about the impacts of ElderWeb's "high-income philosophy", simply due to the fact they would be less likely to afford its membership fees. However, two of the "guest" ElderWeb participants who were interviewed offered some interesting insights about this issue. The first guest was a woman who discontinued her membership with ElderWeb for financial reasons:

> Membership went up fairly considerably after the first year .... [I might become a member of ElderWeb again] if I ever get my system upgraded enough to use the programs and everything. But right now it's out of the question because to upgrade would be very expensive to me ... I have so much income each month.

The second guest was a woman who wanted to join ElderWeb, but could not afford to do so because of financial difficulties: "I am really short of money right now, and I was just kind of leaving it. I couldn't get it into my budget right now."

There are several important themes in these comments. For example, because older women tend to have lower incomes than older men, it may be more than coincidental that these two interviewees were women. Also, it is interesting that one of these women was a member of ElderWeb, discontinued her membership for financial reasons, but was still in attendance at an ElderWeb meeting. Because ElderWeb members are required to pay to attend the meetings, this woman would likely only be able to attend the meetings until one of the administrators noticed she no longer had a membership. But the fact that she was in attendance at the meeting, and had previously belonged to ElderWeb as a member, suggests she enjoyed attending the meetings. It seems quite unfortunate that she would imminently have to purchase a membership, or no longer experience this enjoyment. Finally, especially when complemented with a comment from the peer trainer from ElderWeb, one is left wondering if the computer this woman owned was actually not powerful enough to run the BBS software. The peer-trainer made the following comment about how this woman's feelings might not have been atypical among ElderWeb members:

> At the meetings [the network administrator] suggests the minimum of what to buy if you're buying a computer, and that gets a little scary. [People say], "that's out of my ballpark, it's too much." Even the computers for sale on [the ElderWeb BBS by other companies], the first ones start at $2,300, and people don't have this. One lady I went and visited had a 486, and [the network administrator] was saying that, "now, you shouldn't buy less than a Pentium." All she really needed was a 14 modem, so I asked her if she could afford $100. So I went with her, and we bought a 14.4 modem, and she's hooked up to the thing. And she's just in her glory with this machine that did work, all she was lacking was a modem .... Once you're connected you might be slow, but at least you can communicate. And then you're in business.

In the insights of the peer-trainer, and the woman who discontinued her ElderWeb membership, we see an unfortunate side effect of the technological imperative. Not only does the imperative imply we must become computer literate and buy a computer, but we must also keep retraining, and buying new and "impressive" equipment to keep up as well. As one interviewee stated, "I don't think you can ever catch up with a computer. I envision it as a big game going on somewhere." This likely provides financial and psychological stress for many individuals. For people with restricted incomes who are interested in computing (and interested in using newer applications) this stress may be even more substantial.

Human Factors and Training Issues

About one-in-three survey participants did not feel in control when using a computer. Although women and participants over the age of 64 were more likely than comparison groups to agree or strongly agree with this statement, results from the interviews and surveys suggest that this may have been because these two groups were also more likely to have at least one of the physical, sensory, and emotional difficulties listed in Table 8, or to have used computers for three years or less. Also, many people from ElderWeb and CRM had never used each organization's computer network, and many more said they did not use the networks as often as they would like. In the interviews, people who did not use the networks, people who did not use the networks as often as they would have liked, or people who implied they did not feel in control when computing, often felt computer inexperience, technical difficulties, and ergonomic difficulties were important contributors:

[the ElderWeb BBS] is ok, [but] I keep getting lost. But that was just because I didn't know what I was doing. If I could steady my hand to control the mouse, I would be happy.

It's hard to read things off the screen ... I focus really hard on the screen sometimes. I don't know what suggestions to make to improve [computers]. Make them not so complicated as far as I'm concerned ... There aren't as many parts to a car to learn and make it go as there are in a computer.

I think more instructions should be given initially on the correct use of the mouse. I ended up with tendonitis and wearing a brace for most of a year, which is very painful ... I don't think you can ever catch up with a computer. I envision it as a big game going on somewhere.

I'm not really in the position to say anything about [whether or not computers should be designed better] ... It's like you are shown how to do the things you are working with, and that's it .. At this time, I am trying to learn this Works program, and it's really giving me a bad time. I would like to see a better manual because they don't always tell you the little things, and sometimes you need those little things. If you are not too computer literate, it's difficult.

When I joined [ElderWeb], I expected to rapidly overcome my reluctance to use the machine. And I haven't quite done that. I am still timid with the machine ... I haven't been able to get on [the BBS] easy enough. I have had a couple of shots and for one reason or the other I get turned down. I don't have the appropriate information to feed the machine, and I don't follow up. I am perhaps not that concerned with becoming more literate.

We got this computer three years ago ... We got in the Internet last August, I tried to get [on] since February, but the guy who put the modem in had put the jumpers in wrong. I thought it was just my inexperience.

The keyboard is not really the best location of the keys, but to change that would be absolutely something that would change the whole system worldwide. Some of the keys you use all the time are not always in the easiest position to get at ... it's all speed, speed, speed ... The fact that you wear bifocals, they are quite often not good enough in that the screen distance from your eyes is not good enough. You often need trifocals.

I think more of [whether or not computers can be designed better] is my ability to do it. I'm not far enough ahead to come up with something like that.

In each of these comments, it is interesting that people either blamed themselves for the difficulties they experienced, or felt these difficulties were merely something they would have to accept. Perhaps this is what the survey participants were thinking of when they agreed or strongly agreed that they did not feel in control when using computers. They may have felt unable to control or improve, or that it was not their place to control or improve, the situations that made using computers difficult for them. These comments also suggest that, even though participants found some aspects of computing problematic, psychologically they still felt the benefits and potential benefits of using computers outweighed these problems.

Although interviewees felt unsure about how computers could be designed better, one topic that came up more often during the interviews was that computer manuals were difficult to read and understand. For example:

> I am convinced that the brilliant minds that devise some of these programs could also, if they apply themselves, devise much simpler information exchange with respect to the computers. Of course, there are so many abbreviations and acronyms that when you have to keep pulling a book out to see what the acronym means, and what it does or doesn't do, this gets a little tedious in my mind.

> I guess [computers] could be made a little easier to understand. I think it's more the manuals that are sometimes too technical, or they don't explain it in a simple way.

> The only complaint I have really is the manuals they write. I think that when they write the manuals, they should give it to some lay person to translate into ordinary language. I have found some of the manuals written have just been dreadful.

> The documentation is woeful. The manuals are terrible. They could look at the "Dummy" books and see what's done there. The "Dummy" books are written because the software people didn't.

This last comment is especially interesting, because books like the *The Internet for Dummies* (Levine & Baroudi, 1994) were also strongly recommended by the peer-trainer from ElderWeb.[16] The ElderWeb peer-trainer mentioned that many people he trained found such books useful, particularly for explaining computer tasks and jargon in

everyday language. Both peer-trainers also felt that the concept of peer-training was quite effective for training members:

> The most useful [training technique] is one-on-one, going to their home. They feel comfortable in their home, and there is no rush or anything else. I take my time, answer their questions, and things seem to work out ok.

> One thing we do is we have mentors. If people get a computer and something happens, and they want to phone, we have people whose phone numbers can be given out .... It was just something like getting into programs. We would fire up our computer, and ask them what they had on their screen, and lead them through it. That's what people need.

These comments are also similar to the finding that some people from ElderWeb lurked on the chat forum to learn about computers from their peers, who may have explained computers in everyday language.

Computer Addiction

Other than ergonomic and technical difficulties, the drawback of computers discussed most often by interview participants was that people could potentially spend too much time using them. For many interviewees, spending too much time computing was regarded as only a hypothetical risk -- something "other people" suffered from -- but something they personally avoided:

> I think you have to limit your time on [computers]. I get headaches if I am on too long, but I don't have that kind of problem. I just don't stay on it that long.

> I can't really speak for other people, but I think [the computer] is a tool, and not a way of life. I have seen too many people in the younger members of the family, honest to goodness, it just seems to really take over.

> I think that there may be a danger of being too involved with [computers], not going out ... To protect myself from becoming isolated I'm getting out.

> I think if you got into [computing] too deeply or spent too much time, it may not be good for a person. I like people, so I don't think that would happen.

> [Computing] can be like anything else. It can [involve risks] if it's used wrong. I heard about one couple: the man is downstairs looking at the computer, and she's feeling kind of neglected, so it can cause stress. So far [my spouse and I] have still managed, we still communicate. I think it's important that one person does not get involved without the other one ... It's like having another women in the house if you use it wrong.

However, there were a small number of interview participants who found it considerably more difficult to limit the amount of time they spent computing:

> You spend too much time on [computers]. I don't arm myself against spending too much time on them. I'm spending more time than I ever planned on. It could be a good thing or a bad thing.

> I sometimes find that I sit down at the computer, and all of a sudden two hours have gone, and I wonder what I've been doing. Even on the Internet, you suddenly get a little squirrelly if the list ever crashes, which really bothers me, because I'm addicted to getting those messages.

> I don't know if you would call them benefits or not, but [using computers] certainly has got me involved in more things, consuming more of my time. I don't know if that's a good thing or a bad thing.

Based on interview comments such as these, and also the survey finding that almost 50% of people who spent most of their spare time computing had difficulty sleeping, it appears that at least some ElderWeb and CRM members may have been addicted to computing. The fact that some participants in this study experienced headaches and joint problems from using computers for extended periods of time, or feared they would become socially isolated if they spent too much time computing, also suggests the physical and emotional impacts of extended computer use can be quite harmful.

It is also interesting that two of the interview respondents were not sure if spending a lot of their time computing was a good thing, or a bad thing. When one thinks of addictive behaviour, images of problems such as substance abuse and gambling problems would most likely come to mind. Computer addiction, on the other hand, seems to align itself better with more socially acceptable (and sometimes socially respected) addictions in society, such as being a workaholic. This provides yet another example of how often participants subordinated (or tolerated) the negative aspects of CITS, such as their sedentary nature, to their more positive aspects.

Inappropriate Content, Invasion of Privacy, and Computer Viruses

In the interviews, a number of participants also discussed three other computer-related risks: (1) inappropriate content such as pornographic material and offensive language could be posted on the Internet; (2) computers could be used to invade their privacy; and (3) computer viruses could harm their computer systems. Similar to computer addiction, participants mainly viewed these three risks as hypothetical, namely something they simply avoided, or personally did not find too problematic:

> Just like everything else, there's drawbacks to [the Internet]. I have a program to protect against viruses, and the pornographic material, you don't have to read it ... [The computer] can be a dangerous thing. For example Hitler had this computer, and he used it to get all the information about people. It can be a dangerous thing depending on how it is used and maintained.
>
> I have no secrets. There is the offer of all kinds of stuff [on the Internet], sex and stuff. I looked into that, just curious, and it's mostly business. They want to sell you books and stuff, and become a member somewhere and pay, then they might show you more. What they show ... it's lousy anyway. It's not worth it. I guess kids may get excited for a little while and then they forget about it. If I don't like what I see, I can leave it, like a book in the library.
>
> I guess there are some [risks related to computing], but I think they are relatively easy to side step. For example, giving out your VISA number, and the possibility of downloading viruses.
>
> As far as the content of the Internet, there are things that you come across that astonish you. But you don't deliberately look for it. It's not there are far as I am concerned.
>
> I don't think viruses are a concern .... I just found out that Windows 95 does not have a virus protection program on it. I think we all have enough brains to not accept disks that we're not really sure of. I make sure I put a virus program in and scan it.

These comments are not presented to open up a policy-oriented debate on whether or not the content of the Internet should be regulated. It is far beyond the scope and interest of this thesis to address such an issue. Rather, these comments are presented because they dispel two common misconceptions that some people might have about older adults. The first myth is that older adults are necessarily "ultra conservative", "rigid", or "expect others to conform to their own values" (Wigdor & Foot, 1988). While

most participants avoided or were not personally interested in Internet content some people would consider offensive, they seemed very tolerant of the plurality of opinions and content they encountered. The second myth these comments dispel is that older adults are "slow", "decrepit", "naive", or "easily manipulated" (Wigdor & Foot, 1988). Even though only about 25% of survey participants felt computers could be used to invade their privacy, the interview results suggest they may have felt this way because they were very conscientious about taking measures to protect themselves from risks of this nature. As one interviewee stated:

> Anyone who wants to over email can read what I'm saying. God knows whose machine it passes through before it gets to its destination. There's certain information I would never send through email.

Thus, while participants in this study were very optimistic about CITS, several comments from the interviewees suggest they were still aware that CITS could be used for negative purposes.[17] In the end, however, participants always seemed willing to tolerate the negative aspects of CITS for their more positive aspects.

Lack of Involvement in Decision-Making

It was also not a goal of this thesis to determine if one organization in the case study was "better" than the other organization, as each organization had its own unique strengths and weaknesses. However, it is still relevant that the two organizations differed greatly in the power that was given to members to make key decisions. CRM placed a great deal of the control and operation of the organization in the hands of its members. For example, the technical task of putting the SCIP site on the WWW was performed by a CRM member who had taught himself how to write HTML (hypertext markup language). Decisions about the policy and directions of the SCIP site, such as what information would be posted, were also largely made by an information content committee of older adults. In contrast, the direction and format of ElderWeb seemed to be dictated more by administrators from Grant MacEwan Community College, than by its members. ElderWeb members provided the content for a small number of the BBS components, such as "Bird watching" and "Humour", but most of the content was selected from the WWW by the network administrator and placed on the BBS. ElderWeb did not have a formal information content committee composed of members

to help inform the administrator of what information they wished to have posted on the BBS. More importantly, at the time research for this thesis was conducted, ElderWeb recently made, or was about to make, two major changes that its members essentially had few other choices but to accept: (1) the ElderWeb BBS would be shut down in July 1996, and moved to a home page on the WWW; and (2) the format of ElderWeb meetings was changed, so that several small meetings took place at different locations throughout Edmonton, instead of in one large meeting per month at one central location. Most ElderWeb interviewees were satisfied with these changes, but a substantial number were also upset that they had no input in them. For example:

> I liked the larger meetings better. For one thing, there were others there that I had some contact with, and now that it's split up we've seem to have gone our separate ways into different regions. I just miss the larger meetings.
>
> I did not like the idea that we went from big meetings to smaller ones. I thought it would be tough on [the ElderWeb administrator], and I really didn't believe the reason they did it was that they couldn't find a big enough room in Grant MacEwan.
>
> I don't like [the fact that ElderWeb is moving from the BBS to the World Wide Web] because the move was totally done by Grant MacEwan without any input from the [ElderWeb] group at all. It was just, "this is the way we're going to go, and you just have to go to the Internet to use it". There was no consultation, and this is the thing I don't like about [ElderWeb.] There's no consultation with the group as a whole.
>
> I'm not keen about the move, and of course, the reason for going there is to serve [ElderWeb's] own purposes specifically, not individual purposes.

What this person may have meant by "ElderWeb's own purposes" is that Grant MacEwan Community College had planned to make the organization more national in focus, especially for generating advertising revenue. The following comment by ElderWeb's network administrator summarizes this goal:

> Looking at the Province of Alberta, and the way it works, it is very logical [that] our next jump has to be the City of Calgary, where we will get many members. And the advertising base is in order to provide some funding. Southern Alberta as a whole seems ready to accept [ElderWeb.] We've had quite a number of inquiries from Lethbridge and Medicine Hat, so I

> think as we get into Calgary almost immediately we start pushing the Lethbridge and Medicine Hat people ... We will encourage that sort of thing, making it known that the meeting portions of [ElderWeb] are really only available in locations where there are sufficient numbers. ... [It] has always been our intention to be a national organization.

To be fair to Grant MacEwan Community College, there were a number of practical reasons why moving from the large monthly meetings to smaller meetings, and from the BBS site to the WWW made sense. For example, the membership revenue generated from its 250 members would have totaled approximately $20,000, which was probably insufficient to keep the BBS in operation. The membership of ElderWeb had also grown by quite a large margin in the previous year, so the learning environment of smaller meetings may have been more productive. The critical issue is simply that members were not consulted about these changes, some members were not satisfied with the changes, and other viable options that might have kept the BBS in operation went untried.[18] This provides further support for three general themes that have emerged from this discussion. First, participants were most satisfied when they played an active role in technological decisions that affected their lives. When they were given less choice in such decisions, they were less satisfied. Second, even though participants found some aspects of CITS and the organizations problematic, they received (or hoped to receive) enough benefits from them that they tolerated such problems. While this implies that people felt the positive aspects of CITS outweighed their more negative aspects, it also suggests that ageism often does get played out through CITS and related developments. In this instance, ageist views seemed to be held not only by the ElderWeb administrators (i.e. that the opinions of ElderWeb members regarding the changes did not seem to matter) but also by ElderWeb members themselves (i.e. it was not their place to oppose the developments they disagreed with). Finally, there are also strong elements of the technological imperative in ElderWeb's decision to move from the BBS to the WWW. A more innovative, and "certainly better" technology had come along, so there were few other options but to embrace it.

Obstacles to Political and Democratic Participation

As discussed in the second chapter of this thesis, it is often suggested in the literature that CITS will allow people to communicate more directly with politicians, and enable people to play more direct roles in political decision-making. A comment from an ElderWeb interviewee raises some interesting questions about such claims:

> I tried to form a political group with [ElderWeb members], and ran into a little difficulty. I was thinking of getting on the Internet, every way of communicating with people on the constitution, getting their ideas, and [doing] government work for free. [We would] collect data [from people], and then compile it, and give [the government] a compiled data. I talked to them, the government, and he said that I think I have the solutions to the world's problems. I said I was only trying to help them, not offer a solution, so that's where it stopped ... [He said] people don't want to get involved, but I said I would start it myself and others would fall in. But when politicians start saying that they think that I think I am smarter than he is, then I quit.

This was only one person's experience, but the resistance this man encountered, and how easily he abandoned his quest, is yet another example of how ageism is often played out through CITS and related developments. The politician this man referred to seemed to view older adults as people who should be communicated at, rather than communicated with, when it comes to political matters. This interviewee had become knowledgeable about CITS, but his opinions, and the opinions of the other older adults he was attempting to unite, did not appear to matter to this politician. The fact that this interviewee wanted to use CITS for democratic purposes did not negate the ageist beliefs the politician seemed to hold. Consequently, the experiences of this interviewee provide additional support to Feenberg's (1991) view that CITS can only become truly democratic tools in the context of a wider (pluralistic) reformation of our society. Otherwise, to use a phrase from Herring (1994), we will only be "bringing familiar baggage to the new frontier."

Part Four: General CITS Issues

In this section, three issues addressed by participants that somewhat transcend the "cost-benefit" analysis approach largely followed to this point are discussed. The first section presents interviewee comments and survey findings pertaining to computerization in the workplace, and how this trend relates to older adults. In the

second section, interviewee responses to the question "why do some older adults not use computers" are discussed. Finally, the third section explores if, and how, participants in this study felt the use of computers by older adults differs from their use by people from other age groups.

Computerization in the Workplace and its Relationship to Older Adults

Because close to half of participants used computers for ten years or more, it is likely that many of them learned about computers, or developed their computer skills, in the workplace. In the surveys, 40% of ElderWeb participants, and 25% of CRM participants stated they first learned how to use a computer at work. In the interviews, however, some participants qualified this by adding that they used computers in a rather limited manner while they were in the workforce:

> I am not really in the position to say anything [about whether or not computers should be designed better]. I worked with [computers] for quite a while [at work,] but it's like you are shown how to do the things you are working with and that's it.

> I used to be in the mainframe computing system, and I eventually got into PC's while I was working .... The PC was something relatively new, and I was a user of one. But I used the software that was on it, I didn't really understand the machine itself .... There is some knowledge required to make [the computer] go, but it isn't required if you have someone on site who can do it for you. If you've got a source of information, a support person, you don't have to know anything other than how to click on an icon and go. As I far as I was concerned, I probably wouldn't have either, except the company came out with an offer that said, "hey, if you want to buy a computer, we'll give you an interest free loan to buy one." That's what sort of got me started in having one at home.

> The memory and things I didn't learn when I was working. If anything went wrong with computers at work, they always had to call someone in, and you don't learn anything that way.

Similarly, the peer-trainer from ElderWeb stated:

> A lot of people have used [computers] at work, and they're just filling in the blanks, copying from a sheet on the desk. They haven't done anything with the computer other than calling it up and filling in the blanks. That's what they think is being familiar with the computer. A lot

> of them don't even know what to type at the DOS prompt. Those that have said that they worked with [computers] for ten years, probably about 25% of them have had to call up a program on an icon.

These comments suggest that organizations like ElderWeb and CRM are important for older adults who are interested in using CITS. Many participants used computers while they were in the workforce, but once they retired, they lost a critical infrastructure of support for dealing with technical difficulties. These comments also reflect how the nature of CITS has changed over the past ten to fifteen years. Many new applications, such as email and networking, involve more than just "filling in the blanks", as so many of these older adults seemed to do when they were in the workplace. If this is the case, organizations like ElderWeb and CRM become even more important, not only for teaching new computer users who are interested, but also for retraining people with previous computer experience.

Perhaps related to the fact they had used computers for many years, few interviewees brought up the issue of job displacement when they discussed the potential negative aspects of computers. A comment from one woman from ElderWeb, however, describes how some of her co-workers reacted when computers were introduced in her workplace about ten years ago:

> I know lots of people who quit work because they were afraid of computers ... It was their own choice. Nowadays there are a lot of people having to leave their jobs, but ten years ago it wasn't that bad, and so there was several that just left. I couldn't quit work, I had no choice but to work, and so I had to learn. I'm glad that I did.

There are several interesting elements to this comment. First, it is clearly a working example of the "take it" or "leave it" imperatives that rise to the surface in many CITS-related developments. Although this woman stated her co-workers left their jobs on their own accord, these people likely had little say in the fact that computers were introduced in their workplace. Second, this woman's comment, especially when complemented with some of the other insights participants offered, suggests that some methods for introducing computers in the workplace may be more widely received than others. The man who received an interest free loan from his company to purchase a computer is a good example of how computers might be introduced to workers in a warmer and more encouraging manner than how computers were introduced in this

woman's workplace. Finally, even though this woman was pleased she learned about computers, the fact that she was only motivated to learn about them by economic necessity, and the fact that many of her co-workers left her workplace when computers were introduced, reminds us that there is still a large group of older adults in the general population who might not use computers. As will now be discussed, how participants felt about older adults who do not use computers provides many insights into why these participants were motivated to use, and learn about, computers.

How Participants Felt about Older Adults who do not use Computers

During interviews, members and peer-trainers were asked why they felt some older adults do not use computers. The purpose of asking this question was to indirectly encourage participants to give richer self-descriptions of themselves as "computer users" and why they were motivated to use, or learn about, computers. Similarly, this question was asked to discover the degree to which participants agreed or disagreed with the technological imperatives and CITS-related barriers that were discussed in the second chapter.

When interviewees were asked the question, "why are some seniors not using computers?", they provided remarkably similar answers. Without exception, all interviewees felt older adults who do not use computers are "afraid", "feel they are too old", or "resist learning new things". The following comments are very representative of the answers interviewees provided to this question:

> I think it's an attitude problem. I think they think they're past all that. I think they think they can't do that any more, or that they don't have the capability. It wasn't there when they were children. I think that some of it is fear.

> I've heard people say, "I've learned everything I've wanted to learn, and I just want to relax and enjoy things", so they're not very tuned to challenges and learning how to do that.

> I think people who are lethargic about [computers] are lethargic about a lot of things. There's no reason they're going to change now.

> I think a lot of people don't want to do too much simply because they are afraid to try it. This is one thing all along, that if you push the wrong button, something bad can happen.
>
> Just because they don't remember everything like a twelve year old, they get backward and say they don't want to try [computers] or that [computers] are beyond them .... they have the idea they can't [use computers and that] they're too old to learn.
>
> I think that is because there was that inherent fear of computers years ago that you are going to crash it .... They may just have that crazy fear that those of us had.
>
> I think it's an ignorance. They can't get the concept of [computers]. Some people are afraid of [computers].
>
> I think they are afraid of it, and they think it is too hard to do, and I don't think it is. There is a prejudice against them, like there is a prejudice against anything new.

Based on their usage of words like "crazy", "fear", "afraid", "backward", "ignorance", "prejudice", "attitude problem", and "lethargic" to describe older adults who do not use computers, it becomes clearer why many participants in this study may have felt motivated to continue using computers, or to learn about computers, in their retirement. Many participants seemed motivated to escape the stereotypical and negative ways they might be regarded by others if they were not computer literate. In this respect, these comments provide further evidence of how successfully the technological imperative was accepted by participants in this study: the only way to avoid being viewed in these negative ways was to use computers.

It is also clear from these comments that many participants felt a great deal of "the blame" should be placed upon the shoulders of older adults who do not use computers. Many participants described older adults who do not use computers almost as if they were talking about someone suffering from a phobia,[19] or at the very least, a serious personality "flaw" such as laziness. Thus, unlike extensive computer use, participants found it much less problematic to label non-computer use as a negative behaviour. Not only does this provide further evidence of the technological imperative "in action", but it also indicates how quickly people can overlook other critical reasons why some older adults might not use computers, such as financial difficulties, lack of

opportunities to receive support and training, self-defeating ageism, feeling other activities are more important than computing, and poor design considerations.

Differences Between the use of Computers by Older Adults and People from other Age Groups

Given that age is of interest in this thesis, perhaps the most suitable way to conclude this chapter is discussing if participants felt the use of computers by older adults differs from their use by people from other age groups. When interviewees were asked this question, all but seven felt that there were at least some differences between the age groups. Those who felt there were differences between older adults and people in younger age groups rarely mentioned the medical differences frequently discussed in the literature, such as increased chances of becoming ill or homebound. Instead, they typically talked about three other differences. First, they felt that older adults are less likely to play computer games and use computers in business settings. For example:

> I guess the only thing is the younger ones would be more into using business types of things, where seniors are sort of past that stage.
>
> [Older adults use computers] not as strong for monetary and business uses. Seniors are as interested as business people, but not for business.
>
> Well, there might be some differences at the moment. I don't think too many seniors are interested in games.
>
> I couldn't really say, the two would overlap so much. Probably the younger ones are using it a lot more for games. I play games very seldom.

Computer games and business applications were discussed at various points in the previous two chapters of this thesis. But when interviewee comments about these two uses of computers are presented in conjunction with one another, and interpreted with "preferred" research topics in the literature in mind, some new issues arise. In particular, these comments reflect how easily particular groups in society can be stereotypically portrayed as exclusively using CITS for particular purposes. Children and adolescents use CITS for "playing" or "learning", young and middle-aged adults use CITS for "working", and, according to the main focus in gerontology literature, older

adults either use CITS for medical, security, and safety purposes, or they are too afraid to use them at all. Also, at least according to emphases in the literature, if older adults use CITS for any other purposes beyond those assistive and medical in nature, they are most likely to play computer games, similar to stereotypes for children or adolescents. Of course, other topics such as communication, accessing information, and education have been addressed in literature related to older adults, and other age groups as well. The issue here is simply that particular uses of CITS seem to receive preferential treatment in the literature studying certain age groups. Hopefully, the finding that participants in this study used their computers in many diverse and unexpected ways will help encourage more serious investigations about the accuracy of these stereotypes.

Second, many interviewees suggested that older adults and people in younger age groups differed in terms of computer use, insofar as older adults tend to be more "afraid", more "cautious" towards computers, or move "at their own pace" when computing. The issue of fear towards computers was discussed rather extensively earlier in this chapter. Consequently, it will not be discussed in any further detail. However, one issue that has not been specifically discussed to this point is the possibility that older adults are more likely to cautiously approach technological developments. Some interviewees offered the following insights about this possibility:

> The younger crowd tends to be more up-to-date, and the interest is much higher, where we move at our own pace.

> There's really not much difference in how younger and older people learn, except that older people need to know the benefit of what they're doing. They won't learn unless they know there's some benefit, as opposed to school kids that learn because they think it's a wonderful thing.

> Younger people pick up things quicker, and [younger people] grow up with computers. Overall seniors don't want to make mistakes, and if younger people make mistakes [they] recall it again.

> I wouldn't want a complicated [computer]. But I would want to have everything on it that I could use, or would be interested in using. Because I don't know what's on it, and that's why I want to find out some things before I ever buy one.

There may be a great deal to learn from these comments. In many ways, people in this study seemed to be "buying in" to the technological imperative. At the same time, however, many of them had not even used ElderWeb's BBS, CRM's SCIP site, and only about half of ElderWeb and CRM members had an Internet account. Most ElderWeb and CRM members used their computers for word processing. Also, the most important reason they attended ElderWeb and CRM meetings was to learn more about recent technological developments such as the Internet, before they became committed to using them. This cautiousness is a quality that seems to be forgotten in many technological developments. Too often, it seems, our society becomes more concerned with developing the next "up-and-coming" technology, than with improving and assessing technologies that are in the "here" and the "now". What some people might interpret as "slowness", "incompetence", or "computerphobia" among older adults, even if they use computers, could also be interpreted as careful technological assessment.

Finally, participants also felt an important difference between older adults and people from other age groups is that older adults are much more likely to have grown up, and worked, in a time when personal computers simply did not exist. Hence, either directly or indirectly, they felt older adults are much less likely to be familiar with computer "language":

> I perhaps need some instruction of the kind of nature of programs that I might – It's almost a matter of not knowing the right questions to ask.
>
> We computer literate people use certain jargon that they [older adults] haven't any idea what it means, i.e., "boot up the computer".
>
> I think that when they write the manuals they should give it to some lay person to translate it into ordinary language.
>
> I think a lot of [older adults] would say, "well, my grandchildren get at those computers, and I can't talk to them, and I find that I would like to be able to communicate with them." Being able to communicate with them about computers, they like to be in the now.
>
> I think the information about the operation of the machine can, and should, be made much simpler. The manuals, but the descriptions, you know, of memory and so on. I have great difficulty in clarifying in my mind the difference in my mind between RAM memory and the motherboard memory .... Of course, there are so many abbreviations and

> acronyms that when you have to keep pulling a book out to see what the acronym means, and what is does or doesn't do, this gets a little tedious in my mind.
>
> I think yes, [older adults and younger ages differ in computer use,] because this group, you are at a different level of comprehension, and the wavelength -- we tend to talk differently.
>
> If [an ElderWeb meeting was] a larger one covering the whole range [of ages], I would be afraid that it might be dominated by some hot shot young fellows that I wouldn't know what they're talking about.
>
> This one friend, she's end-sixties, and there is no way she is going to touch a computer. But she uses knitting machines which have built in computers in them. It's how you term "computer", and what it's going to do for you.

All of these comments further explain why so many interviewees in this study seemed most pleased when they were able to talk with other people about computers, why they were so interested in acquiring information about computers and technology, and why they may have been so silent on the chat forums if they were not quite familiar with computers. The truth of the matter is that CITS have become much more prevalent in our society, particular over the past decade. CITS have become part of culture, and part of everyday discourse. All "isms" and imperatives aside, these people seemed, most importantly, to be attempting to remain a part of our culture.

Chapter Six

CONCLUSION

THE RESEARCH QUESTION REVISITED

This thesis examined the question, "From the perspective of a holistic model of health and well-being, in what ways do older adults use CITS, and what meanings do CITS hold for older adults who use them?" To explore this question, two general approaches were employed. In the second chapter, a review of existing literature about CITS, older adults, and health and well-being was conducted. For several reasons, it was concluded that this literature offered little insight into the research question addressed in this thesis. Most of this literature was based upon a medical model of health and well-being, and therefore, only explored CITS older adults could use for clinical, assistive, safety, and security purposes. The importance of investigating clinical, assistive, safety, and security applications of CITS was not denied, but this literature was still critiqued for holding a very limited (even ageist) view of older adults as people who are, or will necessarily become, frail, ill, or homebound.

Another reason why much of the existing literature was not very appropriate for addressing the research question of this thesis was that it lacked evidence from older adults themselves. The literature was typically more interested in asking the question, "How do gerontologists feel older adults should use CITS, and what meanings do gerontologists feel CITS hold for older adults?" than asking the question, "In what ways do older adults use CITS, and what meanings do older adults personally associate with using CITS?" The underlying ageism in this first question was critiqued, as it seemed to regard the viewpoints of older adults as secondary in importance to health professionals, or seemed to view older adults as people who should be spoken "on behalf of".

The final reason why the existing literature was not appropriate for addressing the research question of this thesis was because much of this literature was utopian and over-generalized. Few writers investigated the negative possibilities CITS might entail, or the barriers that could prevent some older adults from experiencing benefits from CITS. Also, few writers examined the relationship between age and other variables such as gender, education, and income levels in their analyses. Most writers seemed to feel that, once a person reaches older adulthood, all other characteristics beyond age become irrelevant. Based on this logic, writers frequently generalized their findings from

a very specific group of older adults like nursing home residents, to all older adults in the wider population. Furthermore, when researchers gathered evidence from older adults, or considered barriers, they usually focused on older adults who have never used CITS. In hindsight, this tendency may have reflected a bias towards the technological imperative in the literature, insofar as the literature seemed most concerned with encouraging older adults who do not use CITS to embrace them. Once older adults made the decision to use CITS, they became a lower priority in the literature.

Because of the limited nature of most existing literature in this area, two case studies of computer organizations oriented to older adults were conducted to explore the research question of this thesis. The purpose of conducting the case studies was not to offer statistical generalizations about the meaning of CITS for all older adults in Canada, but to gather accounts and evidence directly from older adults in these organizations about possible directions answers to the research question could take, and about how well they felt some of the claims made about CITS in the literature applied to them. In other words, the case studies were used for exploring critical issues related to the research question, investigating how participants used CITS, and discovering if participants stated or felt CITS brought meaning to their lives.

While one could argue that there might be a difference between participants "saying" or "feeling" that using CITS benefited them, and these benefits actually occurring in "reality", again, such arguments are not particularly relevant from the standpoint of this thesis. This thesis was based upon a holistic, rather than a medical model of health and well-being, so psychological and emotional benefits of CITS were deemed just as important as physical benefits. Put differently, health and well-being were defined as a positive state of mind, not just bodily improvement. If people said or felt they derived meaning from using CITS, this was regarded as important and relevant evidence for addressing the research question.

Based on the survey and interview findings gathered from ElderWeb and CRM members, it is clear that most participants felt they benefited and derived meaning from using CITS. But far more interesting is the specific benefits and experiences they offered to justify making these claims. The specific benefits participants stated they derived from using, or learning about CITS, were described in the previous chapter. However, by way of conclusion, it is useful to reemphasize the major trends and issues the case studies revealed.

First, it was interesting that a relatively low proportion (30% or less) of survey participants used CITS for communicating with family members or peers often or very often, yet the majority (65% or more) of them still found computing socially advantageous. Initially, this seemed to involve a contradiction, but the interview results suggested that participants associated a much broader range of meanings with the term "social advantage" than the meanings typically discussed in the literature. Rather than strictly viewing a social advantage as something that is attained when physically sitting down at a computer and communicating with others through email or chat forums, many participants felt the greatest social advantages they achieved were attained through using their knowledge about CITS when communicating with others in face-to-face situations. Participants used this knowledge for practical purposes, such as having a useful and contemporary topic of conversation when communicating with others. However, many also appeared to derive a deeper psychological benefit of prestige and power from this knowledge. For many participants, the meaning of the term "social advantage" became synonymous with terms like "social prestige", "social inclusion", and "social status." While one may be tempted to "write off" these feelings as mere elitism, or subscribing to the technological imperative, it is important to consider them in the context of a holistic model of health and well-being, and the contemporary milieu of our society. To a large extent, our society is perceived as technological in nature. Participants from ElderWeb and CRM seemed comforted and empowered from the knowledge they were acquiring about CITS, especially because they felt this knowledge would allow them to remain an active part of society. From the perspective of a holistic model of health and well-being, these psychological benefits are meaningful, even though they simultaneously raise a number of critical questions such as "why did these people feel they had to learn about CITS to belong to society?" and "do older adults who do not use CITS feel excluded or alienated from society?"

Second, survey participants used their CITS most frequently for word processing. The interview results also revealed that participants associated a range of psychological benefits with word processing beyond practical advantages such as ease of retrieving and storing information, writing letters and notes, and writing their life histories. In particular, many participants felt word processing gave them a sense of "accomplishing something" or helping others through volunteering. Thus, similar to how they valued knowledge about CITS, there was an underlying theme in the accounts

many participants offered that implied they associated values of prestige and worthiness with tasks that could be accomplished from using CITS. This may reflect the fact that our society in general often associates prestige and worthiness with CITS. However, it also suggests that, psychologically, participants felt using CITS enabled them to belong and contribute to our society. In a society where so many people seem to feel that older adults cannot make substantial contributions, and in a society where people who are not computer literate are sometimes viewed negatively, it becomes clearer why participants particularly valued psychological benefits of this nature.

Third, other than word processing, participants in the case studies used CITS most often for accessing information from the networks and other Internet and BBS sites. It was also evident that they were most interested in information about technology. In other words, many participants appeared to use CITS rather reflexively, in particular, for obtaining information about CITS. This reflexive use of CITS to obtain information about CITS seems partially explainable by the fact that participants associated values of status and prestige with CITS, felt they would be left out of society if they did not acquire such information, and feared they would be viewed negatively by others if they did not learn about CITS. These benefits are psychological in nature, and thus extend well beyond the medical, safety, and security benefits typically discussed in the literature.

Fourth, and related to the three trends just reviewed, many of the meanings participants associated with learning about CITS were directed towards the future. Many participants feared they would be "left out" of society, or that they would be viewed in a very negative manner by others, if they did not acquire knowledge about computers. Many participants were also concerned they might become homebound in the future, but they felt CITS would bring meaning to their lives if this ever occurred. Furthermore, a large proportion (70% or more) of participants used CITS for obtaining health information, but they felt such information was still important to have on ElderWeb's BBS and CRM's SCIP site if they ever required such information in the future. As a final example, some participants were also concerned their mental acuity might decline as they aged, but they felt using CITS could keep their minds active, and consequently prevent or delay their mental acuity from declining. In these respects, computer experience and knowledge became a symbol of, and even a solution for, the hopes and fears of participants in the case studies.

Fifth, participants in the case studies seemed to experience the greatest benefits when they used CITS for active, rather than passive purposes. Participants generally enjoyed reading information produced by others, and simply belonging to ElderWeb and CRM. However, they were most pleased when they were able to use CITS, or their knowledge about CITS, for helping others, creating things, talking with other people about their experiences, and developing the form and content of ElderWeb and CRM.

Sixth, a high proportion of participants in the case studies did not use ElderWeb's BBS or CRM's WWW site, and most participants who did not use the BBS or WWW site cited technical difficulties as important contributors. Initially these findings were quite surprising, especially considering that 60% or more of participants had used computers for at least four years, and were therefore expected to be quite computer literate. After further exploration during the interviews, however, these findings seemed related to the fact that participants joined ElderWeb and CRM for a wide variety of purposes beyond using each organization's computer networks. Many participants explained how retirement made it difficult for them to receive technical assistance about computers, or talk with others about computers. Furthermore, even if participants used computers while they were in the workplace, they felt new applications such as the Internet involved much more than "filling in the blanks" as they had often done in the past. ElderWeb's BBS and CRM's SCIP site were clearly in the early stages of development and, when the research for this thesis was conducted, the Internet was also a relatively new application for public use. At least at that stage in time, participants were largely using ElderWeb and CRM for assessing if they would become committed to learning about newer CITS, learning about such applications, and accessing and building a support network to help address difficulties they encountered with applications they were currently using.

Finally, it is interesting that particular subgroups in ElderWeb and CRM sometimes used CITS differently than other subgroups. Similarly, some subgroups of participants were more likely to experience particular benefits than other subgroups. For example, participants who were unattached were much more likely to find computing socially advantageous than participants who were attached. In one way or another, participants in this study derived at least some benefits from using, or learning about CITS. However, the frequent claim in the literature that all people will universally and predictably experience benefits from CITS now seems even more unreasonable.

FRUITFULNESS OF THE THEORETICAL FRAMEWORK

Throughout this thesis, a great deal of criticism was directed towards the "take it" or "leave it" imperatives that frequently underlie many CITS developments, and related coverage in the literature. The "take it" approach was critiqued for its overly utopian nature, especially for assuming that all people will derive benefits from using CITS. The "leave it" approach, on the other hand, was critiqued for its overly dystopian nature, and for arguing that the only way to avoid the negative consequences of CITS is to retreat to a previous age where such technologies did not exist. To move beyond these two approaches, Andrew Feenberg's critical theory of technology was particularly valuable. While Feenberg argues that many of the benefits often discussed in the literature are potentially attainable, and desirable, he simultaneously recognizes that many changes may have to take place on a societal level before such benefits can occur in reality. He also recognizes that social values are embedded not only in the use of technologies, but also in their design. Consequently, technologies such as CITS should not be studied or viewed separately from human context. Many participants in this study encountered difficulties when using CITS, yet few of them felt it was their place to suggest improvements in the design of CITS. Some participants were also dissatisfied when they were not able to play an active role in establishing the form and content of ElderWeb, or when they encountered ageist barriers when trying to use CITS for democratic purposes. Again, these participants seemed very reluctant or powerless to overcome these barriers. From Feenberg's perspective, it is evident that CITS developments can only become truly democratic in nature when our society is not guided by values such as ageism, or by values that deify technological developments to such an extent that they are viewed as beyond the control, assessment, and improvement of people who use (and do not use) them.

While Feenberg's critical theory of technology was a valuable framework, it was enhanced even further when used in conjunction with Rob Kling's web model of computerization and CITS. Kling also recognizes that it is futile to view technological developments in stark, black or white, overtones. CITS are complex technologies that have varied and unpredictable meanings for different individuals and social groups. Because of this, the most powerful analyses of CITS are very localized, and strive to understand how people make sense of CITS in their everyday lives. Only by "piecing together" evidence from different social settings and groups can we even come close to

gaining a more complete understanding of the meaning of CITS in our society. The insights that participants in this thesis offered helped us move one step closer to attaining such an understanding.

LIMITATIONS AND METHODOLOGICAL CONSIDERATIONS

Some limitations and methodological considerations should be kept in mind when interpreting the results of this thesis. Perhaps the most important thing to consider is that participants in the case studies were not selected based on the assumption they would be a statistically representative sample of all older adults in Canada. Certainly these participants were all older adults, and many of the insights they offered addressed issues that many older adults who use CITS may find important, such as lack of opportunities to obtain technical support once retired from the workforce, unfamiliarity with computer language, and human factors difficulties. However, at least in terms of some of the baseline characteristics that were inquired about in the surveys, participants in the case studies were different from other older adults in Canada. The results of the case studies should therefore be regarded as exploratory in nature.

Similarly, it should also be emphasized that ElderWeb and CRM were computer clubs that also offered computer networks, and one of the main purposes of both organizations was to introduce older adults to information about CITS. ElderWeb and CRM members typically had previous experience with computing, or were highly interested in learning about computing. Many of the accounts participants in the case studies offered suggested they associated values of prestige and status with knowledge about computers, and were particularly interested in obtaining information about CITS. These findings cannot be generalized to other older adults who do not join organizations such as ElderWeb and CRM, as it is quite plausible that older adults who use different types of computer networks could find other types of information more important.

Another potential limitation of this study is related to the Hawthorne Effect that was discussed in the second chapter. Even though survey and interview participants were asked about their positive and negative experiences with using CITS, they may have felt more motivated to discuss the positive experiences in order to "please" the researcher (myself). It was definitely not the purpose of this thesis to describe CITS purely in positive overtones, or vice versa, but participants could conceivably have interpreted the purpose of the study in this manner. From the standpoint of this thesis,

however, criticisms related to the Hawthorne Effect are somewhat irrelevant. This is because one of the purposes of this thesis was to discover if participants felt CITS were worth "defending" or if they felt their use of CITS would be impressive to others.

A related criticism that could be directed towards this thesis is that it did not "test" the accuracy of the claims participants offered, and did not quantify the degree of correlation between the amount participants used computers and their responses to questions such as the attitudinal statements about computing that were presented in Table 12. While participants associated a number of positive and negative meanings with using CITS, the possibility exists that other factors beyond using CITS might better explain these meanings. For example, if a participant indicated that she felt using computers was financially advantageous, perhaps she recently received a sizeable retirement package or paid the mortgage on her house. Similarly, if a participant who was lonely or depressed indicated that he felt using computers was socially advantageous, perhaps he recently met a close friend at one of the network meetings, or perhaps he was still lonely or depressed but felt using computers could potentially help him overcome these difficulties in the future. Relativist arguments can always be directed towards studies of this nature and, unfortunately, there are many variables that could potentially explain the consequences survey respondents specifically associated with computer use. The relationship between CITS and many of the variables that were of interest in this thesis are much more complex than simply showing statistical correlation between them. This is why the survey results were mainly used to identify issues that would require further exploration during the interviews. Furthermore, the stories and examples participants offered to support the claims they made were viewed as more important than statistical significance for addressing the research question. Health and well-being were defined as a positive state of mind, and not just bodily improvement. If participants felt there was an association between using computers and certain consequences, their feelings, and the stories and examples they offered, were of primary importance.

One might also ask "how, in hindsight, could one have conducted this thesis differently?", or "what suggestions can this thesis offer about potential problems and issues future researchers might try to avoid or address?" One of the most important lessons future researchers can derive from this thesis is that it may be advantageous to narrow their focus on CITS even further than in this thesis. Particularly in the survey

research, it was would have been desirable to know more details about the specific applications participants were thinking about when they replied to broad statements such as "I find computing socially advantageous", and "I find computing financially advantageous". The interview findings offered the opportunity to explore what applications some participants may have been thinking about if they agreed with these statements, but if researchers are interested in investigating more than the mere prevalence of these applications, they may be better served by focusing exclusively on a specific application such as computer networking, word processing, or financial programs.

Furthermore, this thesis also discovered how difficult it is for researchers to obtain a complete historical understanding of the environment they are researching when "stepping into" an environment at one point in time. There were likely many key occurrences in ElderWeb and CRM before this study was conducted, but the accounts of the present administrators and members were relied upon to explore these occurrences. This point is emphasized because the administrators likely had their own interpretations of past occurrences in the organizations. Also, there were potentially a number of previous members of ElderWeb and CRM whose voices were not heard because they could not be recruited. Consequently, a wider range of recruitment techniques could have been utilized to include participants in this study who were previously members of ElderWeb and CRM.

Finally, if conducting similar research in organizations like ElderWeb and CRM in the future, it might also be advantageous to triangulate data sources like surveys and interviews with more technical evidence such as BBS and WWW site login statistics. Login statistics were available from ElderWeb's BBS and CRM's SCIP site, but were unfortunately beyond the scope of this thesis to include and analyze. Including these statistics would have been advantageous for several reasons. For example, login statistics would help determine how people who did not agree to be surveyed or interviewed used (or how they did not use) the networks. Including login statistics would also help address a problem that was encountered in this thesis, namely the difficulties involved in differentiating between the ways participants felt they potentially desired to use the networks, and ways they were actually using the networks at the time. In hindsight, not including network login statistics encouraged a more in-depth examination of the interview results to expand upon the survey findings, and discouraged the

temptation to rely on the login statistics alone to explain what CITS meant to participants. Furthermore, statistics of this nature are not completely accurate, as situations such as power outages and multiple logins by the same person in the same sitting could drastically skew results. However, these statistics are potentially available to researchers. If used wisely and ethically, they offer another source of evidence to explore how people use networks like ElderWeb's BBS and CRM's SCIP site.

FUTURE RESEARCH

If we accept Kling's argument that the most powerful analyses of CITS are conducted in specific settings, there may always be a need for further social analyses of CITS. However, from the perspective of this thesis, there are several particularly interesting issues that future researchers who are interested in older adults could address. One of the most understudied issues is the phenomenon of "lurking" on computer networks. What is the prevalence of lurking among older adults on computer networks? For what other reasons beyond computer inexperience, and for what other functions beyond indirectly obtaining information, might older adults lurk on computer networks? Is there something about the patterns of lurking by older adults that might suggest more about what this behaviour means to them? Is it fruitful to compare lurking patterns between older adults and people from other age groups? Is age a factor in lurking behaviours, or do other variables such as gender, personality, and computer experience better explain it? Due to the anonymous nature of lurking, it may be a very difficult topic to research. Still, it is a fascinating and potentially prevalent behaviour that deserves further inquiry.

Although ElderWeb and CRM were relevant organizations to study, there were many changes taking place in ElderWeb that make it a particularly interesting case study for future research. ElderWeb's BBS was just about to make a transition to the WWW when the research for this thesis was conducted. Thus, many of the insights participants offered about this transition were speculative in nature. A post-examination of how successful this move was implemented and regarded by members of ElderWeb seems in order. It would also be interesting to address other questions related to this move. For example, is ElderWeb's membership still largely composed of people who reside in, or near, Edmonton? How many ElderWeb members cancelled their membership after ElderWeb completed this move? Was the move to the WWW

economically advantageous for Grant MacEwan Community College? Are only a small number of ElderWeb members using the WWW site, as seemed to be the case with the BBS?

It should also be emphasized that ElderWeb and CRM were not true "virtual communities", at least in Rheingold's (1993a; 1993b) sense of the term. Meetings were important services ElderWeb and CRM offered members. Thus, most members of ElderWeb and CRM interacted with one another in face-to-face communication settings, as well as on computer networks. Furthermore, given that ElderWeb was restricted to people over the age of 45, and CRM was still oriented to older adults, everyone attending the meetings would have a general idea about the age ranges of other people. It would be interesting to examine if older adults derive different meanings and benefits from computer networks that are more virtual and anonymous. It would also be interesting to examine several other questions about more virtual and anonymous computer networks. For example, do older adults develop meaningful and lasting relationships on these networks? Do the social relationships that older adults develop on these networks evolve into relationships in real life? Conversely, how often do older adults develop relationships on these networks from previously established relationships in real life? Do older adults freely provide their age when conversing with other people on these networks, i.e. are they proud of their age, or do they feel their age is something to be concealed? To what extent does ageism come to light if older adults provide their ages on these networks? Does age even matter in cyberspace? Do older adults and people from younger age groups commingle on these networks, or are older adults more likely to be ghettoized in specific types of networks? If older adults commingle with people from younger age groups on these networks, are interactions egalitarian, or is one group more likely to dominate the interactions that take place? Are certain types of networks more likely to promote intergenerational interaction than other types of networks? Questions of this nature seem almost endless.

Two other issues that require further research are what this thesis has cautiously labeled as computer addiction and computerphobia. To what degree do older adults who use CITS for extensive periods of time experience health problems, interpersonal difficulties, and other negative outcomes? Are older adults who use computers for extensive periods of time particularly at risk for these problems, or are people from other age groups who extensively use computers just as likely to experience them? Is

extensive computer use regarded as a positive, negative, or even necessary behaviour for older adults? If older adults are reluctant to use CITS, should this be viewed as a phobia, or are other issues in operation, such as lack of opportunities to learn about computers, the high costs of purchasing computers and software, ergonomic factors, ageism, sexism, or simply the possibility that the computer is not the universally appropriate technology that some might contend?

Finally, although other questions certainly abound, a critical question that still needs to be asked is "should older adults who do not use CITS be encouraged to use them?" Unfortunately, there are likely no easy answers to this question for any subgroups of our population, including older adults. On the one hand, if we answer "yes" to this question, we run the risk of falling victim to the "take it" approach to CITS that has been critiqued throughout this thesis. On the other hand, if we answer "no" to this question, we run the risk of not only falling victim to the "leave it" approach to CITS that has also been critiqued throughout this thesis, but also to ageist viewpoints that both younger and older people sometimes hold, such as "you can't teach an old dog new tricks" and "the health and well-being of older people cannot be improved, so why bother?" Hopefully, future research can obtain a greater understanding about why some older adults do not use CITS without being theoretically driven by the technological imperative. As with the methodology employed in this thesis, directly obtaining insights from people who do not use CITS will be a particularly valuable approach to use.

End Notes

(1) Originally, the name of this organization was "ElderNet". However, shortly after the research for this thesis was conducted, it changed its name to "ElderWeb" for legal reasons. For clarity, "ElderWeb" is used to describe this organization throughout this thesis (except in the appendices).

(2) Yoon (1996) used the term "liberalism-positivism", to describe theories that assume technology provides an impetus for progress.

(3) It is beyond the scope and purpose of this thesis to review every theoretical perspective for understanding and studying technology. For readers who are interested in a review of many different theoretical approaches, Ess's (1996) compilation of theoretical perspectives on computer-mediated communication is a good starting point.

(4) For a comprehensive examination of these differing notions of democracy, see Ess (1996).

(5) Kling has also worked very closely with a number of similar-minded colleagues such as Elihu Gerson, Walt Scacchi, Charles Dunlop, and Suzanne Iacono in his impressive (at least 20 year) career studying the relationships between computerization and society. Thus, he might oppose calling the web model strictly "his". Kling has, however, stood at the forefront of is colleagues in forwarding, defending, and implementing the web model. It is also important to mention that similar (although not identical) web approaches have also been applied to the study of many technologies other than computers. For examples of the web approach applied to technology studies in general, see Hughes (1986) and Bijker and Law (1992).

(6) Perhaps one possible way to avoid this recruitment problem is to include attitudinal questions about CITS in more general and nationally representative studies such as Statistics Canada's General Social Survey. Attitudinal information of this nature appears to have a low priority for agencies conducting such research, however, as most research has been directed towards discovering how often various technological innovations are used by different cohorts in society. This is perhaps related to the technological imperative underlying much of the government and industry literature reviewed in the second chapter, which seems more devoted to convincing people to join the

information revolution than understanding how they feel about CITS and use them.

(7) ElderWeb's URL on the WWW is: http://www.elderweb.org

(8) The SCIP site URL on the WWW is: http://www.mbnet.mb.ca/crm/index. html

(9) This probably would not have been as much as a potential problem for ElderWeb. As mentioned earlier, the ElderWeb BBS was restricted to people aged 45 or older. The SCIP site, on the other hand, could be used by any person with access to the WWW. If the survey was posted on the SCIP site, it would have been very easy for a "mischievous" person who was randomly "surfing" around the WWW (and was not an older adult) to complete the survey.

(10) Again, especially in the case of CRM, a "mischievous" person could conceivably have volunteered for the study in this first stage of recruitment. Even though the informed consent form indicated the study was about older adults, and the survey asked about age, the possibility still exists that a person other than an older adult could have forwarded their name and address. The hope here is that, by requesting participants to forward their name and address, it may have been more intimidating for a person other than an older adult to participate. Still, this is an interesting issue in research of this nature, and moreover, one that is not easy to overcome (Avis, 1995).

(11) For a review of this program, see Weitzman & Miles (1995).

(12) "Situations of risk" is a term used by Health Canada to "describe those factors that threaten the health, well-being and independence of older adults. Risk situations may include [but are not limited to] poor health, abuse, advanced age, low income, lack of support, loss or bereavement" (John Gross Associates, 1995, p.7).

(13) According to Desjardins & Dumas (1993), when studying older adults, it is important to examine marital status in terms of gender. This is simply due to the fact that there are well-established differences between males and females in vital status and nuptiality in the total population.

(14) It may be more than a coincidence that these two individuals were women. From casual observations made while attending ElderWeb and CRM meetings, much of the discussion seemed dominated by men.

(15) For ethical and practical reasons, the conversations of participants on email and the chat forums were not observed. Therefore, it was difficult to determine if males also dominated communication on the networks. However, several researchers have observed that communication in electronic environments, even in listservs largely patronized by women, tends to be dominated by males (see review by Shade, 1993).

(16) Note the underlying ideology and imperatives in books with titles like *The Internet for Dummies* (Levine & Baroudi, 1994) and *The Complete Idiot's Guide to the Internet* (Kent, 1994). These titles seem to suggest, "If you are not able to use computers or the Internet, you are an idiot, and you better fix yourself fast!"

(17) This might explain why so few of the participants replied to the request for volunteers that was posted on ElderWeb's BBS and CRM's SCIP site. According to the network administrator of ElderWeb, one of the topics that is constantly talked about at the ElderWeb meetings is the importance of being very cautious about providing personal information to people on computer networks, especially strangers.

(18) Advertising was used to help fund the BBS, but only from a few local restaurants and shops. Of course, advertising is not the only viable option that could have been tried to help sustain the BBS. For example, CRM was exploring the possibility of acting as a consultant for other organizations trying to establish networks for older adults. Some funding for the BBS could also have been sought from information providers, corporate donors, and a range of other organizations interested in the health and well-being of older adults.

(19) For an interesting look at the problematic nature of defining non-technology and non-computer use as "technophobia" and "computerphobia", see Bauer (1995).

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APPENDIX A: ElderWeb Member Survey

Dear [Participant]:

A few weeks ago, you may recall completing a volunteer request form for a survey I am conducting about ElderNet. I would like to thank you once again for becoming involved in this project, and also ask you to complete the survey that is enclosed with this letter. The information will be used to provide ElderNet with various recommendations to help them better serve their current and future members.

Any information you provide will be kept strictly confidential and your anonymity is guaranteed. ElderNet will be provided with a final summary of the survey, but only in group form. In other words, all the surveys will be analyzed together. No items will be attributable to specific individuals.

After you complete the survey, you can mail it to me in the enclosed self-stamped envelope. Furthermore, as mentioned earlier, a draw for prizes (three $25 gift certificates for London Drugs, one gold shirt courtesy McDonald's Restaurants, one T-shirt courtesy the Alberta Shock Trauma Air Rescue Society, or "STARS", and one Entourage fully insulated Lunch Carry-All) will also be made once all the surveys are gathered. If you would like to be entered in this draw, simply complete the following information and return this letter along with the survey.

Thank You Very Much,

David Johnston
Graduate Program in Communications Studies
University of Calgary
2500 University Drive
Calgary, Alberta
T2N 1N4

****

As an added incentive for becoming involved in this project, I would like to be entered in the draw for prizes. If I win a prize, I can be contacted at:

Name: _____

Address: _____

Telephone: _____

Note: Survey must be returned by January 31, 1996 to be eligible for the prizes.

A. Which of the following choices best describes how long you have owned a computer? (check one choice only)

___ Do not own a computer ___ 1-3 years ___ 7-9 years
___ Less than 1 year ___ 4-6 years ___ 10 years or more

B. Which of the following choices best describes how long you have been using computers?

___ Do not use computers ___ 1-3 years ___ 7-9 years
___ Less than 1 year ___ 4-6 years ___ 10 years or more

C. If you use computers, where did you first learn? _____

D. Which of the following choices best describes how long you have had an internet account?

___ Don't have an account ___ 1-6 months ___ 13-18 months
___ Less than 1 month ___ 7-12 months ___ 19 months or more

E. If you have an internet account, which type of internet provider do you use?

___ Local Freenet ___ Commercial Provider ___ Educational Facility
Other _____

F. Please indicate the extent to which you agree or disagree with the following statements: (circle one number for each question)

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
1. I would like to know more about computers than I currently do	1	2	3	4	5
2. I don't feel in control when using a computer	1	2	3	4	5
3. Computers are financially advantageous	1	2	3	4	5
4. Computers are socially advantageous	1	2	3	4	5
5. Using computers enhances my health & well-being	1	2	3	4	5
6. Computers increase the amount of time I have to do other things	1	2	3	4	5
7. Using computers is the main way I spend my leisure time	1	2	3	4	5
8. Computers can invade my privacy	1	2	3	4	5
9. I find using computers quite stressful	1	2	3	4	5
10. Computers should be designed better	1	2	3	4	5

G. Generally, if you need information about health or medicine, where do you go first?

___ Read health books, brochures, or magazines ___ Ask friend or relative
___ Talk in person to Health Professional ___ Use a computer
___ Talk to Health Professional by telephone ___ Television or radio

Other _____

H. How often do you use personal computers for the following: (circle one number per question)

	Never	Seldom	Sometimes	Often	Very Frequently
1. Word Processing	1	2	3	4	5
2. Finance or Business	1	2	3	4	5
3. Accessing other internet/ BBS sites besides ElderWeb	1	2	3	4	5
4. Playing computer games	1	2	3	4	5
5. Communicating with children, grandchildren, or relatives	1	2	3	4	5
6. Communicating with friends/peers	1	2	3	4	5
7. Learning about health	1	2	3	4	5
8. To learn about subjects or activities you are interested in	1	2	3	4	5
9. Purchasing Products	1	2	3	4	5
10. Creating spread-sheets	1	2	3	4	5
11. Using graphics/drawing tools	1	2	3	4	5
12. Banking	1	2	3	4	5

I. How many months have you been an ElderWeb member? (check one only)

___ Am not a member ___ 1-6 months ___ 13-18 months
___ Less than 1 month ___ 7-12 months ___ 19 months or more

J. How often do you attend ElderWeb meetings? (circle one number only)

Never	Seldom	Sometimes	Often	Very Frequently
1	2	3	4	5

K. On average, which of the following categories best describes how many hours per week you currently use either ElderNet's BBS or Internet site? (check one only)

___ Do not use it ___ 1-3 hours ___ 7-9 hours
___ Less than 1 hour ___ 4-6 hours ___ 10 hours or more

L. If you use/have ever used ElderNet's BBS/internet site, what is/was the main reason for doing so?

_____

M. If you have never used ElderNet's BBS/internet site, what is the main reason you have not?

_____

N. What is the main reason you joined ElderNet? _____

_____

O. How did you first hear about ElderNet? (check one only)

___ Television
___ Newspaper
___ Radio
___ Word of Mouth
___ Poster/Flyer/Brochure
___ Newsletter
___ Internet Search Vehicle
___ Magazine

Other _____

P. Before you were an ElderNet member, how often did you use personal computers?

___ Never
___ Every day
___ A few times per week
___ A few times per month
___ A few times per year or less

Q. Since you have become an ElderNet member, how often do you now use computers?

___ Never
___ Every day
___ A few times per week
___ A few times per month
___ A few times per year or less

R. With 1 being "not proficient/skilled at all" and 5 being "very proficient/skilled", how proficient/skilled were you at using personal computers before you joined ElderNet? (circle one number)

Not Proficient		Average		Very Proficient
1	2	3	4	5

S. With 1 being "not proficient/skilled at all" and 5 being "very proficient/skilled", how proficient/skilled are you at using personal computers since you have joined ElderNet?

Not Proficient		Average		Very Proficient
1	2	3	4	5

T. The following is a list of services that ElderNet's BBS/internet site offers. Place a check by 5 services that you find (or would find) most useful.

___ Home and Garden
___ International News
___ ElderWeb Notice Board
___ Letters to the Editor
___ Federal Government
___ Computer Tutor
___ Flea Market
___ Associations
___ Health Issues
___ Mailbox
___ Leisure Time
___ ElderChat
___ Bird Watching
___ I Remember...
___ Travel
___ Senior Centres
___ Humor
___ Dining Out
___ Courses
___ Weather
___ The Mall
___ Conferences

U. Please list any types of information or services that you think ElderNet should offer that are not mentioned above: _____

V. Overall, how useful would you rate the services ElderNet offers? (circle one number)

Don't Know	Not Useful at all		Average Usefulness		Extremely Useful
9	1	2	3	4	5

W. Demographic Information (your responses are anonymous and confidential, and will allow comparisons of groups of people, rather than specific individuals).

1. What city/town and province do you live in? _____

2. What year were you born? _____

3. What is your sex? ___ Male ___ Female

4. What is the highest level of education you have received?
   ___ Less than High School
   ___ Some/Graduated High School
   ___ Trade Certificate or diploma (e.g. NAIT)
   ___ Some/Graduated College or University
   ___ Post Graduate (e.g. Masters, Ph.D., or Law Degree)

5. ElderNet offers information about health. It is also concerned with meeting any special needs its members may have. Please put a check besides any of the following that pose difficulties for you:

___ Visual Impairment	___ Sleeping Difficulties	___ Bone/Joint Problems
___ Hearing Impairment	___ Loneliness/Depression	___ Muscular Problems
___ Speech Impairment	___ Heart Problems	___ Mobility Problems
___ Diabetes	___ Hypertension	___ Difficulty Driving

6. How would you best describe your current work status?
   ___ employed full-time ___ semi-retired/work part-time
   ___ retired ___ unemployed

7. What is/was your main occupation, either currently, or before you retired? (e.g. farmer, homemaker, engineer) _____

8. What is your household yearly income (before taxes)?

___ Less than $10,000	___ $25,001-$40,000	___ $55,001-$70,000
___ $10,000-$25,000	___ $40,001-$55,000	___ Greater than $70,000

9. Do you currently volunteer for any organizations, including ElderNet? ___ Yes ___ No

10. What is your current marital status?
    ___ Married/Common Law ___ Separated/Divorced
    ___ Widowed ___ Never Married

11. Which of the following categories best describes your current living arrangement?
    ___ Own/Rent House ___ Live with Children or Other Relatives
    ___ Own/Rent Apartment/Condo ___ Live in Senior's Facility

    Other _____

12. Besides using computers, please name at least 3 other hobbies/activities that you enjoy:

_____

Thank you for your help in providing this valuable information for the students of the University of Calgary Masters in Communications Studies Program and ElderNet!

APPENDIX B: Creative Retirement Manitoba Member Survey

Dear [Participant]:

A few weeks ago, you may recall completing a volunteer request form for a survey I am conducting about the Seniors Computer Information Project (SCIP). I would like to thank you once again for becoming involved in this project, and also ask you to complete the survey that is enclosed with this letter. The information will be used to provide SCIP with various recommendations to help them better serve their current and future members.

Any information you provide will be kept strictly confidential and your anonymity is guaranteed. SCIP will be provided with a final summary of the survey, but only in group form. In other words, all the surveys will be analyzed together. No items will be attributable to specific individuals.

After you complete the survey, you can mail it to me in the enclosed self-stamped envelope. Furthermore, as mentioned earlier, a draw for prizes (three $25 gift certificates for London Drugs, one gold shirt courtesy McDonald's Restaurants, one T-shirt courtesy the Alberta Shock Trauma Air Rescue Society, or "STARS", and one Entourage fully insulated Lunch Carry-All) will also be made once all the surveys are gathered. If you would like to be entered in this draw, simply complete the following information and return this letter along with the survey.

Thank You Very Much,

David Johnston
Graduate Program in Communications Studies
University of Calgary
2500 University Drive
Calgary, Alberta
T2N 1N4

****

As an added incentive for becoming involved in this project, I would like to be entered in the draw for prizes. If I win a prize, I can be contacted at:

Name: _____

Address: _____

Telephone: _____

Note: Survey must be returned by January 31, 1996 to be eligible for the prizes.

A. Which of the following choices best describes how long you have owned a computer? (check one choice only)

___ Do not own a computer ___ 1-3 years ___ 7-9 years
___ Less than 1 year ___ 4-6 years ___ 10 years or more

B. Which of the following choices best describes how long you have been using computers?

___ Do not use computers ___ 1-3 years ___ 7-9 years
___ Less than 1 year ___ 4-6 years ___ 10 years or more

C. If you use computers, where did you first learn? _____

D. Which of the following choices best describes how long you have had an internet account?

___ Don't have an account ___ 1-6 months ___ 13-18 months
___ Less than 1 month ___ 7-12 months ___ 19 months or more

E. If you have an internet account, which type of internet provider do you use?

___ Local Freenet ___ Commercial Provider ___ Educational Facility
Other _____

F. Please indicate the extent to which you agree or disagree with the following statements: (circle one number for each question)

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
1. I would like to know more about computers than I currently do	1	2	3	4	5
2. I don't feel in control when using a computer	1	2	3	4	5
3. Computers are financially advantageous	1	2	3	4	5
4. Computers are socially advantageous	1	2	3	4	5
5. Using computers enhances my health & well-being	1	2	3	4	5
6. Computers increase the amount of time I have to do other things	1	2	3	4	5
7. Using computers is the main way I spend my leisure time	1	2	3	4	5
8. Computers can invade my privacy	1	2	3	4	5
9. I find using computers quite stressful	1	2	3	4	5
10. Computers should be designed better	1	2	3	4	5

G. Generally, if you need information about health or medicine, where do you go first?

___ Read health books, brochures, or magazines ___ Ask friend or relative
___ Talk in person to Health Professional ___ Use a computer
___ Talk to Health Professional by telephone ___ Television or radio
Other _____

H. How often do you use personal computers for the following: (circle one number per question)

	Never	Seldom	Sometimes	Often	Very Frequently
1. Word Processing	1	2	3	4	5
2. Finance or Business	1	2	3	4	5
3. Accessing other internet/ BBS sites besides SCIP	1	2	3	4	5
4. Playing computer games	1	2	3	4	5
5. Communicating with children, grandchildren, or relatives	1	2	3	4	5
6. Communicating with friends/peers	1	2	3	4	5
7. Learning about health	1	2	3	4	5
8. To learn about subjects or activities you are interested in	1	2	3	4	5
9. Purchasing Products	1	2	3	4	5
10. Creating spread-sheets	1	2	3	4	5
11. Using graphics/drawing tools	1	2	3	4	5
12. Banking	1	2	3	4	5

I. Overall, with 1 being "not proficient/skilled at all" and 5 being "very proficient/skilled", how proficient/skilled would you say you are at using computers? (circle one number)

Not Proficient		Average		Very Proficient
1	2	3	4	5

J. Are you a member of the Creative Retirement Computer Club? ___ Yes ___ No

K. Are you a member of SCIP's Internet Special Interest Group? ___ Yes ___ No

L. What is the main benefit you feel SCIP can offer you? _____

_____

M. On average, which of the following categories best describes how many hours per week you currently use SCIP's internet site? (check one only)

___ Do not use it ___ 1-3 hours ___ 7-9 hours
___ Less than 1 hour ___ 4-6 hours ___ 10 hours or more

N. If you use/have ever used SCIP's internet site, what is/was the main reason for doing so?

_____

O. If you have never used SCIP's internet site, what is the main reason you have not? _____

_____

P. How did you first hear about SCIP? (check one only)

___ Television
___ Newspaper
___ Radio
___ Word of Mouth
___ Poster/Flyer/Brochure
___ Newsletter
___ Internet Search Vehicle
___ Magazine

Other _____

Q. The following is a list of services/information that SCIP's internet site offers. Place a check by 5 services that you find (or would find) most useful.

___ Advocacy
___ Health
___ Housing
___ Income/Finance
___ Legal/Consumer Issues
___ Lifestyle
___ Senior Centres/Clubs
___ On-line Conferences/Forums
___ Organizations
___ Special Needs
___ Email/CyberPals
___ Senior Times (news, events, and announcements)
___ Ask a Great-Granny (advice about family matters)
___ Manitoba Senior Citizen's Handbook
___ Health Line (inquire about health matters)
___ Senior's Guide to Federal Programs

R. Please list any types of information or services that you think SCIP should offer that are not mentioned above:

_____

S. Overall, how useful would you rate the services SCIP offers? (circle one number)

Don't Know	Not Useful at all		Average Usefulness		Extremely Useful
9	1	2	3	4	5

T. Demographic Information (your responses are anonymous and confidential, and will allow comparisons of groups of people, rather than specific individuals).

1. What city/town and province do you live in? _____

2. What year were you born? _____

3. What is your sex? ___ Male ___ Female

4. What is the highest level of education you have received?

___ Less than High School
___ Some/Graduated High School
___ Trade Certificate or diploma
___ Some/Graduated College or University
___ Post Graduate (e.g. Masters, Ph.D., or Law Degree)

5. SCIP offers information about health. It is also concerned with meeting any special needs its members may have. Please put a check besides any of the following that pose difficulties for you:

___ Visual Impairment	___ Sleeping Difficulties	___ Bone/Joint Problems
___ Hearing Impairment	___ Loneliness/Depression	___ Muscular Problems
___ Speech Impairment	___ Heart Problems	___ Mobility Problems
___ Diabetes	___ Hypertension	___ Difficulty Driving

6. How would you best describe your current work status?

___ employed full-time	___ semi-retired/work part-time
___ retired	___ unemployed

7. What is/was your main occupation, either currently, or before you retired? (e.g. farmer, homemaker, engineer)

_____

8. What is your household yearly income (before taxes)?

___ Less than $10,000	___ $25,001-$40,000	___ $55,001-$70,000
___ $10,000-$25,000	___ $40,001-$55,000	___ Greater than $70,000

9. Do you currently volunteer for any organizations, including SCIP? ___ Yes ___ No

10. What is your current marital status?

___ Married/Common Law	___ Separated/Divorced
___ Widowed	___ Never Married

11. Which of the following categories best describes your current living arrangement?

___ Own/Rent House	___ Live with Children or Other Relatives
___ Own/Rent Apartment/Condo	___ Live in Senior's Facility

Other _____

12. Besides using computers, please name at least 3 other hobbies/activities that you enjoy:

_____

Thank you for your help in providing this valuable information for the students of the University of Calgary Masters in Communications Studies Program and SCIP!

APPENDIX C: Network Versions of Volunteer Request Form

To: All ElderNet Members
From: David Johnston

Under the direct supervision of Dr. Edna Einsiedel at the University of Calgary, I am studying the use of computers by older adults. I am asking all interested ElderNet members to voluntarily complete a short survey. The questions will vary in nature, but will focus on how you are using computers and any personal experiences you have had with them. You may also be asked to volunteer for an interview at a later date as well.

A summary report of the information will be provided to both ElderNet and any members who are interested. This will directly benefit yourself, because ElderNet will receive feedback that will help them ensure they are meeting your needs.

After forwarding your name and address to my ElderNet mail box (send your responses to "David Johnston" on the ElderNet BBS) you will then receive the survey by mail. You will not have to pay for any postage, and a draw for a few small prizes (such as computer books and disks) will also be made as an added incentive to become involved in this project. By volunteering for this study, you are by no means waiving your legal rights or releasing the researcher from his legal and professional responsibilities. You are also free to discontinue your involvement at any time.

When the survey is sent to you, your name will be separated from all information you provide. This will ensure that your anonymity is completely guaranteed. Furthermore, after the study is completed, all surveys and volunteer sheets will be destroyed.

Thank you, and I hope you become involved in this meaningful project.

David Johnston
Graduate Program in Communications Studies
University of Calgary

Note: If you have any concerns about this study, you can either contact myself or Dr. Edna Einsiedel at (403) 220-6357.

To: All Seniors Computer Information Project (SCIP) Members
From: David Johnston

Under the direct supervision of Dr. Edna Einsiedel at the University of Calgary, I am studying the use of computers by older adults. I am asking all interested SCIP members to voluntarily complete a short survey. The questions will vary in nature, but will focus on how you are using computers and any personal experiences you have had with them. You may also be asked to volunteer for an interview at a later date as well.

A summary report of the information will be provided to both SCIP and any members who are interested. This will directly benefit yourself, because SCIP will receive feedback that will help them ensure they are meeting your needs.

After forwarding your name and address to my email address (dwjohnst@acs.ucalgary.ca) you will then receive the survey by mail. You will not have to pay for any postage, and a draw for a few small prizes (such as computer books and disks) will also be made as an added incentive to become involved in this project. By volunteering for this study, you are by no means waiving your legal rights or releasing the researcher from his legal and professional responsibilities. You are also free to discontinue your involvement at any time.

When the survey is sent to you, your name will be separated from all information you provide. This will ensure that your anonymity is completely guaranteed. Furthermore, after the study is completed, all surveys and volunteer sheets will be destroyed.

Thank you, and I hope you become involved in this meaningful project.

David Johnston
Graduate Program in Communications Studies
University of Calgary

Note: If you have any concerns about this study, you can either contact myself or Dr. Edna Einsiedel at (403) 220-6357.

APPENDIX D: Meeting Versions of Volunteer Request Form

To: All ElderNet Members
From: David Johnston

Under the direct supervision of Dr. Edna Einsiedel at the University of Calgary, I am studying the use of computers by older adults. I am asking all interested ElderNet members to voluntarily complete a short survey. The questions will vary in nature, but will focus on how you are using computers and any personal experiences you have had with them. You may also be asked to volunteer for an interview at a later date as well.

A summary report of the information will be provided to both ElderNet and any members who are interested. This will directly benefit yourself, because ElderNet will receive feedback that will help them ensure they are meeting your needs.

As an added incentive for becoming involved in the project, all volunteers who wish will be entered in a draw for prizes (three $25 gift certificates for London Drugs, one gold shirt courtesy McDonald's Restaurants, one T-shirt courtesy the Alberta Shock Trauma Air Rescue Society, or "STARS", and one Entourage fully insulated Lunch Carry-All)

By volunteering for this study, you are by no means waiving your legal rights or releasing the researcher from his legal and professional responsibilities. You are also free to discontinue your involvement at any time. When you complete the survey, your name will be separated from all information you provide. This will ensure that your anonymity is completely guaranteed. Furthermore, after the study is completed, all surveys and volunteer sheets will be destroyed.

Thank you, and I hope you become involved in this meaningful project.

David Johnston
Graduate Program in Communications Studies
University of Calgary

Note: If you have any concerns about this study, you can either contact myself or Dr. Edna Einsiedel at (403) 220-6357.

****

Volunteer Sign-up Form

I _____ a) do ___ b) do not ___ agree to participate in this project.

Address: _____ Telephone: _____

Signed: _____ Date: _____

I a) have ___ b) have not ___ used [ElderWeb's Bulletin Board System (BBS)

I a) am ___ b) am not ___ currently a member of ElderNet or will be joining soon

I a) do ___ b) do not ___ wish to be entered in the draw for prizes

To: All Seniors Computer Information Project (SCIP) members
From: David Johnston

Under the direct supervision of Dr. Edna Einsiedel at the University of Calgary, I am studying the use of computers by older adults. I am asking all interested SCIP members to voluntarily complete a short survey. The questions will vary in nature, but will focus on how you are using computers and any personal experiences you have had with them. You may also be asked to volunteer for an interview at a later date as well.

A summary report of the information will be provided to both SCIP and any members who are interested. This will directly benefit yourself, because SCIP will receive feedback that will help them ensure they are meeting your needs.

As an added incentive for becoming involved in the project, all volunteers who wish will be entered in a draw for prizes (three $25 gift certificates for London Drugs, one gold shirt courtesy McDonald's Restaurants, one T-shirt courtesy the Alberta Shock Trauma Air Rescue Society, or "STARS", and one Entourage fully insulated Lunch Carry-All)

By volunteering for this study, you are by no means waiving your legal rights or releasing the researcher from his legal and professional responsibilities. You are also free to discontinue your involvement at any time. When you complete the survey, your name will be separated from all information you provide. This will ensure that your anonymity is completely guaranteed. Furthermore, after the study is completed, all surveys and volunteer sheets will be destroyed.

Thank you, and I hope you become involved in this meaningful project.

David Johnston
Graduate Program in Communications Studies
University of Calgary

Note: If you have any concerns about this study, you can either contact myself or Dr. Edna Einsiedel at (403) 220-6357.

****

Volunteer Sign-up Form

I _____ a) do ___ b) do not ___ agree to participate in this project.

Address: _____ Telephone: _____

Signed: _____ Date: _____

I a) have ___ b) have not ___ used SCIP's Internet Site

I a) do ___ b) do not ___ wish to be entered in the draw for prizes

APPENDIX E: ElderWeb Member Interview Questions

I. Questions for ElderNet Members who used BBS

1. Do you have any family members who are involved with computers? (probe)
2. When you joined ElderNet, what benefits did you expect them to offer you?
3. To what extent do you think being a member of ElderNet has helped you achieve these benefits?
4. Are you currently using ElderNet's services in any different ways than you originally expected you would when you joined? (probe)
5. Do you use ElderNet's BBS? (if yes, go to Q. 6)(if no, go to questions for non-users)
6. Did you find it easy or difficult to learn how to use the BBS? (probe)
    a. Do you have any suggestions on how to improve the BBS?
7. Have you ever needed assistance or training from ElderNet? (if no, go to Q.8)
    a. (If yes) what kind of assistance or training have they given you?
    b. (If yes) how helpful was this assistance?
8. Do you every use ElderNet's online computer tutor? (if yes, go to "a")(if no, go to Q.9)
    a. How helpful do you find the online computer tutor?
9. What do you mainly use the BBS for? Why do you use the BBS?
10. Do you have an Internet account? (if yes, go to Q.11)(If no, go to Q.15)
11. Do you use any Internet sites besides ElderNet?
    a. (If yes) what types of sites do you most frequently use?
12. Will you remain an ElderNet member as they move onto the Internet? (probe: Why? Why not?)
13. Is your account through a Freenet?
    a. (If yes) would you use the Internet if you could not use a Freenet?
14. Do you feel that ElderNet differs from other sites on the Internet?
    a. (If yes) how does ElderNet differ from other sites on the Internet? (go to Q. 18)
15. Do you plan on getting an account? (probe: Why? Why not?)
16. (If Q.15=yes) what type of Internet Service Provider do you expect to use?
17. Will you remain an ElderNet member as they move onto the Internet? (probe: Why? Why not?)
18. Do you think computers should be designed better? (probe)
19. Do you ever use any attachments on computers that make them more comfortable to use? (probe)
20. Would you like to know more about computers?
    a. (If yes) what would you like to know more about?
21. How do you feel about the fact that ElderNet is moving from the BBS to the Internet?
22. Have you looked at the Internet site? (If yes, what do you think about it? Do you have any comments about it?)
23. Do you attend ElderNet's meetings?
    a. (If yes) do you enjoy them and benefit from them?
        i. (If benefit) How do you benefit from them?
        ii. (If don't benefit) Why don't you benefit from them?

b. (If yes) do you attend the meetings more for the social aspects or for the learning aspects?
c. (If yes) do you have any suggestions on how to improve the meetings?

24. Which do you find better: the larger meetings ElderNet used to hold or the smaller meetings they now have? (probe)
25. Do you like the fact that only seniors are allowed to use ElderNet? (probe)
26. Do you ever use computers to communicate with others? (if yes, go to Q.27)(If no, go to Q.28)
27. I am now going to name three other common forms of communication. I would like you to tell me if you find them as more or less acceptable than communicating by computer.
    a. Face-to-face communication (probe)
    b. Communicating by telephone (probe)
    c. Writing letters (probe)
28. Do you find computers to be a useful topic of conversation with other people?
    a. (If yes) who do you usually talk with about computers?
        i. Friends?
        ii. Family?
        iii. People who use computers?
        iv. People who do not use computers?
29. If you had the choice of either not attending ElderNet meetings for a month, or not using the BBS for a month, which would you choose? (probe)
30. Do you find that the information ElderNet offers on its BBS or Internet site is relevant to your own interests? (probe)
31. Do you believe using computers offers you any benefits? (probe)
32. Do you think that using computers has any potential drawbacks or risks? (probe)
    a. (If yes) what are you doing to arm yourself against these risks?
33. Do you think that there is anything about the use of computers by seniors that makes their use different from other age groups? (probe)
34. Why do you think some seniors aren't using computers?
35. Do you think seniors who aren't using computers should be encouraged to use them? (probe: Why? Why Not? How encourage?)
36. Do you have any comments about this interview or the survey you filled out, or any other comments that you would like to make about ElderNet?
37. Demographics
    a. Sex: Male ___ Female ___
    b. Age: ___
    c. Education: <High School ___ Some High School ___ Trade School ___
       College/University ___ Post-graduate ___
    d. Martial Status: Married/Common-law: ___
       Widowed ___
       Separated/Divorced ___
       Never Married ___
    e. Work Status: Retired ___ Semi-Retired/Part Time ___ Full-time ___
       Unemployed ___

II. Questions for ElderNet Members who have not used BBS

1. Do you have any family members who are involved with computers? (probe)
2. When you joined ElderNet, what benefits did you expect them to offer you?
3. To what extent do you think being a member of ElderNet has helped you achieve these benefits?
4. Are you currently using ElderNet's services in any different ways than you originally expected you would when you joined? (probe)
5. Do you use ElderNet's BBS? (if yes, go to questions for users)(if no, go to Q.6)
6. Would you like to use the BBS? (probe: Why? Why not?)
    a. (If yes) what would help you to use it?
7. Do you use computers? (if yes, go to Q. 21)(if no, go to Q.8)
8. Why did you join ElderNet?
9. Would you like to use computers? (probe: Why? Why not?)
    a. If yes, what would help you use them?
10. Have you ever needed assistance or training from ElderNet? (if no, go to Q.11)
    a. (If yes) what kind of assistance or training have they given you?
    b. (if yes) how helpful was this assistance?
11. Will you remain an ElderNet member as they move onto the Internet? (probe: Why? Why not?)
12. Do you think computers should be designed better? (probe)
13. Would you like to know more about computers?
    a. (If yes) what would you like to know more about?
14. How do you feel about the fact that ElderNet is moving from the BBS to the Internet?
15. Have you looked at the Internet site? (If yes, what do you think about it? Do you have any comments about it?)
16. Do you attend ElderNet's meetings?
    a. (If yes) do you enjoy them and benefit from them?
        i. (If benefit) How do you benefit from them?
        ii. (If don't benefit) Why don't you benefit from them?
    b. (If yes) Do you attend the meetings more for the social aspects or for the learning aspects?
    c. (If yes) Do you have any suggestions on how to improve the meetings?
17. Which do you find better: the larger meetings ElderNet used to hold or the smaller meetings they now have? (probe)
18. Do you like the fact that only seniors are allowed to use ElderNet? (probe)
19. Do you believe using computers could potentially offer you any benefits? (probe)
20. Do you think that using computers has any potential drawbacks or risks? (probe)
    a. (If yes) what are you doing to arm yourself against these risks? (go to Q.47)
21. What do you mainly use computers for?
22. Have you ever needed assistance or training from ElderNet? (if no, go to Q.23)
    a. (If yes) what kind of assistance or training have they given you?
    b. (If yes) how helpful was this assistance?
23. Do you have an Internet account? (if yes, go to Q.24)(If no, go to Q.28)
24. What types of sites do you most frequently use?
25. Will you remain an ElderNet member as they move onto the Internet? (probe: Why? Why not?)

26. Is your account through a Freenet?
    a. (If yes) would you use the Internet if you could not use a Freenet?
27. Do you know if ElderNet differs from other sites on the Internet?
    a. (If yes) how does ElderNet differ from other sites on the Internet? (go to Q. 30)
28. Do you plan on getting an account? (probe: Why? Why not?)
29. (If Q.28=yes) what type of Internet Service Provider do you expect to use?
30. Will you remain an ElderNet member as they move onto the Internet? (probe: Why? Why not?)
31. Do you think computers should be designed better? (probe)
32. Do you ever use any attachments on computers that make them more comfortable to use? (probe)
33. Would you like to know more about computers?
    a. (If yes) what would you like to know more about?
34. How do you feel about the fact that ElderNet is moving from the BBS to the Internet?
35. Have you looked at the Internet site? (If yes, what do you think about it? Do you have any comments about it?)
36. Do you attend ElderNet's meetings?
    a. (If yes) do you enjoy them and benefit from them?
        i. (If benefit) How do you benefit from them?
        ii. (If don't benefit) Why don't you benefit from them?
    b. (If yes) do you attend the meetings more for the social aspects or for the learning aspects?
    c. (If yes) do you have any suggestions on how to improve the meetings?
37. Which do you find better: the larger meetings ElderNet used to hold or the smaller meetings they now have? (probe)
38. Do you like the fact that only seniors are allowed to use ElderNet? (probe)
39. Do you ever use computers to communicate with others? (if yes, go to Q.40)(If no, go to Q.41)
40. I am now going to name three other common forms of communication. I would like you to tell me if you find them as more or less acceptable than communicating by computer.
    a. Face-to-face communication (probe)
    b. Communicating by telephone (probe)
    c. Writing letters (probe)
41. Do you find computers to be a useful topic of conversation with other people?
    a. (If yes) who do you usually talk with about computers?
        i. Friends?
        ii. Family?
        iii. People who use computers?
        iv. People who do not use computers?
42. Do you believe using computers offers you any benefits? (probe)
43. Do you think that using computers has any potential drawbacks or risks? (probe)
    a. (If yes) what are you doing to arm yourself against these risks?
44. Do you think that there is anything about the use of computers by seniors that makes their use different from other age groups? (probe)
45. Why do you think some seniors aren't using computers?

46. Do you think seniors who aren't using computers should be encouraged to use them? (probe: Why? Why not? How encourage?)
47. Do you have any comments about this interview or the survey you filled out, or any other comments that you would like to make about ElderNet?
48. Demographics
    a. Sex: Male ___ Female ___
    b. Age: ___
    c. Education: <High School ___ Some High School ___ Trade School ___
       College/University ___ Post-graduate ___
    d. Martial Status: Married/Common-law: ___
       Widowed ___
       Separated/Divorced ___
       Never Married ___
    e. Work Status: Retired ___ Semi-Retired/Part Time ___ Full-time ___
       Unemployed ___

APPENDIX F: Creative Retirement Manitoba Member Interview Questions

I. Questions for CRM Members Who Used the SCIP Site

1. Do you have any family members who are involved with computers? (probe)
2. When you originally used the SCIP site, what benefits did you expect it to offer you?
3. To what extent do you think using the SCIP site has helped you achieve these benefits?
4. What do you mainly use the SCIP site for?
5. Are you currently using the SCIP site in any different ways than you originally expected you would when you originally used it? (probe)
6. Do you find it easy or difficult to use the SCIP site? (probe)
7. Have you ever needed assistance or training from CRM? (if no, go to Q.8)
    a. (If yes) what kind of assistance or training have they given you?
    b. (If yes) how helpful was this assistance?
8. Do you have an Internet account? (if yes, go to Q.9)(If no, go to Q.12)
9. Do you use any Internet sites besides SCIP?
    a. (If yes) what types of sites do you most frequently use?
10. Is your account through a Freenet?
    a. (If yes) would you use the Internet if you could not use a Freenet?
11. Do you feel the SCIP site differs from other sites on the Internet?
    a. (If yes) how does the SCIP site differ from other sites on the Internet? (go to Q.14)
12. Do you plan on getting an account? (probe: Why? Why not?)
13. (If Q.12=yes) what type of Internet Service Provider do you expect to use?
14. Do you think computers should be designed better? (probe)
15. Do you ever use any attachments on computers that make them more comfortable to use? (probe)
16. Would you like to know more about computers?
    a. (If yes) what would you like to know more about?
17. Do you like the fact that other people besides seniors are allowed to access the SCIP Internet site? (probe)
18. Do you ever use computers to communicate with others? (if yes, go to Q.19)(If no, go to Q.21)
19. I am now going to name three other common forms of communication. I would like you to tell me if you find them as more, less, or equally acceptable than communicating by computer.
    a. Face-to-face communication (probe)
    b. Communicating by telephone (probe)
    c. Writing letters (probe)
20. Do you find computers to be a useful topic of conversation with other people?
    a. (If yes) who do you usually talk with about computers?
        i. Friends?
        ii. Family?
        iii. People who use computers?
        iv. People who do not use computers?
21. Do you believe using computers offers you any benefits? (probe)
22. Do you think that using computers has any potential drawbacks or risks? (probe)
    a. (If yes) what are you doing to arm yourself against these risks?

23. Do you think that there is anything about the use of computers by seniors that makes their use different from other age groups? (probe)
24. Why do you think some seniors aren't using computers?
25. Do you think seniors who aren't using computers should be encouraged to use them? (probe: Why? Why not? How encourage?)
26. Are you a member of the CRCC? (if yes, go to "a")(if no, go to Q.27)
    a. Do you attend the CRCC meetings?
    b. (If attend) Do you enjoy the meetings, and benefit from them? (probe)
    c. Do you have any suggestions on how to improve the CRCC meetings?
    d. If you had the choice of not attending the CRCC meetings for a month, or not using the SCIP Internet site for a month, which would you choose? (probe)
    e. Do you attend the meetings more for the social aspects or the learning aspects?
27. Are you a member of CRM's SIG? (if yes, go to "a")(if no, go to 28)
    a. Do you attend the SIG meetings?
    b. (If attend) Do you enjoy the meetings, and benefit from them? (probe)
    c. Do you have any suggestions on how to improve the SIG meetings?
    d. If you had the choice of not attending the SIG meetings for a month, or not using the SCIP Internet site for a month, which would you choose? (probe)
    e. Do you attend the SIG meetings more for the social aspects or for the learning aspects?
28. Do you have any comments about this interview or the survey you filled out, or any other comments that you would like to make about the SCIP site or CRM?
29. Demographics
    a. Sex: Male ___ Female ___
    b. Age: ___
    c. Education: <High School ___ Some High School ___ Trade School ___
       College/University ___ Post-graduate ___
    d. Martial Status: Married/Common-law: ___
       Widowed ___
       Separated/Divorced ___
       Never Married ___
    e. Work Status: Retired ___ Semi-Retired/Part Time ___ Full-time ___
       Unemployed ___

II. Questions for CRM Members Who have not Used the SCIP Site

1. Do you have any family members who are involved with computers? (probe)
2. Why haven't you used the SCIP Internet site?
3. Would you like to use the SCIP site? (probe: Why? Why not?)
    a. (If yes) what would help you use it?
4. Do you use computers? (if yes, go to Q.13)(if no, go to Q.5)
5. Would you like to use computers? (probe: Why? Why not?)
    a. If yes, what would help you use them?
6. Are you a member of the CRCC? (if yes, go to "a")(if no, go to Q.7)
    a. Do you attend the CRCC meetings?
    b. (If attend) Do you enjoy the meetings, and benefit from them? (probe)
    c. Do you have any suggestions on how to improve the CRCC meetings?
    d. Do you attend the meetings more for the social aspects or for the learning aspects?
7. Are you a member of CRM's SIG? (if yes, go to "a")(if no, go to 8)
    a. Do you attend the SIG meetings?
    b. (If attend) Do you enjoy the meetings, and benefit from them? (probe)
    c. Do you have any suggestions on how to improve the SIG meetings?
    d. Do you attend the SIG meetings more for the social aspects or for the learning aspects?
8. Have you ever needed assistance or training from CRM? (if no, go to Q.9)
    a. (If yes) what kind of assistance or training have they given you?
    b. (If yes) how helpful was this assistance?
9. Do you think computers should be designed better? (probe)
10. Would you like to know more about computers?
    a. (If yes) what would you like to know more about?
11. Do you believe using computers could potentially offer you any benefits? (probe)
12. Do you think that using computers has any potential drawbacks or risks? (probe) (go to Q.34)
13. What do you mainly use computers for?
14. Are you a member of the CRCC? (if yes, go to "a")(if no, go to Q.15)
    a. Do you attend the CRCC meetings?
    b. (If attend) Do you enjoy the meetings, and benefit from them? (probe)
    c. Do you have any suggestions on how to improve the CRCC meetings?
    d. Do you attend the meetings more for the social aspects or for the learning aspects?
15. Are you a member of CRM's SIG? (if yes, go to "a")(if no, go to 16)
    a. Do you attend the SIG meetings?
    b. (If attend) Do you enjoy the meetings, and benefit from them? (probe)
    c. Do you have any suggestions on how to improve the SIG meetings?
    d. Do you attend the SIG meetings more for the social aspects or for the learning aspects?
16. Have you ever needed assistance or training from CRM? (if no, go to Q.17)
    a. (If yes) what kind of assistance or training have they given you?
    b. (If yes) how helpful was this assistance?
17. Do you have an Internet account? (if yes, go to Q.18)(If no, go to Q.21)
18. What types of sites do you most frequently use?

19. Is your account through a Freenet?
    a. (If yes) would you use the Internet if you could not use a Freenet?
20. Do you know if the SCIP site differs from other sites on the Internet?
    a. (If yes) how does the SCIP site differ from other sites on the Internet? (go to Q.23)
21. Do you plan on getting an account? (probe: Why? Why not?)
22. (If Q.21=yes) what type of Internet Service Provider do you expect to use?
23. Do you think computers should be designed better? (probe)
24. Do you ever use any attachments on computers that make them more comfortable to use? (probe)
25. Would you like to know more about computers?
    a. (If yes) what would you like to know more about?
26. Do you ever use computers to communicate with others? (if yes, go to Q.27)(If no, go to Q.28)
27. I am now going to name three other common forms of communication. I would like you to tell me if you find them as more, less, or equally acceptable than communicating by computer.
    a. Face-to-face communication (probe)
    b. Communicating by telephone (probe)
    c. Writing letters (probe)
28. Do you find computers to be a useful topic of conversation with other people?
    a. (If yes) who do you usually talk with about computers?
        i. Friends?
        ii. Family?
        iii. People who use computers?
        iv. People who do not use computers?
29. Do you believe using computers offers you any benefits? (probe)
30. Do you think that using computers has any potential drawbacks or risks? (probe)
    a. (If yes) what are you doing to arm yourself against these risks?
31. Do you think that there is anything about the use of computers by seniors that makes their use different from other age groups? (probe)
32. Why do you think some seniors aren't using computers?
33. Do you think seniors who aren't using computers should be encouraged to use them? (probe: Why? Why not? How encourage?)
34. Do you have any comments about this interview or the survey you filled out, or any other comments that you would like to make about the SCIP site or CRM?
35. Demographics
    a. Sex: Male ___ Female ___
    b. Age: ___
    c. Education: <High School ___ Some High School ___ Trade School ___
       College/University ___ Post-graduate ___
    d. Martial Status: Married/Common-law: ___
       Widowed ___
       Separated/Divorced ___
       Never Married ___
    e. Work Status: Retired ___ Semi-Retired/Part Time ___ Full-time ___
       Unemployed ___

APPENDIX G: ElderWeb Peer-Trainer Interview Questions

I. Background Information

1. What aspects of ElderNet's computer projects are you responsible for?
2. When, how, and where did you learn about computing?

II. Questions about Seniors and Computers

3. Would you say seniors who are using computers are different than other seniors who are not using them? (probe: How different? How not different?)
4. Do you think there are differences between the use of computers by seniors, and their use by people from other age groups? (probe)
5. Why do you think some seniors aren't using computers?
6. Do you think seniors who are not using computers should be encouraged to use them? (probe: Why? Why Not? How encourage?)
7. What benefits do you feel using computers offers seniors?
8. Do you think using computers or computer networks presents any risks to seniors? (probe)

III. General Questions

9. Why do you think people are joining ElderNet? What benefits do you think ElderNet can offer them?
10. What is the nature of most of the help you give people? (What are the most common difficulties)
11. Would you say most people who are joining ElderNet are beginners, or are already experienced at computing?
    a. How do you, as a trainer, meet the needs of both groups?
12. Do you think computers should be designed better? (probe)
13. What strategies do you use to train people about computers? (Do you find any techniques particularly useful?)
    a. Does ElderNet provide people with written materials?
    b. Do you teach differently in a class-setting than when you are one-on-one with a person? What method seems to work best?
14. Where does most of the training you give people occur? In people's homes? At the satellite sites? By telephone?
15. Do you find most people prefer DOS or Windows based programs?
16. What do you find most people are using their computers for?
17. Do you find some people are afraid of breaking computers?
18. Do you find that people are concerned about computer viruses?
19. Do you find that computer terminology is a problem for people you help?
20. How important would you say ElderNet's meetings are to people?
21. Would you say people attend the meetings mainly to learn about computers or to meet other people with similar interests?
22. What benefits do you personally receive from your involvement with ElderNet's computer projects?
23. What benefits do you personally receive from working with computers?

24. A lot of people in the surveys said they would like to know more about computers. Do you have any comments about what you think they might want to know more about?

IV. Questions about the BBS

25. Are people finding it easy or difficult to use the BBS? (probe)
26. What is the nature of most of the help you give people using or learning about the BBS? (What are the most common difficulties?)
27. Do you have any suggestions on how the BBS can be improved?
28. Why are people using the BBS?
    a. What do they like about it, what parts of it seem to be most popular?
    b. Is there anything people seem to dislike about it?
29. Why so you think so many people are not using the BBS?

IV. Questions about the Internet Site

30. How many people that you have been talking to have used the Internet site?
31. Are people finding it easy or difficult to use the Internet site? (probe)
32. What is the nature of most of the help you give people about hooking up to the Internet or using the Internet site? (What are the most common difficulties?)
33. Generally, what do most people think about the fact ElderNet is moving from the BBS to the Internet?
34. From what you've seen, do you have any suggestions on how to improve the Internet site?
35. What are people liking about the Internet site?
36. What are people disliking about the Internet site?
37. How do most people you talk to feel about the Internet in general?
38. Do you have any suggestions or comments on the survey you filled out, or anything you would like to add about ElderNet?

APPENDIX H: Creative Retirement Manitoba Peer-Trainer Interview Questions

I. Background Information

1. What aspects of ElderNet's computer projects are you responsible for?
2. When, how, and where did you learn about computing?

II. Questions about Seniors and Computers

3. Would you say seniors who are using computers are different than other seniors who are not using them? (probe: How different? How not different?)
4. Do you think there are differences between the use of computers by seniors, and their use by people from other age groups? (probe)
5. Why do you think some seniors aren't using computers?
6. Do you think seniors who are not using computers should be encouraged to use them? (probe: Why? Why Not? How encourage?)
7. What benefits do you feel using computers offers seniors?
8. Do you think using computers or computer networks presents any risks to seniors? (probe)

III. Questions about the SCIP site

9. Are people finding it easy or difficult to use the SCIP site? (probe)
10. What is the nature of most of the help you give people using or learning about the site? What are the most common difficulties?
11. Do you have any suggestions on how the SCIP site can be improved?
12. Why are people using the site?
    a. What do they like about it, what parts of it seem to be most popular?
    b. Is there anything people seem to dislike about it?

IV. Questions about the CRCC

13. What is the nature of most of the help you give members of the CRCC? (What are the most common difficulties?)
14. Would you say most people who are attending the CRCC meetings are beginners, or are already experienced at computing?
    a. How do you, as a trainer, meet the needs of both groups?
15. Why are people joining the CRCC?
    a. What benefits do you think they are obtaining from the CRCC?

V. Questions about SIG

16. What is the nature of most of the help you give members of the SIG? (What are the most common difficulties?)
17. Would you say most people who are attending the SIG meetings are beginners, or are already experienced at using the Internet?
    a. How do you, as a trainer, meet the needs of both groups?
18. Why are people joining the SIG?
    a. What benefits do you think learning about the Internet will offer them?

VI. Other Questions

19. Do you think computers should be designed better? (probe)
20. What strategies do you use to train people about computers? (Do you find any techniques particularly useful?)
    a. Does CRM provide people with written materials?
    b. Do you teach differently in a class-setting than when you are one-on-one with a person? What method seems to work best?
21. Where does most of the training you give people occur? In people's homes? At the test-sites? By telephone?
22. Do you find most people prefer DOS or Windows based programs?
23. What do you find most people are using their computers for?
24. Do you find some people are afraid of breaking computers?
25. Do you find that people are concerned about computer viruses?
26. Do you find that computer terminology is a problem for people you help?
27. How important would you say CRM's meetings are to people?
28. Would you say people attend the meetings mainly to learn about computers or to meet other people with similar interests?
29. What benefits do you personally receive from your involvement with CRM's computer projects?
30. What benefits do you personally receive from working with computers?
31. A lot of people in the surveys said they would like to know more about computers. Do you have any comments about what you think they might want to know more about?
32. Do you have any suggestions or comments on the survey you filled out, or anything you would like to add about CRM's computer projects?

APPENDIX I: ElderWeb Staff Interview Questions

I. Background Information

1. What is your title, and what aspects of ElderNet are you responsible for?
2. When was ElderNet established?
3. How long had the project been in the development/conceptual stage before this time?
4. Was there anything in existence before the BBS was established, for example, a computer club?
    a. If yes, what was in existence and when was it established?
5. What was the initial mandate, goal, or "mission" of ElderNet?
6. Did these goals change over the first six months or so? If so, how?
7. Can you please tell me about the role that Grant MacEwan Community College and Health Canada played in the establishment of ElderNet?
8. Did Health Canada approach Grant MacEwan Community College, or vice-versa?
9. Besides its members, Grant MacEwan Community College, and Health Canada, are there any other players involved in ElderNet?
10. Was the initial goal of ElderNet introducing seniors to computers or providing a community for those already quite experienced in computing?
    a. How do you manage having both groups, and to what extent are their needs similar or different?
11. Why develop a network only for seniors?

II. General Questions about ElderNet: Members, Meetings, and Access

12. Members

a. How many ElderNet members are there?
b. What cohorts of the senior population did you originally target, or expect to become members?
c. Were there any surprises here about what cohorts are joining and using ElderNet?
d. Would you say ElderNet members are different than other seniors? How? How the same?
e. Do you suspect there are many people over the age of 80 who are members?
f. Do you suspect that many seniors in "situations of risk" are members. "Situations of risk" is a term used by Health Canada to describe factors that act as barriers to the health, well-being, and independence of seniors. Examples of such factors include poor health, abuse, advanced age, low income, lack of support, and loss or bereavement.
g. Do you think there are differences between senior computer users and younger users? If yes, what are the differences? If no, why not?
h. Why do you think people are joining ElderNet?

13. Meetings

a. Where, when, and how often do meetings take place?
b. What goes on at the meetings? Do you follow a certain agenda?
c. Would you say the main reason people are attending the meetings is for social

interaction, or to learn about computers?
d. Did the nature of the meetings change over the first six months?
e. Why did ElderNet go to smaller meetings?
f. How are the smaller meetings working? How do members feel about the change? Are there any members who don't like the smaller meetings?

14. Access Issues

a. What strategies do you personally use to train people?
b. Are peer-trainers involved in training members?
c. Does most training occur in people's homes or at the senior centres?
d. What does ElderNet train people about? What aspects of computing besides hooking-up their computers do people receive help for?
e. Are there any training mechanisms in place for people with MacIntosh computers?
f. As a philosophy, how much of the training, help, or instruction that ElderNet gives is on paper?
    -If little on paper, why?
g. Are computers available for seniors who may not have them at their place of residence?
    -If yes, where are these computers located?
    -If yes, are these computers being used? Which ones are and which ones are not being used?
h. As you expand beyond Edmonton, will new satellites [seniors centres] have computers available for those who cannot access them at home?
i. Do seniors at the satellite groups have to purchase ElderNet memberships to use the BBS?
j. Do any of the computers at the centres have ergonomic hardware? If yes, which centres have ergonomic hardware, what types of hardware, and are they being used?
k. Does ElderNet have any mechanisms to get people computers who cannot afford them, or who cannot make it to the satellite sites because they are homebound?
l. Referring to either the Internet site, or the BBS, do you have any measures in place to get people Internet accounts or ElderNet accounts who cannot afford them?

15. Questions about the BBS

a. Why did ElderNet initially develop a BBS and not an Internet site?
b. How many members would you say use the BBS?
c. Do you have any insights about why so many people are not using the BBS?
d. As far as usage and the discussion on the BBS, are there a few people who seem to dominate, or are many members involved?
e. The BBS has a "Letters to the Editor" link. What do most of the comments pertain to?
f. Go over components of BBS, asking which ones are active, why some were inactive.

16. Questions about the Internet site

a. When will the BBS shut down?
b. Will the membership fee structure change with the move?
c. Is the Internet site completed? Is it being used yet?

d. How much of the content of the BBS will be brought over? Which content will be brought over?
e. Why did ElderNet move from the BBS to the Internet?
f. Is this move more cost effective for ElderNet?
g. Generally, what do most members think about the move?
h. Are there any members who are not happy with the move? If yes, what are they not happy about?
i. What is ElderNet doing to prepare people for the move?
j. Does ElderNet plan on encouraging members who are not using the BBS to use the Internet site? How will you encourage them?
k. Where does, or will, most of the information on the Internet site come from?
   - how much is brought over from the Internet?
   - Who is Nando? Why use their content so much?
l. Will the nature of the meetings change with the move?
m. Are there any services that ElderNet will be able to offer on the Internet that they couldn't offer on the BBS? Will their be any new content?
n. Are there any services that ElderNet will not be able to offer with the Internet that they offered on the BBS?
o. How will ElderNet keep up the training, meetings, and help with the move to the Internet? i.e., if more people are members who do not live in Edmonton.
p. How would you say ElderNet's Internet site differs from the services that other Internet sites are offering seniors?
q. Is membership in ElderNet up or down as the move is occurring, or about the same?
r. Have any new members signed up from areas other than Edmonton yet? Where are they from?

17. General Questions

a. Do you think ElderNet plays a role in enhancing the health and well-being of its members? Health and well-being is the extent to what an individual or group is able, on the one hand, to realize aspirations and to satisfy needs; and on the other hand, to change or cope with the environment? This includes things such as disease treatment, but also broader determinants of well-being such as health promotion, disease prevention, education, proper safety and security, stable housing, and enhancing the financial and social independence of seniors. (probe)
b. What other benefits do you feel ElderNet offers members?
c. Do you feel computing, or computer networks, offer any risks to seniors?
d. What is ElderNet doing to avoid these risks, or educate people about them?

18. Conclusion and Future of ElderNet

a. Looking back to the initial goals, how well do you feel ElderNet has met those goals? Where do you feel you have succeeded, and where would you like to improve?
b. How will ElderNet be funded in the future? (If lessening federal funding, where will funding come from?
c. Why is ElderNet not interested in future government involvement? Will lessening this tie hamper the ability to set up satellite groups, provide computer terminals etc...?
d. Where does ElderNet plan to go with satellites? Does it intend to be more national in focus?

e. How will bilingual issues come into play if ElderNet become national?
f. Will ElderNet remain dedicated exclusively to seniors? (probe why?)
g. Do you have any other comments you would like to add?

Appendix J: CRM Staff Interview Questions

I. SCIP Project Manager

A. Background Information

1. What is your title, and what aspects of CRM's computer projects are you responsible for?
2. When was the SCIP site established?
3. How long had SCIP been in the development/conceptual stage before this time?
4. Was there anything in existence before the WWW site was established, for example, a computer club or BBS?
    a. If yes, what was in existence and when was it established?
5. What was the initial mandate, goal, or "mission" of CRM in regards to the SCIP site?
6. Did these goals change over the first six months or so? If so, how?
7. Can you please tell me who the major players are in SCIP, and what roles they play within the project?
8. Did Health Canada approach CRM about SCIP, or vice-versa? What is the nature of the relationship between CRM and Health Canada?

B. About the Site

9. Why develop a WWW site for issues related to seniors?
10. Has the content of the site changed much since its foundation?
11. Who is using the WWW site? Why are these people using the WWW site?
12. Who did you originally target, or expect to use SCIP?
    a. Were their any surprises in who seems to be using it?
    b. Did you expect more health professionals/caregivers or seniors themselves to use it?
    c. How are you managing meeting the needs of these two groups? To what extent are their needs similar or different?
    d. Did you expect users to cluster around Winnipeg, or be from all over Canada, or even larger (the world)?
13. Would you say seniors who are using the SCIP site are different than other seniors who are not using it? (probe)
14. Do you plan on encouraging members who are not using the BBS to use the Internet site? How will you encourage them?
15. Do you suspect there are many people over 80 who use the site?
16. Do you suspect that many seniors in "situations of risk" use the site? "Situations of risk" is a term used by Health Canada to describe factors that act as barriers to the health, well-being, and independence of seniors. Examples of such factors include poor health, abuse, advanced age, low income, lack of support, and loss or bereavement.
17. Would you say SCIP differs from the services that other Internet sites are offering seniors?
18. Looking back to the initial goals of SCIP, how well do feel CRM has met these goals? Where do you feel you have succeeded, and where would you like to improve?
19. How will SCIP be funded in the future?

20. To what extent will SCIP become more internationalized?
21. Do bilingual issues come into play with the SCIP site?
22. Do you plan on introducing any new test sites? If yes, where do plan to go?
23. How do you expect the test sites will be organized and funded in the future?

C. General Questions

24. Do you think there are differences between senior computer users and younger users? If yes, what are the differences? If no, why not?
25. Do you think CRM's computer projects plays a role in enhancing the health and well-being of its members? Health and well-being is the extent to what an individual or group is able, on the one hand, to realize aspirations and to satisfy needs; and on the other hand, to change or cope with the environment? This includes things such as disease treatment, but also broader determinants of well-being such as health promotion, disease prevention, education, proper safety and security, stable housing, and enhancing the financial and social independence of seniors. (probe)
26. What other benefits do you feel CRM's computer projects offers members?
27. Do you feel computing, or computer networks, offer any risks to seniors?
28. What is CRM doing to avoid these risks, or educate people about them?
29. Do you have any other comments you would like to add?

II. CRM Technical Support Manager

A. Background Information

1. What is your title, and what aspects of CRM's computer projects are you responsible for?
2. Why did CRM develop two computer clubs oriented to seniors?

B. Questions about CRCC

3. When was the CRCC established?
4. What was the initial mandate, goal, or "mission" of CRM in regards to the CRCC?
    a. Have these goals changed at all?
5. How many people are in the CRCC?
6. Where do the CRCC meetings occur, and how often do they occur?
7. How many people usually attend the CRCC meetings?
8. Is there a fee involved in joining the CRCC?
9. Who are the major players in the CRCC? How is it funded?
10. Why are people joining the CRCC? What benefits are they seeking?
11. What goes on at the CRCC meetings? What topics are typically dealt with?
12. Do you talk about the Internet much at the CRCC meetings?
13. Is there a strong social component to the CRCC meetings? Would you say people are coming more for the learning aspects or for the social aspects?
14. Do you think that most people who are joining the CRCC are generally new computer users, or are they already quite experienced?
    a. if diverse: how are you meeting the needs of both groups?

C. Questions about SIG

15. When was the SIG established?
16. What was the initial mandate, goal, or "mission" of CRM in regards to the SIG?
    a. Have these goals changed at all?
17. How many people are in the SIG?
18. Is there much overlap with the CRCC, i.e. are most SIG members also CRCC members?
19. Where do the SIG meetings occur, and how often do they occur?
20. How many people usually attend the SIG meetings?
21. Is there a fee involved in joining the SIG?
22. Who are the major players in the SIG? How is it funded?
23. Why are people joining the SIG? What benefits are they seeking? Why are they interested in the Internet?
24. What goes on at the SIG meetings? What topics are typically dealt with?
25. How many SIG members would you say have Internet accounts?
26. Is there a strong social component to the SIG meetings? Would you say people are coming more for the learning aspects or for the social aspects?
27. Do you think that most people who are joining the SIG are generally unfamiliar with the Internet, or are the quite familiar with it?
    a. if diverse: how are you meeting the needs of both groups?

D. General Questions

28. Do you suspect there are many people over 80 who are joining the CRCC and SIG?
29. Do you suspect that many seniors in "situations of risk" who are joining the CRCC and SIG? "Situations of risk" is a term used by Health Canada to describe factors that act as barriers to the health, well-being, and independence of seniors. Examples of such factors include poor health, abuse, advanced age, low income, lack of support, and loss or bereavement.
30. What benefits do you feel computing offers seniors?
31. Do you feel computing, or computer networks, offer any risks to seniors?
32. What kind of strategy does CRM use to train and assist people?
33. Does most training occur in people's homes or at the test sites?
34. What does CRM train people about? What aspects of computing besides hooking-up their computers do people receive help for?
35. Are there any training mechanisms in place for people with MacIntosh computers?
36. As a philosophy, how much of the training, help, or instruction that CRM gives in on paper?
    a. If little on paper, why?
37. Are computers available for seniors who may not have them at their place of residence?
    a. If yes, where are these computers located?
    b. If yes, are these computers being used? Which ones are and which ones are not being used?
38. Do seniors at the test sites have to purchase an Internet account to access the Internet or use the SCIP site?
39. Do any of the computers at the test sites have ergonomic hardware? If yes, which sites have ergonomic hardware, what types of hardware, and are they being used?
40. Does CRM have any mechanisms to get people computers who cannot afford them, or who cannot make it to the test sites because they are homebound?
41. Do you have any mechanisms in place to get people Internet accounts who cannot afford them? Would these people have to pay to attend the CRCC or SIG?
42. Can you tell me about the newsgroup, "soc.retirement"? Who is it intended for: seniors, caregivers/health professionals, or both? How is it coming along?
43. Looking back to the initial goals and mandates of the CRCC and SIG, how well has CRM met these goals? Where do you feel you have succeeded, and where would you like to improve?
44. Do you expect the nature of the CRCC and SIG to change in the future? How will they be funded in the future?
45. Do you have any other comments you would like to add?