

AN ABSTRACT OF THE THESIS OF

Christopher I. Cassell for the degree of Master of Arts in Applied Anthropology presented on July 29, 2002. Title: Computer and Internet Usage in Rural Clubs: Are Members Digitally Divided?

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Abstract approved _____

Nancy Rosenberger

Lower rates of computer adoption and usage in rural areas has been called a "digital divide." This work explores the current state of connectivity within a rural town of the Pacific Northwest with a quantitative and qualitative overview of computer usage and access within civic and activity clubs, ranging from town's Rotarians to its bowling leagues. An Anthropological Rapid Appraisal Process (RAP) leverages focus groups, mini-surveys and ethnographic methods within the clubs to explore the topography of the digital divide. Civic clubs with younger, higher-income, better-educated members have higher rates of e-mail penetration (93% - 56%) while activity clubs fare far worse on average (28%). Research establishes a link between club demographics and e-mail penetration rates, by showing that older clubs report less e-mail usage.

This work explores the conditions that exacerbate the digital divide as well as highlighting those which may mitigate it. Variables include the presence or absence of technological leadership and the nature of ties to corporate and/or national organizations. Additionally, research shows that rural settings limit and structure the opportunities for computer skill

acquisition. Civic clubs are increasingly reliant on computer-mediated communication (CMC) and computer-mediated information (CMI) sources and correspondingly, also upon the computer proficient members who can manage websites, or create and distribute electronic bulletins.

“New media” is challenging traditional club norms and favors the contributions of more technological literate members, while handicapping the participation of non-computer using members. Beyond the hyped-up prospects of increased efficiency and communication amongst geographically dispersed members of such clubs, the technology is also creating new forms of exclusion. Recommendations include: 1) a technology decision-making process that ensures consensus among club members by including non-users; 2) creative capacity-building to support computer usage; and 3) by-laws which ensure that members are not marginalized because of a current or chronic lack of computer usage. This work grounds expectations of new technology, by providing a factual account of computer usage within clubs and exploring how clubs are using computers to facilitate their activities.

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Computer and Internet Usage in Rural Clubs:
Are Members Digitally Divided ?

by
Christopher J. Cassell

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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

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Christopher J. Cassell, Author

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TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| Chapter 1: Introduction | 1 |
| Chapter 2: Literature Review | 4 |
| Anthropology and Technology | 5 |
| Computer Usage by Individuals | 8 |
| Computer Usage in Organizations | 14 |
| Formal Organizations | 18 |
| Informal and Non-Profit Organizations | 21 |
| Computers in Rural Community | 25 |
| Chapter 3: Methodology | 31 |
| Justification | 31 |
| Overview | 33 |
| Identifying Community and Clubs for Study | 35 |
| Focus Groups | 37 |
| Focus Group Process and Recording | 39 |
| Mini- Surveys | 41 |
| Semi-structured Ethnographic Interviewing | 43 |
| Typical Day | 44 |
| Analytical Approach | 46 |
| Methodological Limitations | 47 |

TABLE OF CONTENTS, Continued

| | <u>Page</u> |
|--|-------------|
| Chapter 4: Findings | 50 |
| Computing in the Country | 50 |
| Ruralville's Computing Community | 51 |
| Community Resources | 54 |
| Analysis of Clubs | 59 |
| Civic Clubs | 66 |
| Older Civic Clubs | 67 |
| Younger Civic Clubs | 70 |
| Communicating with the National Headquarters | 73 |
| Leaders' and Members' Computer Literacy | 79 |
| Activity Clubs | 85 |
| Chapter 5: Analysis and Discussion | 97 |
| Users | 99 |
| Ties to Formal Organizations | 102 |
| Rural Community | 108 |
| Chapter 6: Conclusion | 111 |
| Chapter 7: Recommendations | 116 |
| Bibliography | 117 |
| Appendices | 122 |
| Appendix A: Sign Up Sheet | 123 |
| Appendix B: Mini Survey | 124 |
| Appendix C: Script | 125 |

LIST OF TABLES

| <u>Table</u> | | <u>Page</u> |
|--------------|--|-------------|
| 1. | Typology of Users, Distant Users and Non-Users | 13 |
| 2. | Distinctions between Formal and Informal Organizations | 15 |
| 3. | Computing Condition Variables – by Organizational Type | 16 |
| 4. | Examples of Triangulation | 34 |
| 5. | Club Profile Data Sheet – Example | 46 |
| 6. | Public Access Computers in Ruralville | 55 |
| 7. | Informal Club Types | 62 |
| 8. | E-mail Penetration in Civic Clubs | 67 |
| 9. | E-mail Penetration in the Older Civic Clubs | 68 |
| 10. | Older Civic Clubs – Evidence | 68 |
| 11. | Email Penetration in the Younger Civic Clubs | 70 |
| 12. | Younger Civic Clubs – Evidence | 71 |
| 13. | E-mail Penetration by Age | 72 |
| 14. | Club Facilities and Computer-Mediated Communication | 73 |
| 15. | Prevalence of Electronic Reporting to the National | 74 |
| 16. | Prevalence of Locally Produced Electronic Bulletins | 79 |
| 17. | E-mail Penetration in the Activity Clubs | 86 |
| 18. | Comparing E-mail Penetration – by Club Type | 97 |
| 19. | E-mail Penetration – Overview of All Clubs | 98 |
| 20. | Relationships with the Nationals – by Club Type | 105 |

DEDICATION

For my wife Elizabeth and my daughter Caroline.

COMPUTER AND INTERNET USAGE IN RURAL CLUBS: ARE MEMBERS DIGITALLY DIVIDED?

CHAPTER 1: INTRODUCTION

"The paperless office" and "automotive freedom" are but two examples of Americans rather unwavering faith in technology. Not surprisingly, the promise and "power of the web" is being reconsidered. Fashionable "digital divide" rhetoric presupposes that computer ownership is a desirable and even an attainable goal. We are at the cusp of yet another kind of technologically-centered world and it's a good time to stop and take notes.

"A chicken in every pot" was once the harbinger of prosperity, but the slogan is being revised and updated, we're asked to consider instead the relevance of "a computer in every home." If given a choice, will average Americans prefer computer-mediated information (CMI) sources over more traditional ones ?

The National Telecommunications Information Agency (NTIA) seminal report-*Falling through the Net: A Survey of the "Have-Nots" in Rural and Urban America*-drew attention to rural areas lagging behind more urban areas in terms of computer and modem ownership. For rural researchers, the lag reflects a historical trend in which adoption rates of technology are often dependent on geography and culture.

Computer usage and Internet access continues to rise rapidly across America's rural areas, as isolated people seek the benefits of CMI and CMC. Today, NTIA estimates put computer and modem ownership at an all time high in America's rural areas. Computers are being used in an ever broader array of rural settings, ranging from small businesses to clubs like the Rotarians, the Jaycees and the 4-H.

Rural clubs are the heart of civil society, and certainly the soul of a rural town. The thesis focuses on rural clubs as the primary unit of analysis and as a means to explore the prevalence of computer usage and access in a rural town. Rural clubs provide a natural setting for the examination of the dynamics between members who do and do not use CMI and CMC. Clubs themselves are often "digitally divided" and those who volunteer their computer and skills to facilitate club work find themselves struggling against those who are unwilling or unable to.

Digital divide literature anticipates disparities in computer usage and access in rural club settings. This thesis explores ten rural clubs in a small town of the Pacific Northwest and quantifies the presence of computer "haves" and "have nots" within all of the clubs. Uneven computer usage and access (a.k.a. the digital divide) is a demonstrable reality. This study seeks to further our understanding of the "digital divide" by examining both the reasons and consequences for digital disparities.

This thesis provides quantitative and qualitative view of computer usage patterns and adoption rates within the clubs. Computer ownership was the norm among all club leaders. However, e-mail penetration within clubs varied from dramatically, from a low of 7.5 % to high of 93 %. Two specific kinds of clubs were studied and the data revealed that service clubs (n=6) show higher average rates of e-mail penetration than activity clubs (n=4). A comparative analysis discusses reasons for the digital divide between the club types. In addition, the thesis explores how clubs are using computers to facilitate their activities. It discusses which clubs are using computers, and more importantly, which clubs use computers the most.

The work grounds expectations of new technology, by providing a factual account of the current state of computer usage within rural clubs. Designing policy and grounding expectations of technology begins by separating the facts about the "power of the web" from the hyped up prospects (remember the paperless office ?!). Thesis data may be useful in illuminating the whether CMI and CMC have the potential to alleviate chronic disparities in civic participation, income and education.

CHAPTER 2: LITERATURE REVIEW

The notion of a “digital divide” was coined by National Telecommunication Information Agency (NTIA) to describe the gap between information technology “haves” and “have nots.” In the 1995 NTIA report, the government showed that US rural households lagged behind more urban ones in terms of computer and modem ownership. In 1999, it reported the persistence of dramatic variances according to income, education level, race, household type and geography (NTIA 1999). The report also noted that across all demographic groups and geographic areas usage and access is increasing. Undoubtedly, the upward trend in rural areas was partly influenced by Clinton-era technology extension initiatives which included Community Technology Centers and Community Access Centers. Targeting the digital divide in rural areas remains problematic because of sporadic technology initiatives and fragmented telephony.

Research which discusses computer usage within informal groups and rural clubs is quite limited. This necessitates that literature from a variety of disciplines and constructs an understanding of computer usage from three units of analysis: 1) by individuals; 2) within group settings; 3) at-large in the rural community. This is a multi-disciplinary review that integrates works from a variety of on-line and off-line sources. Primarily it includes the disciplines of Anthropology, rural Sociology, and work of

critical mass and communication theorists. As an Anthropologist, I have sought to integrate the major threads and themes relevant to understanding the variables and predictors applicable to rural areas. This chapter synthesizes individual, organizational and community perspectives on computers to provide a holistic understanding of the conditions which shape computer usage in the rural community and its clubs.

ANTHROPOLOGY AND TECHNOLOGY

Spicer's (1952) introductory remarks on technology change emphasized the morality of understanding how human relations are impacted by innovation (Spicer 1952:9). His case studies are likely to have inspired the anthropologists/editors of *Technology and Social Change* who later noted: "technological innovation and its effects on social and cultural systems remains one of the most neglected areas in anthropological research" (Bernard and Peltó 1972:1). Peltó and Muller-Willie (1972) documented the ways in which rapid adoption of snowmobiles changed social differentiation and interaction among Arctic reindeer herders. These works were presented about the time anthropologists began trickling into non-academic settings and corporate and non-profit organizations began enlisting the "utility of anthropology," as our methods were applied in new settings (Baba 1994).

That idea that computing infrastructures and outcomes are influenced by cultural variables was advanced by Hakken's concept of "culture-centered computing" in a comparison of British adoption patterns to American ones (Hakken 1991, 1993). He observes that computers routinely came first and that people were plugged in afterwards with poor results. He recommends that we: "approach computerization culturally, through centering system development on a broad understanding of its real contexts" (Hakken 1991: 420). Bringing anthropologists into ICT development is crucial in light of globalization which is creating new forms of multi-cultural and cross-cultural computer usage. Simple "machine-oriented" perspectives no longer suffice.

My focus on ICT usage is largely inspired by Brown and Duguid's (2000) book *The Social Life of Information* and Margaret Everett's (1998) article: *Latin American On-Line: The Internet, Development and Democratization*. The former draw parallels between computer skill acquisition and a driver's education. Cars are incredibly complex and dangerous yet we manage it because of "social learning:"

Almost everyone in our society who learns to drive has already spent a great deal of time traveling in cars or buses, along roads and highways. New drivers begin formal instruction with an implicitly structured, social understanding of the task (Brown and Duguid 2000:137).

Those lacking long term exposure to car-related technologies (speedometers, pedals, steering wheels, gearshifts) and car-mediating

infrastructures (paved roads, crosswalks, stop lights) are at a significant disadvantage in a drivers' education class. Western automobile cultures have socially integrated the technology for more than a century and as a consequence learning to drive is relatively easy.

By comparison, "information superhighways" require skills which enable one to move through a conceptual, rather than in a physical medium. Like the automobile, the computer comes daunting prospects of social change. Envision the "world wide web" as a kind of super huge (and super complex) mainframe computer. Storing and retrieving data on the web requires a "driver" who can muster the resources and literacy to navigate a complex, culturally-laden environment which is entirely conceptual. Indigenous voices seeking to gain access and wishing to retrieve and store data from the mainframe are few, and those participating are likely to be fundamentally changed by the process. On a global scale, those attacking the "digital divide" are doing so with trepidation and must consider radical forms of "digital aid." Excitement about the largely western technology hides "new forms of exclusion" and may lead to the "neglect of other basic developmental issues" (Everett 1998:391).

While it is important to pursue the possible social benefits of technology change, it is equally important to resist the notion that everything of social value can be channeled through the Internet (Everett 1998:392).

And finally, there are applied anthropologists, like Marshall (2001) who challenge the appropriateness of computers in non-Western settings

COMPUTER USAGE BY INDIVIDUALS

From marketing efforts, to product design, to usability testing, computer software and hardware manufacturers are increasingly thankful for perspective generated by ethnography:

At the time (early 1990s), many developers and designers had been using techniques based on the work of Anthropologists and ethnographers observing users and incorporating those observations into future iterations....These days there's a growing segment of user-experience researchers applying the process of to web-site design (Veen 2001:36).

Early ICT researchers who took notes while poised "over-the-shoulder" of new users were seeking an accurate account of the users' perspective, but didn't always write such odes to anthropology. Simply substitute the word user in the following: "observations and questions of the informants hope to accurately portray what is true for them" (Spradley 1979:223).

Summarizing this data forms what anthropologists call the "emic perspective." Any method which attempts to see the world through the eyes of users, or deliberately seeks to out their point of view, are by striving for the emic perspective. Any kind of marketing or research which seeks a "customer focus" or engages consumers in product testing is by design an emic study, and such studies are becoming core elements in the computer software and hardware development process. Corporate "usability trials" seek the emic view to test web sites and technology interfaces, ensuring their products are "user friendly." Corporations also engage in additional forms of "user research" via the use of "spyware" which enables centralized monitoring of dispersed users' habits and preferences. A recent

trade magazine article recommends web designers “stalk the user” for insights on how to design websites for maximum impact (Veen 2001:37).

Among the forebearers of this type of research is the Palo Alto Research Center (PARC) who supported early IT product development, beginning in 1970s. Academics like Hiltz and Turoff (1978) were also closely conducting emic research involving computers. Within sociology, Turkle’s (1985) work with computer hobbyists shed light on the highly personal ways in which people appropriate computer-based technology. Turkle observes that: “different people apprehend it (the computer) with very different descriptions and invest it with very different attributes” and concludes that the computer is a kind of Rohrschach Test (Turkle 1985). In the process of learning to use the technology, these hobbyists “learn to see themselves differently” (Turkle: 1985:189). When compared to their peers (like model train hobbyists), these computer-builders’ activities were seen as less frivolous and thus “commanded respect as a real and useful technology” (Turkle 1985:190).

In 1982 sales to the home segment of computers were approximately 375,000 units and were dominated by these hobbyists. Today, estimates put computer users at 100 million adults in the USA and Canada alone (E-stats 2000: 175). Sociologist Lori Reed (2000: 175) suggests in her recent analysis that the introduction of personal computers into American homes back in the 1970s was a “deeply cultural process” that tacitly managed widespread

technophobia. She asks us to consider a 1983 study, and the reaction of those being exposed to computing devices for the first time:

Approximately 5% of these people exhibited symptoms of classic phobia: nausea, dizziness, cold sweat, and high blood pressure. In an attempt to cure these people of the cyberphobia, Wienberg gradually exposed them to electronic calculators, then electronic games and eventually simple computer programs (Reed 2000:159).

Today, the fear of technology is further complicated by new considerations, including a "sense of loss of privacy and the negative impact the Internet can have on family life" (Reddick 2000:37). Overcoming such fears and becoming proficient may mean we forget about the trauma of our computer learning curves and our ability to delete offensive junk mail. And we no longer wonder—"why is it that Microsoft's "start" button also shuts off the machine? When using a Macintosh why does one "drop/drag" the "icon" into "trash" to eject it? Experience over time allows those proficient to negotiate these complex technical environment with ease. For the nascent users, a computers lack of "self-explanatoriness" strikes fear into many (Brown and Duguid 2000) .

It is the cumulative exposure to instruction manuals, computer help lines, books, advice columns, corporate/organizational management literature, computer related ads and printed public dialogues that shapes one's perspective and assumptions about the rules (Woolgar 1991: 83). Taken together these items coalesce to "configure users" and thus shape computer usage norms overtime (Woolgar 1991:89). Adept computer users

have internalized various rules, memorize passwords and recall printing regimes to accomplish tasks. An individual's learning process is in a sense a form of cultural training with proficient users joining a large sub-culture of astute users; thus subsequent studies have looked critically at the contextualized learning needed to build computer literacy (Brown and Duguid 2000).

Reed points out that everyday uses of the late 1970s (computer dating, computer election predictions, and score keeping for bowling) "helped manage the anxieties about cold, distant and wild computers" early on and were rounded out by corporate marketing campaigns and periodicals that "humanized" the technology (Reed 2000:172).

Communication researchers and theorists have begun linking positive computer experiences and supportive environments to increased success and increased confidence ("self efficacy") with computers (Eastin and LaRose 2000). These authors draw on the work of peers who suggest that social support (Curtrona and Russell 1987) and the amount of perceived and actual technical support increase self-efficacy and decrease computer related stress (Compeau and Higgins 1995).

In surveys of the literature about users, the variables for usage multiply as one consults the work of additional disciplines. For instance communication theorists have focused on users of Computer Mediated Communication (CMC) as a new "channel" of communication among more

traditional modes like telephone and face-to-face communication.

Although computers are capable of "performing all of the communication modes of older technologies," they create a "decreased awareness of the people with whom we communicate" (Postmes et al; 1998:692). This is significant because "when given a choice people see the oral channel as more competent than the written channel when attempting to satisfy interpersonal needs"(Westmyer et al; 1998: 243).

Andrew Reddick (2000: 6) led the Public Interest Advocacy Center (PIAC) research on Canada's connectivity, and in his pivotal report, the "Dual Digital Divide," he argues that the world cannot be parsed into users ("haves") and non-users ("have-nots"). "Non-users" shouldn't be thought of as homogenous group, for some have no interest in using computers or accessing the Internet; table one outlines the variety of "users" (Reddick 2000:7):

Table 1. Typology of Users, Distant Users and Non-Users

| | |
|--------------|--|
| Non-User | Recognizes value of the internet, but face primary obstacles of cost/affordability and technical skill development |
| Near User | Presence of cost and technical barriers, but also a real lack of personal or social benefit an alue of internet service |
| Distant User | Far removed from on-line acitivities, not likely to see or derive any personal benefit from access, not likely to have the resources or social skills and interests to benefit from current access |

The Canadian report is noteworthy for providing a more humanistic approach to the range of reasons people adopt technology. A recent MIT work titled, *Digital Divide – Facing a Crisis or Creating a Myth?*, notes somewhat belatedly the existence of “voluntary non-users” and in his conclusion, the editor notes that “scant attention has been paid them”(Compaine 2001: 328). Research examining the breadth of responses to computers, outside of corporate and marketing studies, appears to have lagged.

COMPUTER USAGE IN ORGANIZATIONS

As it is impossible to portray faithfully the process by which both large and small organizations have come to adopt computers. The effort here is distinguish between between formal and informal organizations as *unique computing environments*. As opposed to well-funded and market driven research informs computer deployment in bureaucratized, governmental and corporate organizations, there are relatively few investigations into those smaller, non-profit organizations, like rural clubs.

An informal organization or "a unit in interaction with its environment" is of a "voluntary nature, such as religious or ideological association" which are distinguishable by their "spontaneous and functional development"(Thompson 1967:7). By contrast, formal organizations are characterized by their strict hierarchical structures of the private sector. Wages or salaries are said to "coerce participation" in these corporate organizations(Thompson1967:7). Formal organizations tend to be "complex organizations and are often effective instruments for achievement...which flows from planned and controlled action" (Thompson 1967:8). Work of Baba (1999) rounds out Thompson's earlier distinctions see Table 2.

Table 2: Distinctions between Formal and Informal Organizations

| | Formal Organizations | Informal Organizations |
|------------------------|---|---|
| Examples | For-profit Corporate Private sector Government | Not-for-profit 501(3) C Non-Governmental Organizations (NGOs) Civic Groups Social Movements |
| Labor | Paid with wages, coercion, or inducements | Voluntary |
| Structure | Complex Closed systems Centralized control Hierarchies | Informal Open systems Locally determined |
| Decision-making | "Bounded rationality" (Simon 1957) Formal | Ad-hoc, situation based Consensus Bi-laws |
| Resources | Shareholders Investors Profits | Grants Dues Foundations Private Sector |

"Failure to read the topography may be at its most damaging as people try to predict the effects of new information technologies on organizations" (Brown and Duguid 2000: 144). As computer usage and Internet access becomes more universal in an ever wider variety of organizations, these writers encourage technology consultants to "read the topography" and recognize that formal and informal organizations use and support computers in very different ways. The nature of IT training, the size of peer support networks, and presence of technical support are critical variables shaped by the organizational type. Each environment creates a

different material and ideal conditions, which impact computer usage outcomes (Table 3.)

Table 3: Computing Condition Variables - by Organizational Type

| | Peer Networks | Technical Support | Nature of Training |
|-----------------|----------------------|----------------------------|---------------------------|
| Formal | Larger | Stronger (i.e. help desks) | Explicit, Ongoing |
| Informal | Smaller | Weaker | Sporadic, Peer |

Lastly, an informed perspective on the historical context of usage becomes an important factor when evaluating any organization's prospects with a new technology.

Some variables do appear to impact the groups equally. Diversity of resources and composition affect the adoption rates of a new technology (Markus 1987). Theorists use constructs like homogeneity and heterogeneity to project outcomes and predict adoption patterns. In their view, technology adoption patterns within a small group with fewer resources will differ from a larger one with members who possess varied interests and diverse resources. "Larger organizations are more innovative, just as are individuals with larger incomes and higher socio-economic status" (Rogers 1995: 377).

Everett Rogers' attempts to predict how organizations of all kinds will respond to innovations and operationalizes a series of constructs he

deemed relevant to organizational "innovativeness" including: centralization, complexity, formalization, interconnectedness, organizational slack, and size. However, he found that the positive and negative correlation for each varied, depending on whether it was the initiation phases or the implementation process of a technology implementation (Rogers 1995: 381). He also points out methodological concerns when data on artificial constructs is collected from only a few leaders. (Rogers 1995: 380).

In both kinds of organizations, a single individual can radically impact outcomes: "descriptions of individual entrepreneurs and technological innovators leave little doubt about the importance of individuals in technological change" (Bernard and Peltó 1987:9). Whether they are chief information officers or ad-hoc technology leaders, technically astute users are the talismans of both the formal and informal computer-using organizations. During an 18 month longitudinal study of 72 small non-profits, "good on-line leadership" emerged as an important predictor of success, and recruiting such individuals was crucial to the success of networking projects (Rubinyi 1989:111). In the popular press and within the academic literature, it is not difficult to find tales of "innovation champions"(Rogers 1995:382). Indeed think about how many computer industry leaders are now household names.

The dedication and knowledge of a single individual is particularly powerful, in light of critical mass theory and the proverbial band wagon:

The bandwagon may roll, started by a single person. For the process to start however, this initiator must have extraordinarily high interest in the collective good, perhaps several hundred times greater than necessary to initiate action...(Oliver et al; 1985: 543).

The "local champion" is another term for such an individual, who has become the key "success factor" in well-established and well accepted models, which increase computer usage and Internet, access in rural communities (personal memo Jerry Johnson, October 25, 2001). Such individuals are notable for working full-time over a period of years to spearhead technology initiatives; they are sometimes called "circuit riders" and are instrumental in the process of building and supporting computer connectivity and usage often outside of formal organizations.

Formal Organizations

Formal organizations have cycles of reinvestment, depreciation and training that ensure a steady stream of computer hardware and software upgrades. These create a unique and ever-changing computing environment in which competitive pressure and strategic alliances create various incentives to maintain technological progress overtime among efficiency-oriented peer organizations. Research has been instrumental in helping identify and overcome resistance to computers; for instance, in 1989, writers in *Management Science* journal determined that "resistance to

end-user systems remains a widespread problem,” and that “altering the nature of systems and the processes by which they are implemented” would improve user acceptance (Davis et al; 1989: 982). Just as academicians like Reed wrote about early users, researchers in the corporate context were emphasizing the need to “better understand why people accept or reject computers” (Ibid 982). Since the late 1980s Palo Alto Research Center’s (PARC) exhaustive workplace studies have informed office technologies and strengthen internal ICT operations within or between work groups (Buderl 1998: 44). PARCs work also highlighted early on the usefulness of Anthropological methods in non-academic settings.

Over time, corporations reached a technological critical mass that supported their own internal structures and led to connections with a variety of peers. Perhaps the ultimate expression of critical mass is that some corporations now outsource “help desk” support. Critical mass also created a critical need for support on a grand scale. To support more than 10,000 computers, Merrill Lynch has 20 help desks, an Information Services (IS) department dealing specifically with the computer infrastructure, and like many other corporations, also has a “chief information officer” to oversee the IS department (Stackpole 1999: 89). Workers have a different perspective on the rapid evolution of the workplace: “no one person knew how to handle these temperamental machines. But spread around the office was enough collective knowledge to keep them running” (Brown and

Duguid 2000:77). Ironically, new technologies also displaced work tasks that were once successfully shared across a group by concentrating them on one individual (Brown and Duguid 2000: 79).

Some suggested that computers would create the "paperless" office, but in reality paper consumption has increased. Predicting the outcomes of computer usage continues to frustrate analysts, and even the claim of computer-related productivity has been hard to quantify. Despite massive investment in computers, productivity has remained steady or declined, hence the "productivity paradox" (Brown and Duguid 2000: 83).

Investment in the advanced technology sector grew by over 116% per worker between 1980-1989, while output increased by only .03 to 1985, and 2.2 % to 1989 (Tenner 1996:188).

Alongside the mixed results regarding paper consumption and productivity, there are other unanticipated outcomes. Baba (1999) dispels the notion of IT as the "managerial silver bullet" by noting unanticipated outcomes of her colleagues': 1) evidence of decreased risk taking and innovation; 2) increased failure of IT deployment; and 3) difficulty of reaping the benefits of the virtual office (Baba 1999:355). In her own work, she notes that trust is a significant factor in inhibiting the adoption and usage of new forms of computer technology deployment between and within work groups of formal organizations (Baba 1999:331). Indeed, trust is the primary assumption underlying many IT systems. "More powerful parties often try to force a shift in the medium of information exchange to

gain greater control in specific hierarchical relationships" (Baba 1999:331). Clearly the outcomes of computer usage in formal organizations are varied, disputed, and often disappointing.

Informal and Non-Profit Organizations

Non-corporate, non-profit and non-governmental organizations often lack the material conditions needed to support the vibrant technological infrastructures common to corporate environments. Many informal groups lack staff time and money for computers, or do not plan adequately for their implementation (Rubinyi 1989:112). A survey conducted in 2000 with non-profit technology grant recipients revealed how little the situation has changed: "We needed instruction in computer, how to use the computer effectively, how to do spreadsheets, and we didn't get that kind of help "(Johnson 2000: C).

Rubinyi's (1989) study of 72 small non-profit organizations found that "Those who were better off, were better able to take advantage of the computer."

Community interest groups may be unable to take full advantage of the new technology because of limited resources. Falling behind technologically might make it even more difficult for these groups to represent the concerns of their constituents (Rubinyi 1989: 110).

An earlier study spotted a lack of resources of fear computers as threats for non-profits. (Haight and Rubinyi 1983:109)

Those studies are as relevant today as they were 20 years ago. From an ICT standpoint "keeping up with the Joneses" requires small organizations with considerably fewer resources to work harder and smarter to get messages effectively to constituents or members.

Corporations are able to conduct multi-media campaigns which integrate websites and print media with other more traditional forms and the smaller fish have to swim smarter and faster to keep up. Small clubs also find themselves grappling with the increasing demands of their larger national administration.

As the technological tide rises, there is a fear that smaller groups with limited skills and access are likely to have a faint voice or no voice at all.

Information Technology researchers have long noted the importance of ease of access in predicting the use of systems, and access can be thought of as one form of the cost of contributing. From this perspective access may explain variable "contribution rates" as well as asymmetries in expected benefits (Steinfeld and Fulk 1987:487).

The adoption of new information technologies is "related positively to the group's wealth and education" and thus, the "distribution of the new technology has serious consequences for the distribution of political power" (Haight and Rubinyi 1983:109). Here the power of the web is elusive, particularly because using a computer to produce a website is beyond many groups.

There has been a proliferation of non-governmental organizations (NGOs) providing technical computer assistance, training and support to others. Organizations like Netcorps in Eugene, Oregon now offer "technology planning, assistance and support services to non-profits." Increasingly, traditional "foreign aid" is being replaced by what I call "digital aid." Among those groups, is Seattle based Digital Partners sponsors a Social Enterprise Labortary and provides seed grants for ICT projects targeting the computer usage among the poor. Geekcorps, also of Seattle, recently entered a partnership with the International Executive Service Corps (IESC) and provide ICT training in Ghana, Africa.

Moore's law stipulates that computing power doubles every 18 months and computer using organizations around the world are constantly struggling to maintain the quickening pace of computer power. Non-profits often rely on donations, grants and corporate castaways and are increasingly resourceful in their efforts to keep pace with larger formal organizations. There are even organizations, like E-advocacy of Virginia, which help ensure NGOs comprehend the emerging legislation governing on-line solicitations and canvassing.

Not surprisingly, America's informal, non-profit, non-corporate organizations are becoming more "business-like" as they adopt technologies created by and for corporate applications. Consider as an

example the language of a non-profit leader assessing the outcome of a technology assessment with Netcorps.

We have initiated a technology committee...we put together some technology goals...and they (the board) are going be looking at how efficiently we are implementing the new technology goals...and...how these goals might affect staff volunteers and financial resources (Johnson 2000:A).

That these steps occurred within a non-profit organization suggests that well-planned and well-executed information technological infrastructures are fast becoming mission-critical to a bevy of NGOs and non-profits. Though their goals are markedly different from corporations, non-profit, informal organizations are beginning to sound more "corporate" about efficiency: "every hour we spend messing with computers is an hour we're not protecting habitat; efficiency actually means more habitat protection"(Johnson 2000: B). For an explanation of why non-profits are finding themselves becoming more corporate, consider McLuhan's (1964) famous observation that: "We shape our tools and thereafter our tools shape us" (McLuhan 1964:127). The critical mass of ICTs in corporate environments may explain why non-profits are seeking managers who have corporate experience. A recent business journal notes the trend of non-profits turned corporate: "As non-profits streamline operations, business pros get the call" (Mirabella 2002).

Lastly, non-profit organizations lack the critical mass to attract software designers capable of creating customized applications for their

needs (Haight and Rubinyi 1983:116). Designing customized systems is mostly prohibitive for those who struggle to simply afford the technology. Non-profits have come to rely on the same hardware and software used by for-profit organizations and may find themselves dependent on those with for-profit experience and skills.

COMPUTERS IN RURAL COMMUNITY

Rural community characteristics continue to play a role in explaining the usage patterns of a number of technologies (Leistriz et al; 1997). A 1995 National Telecommunication Information Agency (NTIA) report titled: "Falling Through the Net: A Survey of the 'Have Nots' in Rural and Urban America," validated what many rural researchers had known all along. Rural sociologist Donald Dillman (1985) that initially sounded the alarm ten years prior:

It is important to know whether rural North America becomes a land of information 'haves' or 'have nots' for there is a very real threat that our rural areas may lag further behind than was the case with the industrial revolution (Dillman 1985:1).

The NTIA's report defined rural as "everything not urban," those places of less than 2,500 persons and places outside designated census areas (NTIA 1995). Dillman (1985) describes rural areas as those with a small population size, a low density of population, and a low rate of population turnover; he also cites the work of colleagues in noting the lack of heterogeneity in such

places. Dillman notes that "rural North Americans have been slower than urbanites to adopt many technologies."

Recent indicators show Information and Communication Technology (ICT) usage is reaching critical mass in rural areas, despite the uneven presence of government initiatives, beyond the libraries and schools. For instance in 2001, 50 % of all United States farms own or lease a computer, up from 40 % in 1999, with 29% of the farms reporting that they are using computers for their businesses according to the United States Department of Agriculture (USDA 2002). Evidence suggests that the technology gap between rural and urban areas is decreasing. For a National Information Infrastructure (NII) to become viable, with features like IRS online and electronic Medicaid, ICT technologies must penetrate deeply into rural areas, and into low-income and low-education households.

Ronald Kline, a technology historian, observes that rural people are apt to respond to new technologies by using them in alternative ways, often altering them or resisting them; in the process, the creation of new forms of both technology and rural life is to be expected (Kline 2000: 9). To ground the hyperbolic claims being made of computer usage and Internet access, a historical perspective on technology in rural areas is useful:

I have emphasized how farm people interacted with promoters to modify and selectively use communication, transportation, and household technologies to change their

environment, to create rural forms of modernity that differed from those envisioned by the modernizers (Kline 2000:280).

Kline is apt to view the "digital divide" as merely an evolving reality, or perhaps as another in a long string of campaigns seeking to urbanize and reform the rural neighbors through the use of the latest technologies. One could argue that the "digital divide" has other predecessors: the automotive divide, the radio divide, the telephone divide, and the electrical divide.

Rural communities may lack the kinds of formal and informal support structures which help adults learn how to use computers. Peer support and the informal social networks keep computers working; "it is the robustness of social systems which can support the frailty of technological ones" (Brown and Duguid 2000:69). The isolating force of rural space and the absence of multiple phone lines is likely to impair peer support. The presence or absence of a local champion who is willing to "ride the circuits" between rural neighbors has a significant impact on the long-term sustainability, implementation, and success of computer networks in small towns. Computer access and training through public libraries, community colleges, human service agencies, and employment offices are important sources of formal support, indirect forms of government support, and gateways to peer support. Assessment of computing prospects in any given environment must consider the existing presence of technology extension programs and IT intervention strategies.

Looking wholistically for hidden, but relevant, factors are crucial when evaluating the prospects of developing critical mass (Markus 1987:504).

At the community level, initiatives that specifically target IT infrastructure and/or training are now common, since Microsoft's famous attempt to wire Lusk, WY for Internet in 1995. Municipal level efforts to spur ICT usage now couple infrastructure capacity building with training. The presumption is that communities with a well-articulated strategy for dealing with the electronic revolution will reap the "power of the web." Two major strategy types have been identified: 1) a hands-on approach involving integrated outreach and training, including targeted assistance to minority groups; 2) a hands-off approach—*laissez faire*, the traditional economic development supported by market forces (Sullivan et al; 2002).

The nature of rural economies, the prevalence of the natural resource-based sector and relative lack of "high-tech" jobs represent a set of material conditions unique to rural communities. Economies overly dependent on "extractive industries" may also have homogeneous workforces (Leistritz et al; 1997). Community diversity in terms of the workforce and economy, and the presence (or absence) of large formal organizations with ICT infrastructures all affect the critical mass of computer usage and training opportunities. Large ICT dependent employers affect the number and diversity of jobs requiring computer skills. Such organizations serve as platforms for "networks of practice"

and occupational groups that share a common set of skills. (Brown and Duguid 2000:142).

Community factors like size, net population growth, per capita income, and economy type impact rates of technology adoption. (Leistritz et al; 1997). An index of nine advanced telecommunication technologies (including telephone, fax, computer, modem, e-mail and satellite TV) was used to study 20 midwest rural communities; they observed that community variables like per capita incomes and economy type matter:

A community's per capita income level was positively associated with the index of telecommunications technologies, while the percentage of an areas' earnings or employment associated with the natural resource based sectors and/or manufacturing was negatively associated with use (Leistritz et al; 268).

They found that dependency on natural resources based industries and/or manufacturing was "generally negatively related to telecommunications use," but also noted that: "firms in the finance, insurance and real estate and service sectors generally reported higher than average use"(Ibid 275). Larger towns and those with growing populations tended to have higher index scores, other things being equal (Ibid 268).

Lastly, the heterogeneity (or diversity) of a community is in itself an important variable seemingly unexplored in the literature. Critical mass theorists would argue that socio-economic, racial and ethnic diversity may exert an influence on the presence and usage of ICTs in rural areas:

"Heterogeneity of resources and interests among members of a community

will increase the likelihood of universal access”(Markus 1987:502). The range and intersection of variables within a given community require a holistic methodology for discovering and testing them.

A review of the literature prompts a number of questions regarding the usage and adoption of computer within rural community clubs. A primary goal of this research is to provide an better understanding of the outcomes of computer usage outside of highly-structured corporate settings where computer usage is often compulsory rather than voluntary. The literature review also generated specific research questions:

- 1) How do large formal organizations influence the computer usage and adoption patterns of smaller informal organizations?
- 2) What are the anticipated and unanticipated outcomes of computer usage with rural clubs, as informal organizations?
- 3) Do income, age, and education variables, which predict computer usage at the individual level, also explain computer usage at the club level?
- 4) How are rural areas unique in terms of the conditions which shape and support computer usage?
- 5) The "digital divide" appears to be rhetoric, because it presupposes that universal computer ownership is plausible in the United States. Is it?

CHAPTER 3: METHODOLOGY

Studying the current state of connectivity in rural clubs not only provides new insights into the nature of the digital divide in rural areas, it also serves as a useful counterpoint to corporate-sponsored research, which is often laden with presuppositions about “the need” for computers.

JUSTIFICATION

This anthropological methodology bears little resemblance to “technology assessments” widely used by technology consultants and organizations providing “technological solutions” to non-profits, NGOs and/or small clubs. Although such technology “needs assessments” do produce an overview of the technical infrastructure (i.e. the physical links between computers, hardware and software), they often fail to fully understand those actually using these tools. Brown and Duguid (2000) exhort ICT designers to “read the topography” to better ensure the long term sustainability and efficacy of projects relying on fragile computer systems. Lopsided, technocentric assessments impair the long-term outcomes and sustainability of technology initiatives. Machine capacities and connections end up being well-understood, but when the social networks are poorly understood projects become costly and unsustainable. ITC specialists arrive with the pre-fabricated solutions (more cables, computers, modems, or shareware) mostly convinced of the solution before

truly understanding what success will look like long-term and in situ.

Another methodological flaw of technology assessments is the over-reliance upon a leader's perspective to generate organizational analysis (Rogers 1995:379). In the worst cases, such assessments alienate the social networks upon which the technology must rely and/or dismiss the relevance of local resources and solutions. My methodology has sought to triangulate data collection and use focus groups to include a grassroots perspective, while minimizing leader bias.

Research methodologies that focus on how or whether people actually use computers are incredibly important, yet difficult to manage because they must synthesize human and technology components. The emic perspective of the user is particularly elusive. Rather than asking, "Where shall I put this computer?" my approach asks broader questions- "What do you see technology doing for your club? Who is your primary resource for learning about computers? How long have you used a computer? Where do learn about them?" I think that getting answers to these open-ended questions offers the most potential for new insights into how technology can be useful to users and non-users. Such questions are also likely to provide solutions in the form of specific ideas compatible with local resources and priorities. People-centered questions about technology have emerged as the most useful and this explains why anthropological methods are now being favored by Internet researchers.

OVERVIEW

The qualitative method included 16 focus groups encompassing 86 participants; structured and semi-structured interviews with 35 club members and leaders; and quantitative data from some clubs via a mini-survey with open-ended and demographic questions. Participant observation during each club's natural gathering time (during either regularly scheduled meetings or activities) revealed the various distinctions between the clubs. In addition to those scheduled natural gatherings, supplemental time was spent in unscheduled and unhurried observations in a range of natural settings ranging from the bowling alley to the local restaurant where many of the service clubs gather for their lunch meetings.

Interviews with various community members and a review of the community media forums (including websites, newspapers and public bulletin boards) rounded out my perspective and contextualized each club's role in the community. Participant observation of each public access computers (PACs) site produced a profile of the computer and Internet resources available to club and community members (Table 4). Participant observations included PAC sites. At times I felt constrained by OSU's Institutional Review Board (IRB) protocols and avoided engaging citizens, unless I was certain they were affiliated with a club and/or covered by my IRB protocols.

The overarching methodological framework was guided by a systems perspective, an interactive process of data collection and analysis by triangulation. The rural community is viewed as a complex, yet integrated system, and via an iterative process one identifies and explores the systems key elements, to collect and analyze data. Triangulation generates perspectives from different parts of the system to create a well-rounded view of the key elements: a process that enables “grounded knowledge” is used to “extend and complete the possibilities of knowledge production” (Flick 1998:230). In practice, this meant that similar questions about key elements were asked in different natural settings. Table four overviews key elements and methods of triangulation.

Table 4: Examples of Triangulation

| Key Element | Focus Group | Mini Survey | Semi-Structured Interview |
|------------------------------|---|---|---|
| Public Access Computer (PAC) | Has anyone heard about the Public Access Computer Center? | What are your primary resources for learning about computers? | Have you ever used the PAC? |
| Household Composition | Who knows the most about computers in your family? | Demographics: Children, Spouse, DOB | What kinds of people are in your club? |
| Computer Usage | How do people in the club used computers to do club work ? What about those who don't ? | Presence/ Absence of Computer in home | How have you used the computer in regards to your club? |

My overall approach subscribes to Beebe’s view that “elements of a system and their relative importance *cannot* be identified in advance” (Beebe 1995:42). The inherent flexibility of multi-dimensional methodologies like

the Rapid Appraisal Process (RAP) make them appropriate to studying and managing ICT design because of their reliance on systems theory. The emergence of systems theory reflects a shift for scholars and theorists who have been "encouraged to converse in disciplines, while organizations are multidisciplinary phenomena" (Thompson 1967: vii).

During a six-week period that began January 13 and ended February 15, 2002, a total of three weeks was spent on-site. A week of data collecting on site was followed by a week off-site organizing field notes, adjusting the calendar and methodology. Taking a cue from Schensul's mode of "Commando Research," my fieldwork was orchestrated to maximize efficiency (Schensul 2000:11). Though difficult, the tightly organized calendar did maximize data collection and minimize disruption amongst the town's people.

IDENTIFYING COMMUNITY AND CLUBS FOR STUDY

A town with a year-round population of more than 2,500 meets the census definition of "rural." The OSU extension office was instrumental in the research community and identifying rural clubs and their leaders. Town hall provided a partial listing of the clubs thanks to Judi Steward (1998). As I began calling club leaders and introducing the project using a script (see Appendix A), the process of data collection was set in motion. The script's mention of OSU and the extension office eased initial contact, and built trust and credibility in the research. Leader contact information

provided by city hall was outdated, but former leaders happily updated the information. The initial list served as a starting point and additional clubs were identified later in the research process, after I arrived on site.

Experience as a data collector and call center operator enabled me to use the phone and contact 12 of the 18 clubs listed prior to even arriving on site. Preliminary phone conversations enabled me to construct a research calendar, build rapport with club officers, provide an overview of the research process and specifically discuss the focus group process. Those calls also enabled me to begin constructing key club profiles which included basic details like club size, names of leaders and meeting times. Instinctively, I avoided e-mail contact, and only later did I realize that the phone was a far better communication tool for building support in my research. For many it seems that the phone was their preferred communication channel and I think club leaders appreciated the personal contact. Although such telephone exchanges may have heightened awareness about my research goals, I felt it was that preferable to an e-mail script that may potentially circulate unevenly among community members creating unwanted expectations about the research.

During my three weeks on site, I attended a variety of civic clubs' regularly scheduled meetings and was able to recruit focus groups while also interviewing key informants (club leaders) after meetings. Most clubs had a customary meeting place and time, and during the weeks on site I moved from one meeting to the next. A master research calendar detailed

clubs' events and ensured that I scheduled the focus groups at times which wouldn't conflict with other regularly scheduled events. Knowing that one club met "every Wednesday at the lodge," while another met "every third Monday at the Sportsman's Grill" was instrumental in managing my time.

Research had originally hoped to encompass the 18 clubs from the original list, reporting approximately 800 members. However, during the research process, each club's participation and interest varied. Fieldwork ultimately produced twelve strong data sets which included three primary components: focus groups, interviews and mini-surveys. Resulting data detailed six civic clubs, four activity clubs and two occupational groups. Ultimately a comparative analysis between civic clubs and activity clubs was pursued to highlight the nature of uneven computer usage and access within informal club settings. Research revealed that occupational groups are not true informal groups because members' wages are tied to club activities and thus they do not meet the criteria of informal clubs, as set forth by Baba (1999) and Thompson (1967)

FOCUS GROUPS

A total of 16 of the rural community clubs participated in the focus groups, involving a total of 86 participants. Each group was a subset of a club. Recruitment of focus groups occurred during a regularly scheduled club gathering or meeting and involved some basic steps: 1) introduction of the study to an assembly of club members; 2) overview of the focus group

process; and 3) recruitment of participants. A focus group sign-up sheet would circulate, and by the end of the meeting/gathering an amenable place and time for the focus group was confirmed.

An attempt was made to use a script to introduce the focus group process and the study itself, but this was often difficult. Questions and comments were inevitable. In instances where I could not recruit focus participants directly from an assembled group of club members, I asked a leader to "stick to the script" on the sign-up sheets and read it carefully to potential participants. In activity club gatherings it was mostly impossible or inappropriate to interrupt an activity for the sole purpose of introducing the study. In addition to being an obvious departure from the norm, it could also trigger hostility because people may simply not be interested. In such situations, I relied upon the leader to recruit participants for a focus group after the club activity.

Focus group participants were instructed to show up at the specified time and place. No incentives for participation were offered and recruiting focus groups was somewhat more difficult than anticipated. The sign-up sheets were useful tools that were left with organizational leaders (or secretaries) who were asked to remind, or call participants regarding the focus group.

Focus group size ranged from three to twelve members, with the average being five. As assemblages of each clubs' membership, focus group participants did know each other, and I discuss this as a

methodological limitation. Researchers do routinely conduct focus groups "in organizations and other naturally occurring groups in which acquaintance-ship is unavoidable" (Morgan 1997:38).

FOCUS GROUP PROCESS AND RECORDING

Focus groups were expected to last about an hour. Once all were assembled, I introduced myself and reiterated my objective. Each participant was given a mini survey (Appendix C) to complete and was reminded to not write their name on the survey. In an effort to put participants at ease and increase trust, I reiterated assurances regarding confidentiality and anonymity. Basic ground rules (respect other's opinions, no interrupting, be courteous etc.) were discussed, and I asked that everyone be allowed to express their opinion and said there were "no wrong answers." Sessions began with a simple question about the club's history and they were as follows:

- 1) Tell me a little bit about your club's history
- 2) Have you ever used a computer with regards to this club?
- 3) What kinds of experiences have you had with computers?
- 4) Within the club do you help each other with computers?
- 5) How has this club changed because of computers?

The progression was designed as a "funnel approach" that "emphasizes free discussion and then moves toward a more structured discussion of specific questions" (Morgan 1997:41). Here, the role of the moderator shifts often from low to high degrees of involvement to ensure the group moves smoothly from easy general conversations to harder specific questions.

Previous professional experience facilitating small organizational focus groups enabled me to work effectively as a moderator.

Early in the research design, I decided against tape recording focus groups and interviews. Tape recorders and computers have a wide range of connotations for people, and thus, I relied instead on handwritten notes and put my pen to paper. For what should be obvious reasons, I did not use a laptop computer while doing data collection. Perhaps it was my reputation as an earnest notetaker that helped build trust and rapport with community and club members. An added benefit was that handwritten loose-leaf pages were easy to manage and collate by club. As I wrote, I'd share my notes with informants which often put them at ease. Not using a laptop was the easiest way to accommodate the techno-phobic, avoid any opposition by non-users and minimize distractions during interviews. Information technology researchers would be wise to examine their assumptions about hierarchy and rapport, while being aware of the unintended outcomes of laptop use during interview situations, for computers may intimate or become an unwanted topic of discussion. Of course, a more postmodern alternative would be to design a computer based interface for use by the informant that did not require computer literacy or keyboard use by the interviewee.

I did consider hiring a skilled stenographer to take notes during focus groups, but again the issue of trust (of that person within the community) would still exist. A hired notetaker could not be easily trained

to “hone in” on the issues relevant to my research. Settings for the focus groups were natural settings for club members, and the places of meeting ranged from their regular meeting facilities to less familiar meeting places like the town auditorium, a side room at the local restaurant, or a conference room at the senior center. No focus groups occurred in private homes. Taking notes while simultaneously serving as the group’s moderator was physically and mentally exhausting. Previous work experience facilitating group meetings at a mail-order company helped prepare me for this role, but not for the exhaustion.

MINI- SURVEYS

As a research tool the mini-surveys helped me to identify users and non-users. Mini-surveys (Appendix B) were developed and instituted during the first week of field research to enrich my research by quantifying focus group composition in terms of users and non-users, or “haves” and “have nots.” In RAP one must anticipate “information collected to change the research process and develop an iterative response” (Beebe 1995:44). Difficulty recruiting non-users into focus groups was identified and my iterative research methodology ensured a means to quantify the ratio while in the field.

Mini-surveys were routinely distributed and then collected at the beginning of each focus group and by the end of the research process virtually all of the focus group participants completed surveys (n=86). Of

the total number focus group participants, 60 had computers in the home, versus 26 that did not, which meant that 70 % of the focus group participants had computers in their household. This was somewhat surprising, because I anticipated a fairly even split between computer owners and non-owners. But as one club members observed: "What did you expect, people enjoy talking about things they know!" (Geez, where was this guy when I was designing my research?!) Unfortunately, mini-survey data are limited, but do reveal the extent of the "digital divide" among the artificial sample of focus group participants.

An attempt to get mini-survey data at the club level was partially successful. Mini-surveys were distributed among attendees of three different clubs' regular scheduled meetings (n=143). However, in only two clubs did a clear majority of the members complete the surveys; in those two instances data at the club level are useful for clarifying club attributes, but little else. Methodological limitations of mini-surveys are later discussed.

SEMI-STRUCTURED ETHNOGRAPHIC INTERVIEWING

Club leaders and officers were purposefully selected as “key informants,” able to answer questions about the “knowledge and behavior of others and especially about the operations of the broader systems” (Beebe 1995: 44). Their selection was not pre-determined but rather the result of an iterative process. Club officers were able to discuss computer usage and adoption within the club. Club members often knew who had e-mail (and who didn’t) and talked freely about different members’ proficiency with computers. Inevitably an interview with one person would lead me to another interview and in this iterative pathway I often traced the technological links (or as techies call it—riding the circuits) between various community members—a hallmark of anthropologist doing a PRA.

A standard set of questions was used during these semi-structured interviews to “keep informants talking” about the organization (Spradley 1979:80). In some instances, a leader and club officer would be present during an interview, and helped corroborate a more complete view.

Standard Set of Questions

1. Tell me about your club and its history
2. Show me a list of your members
3. Do your members pay dues?
4. How many officers does the club have and with what titles?
5. What is your club known for?
6. What do you see technology doing for your club?
7. Ever had speakers use or speak about computers during a club meeting?
8. Does the club own a computer or make one available to members?

Additional questions focused then on the leader's personal experience with computers.

1. If you have a computer, how long have you been using it?
2. Have you used the Internet in regards to this club
3. What do you consider your primary resource for learning about technology?

A total of 20 semi-structured interviews and five open-ended interviews were conducted; 33 people were involved in the semi-structured interviews. In all cases, interviews were pursued in natural settings—those places where interviewees were routinely involved in club business. In several instances a president and another key officer agreed to be interviewed together. Morgan (1997) suggests that such an arrangement may qualify as a mini focus group, but I did not classify them as such because I did not use focus group questions.

TYPICAL DAY

Participant observation outside of the club activities and meetings extended into the community. Seeking out the town's Public Access Computer (PAC) sites and gathering data about their hours of operation and Internet usage policies provided ample opportunity for ethnographic notetaking in natural settings. Interviews with managers of PAC sites (n=7) helped triangulate findings from focus groups about PACs. Additional sources of information about the clubs' activities were collected

from local media including newspapers, and fliers and also included various electronic references cited by club members.

Managing research goals and measuring progress with clubs was made possible with research tracking documents that listed the clubs and the primary research elements: interviews, focus group and mini-surveys. In essence, I was moving each NGO through a steady progression that began with study introductions, and ended with complete field notes from interviews, participant observation, and successful focus groups. The rate of progress varied with each club, but was measured by tracking key events. Rarely was progress from initial contact to complete field notes swift, but in one instance I completed a data set within 24 hours:

| | | |
|--------|--------|--|
| Sunday | 6:30pm | contact club leader by telephone |
| Monday | 6:30pm | meet leader, re-iterate workplan |
| | | complete research paperwork, have leader |
| | | recruit focus group participants |
| | 7:00pm | join club's regularly scheduled activity |
| | 8:45pm | assemble and conduct focus group |
| | 9:45pm | conduct leader interview |

However, progress with a single club usually proceeded slowly and a typical day in the field may involve four different clubs:

| | |
|----------|---|
| 8:00am | review calendar for the day / week |
| 9:00am | interview with key informant: club A |
| 12:00 pm | introduce research and solicit focus group |
| | participants during meeting: club B |
| 3:00 pm | semi-structured interview with leader/key |
| | member: club F |
| 7:00pm | conduct a focus group w/ mini-surveys: club C |
| 9:00pm | review day's field notes for clubs: A, B, F, C. |

ANALYTICAL APPROACH

At the end of each day's activities, field notes were reviewed. A cover sheet and a separate binder for each club kept things organized. The emphasis on semi-structured questions created a great deal of data and organizing pages of loose-leaf notes was critical to the process.

Table 5: Club Profile Data Sheet – Example

| Club X | |
|---|----------------------------|
| Members | 40 |
| Active | 40 |
| E-mail? | 25 % |
| Leaders | 4 named, all e-mail |
| Demographic | Very few retirees |
| Men / Women | 50/50 |
| Newsletter | None |
| Connected to a National | No |
| Membership and Attendance filed? | Not Nationally |
| Meeting Space | Own Lodge |
| Meeting Type | Highly structured – CLOSED |
| Speakers? | No |
| Time | Evenings, not in summer |

In my initial review, I could record and begin evaluating the variables and emerging themes through the systematic evaluation and coding of field notes. A secondary template useful for recording key quotes relevant to the following themes I found and coded:

- Computer Literacy—astute users, awareness of, among members
- Computer Ownership—by members, by clubs, by officers
- Leadership—prevalence of computer literacy among
- Membership—types of membership, dues paying as variable
- Communication Channels—printed and electronic, preferred forums
- Meetings—frequency, duration, purpose, settings
- Ties to National—strong or weak ties
- Ties to Regional—strong or weak ties

As the themes emerged, and descriptive quotes filtered into this secondary template, club profiles came into sharper focus. Throughout the process, notes remained collated and carefully numbered by club, mostly due to my interest in presenting the club as the unit of analysis.

METHODOLOGICAL LIMITATIONS

Although Morgan (1997) suggests that acquaintanceship can be expected in focus groups within organizations, I found it a limiting factor in rural focus groups composed of club members. Computer and Internet usage appears to be a challenging subject matter that raises sensitive issues among members. One ability to buy and use a computer highlights tensions around status, income and literacy among members. Mini-surveys were implemented to quantify my perception of uneven participation in the focus groups. They revealed the preponderance of computer users (70%) in focus groups suggests that "distant-users" avoided these forums, or possibly felt intimidated by presence of users. Efforts to attract the "distant users" or "voluntary non-users" to participate required cajoling and were largely unsuccessful.

When users and non-users actually did come together in focus groups, computer jargon often impeded the free flow of conversation. As an unfamiliar word like "download" or "attachment" cropped up in conversation, a moderator or a member may take a moment to define them

in an attempt to assist the less computer literate. Conversation may have been further skewed towards users because the non-users may have sought to minimize their lack of skill or knowledge. Acquaintanceship further exacerbates the situation because those who lacked computer skills may have feared the repercussions of their limited interest and abilities with computers, particularly as such skills are becoming increasingly prevalent among leaders.

During this methodology, mini-surveys were instituted to measure the composition of focus groups in terms of user and non-users constructs. (See Appendix C). They were primarily used to quantify focus group participants and provide demographic sketches of meeting attendees in three different clubs. Mini-surveys offered an excellent lesson in the perils of collecting too much data. For instance, although questions detailing the presence and location of children may be useful variables in predicting e-mail usage, systematic data collection was problematic because meetings were brief, and attendance varied greatly. Nonetheless, mini-surveys did provide an excellent forum for testing question wording and layout for subsequent research.

Further research would require a refined methodology to segment focus groups according to computer ownership, or otherwise separate users from non-users. Computer ownership, amount of usage and degrees of proficiency are all exceptionally difficult to measure. For example one may have regular access to a computer in a work setting, but is it the functional

equivalent of ownership? Recruitment materials would need to be modified and emphasize clearly that a lack of computer experience is desired, or even preferred to encourage distant-users and non-users to participate. Finally, to limit the force of acquaintanceship in focus groups, users and non-users groups would need to be delineated and assembled from across all club membership rosters.

CHAPTER 4: FINDINGS

COMPUTING IN THE COUNTRY

Rural towns present a set of physical, environmental, cultural and material conditions which have historically influenced the adoption and usage patterns of technology; for example Kline (2000) notes that farmers and ranchers multi-tasked their Model Ts into washing machine and hay bailers. History is likely to repeat itself as computers rapidly find new uses across rural America. Techno-centric research portrays rural ICT as a beleaguered place beset by slower downloads and the lack of broadband, rather than digging deeper to understand how rural areas may have acutally adapted to such material conditions. This view tends to neglect subtler effects of culture and custom which produce things like a car turned hay baler. We must remind ourselves to think less about the machines and think more about the physical, environmental, cultural and material conditions shaping their use. Here are a few of the influences I found during my research:

AOL isn't a local call
Single computer store ...the next one is 75 miles away.
One local Internet Service Provider (in the computer store!)
There's no "users group" in the area.
Everyone's phone seems to be off the hook after 7:30 pm.
Local high school computer lab established in 1995.
Bowlers still use overhead transparencies, not computers.

Clearly, rural towns have a distinct set of resources and constraints that impact both computer usage by adults and within clubs. Before

discussing how club members are using computer skills, it is necessary to discuss how local employers and existing community resources create a computing knowledge base within the rural community and thus, an overview of my research site "Ruralville" is provided first.

After discussing the local opportunities for skills, training, and resources, an analysis of the how local service clubs are using computers and their members' skills to support the club follows.

Ruralville's Computing Community

The town with its year-round population of less than 2,500 meets the census definition of "rural." Ruralville is the largest city, seat and center of a county covering 8,100 square miles. Like many rural towns of the Pacific Northwest, Ruralville is geographically isolated and not served by national interstate highways and passenger trains. Ruralville residents are heavily reliant on the automobile and drive to the nearest "big" city (two hours) and the state capital (six hours). Aside from gas stations chains and two automobile dealerships, the local economy is characterized by the absence of multi-national retail stores (i.e. McDonalds and Wal-Mart) and has an eclectic mix of locally-owned retail stores and restaurants (including both a Chinese and a Mexican). Two supermarket chains serve the county with stores that appear to double as meeting place for county residents.

State, county and federal governments are among the local economy's biggest employers. The county's largest hospital and a federal interagency office comprised of Bureau of Land Management (BLM) and

the US Forest Service are also within the town. As formal computer-using organizations, they have dramatically enriched the town's "computing community" and fundamentally support its critical mass over time; they are also instrumental in creating the "networks of practice" within the workplace and the community as whole (Brown and Duguid 2000:141). The economy was once heavily dependent on natural resources, but timber harvesting and income have declined, while ranching and agriculture have remained steady. There are several finance, insurance and real estate businesses in the town.

The economy is clearly related to natural resources; but the nature of the relationship has shifted from low-skilled extractive jobs in the field, to highly skilled administrative jobs in office settings. Jobs in the "extractive industries" have been declining steadily. Because the two large government organizations and the hospital are formal organizations, they have technology budget for upgrades, formalized training and support structures. These have the net effect of fundamentally supporting computing in a rural setting where the material conditions may not appear to favor such skills. Computer skills are the product of exposure over time, and these formal organizations' long-term presence has clearly had an impact on off-the-job usage patterns. A club president said the key for him was his "government job with government training" that began in 1990; several current (and past) club leaders said they learned their skills "at the

agency." This is, in essence, a form of government-sponsored capacity building, which then trickles into the rural community and its clubs.

The municipality has not apparently prioritized computers internally. There was no networked infrastructure linking local municipal workers. As opposed to the formal federal organizations nearby, the municipality's efforts at computerization appears reactive. There also seems to be a lack of consensus about the importance of such an infrastructure for the town. One citizen noted: "Nobody is making decisions on these kinds of things," and here "things" means everything from a digital camera for the town's tax assessor, to not being able to send an e-mail to the mayor@ruralville.com. The cost of the existing systems have already been highlighted; "computers" appears as a single line item in the town budget and cost the town \$145,000 annually. Although buying more computers and justifying additional computer-related expenditures like maintenance and training is likely to augment the critical mass of computing in the rural community, such decisions can be contentious. A club member who also happens to be a municipal employee paints the issue clearly: "We think it's a mess—computers are burdensome, costly and don't seem to pay for themselves in local government." These are but some of the "prevailing winds" within a small town which need to be considered.

At the macro-level, age, income, and population growth are potential variables influencing the size of the rural computing community. The town's population shrank slightly over the decade from 1980 to 1990, but

has climbed 3.9 % since (Larry Holzgang, phone conversation April 2 2002). Leistritz (1997) suggests that ICT usage indexes may positively correlate with population growth. Median family incomes also would impact the size of the rural computing community. In terms of economic vitality in 1994, 50.5% of the town's households were considered low and moderate income. NFIA reports consistently link computer ownership and Internet access to income. Lastly, the town's demographics are an indicator. According to the 2000 US census, 61% of the county's population was born before 1965 and thus not exposed to computers in local high schools. This census fact was confirmed by one interviewee who said: "70% of the town is 55 years or older and 50% of those folks are older than 65!" Taken together these demographics suggest low computer usage, yet they must be viewed as a starting point for further discussion.

Community Resources

The mixture of public access computer (PACs) sites in Ruralville appear to create material conditions conducive to supporting computer usage, even among those who do not own or are unable to access a computer through personal or professional circles. It is beyond the scope of this thesis to make generalizations about PACs and CTCs in other communities; Table 6 outline's Ruralville's PACs as a point of reference.

Table 6: Public Access Computers (PACs) in Ruralville

| Site | Hours | Clientele | Support for Computer Questions ? | Children Allowed On-site ? | Costs |
|-----------------------------|--|--|------------------------------------|----------------------------------|---|
| Community Technology Center | M-R 11- 6pm F 11-2 S/S closed | General Public Free Registration | Yes | Yes | Free Internet Access, fees for printing |
| Local Library | M-F 8:30-6pm Tues til 9pm Sat 10-4 S closed | General Public | Yes, 30 minutes of assistance | Yes, with Play area for children | Free Internet Access, fees for printing |
| High School Computer Lab | M-F 3pm -6pm "with custodial presence" | Enrolled students and their parents | Available during school hours only | Yes | ? |
| Local Computer Store | M-Sat. 10am-6pm | Customers and Public | Assumes people don't need training | Yes | Fee-based Internet Access |
| State Job Training Office | M-F 9-5 | Registered Job Seekers | Yes, 30 minutes of assistance | Case-by-case | No |
| State Employment Office | M-F 8-11am | General Public | Generously provided | Yes, if "well-tended" | For printing and extensive coaching |
| Federal Agency Office | M-F 7:45am-4:30pm | Contractors with specific needs - by appointment | Case-by-case | Yes | ? |

Unencumbered social exchanges around computers serve as a crucial support mechanism for nascent users and thus, environments which encourage problem solving conversation ("tech talk") are crucial to skill transfer. Of these PAC sites, the local library and the Community Technology Center stand out as the most accessible to users, but appear to

impede socializing. As opposed to one's workplace or a cybercafe, where people are able to help each other with problems, there appeared to be little social collaboration around PAC computers, except for those in the High School Lab and the State's Job Training Office.

Public access computers represent what Foster (1969:7) dubs a form of "directed culture change" whereby "physical changes are made to spawn behavioral ones." If these spaces fail to facilitate social interaction proven to be instrumental in building efficacy with computers, they may be underutilized and unproductive investments, because "it's the robustness of social systems which can support the frailty of technological ones" (Brown and Duguid 2000:69). Ruralville's PACs tended to mimic office settings, but they lack the peer support and offer minimal technical support to people. These stand-alone, unsupported computers are mostly suited to those with skills, not those hoping to acquire them, because few would risk the embarrassment of walking up to a machine and needing to rely on others to figure it out. Imagine the scene: you're a neophyte user, and at the PAC someone points to a lone computer and says, "help yourself." For many it's a terrifying thought. Those who support PACs may even hesitate to provide support; consider one PAC administrator's assessment of a neophyte user:

We tried to help her set up a hotmail account. Oh my god what a nightmare. It took us almost 2.5 hrs. After that, never again, we just can't do it. It is such a hassle, some people just don't get it and you can't sit there all afternoon trying to help them.

The instance reveals that support often is discretionary and that discrimination is possible. PACs and CTCs have joined a long tradition of government attempts at "directed-culture change" which as Foster (1969: 7) puts it "may fail to have the desired effect."

Ruralville's Community Technology Center teaches classes, and provides free e-mail access via 12 computers. A large screen projects the monitor of the instructor as he/she stands at the back of the room and *behind* the students. From the student's perspective, the instructor remains invisible and is simply a voice behind them. When trouble arises, the instructor approaches the student from behind to correct a situation. These core elements create an impression of hierarchy; students don't make eye contact with the instructor unless they are encountering technical difficulty.

Although a focus group question encouraged participants to talk about the CTC, very few had opinions about it. Many did not know what purpose the CTC served. When they did express opinions, informants views ranged from the enthusiastic to the reticent. One woman in her early thirties noted: "Why would I want to sit there for three to four hours—you don't want people staring at you...There's no privacy with people moving around me!" In such a constrained setting, learning to use a computer and surf the Internet has a variety of limitations and ramifications in a public setting. In addition to the environment, other issues like child-care and hours of operation create invisible barriers.

Transportation is also a consideration; there's no bus service in Ruralville and only one taxi. One citizen scoffed: "Why would I want to travel 12 miles and burn gas? If you need it [a computer] get it at home! "

In addition to the PACs, Ruralville's mix of small businesses in the finance, insurance, and real estate (FIRE), and other computer-dependent service sectors, offers resources for supporting computer skill acquisition. Peer networking was evident even in the smaller formal organizations which lack the resources for constant upgrades and formally training. On-the-job training means that, as one club member put it: "I can learn as I go." Another club member and local shopkeeper said: "We train each other and if I learn how to do it and can manage to teach them, then they'll learn as well." Unlike the largest formal organizations, the smaller firms each have their own mix of hardware and software. This seems to limit the "networks of practice" which are healthiest in large formal organizations.

Two of Ruralville's retail businesses (a computer store and a printing shop) serve the public directly as places to hang out, listen to or engage in "tech talk." Places where people gather around a computer matter to rural people trying to learn computing skills. One informant compared his shop to the small town garage of yore, where people stop by to see what the mechanic is working on and pick up pointers. CTCs and PACs may attempt to create such physical spaces and conducive material conditions, but they don't appear to support collaborative socializing that fundamental engage "distant users" in the idea of actually using a computer.

Ruralville also lacks a "users group" which is a common form of peer support that regularly gathers computer users interested in troubleshooting technical issues by leveraging their aggregate knowledge to resolve a computer-related problem. These unique social exchanges with computers as the focus are what I have dubbed "tech talk." Attempts to start a "users club" in 1994 failed. Ironically, one respondent mused that it was probably the arrival of the Internet and e-mail in the 1995 that prevented the formation of the club. Rather than gather physically, proficient users can seek their solutions on-line rather than from each other. As one club proficient secretary pointed out: "I can click on this and go to a conference: I've access to an on-line professional group. That's where I'm learning new skills." Engaging others in face-to-face tech talk is difficult when astute users don't congregate to share their expertise amongst each other, although we assume they do feed their knowledge into their immediate circles and families.

ANALYSIS OF CLUBS

It is important to remember that the relatively rapid adoption of computers in formal corporate settings is largely the result of favorable material conditions and initiatives aimed at increasing usage, which often target resistance. Consider how employees are provided equipment and expected to keep their computer skills current; usage is explicitly supported through peer networks, training and perhaps most importantly,

wages. Computer usage in formal settings is well-researched and informs design and efficiency, whereas the study of computer usage in non-formal organizations has lagged, possibly due to a lack of funding, need, or application. This analysis of computers usage in informal organizations provides a useful counterpoint to the traditional, often corporate-sponsored research.

Working in non-formal groups (rural clubs), one gets a fresh perspective on computer usage outside the unique material and structural conditions found in formal organizations. In these small rural clubs, volunteers use their computer skills and resources to administer and advertise club activities, mostly without support or remuneration from the club. Like the corporate worker, these clubs and their volunteers are finding themselves increasingly reliant on computer technology. It is the pervasiveness of home computing, and the incremental rise of computer usage and literacy among rank and file members (often the result of formal organizational training) that enables clubs to find the computing resources they need. My research explored the extent of e-mail penetration, computer usage and computer literacy in a variety of clubs. Of the clubs which were fully engaged by the research methodology, ten appear to meet the criteria set forth by Thompson (1967) and Baba (1999) which identify non-formal groups as composed of members who join voluntarily without wages or inducements, see Table 2.

"Digital Divide" literature anticipates that computer usage and access among club members will vary, often dramatically. For this reason, these ten rural clubs represent an opportunity to explore the topography of the "digital divide" and examine possible reasons for it. Uneven computer usage and access among informal clubs' membership is the inevitable result of variables like age, income, education and literacy. Not only should one anticipate variances within clubs, but also expect them between clubs as a function of club demographics. Variations of usage and access should have identifiable consequences for clubs as well as individual members. How do members' varying degrees of computer usage and access affect their clubs' and members' participation? After analyzing the prevalence and consequences of computers within clubs, I shall discuss why the "digital divide" has emerged among and within clubs from a theoretical perspective.

Research revealed two basic types of non-formal clubs: activity clubs and the civic/service clubs. Table 7 sets forth the distinctions.

Table 7: Informal Club Types

| Civic or Service Clubs (n=6) | Activity Clubs (n=4) |
|--|---|
| 1) Primary emphasis on serving community needs | 1) Primary emphasis on shared recreational interest |
| 2) Some form of regular reporting with a national or regional office | 2) Reporting to a national or regional office may occur, but not emphasized |
| 3) Club officers with titles | 3) Club officers with titles |
| 4) Periodic communication (often a monthly newsletter) | 4) Regular gatherings foster and extend the chosen activity |
| 5) Periodic structured meetings to plan and execute club activities and fundraising. | 5) Annual general meetings , or quarterly for group business |
| 6) Periodic fundraising events | 6) Periodic gatherings, performances, or competitions with other clubs. |
| 7) Stronger emphasis on collaboration, planning and communication | 7) Weaker emphasis on collaboration, planning and communication |

According to Putnam (2000: 20), service or civic clubs are the kind which “mobilize local energies.” The Jaycees, the Kiwanis, the American Association of University Women, the Knights of Columbus, the Masons, the Rotarians, the Eagles, and the Elk are common examples of the organizations referred to as service-clubs, or civic associations. Clubs meet during lunch or after a shared evening meal; socializing time was an important, but secondary, facet of meetings. “Open” meetings allowed people from outside the organization and/or community to make topical presentations. Civic club leaders are often immersed in the coordination of speakers and community events. Meetings are events structured by a

routine which may involve a call to order (often a pledge said in unison), an agenda and often specific rules of conduct. Such clubs “provide members with friendships and business connections that pay off personally” (Putnam 2000:20). Clubs may require that members meet certain educational or occupational criteria. For instance, the American Association of American Women requires that members have a college degree, as opposed to another club stipulating business or professional experience. Membership criteria and nomination processes affect the club’s identity over time, and are certain to influence variables like club homogeneity and diversity as clubs self-select new members. Clubs initiate members through a ritualized nomination and admission process.

As opposed to civic clubs, activity clubs are less structured and appear more accessible to new members. Bowling, choral singing, model collecting, square-dancing, archery, markmanship, and snowmobiling are examples of hobbies or recreational pursuits supported by organized clubs in Ruralville. Periodic gatherings happen in a setting appropriate to the activity, whether it be at a bowling alley, an archery range, or the race track. Often the frequency of the meetings is seasonally dependent (i.e. a snowmobiler’s club adjourns for summer). Socializing is an important facet of such clubs. Weekly gatherings are punctuated by annual or quarterly “formal” meeting in which club governance and planning is discussed. Activity clubs often may partner, compete, or perform with other such clubs in other parts of the state, region, or country.

A vast majority of those participating in Ruralville did not “grow up” on computers. From a idealist perspective, club members (who are mostly in their late 30’s and early 40’s, or older) didn’t have any exposure to computers until after high school, if any at all, as opposed to children today, who experience computers as an inseparable part of the culture. A bank clerk appears to speak broadly for her generation and her peers in rural activity and service clubs:

I work with a number of people who have a low comfort level and low level of competence with the technology we currently have. We’re in the demographic group that entered the workforce before computers; we learn it from the kids—ours’ and other peoples’.

Research confirmed that it was professional and academic experience *after* high school which serves as the primary means of exposure to computers. This was triangulated in responses to the open-ended mini-survey question asking “What are your primary resources for learning about computers?” A total of 24 mini-survey respondents (n=190) indicated “self-taught” in response to the question. Computer usage and skill acquisition is often the result of being exposed to computers in formal settings whether they be academic or corporate.

As a peer group, they began graduating from high school at a time when computers (and computer labs) were not yet a consistent feature of a Ruralville education. It is highly unlikely that Ruralville residents born prior to 1965 would encounter computers in their secondary education. Though not possible to determine precisely the percentage of club members

born prior to 1965, the 2000 US census suggests 61% of Ruralville's current residents were born prior to 1965. Research confirmed that computers and associated training was not a part of the Ruralville High School (RHS) until 1989. For the sake of this analysis one can reasonably assert that computer usage among club members is not the result of structural exposure in high school and therefore must be explained in terms of the subsequent material, environmental, physical and cultural conditions. Knowledge of computers and e-mail usage is likely the result of a complex set of variables involving post-secondary educational, professional, or personal experiences.

Civic Clubs

These types of clubs place a primary emphasis on serving community needs, and meet regularly to plan and execute club activities and fundraising events. Among the leaders, there is a strong emphasis on collaboration, planning and communication which trickles down into the rank and file members. Club officers are responsible for the primary club maintenance activities, including the membership and attendance reporting to the national or regional office. In addition to the regular meetings, there is periodic communication (often a monthly newsletter) to the members.

To protect the identities of these clubs and their members, this analysis is carefully crafted to avoid discussion of mission statements, membership totals, current projects and even club profiles. Pseudonyms for the six service clubs are as follows: the Salmon, the Quails, the Kestrels, the Bears, the Flamingoes, and the Dinosaurs. Analysis provides a basic factual view of each club's usage of computers while examining the conditions supporting e-mail penetration and computer literacy among the club member, as well each club's ties with their respective National organizations.

Research revealed that each club has a different number of members reporting e-mail addresses (Table 8). Such addresses are considered here as evidence of computer usage.

Table 8: E-mail Penetration in Civic Clubs

| Club | Members with e-mail addresses |
|-------------|--------------------------------------|
| Salmon | 93 % |
| Quails | 68 % |
| Kestrels | 56 % |
| Bears | 36 % |
| Flamingoes | 50 % |
| Dinosaurs | 7.5 % |

Source: Interviews and Mini-Surveys

Age appears to be useful predictor for e-mail usage at the club level and reflects NTIA findings. Income and education data within clubs were not collected, but the methodology provides other views of such variables.

Older Civic Clubs

Research revealed that three Ruralville clubs are dominated by seniors, retirees or those nearing retirement age; these three clubs also reported lower e-mail penetration rates (Table 9). Age is clearly an important factor when evaluating a club's prospects for computer in light of recent NTIA findings:

Individuals 50 years of age and older are among the least likely to be Internet users. The Internet use rate for this group was only 29.6% in 2000. However, individuals in this age group were almost three times as likely to be Internet users if they were in the labor force, than if they were not (NTIA 2000: XVII).

A Bear joked that his club turned into a senior center: "a majority of our people are in their late 70's or early 80's!" These "older" clubs appear to

have a majority of members who are no longer in the workforce, or may have worked at a time when computers were not yet widely used. A Flamingo mentions casually that she retired in 1983, and that a year later her job was "computerized."

Table 9. Email Penetration in the Older Civic Clubs

| Club | Members with e-mail addresses |
|-------------|--------------------------------------|
| Flamingoes | 50 % |
| Bears | 36 % |
| Dinosaurs | 7.5 % |

To validate this analysis I quantified my perceptions of the "older" clubs with data from the clubs themselves in Table ten. A total of 60 % of the Bears completed mini-surveys for data; and to profile the Dinosaurs (for whom mini-surveys were not available), I relied on a member who clearly knew the club member ages.

Table 10: Older Civic Clubs - Evidence

| Year Born | Bears | Dinosaurs |
|------------------------|--------------|------------------|
| 1910-1919 (ages 82-91) | 1 | 8 |
| 1920-1929 (ages 72-81) | 7 | 31 |
| 1930-1939 (ages 62-71) | 7 | 19 |
| 1940-1949 (ages 52-61) | 11 | 8 |
| 1950-1959 (ages 42-51) | 3 | 8 |
| 1960-1969 (ages 32-41) | 0 | 2 |
| 1970-1979 (ages 22-31) | 1 | 0 |

Flamingoes are included in this cluster of "older" clubs. Through direct observation, the age of members was self-evident but my attempt to quantify their demographics was brushed off by a Flamingo who replied: "most of us already died and the rest of us will be there soon enough! "

Special considerations made for age-related limitations provided additional evidence for qualifying "older" clubs. If not adjourned for the summer, the elders may opt for meetings during daylight hours to make driving easier. At one point, one club considered implementing a shuttle service to help members overcome transportation barriers. One local put it this way: "most of the accidents in Ruralville only involve one car" and thus she intimates the problem of elderly drivers. Distance alone can inhibit an elderly member's participation in their club because attending a meeting may involve 50 mile round trip. A convenient meeting location is perhaps the best way to accommodate the elderly; the only older Ruralville club that meets weekly gathers in the senior center during lunch, where many of the members already eat.

For the most part club members seemed aware of the age of those in their club. Indeed age served as a kind of inside joke for the Bears, the Flamingoes and the Dinosaurs. A Flamingo joked that the only speaker she'd heard lately was the undertaker, and as she explained it: "He only came to size us up!" A Bear lamented: "We're the old timers, who'd want to join us?" Through this mixture of direct observations, age-related data and droll humor, a distinction between Ruralville's "younger" and "older" civic-clubs emerged. Analysis revealed that the younger and older clubs are also distinguished by the degree of e-mail usage, as the NTIA report would suggest.

Younger Civic Clubs

As opposed to the elders, focus club participants in younger clubs used a numerous phrases that indicating clearly that they were users. Among the common phrases were such statements as: "my very first computer," "my husband's first job with a computer," "my first job with a computer," "the person who helps me the most on the computer" and "the year we got the Internet." Although it was not possible to count and provide frequencies for these phrases, the prevalence of them drew attention to the differences between younger and older club.

Table 11. Email Penetration in the Younger Civic Clubs

| Club | Members with e-mail addresses |
|-------------|--------------------------------------|
| Salmon | 93 % |
| Quails | 68 % |
| Kestrels | 56 % |

Further solidifying this impression of younger clubs were the variety of club events scheduled around working people and not necessarily the elderly or retirees. The Salmon, Kestrels and Quails meet frequently and appear to have a broader array of club-related activities and fundraising. Two clubs met weekly during a tightly scheduled business lunch hour, and a third met monthly in the evening after mealtime.

A Salmon remarked: "We're no longer Ruralville's old man's club!" Looking around the room during the Salmon lunch gathering, it was easy to spot the differences from older clubs. Many in attendance appeared to

be on their lunch break and dressed casually, but professionally. These clubs appear to be dominated by people still in the workforce or people recently retired. Many reported learning about computers on the job and appear to take them for granted. As one Kestrel observed: "I don't know anyone without a computer. Everyone I know has e-mail." Such remarks were common in the younger gatherings, as opposed to the older club clubs where computer ownership often prompted either surprise, skepticism or both.

Mini-surveys distributed during a Salmon meeting netted responses from 50 % of members, and the data confirm my impression that most Salmon are in their 40's, 50's and 60's; 78% percent of the Kestrels completed mini-surveys during a meeting. Results for two of the younger clubs are provided. Quails are not listed in the Table 12 because a minority (35 %) completed mini-surveys.

Table 12: Younger Civic Clubs – Evidence

| Age Cohort | Salmon n=21 | Kestrels n=21 |
|------------------------|------------------------|--------------------------|
| 1920-1929 (ages 72-81) | 4 | 2 |
| 1930-1939 (ages 62-71) | 3 | 5 |
| 1940-1949 (ages 52-61) | 9 | 6 |
| 1950-1959 (ages 42-51) | 3 | 6 |
| 1960-1969 (ages 32-41) | 2 | 0 |
| 1970-1979 (ages 22-31) | 0 | 1 |

Within focus groups and interviews with younger clubs' members, certain phrases cropped up frequently: "my very first computer," "my husband's first job with a computer," "my first job with a computer," "the person who

helps me the most," and "the year we got the Internet." Such comments were an indicator of those with computer exposure.

The fact that these "younger" clubs have higher rates of e-mail penetration is likely to be influenced by children (Table 13) in households. Buying a computer for a kid entering high school is fast becoming a rite of passage for many. As Reed (2000: 173) notes: "one type of computer recruitment had a name within the industry, known as the 'Mom and Dad factor', whereby parents brought computers into the home for the children." Ruralville's computer retailer also noted a second kind of kid-induced purchase: "There's the grown-up kids, those older kids who've left home and then who come back and insist on making their parents accessible by e-mail and so they say we need to get our parents a computer." Even in the older clubs there were stories of pressure from children and grandchildren to get on-line. Those forces when combined with the variety of professional experiences reveal the variety of ways in which age is a useful indicator in explaining why e-mail penetration is likely to vary by club age.

Table 13: Email Penetration by Age

| Older | | Younger | |
|--------------|------|----------------|-----|
| Flamingoes | 50% | Salmon | 93% |
| Bears | 36% | Quails | 68% |
| Dinosaurs | 7.5% | Kestrels | 56% |

Communicating with the National Headquarters

Research also revealed that most of the civic club's officers were involved in some type of computer-mediated communication (CMC) with their respective national organizations (Table 14). Although the National organizations do not materially support the clubs, with either computers or supplies, Nationals expect to engage clubs in CMC. In this case, CMC as an idea, is supported and this gives it impetus within the clubs and increases computer usage. CMC ranged from basic e-mail exchanges between club officers and national administrators to the transmission of electronic reports to the national by club secretaries, or electronic bulletins by the president. Research revealed that clubs do not own computers or computing facilities, and that members use their own personal (or work) computers in these CMC exchanges.

Table 14: Club Facilities and Computer-Mediated Communication

| Club | Owns an office/ lodge ? | Owns a computer ? | CMC with National? |
|-------------|--------------------------------|--------------------------|---------------------------|
| Salmon | No | No | Yes |
| Quails | No | No | Yes |
| Kestrels | No | No | Yes |
| Bears | No | No | Yes |
| Flamingoes | No | No | No |
| Dinosaurs | Yes | No | Yes |

It became apparent that club officers and members do their club-related computing and reporting on either their computers at work or home. Surprisingly, members did not mention the PACs as a location for

doing club-related work, nor did they question why the club itself lacked its own computer resources. There seems to be a basic assumption that, as one officer casually states: "Oh, I just use my own computer; it's too bad the previous secretary didn't have one."

Electronic filing of membership data is increasingly prevalent among the clubs; three of the clubs implemented electronic reporting procedures within the last year: the Salmon, the Bears and the Dinosaurs (Table 15). With minimal technical or financial support from the national or the local club, members appear to donate their resources and skills in the face of incrementally rising expectations.

Table 15: Prevalence Electronic Reporting to the National

| Club | Year Instituted | Members Proficient In Process |
|-------------|------------------------|--------------------------------------|
| Salmon | 2000 | 2 |
| Bears | 2000 | 1 |
| Dinosaurs | 2000 | 1 |

Anthropologists Brown, Duguid (2000) and Foster (1969) discuss how physical settings can dramatically affect outcomes of technology and adoption. One might think that a centrally located club-funded computer served as a collective resource for filing electronic reports and computer skill development within the club. However, none of the civic clubs owned a computer, and only one had a lodge to set one up. When club members' need to work together over a computer, they retreat to a member's private home or business. PACs appear to be an underutilized resource in this

regard. Despite the lack of club-funded computing resources, clubs are filing reports electronically due largely to key individuals with strong skills and resources.

Particularly worrisome is the national's adoption rate of new technologies potential to outpace skills and resources found in rural club settings. Estimates put computer-related expenses and Internet access at \$2,700 annually, yet nationals may not explicitly require clubs to own a computer. As one secretary puts it: "They don't tell you to go by one, but you really need one!" Once one has a computer, other problems may arise, including training and resource capacity. A member who has had "recent trouble's downloading things, especially bigger ones from the national" wonders if her computer is too old. Rural club members may in fact find themselves in a constant struggle to keep up with the national if their members don't have the latest computers and skills, or powerful hard drives capable of handling ever-larger attachments and files sent by the national.

The local Salmons (93% penetration) are within a larger district that has prioritized Internet Communication and created an initiative to support e-mail exchanges between clubs, and between each club and the national. Leading this initiative regionally is a "technology champion" from another club who has prioritized the search for local champions in other clubs. As one Salmon puts it: "She's a guru." Rubinyi (1983), J. Johnson (2001), Markus (1987), and Oliver et al. (1985) all discuss the importance of

technology champions within organizations. Across the region Salmon clubs are naming "Internet Communications Officers" (ICO). Finding and cajoling someone into the three-year post creates a point person for ICT needs and initiatives within the club. The Salmon did in fact put the local champion into the ICO role, or as she puts it, she was "appointed." Now after three years she is stepping down, having "requested a replacement volunteer." What is not clear is how difficult it will be to fill such posts voluntarily, for they in fact require a fair amount of computer skill and dedication.

Dinosaurs (7.5% penetration) have traditionally provided regular updates on club member status to a regional administrative body, largely because one's rank is a central theme in club activities. Computer-mediated communication and reporting significantly improves the efficiency of the regional administrator to keep tabs on members. In 2000 a postal reporting system was phased out and a web-based reporting system was implemented. In making the change, the national administrators essentially began requiring computer and Internet usage by at least one Dinosaur. At the time, there was some resistance to national's effort and what the local leader saw as "elaborate web pages secretaries need to access to do reporting." Further research may reveal how clubs responded to the strong ICT mandate, particularly during the transition. Savings on postage ("upwards of \$50-\$60 per year") are likely to be offset by the hidden cost of a member able to do web-based reporting. Ironically, even after

implementing "paper-less" reporting the regional administrator still confirms electronic data the old-fashioned way, or as the local secretary joked: "They send paper back to us....they want to make sure you get it!" Most recently, regional Dinousaur clubs' secretaries have the option of electronic confirmation for each electronic update; additional changes to the process are likely. Currently, the names of new applicants are compiled and circulated among the clubs' secretaries across the state, in an effort to keep tabs on members who may be expelled from one club, but may attempt to join another.

The Bears (36% penetration) organizational culture is characterized by numerous well-entrenched policies and procedures, evidence of which is a consistent emphasis on regular reporting. A regional administrator tightly coordinates clubs from across the state. Electronic reporting was made available to Bears clubs across the state in 1999; however, the local Bears began using the electronic process in 2000. Since the inception of electronic filing, only one person has performed the task.

Quail's (68% penetration) national and regional organizations have traditionally placed an "emphasis on being connected in the most efficient ways possible," and their local roster which lists addresses and e-mails reflects their national's culture. When attending regional conferences, the theme of listing members and staying connected carries over, as one member noted that, "all the e-mail addresses are on a master sheet and given out to conference attendees." Lists of contact information place a

strong emphasis on staying connected. Quails have a strong networking culture, and e-mail's popularity appears to have ridden along the pre-existing social networks which Brown and Duguid (2000) argue are critical to building "communities of practice."

Although they do not file electronic reports to the national, electronic bulletins appear to be a part of the Kestrel's national culture. A web search for Kestrel clubs revealed that many are distributing and/or posting electronic newsletters for their members. Kestrels place an emphasis on the dissemination of information, and their orientation to the belief that "knowledge is power." In addition to receiving paper bulletins, newsletters from Kestrel clubs statewide, a local Kestrel officer also mentioned getting electronic versions. Kestrels in the nearest city to Ruralville also publish such a bulletin. With the practice widespread in other parts of the state, and even in the neighboring town, Ruralville Kestrels have also taken up the practice. This may explain why they produce an electronic bulletin for local members despite the slim majority (56%) of local members with computers and e-mail at home. They serve two important functions: they increase the flow of information between clubs and they broaden the "community of practice" that supports and extends the creation of electronic bulletins to other Kestrel clubs. It should also be noted that Quails and Kestrels are both female clubs (Table 16).

Table 16: Prevalence of Locally-Produced Electronic Bulletins

| Club | Year Instituted | Members Proficient In Process |
|-------------|------------------------|--------------------------------------|
| Quails | 2002 | 1 |
| Kestrels | 2002 | 1 |

Leaders' and Members' Computer Literacy

Dinosaurs (7.5% penetration) have the smallest number of members with exposure to computers and thus are the weakest in terms of critical mass. Prospects for adoption are low, and comments by Dinosaurs during meetings revealed that few are willing or interested in pursuing Internet access. One user, suggested that his peers may "simply fear the change, running water and electricity are still fresh memories;" thus a bulk of the Dinosaurs are, according to Reddick's (2000) typology either near or distant users. Current and past Dinosaur presidents have used their personal computers to support the club. One president managed to create, print and mail the club's newsletter on his home computer, but while reimbursing him, the Dinosaurs realized it was cheaper to continue preparing it for reproduction at a print shop. The expense of ink cartridges and printer paper made the cost of printing almost 100 newsletters prohibitive. The lack of critical mass among Dinosaurs certainly makes an electronic newsletter a distant prospect.

Ranking second lowest in terms of e-mail penetration (36%) is the Bears. The Bear's secretary summed up his relationship with the rest of the

club: "I'm dragging them into the rest of the world and I have the bull whip!" Their newest president recently purchased a computer, but barely uses it, and thus he follows in the footsteps of several Bear presidents who knew little about computers. The secretary's frustration with club apathy towards computer use was apparent and has delayed his effort to produce an electronic newsletter. Another club member is unsure if technology would have "made a difference" in terms of the club's vitality and he characterizes the club's rate of adoption as a slow one: "I don't know if we ever let technology into things." The stance of the Bear old guard contrasts sharply with the new secretary who is an enthusiastic booster of ICTs and who now does a majority of the club's computing: "I file monthly reports; we can communicate via e-mail with all board members" Ironically, he is from an urban area and another club which used computer far more extensively.

Outside the upper echelons of leadership, the Bears clearly struggle with what Reddick (2000) calls the uninterested "distant users" who refuse to, as one Bear put it, "come up" to computers. This can be particularly problematic when "old timers" hold onto key positions. Speaking of the past treasurer, the new one laments: "He ruled the club with a ball and chain, finally I wrestled it away from him." In 2001, the new treasurer's first act was to "put the books on the computer" because "it's the modern thing to do." Such tales of active resistance to computers were unique to the

Bears and is certainly a variable to consider when exploring the club's overall e-mail penetration.

Although only a slight majority of the Kestrels' members appear to have e-mail (56%), the club went ahead with an electronic newsletter in 2002. Like his Quail counterpart, he cites savings as a motivator for justifying the switch from a paper bulletin to an electronic one: "We're saving money and we're a small group with no money!" The shift to the new forum was put to club members informally during a meeting: "Everyone said it was a good idea," and that there were "no objections." The club then circulated a clipboard and those with e-mail noted their addresses. Traditionally, the club president prepares the club's newsletter, but with the shift to an electronic forum challenged that custom and partnered the lower skilled president with a higher skilled treasurer. The latter formats the president's notes into an electronic bulletin and sends it out. Though she consulted with the president through the process, when it came to technical details: "Essentially, I did them for her."

Kestrels are still in the early stages of implementing the new bulletin and overcoming technical issues. Idiosyncratic of the electronic bulletins is that delivery problems may be triggered by either the recipients' or senders' computer proficiency, or even by the reliability of the network. Apparently both of the local Internet Service Providers crashed after the Kestrels were able to send their electronic bulletin to 56% of their members, but in a focus group those assembled joked that some hadn't figured out

that the ISP crash prevented delivery. Being less proficient has its consequences, as they joked about her: "She didn't even know she got left out!" Electronic delivery problems are new terrain for Kestrels and Quails and others who no longer send things via the post office.

Ranking second in terms of e-mail penetration is the Quails, who have reached 68%. The newest treasurer just put the "books" on the computer in the last year and the Quail president has clearly been enthusiastic about embracing e-mail. A backbone of the group is a well-circulated list for members' contact information; three years ago a column for e-mail addresses was added. By publicly listing the increased number of e-mail users from year to year, there was an awareness of critical mass within the group and one might suggest that this list contributed to an increased the interest in e-mail. Once the critical mass became visible it created the ideal conditions for non-using members to ask questions of users: "How did you get e-mail?" Today 68% of the group members report an e-mail address; all but one of the five board members are available on-line. It is important to note that having e-mail doesn't necessarily mean it is being actively used—several off the club members are known to be "passive recipients" who never send anything.

The Quails listing of e-mail "haves" and "have nots" also represents a unique form of peer pressure for non-users, who may in fact as Reddick (2000) suggests, be "distant users." The decision to list e-mail information is also not entirely the result of internal forces. A previous president had

seen other chapters institute the practice, and was encouraged by the national to do it locally. "We'd been trying to figure out a way to make it happen (in Ruralville) and finally Nancy just said-let's do it!" Justifying these kinds of sweeping decisions can be easy, for the technology appears to offer solutions to club needs, as another past president pointed out:

It would be nice to if all our members had e-mail so that information could be sent to all members at once or follow-up from meetings (minutes, treasurers' report, etc.) could be distributed that way. In general I have this feeling that there will be changes in the way we live taking place in the next few years due to Internet connectivity that we cannot even imagine at this time.

In the current reality, not all of the Quails are connected. Raising the penetration rate wasn't discussed in terms of converting non-users to users, but rather as a war of attrition, one member remarks: "In ten years, as we lose the older ones and new younger members come up" their ranks and rate usage will increase.

Currently the Quail newsletter is distributed on paper during meetings and then passed (or mailed) to those absent; currently the club is testing an electronic bulletin. Those without Internet access or e-mail couldn't receive it, so in addition to the electronic edition, the club continues with a printed edition. In such a situation, the "savings" to the club are in fact small subsidies from members willing or able to receive their newsletter via equipment, paper and toner, without reimbursement from the club. Those who cannot receive electronic copies continue to

"cost" the club postage if they don't get the newsletter while attending a meeting.

The Salmon appear to have the highest rate of penetration with 93% reporting e-mail in the household. The statistic reflects a number of factors, including members' affluence and skills as "professionals," as well as their household demographics. Considering that: "It has become law that the way to learn to use a home computer is to get a kid" (Brown and Duguid 2000: 89). Salmon as a "younger" club have more children and more members still in the work force.

All of the Salmon leaders have e-mail, and all the board members are also e-mail accessible—though as one officer pointed out "they don't necessarily use it a lot," or they may have access to e-mail "through their wives." One officer spoke of his peers: "We all file reports and practically all of our communication is through e-mail." In describing the group, one member said: "I don't think there's a group as an organization as progressive as we are; I get e-mails from Russia!" So although e-mail is pervasive within the group, usage ranges from the undisciplined, occasional user who merely reads the mail he/she receives, to those who are actively engaged in receiving, forwarding, and filing electronic reports with multiple parties.

Activity Clubs

These types of clubs place a primary emphasis on gathering regularly to foster and extend a shared recreational interest. Compared to civic clubs which often nominate and limit members based on professional and academic achievement, activity clubs are more open and egalitarian. These clubs themselves are decidedly more blue collar, with a diverse mix of educational and economic backgrounds. Compared to civic clubs, activity clubs are looser and there is a relatively weaker emphasis placed on collaboration, planning, and communication (with the exception of one club which hosts competitions that are nationally sanctioned). Events are regularly scheduled and members are encouraged but not required to attend. Formal meetings are less frequent, occurring annually or quarterly. Club officers are responsible for the primary club maintenance activities, but membership and attendance reporting to the national or regional office is not strongly evident, as it is in civic clubs where membership is carefully monitored and reported. Activity clubs may periodically gather or include other clubs in their performances or activities. Communication among the rank and file membership tends to be less formal; only one of the four activity clubs has a newsletter.

Pseudonyms for the activity clubs discussed are as follows: the Blue Herons, the Roadrunners, the Muskrats and the Gophers. Analysis provides a basic factual view of each club's usage of computers while examining the conditions supporting e-mail penetration and computer

literacy among the club member, as well each clubs' ties with their respective National organizations.

Table 17: E-mail Penetration in the Activity Clubs

| Club | Members with e-mail addresses |
|-------------|--|
| Blue Herons | 50 % |
| Muskrats | 36 % |
| Roadrunners | 26 % |
| Goose | 10 % |

Roadrunners e-mail penetration is 26% and all the current leaders do have computers. As a predominately male club, it includes about 73 households. In this club, and in many others, there was much evidence of a computer-using spouse enabling the less proficient one, but I found little evidence to suggest that computer proficiency was linked to gender. Such dynamics were interesting to note: one man joked that he doesn't even know his wife's e-mail address, as she bragged about being able to make all of her posters and greeting cards on the computer.

A paper newsletter is produced on a computer by the secretary and distributed to rank and file members. In addition to a regular newsletter, the group has a website with some basic information about the club, photos of members and their cars. As is the case with all of the activity clubs, the Roadrunners appear more heterogeneous than the more exclusive civic clubs. They draw members from across the socio-economic spectrum and amongst them are retired teachers, land surveyors, and federal agency

retirees, as well as tradesmen, hourly laborers and automotive mechanics. About the only way in which membership was restricted was one's ability to buy, maintain, and potentially race an automobile, and even this barrier isn't particularly strong, because some club members don't own performance vehicles.

Drag racing is an information-intense activity with lots of numerical data which computers can easily store and facilitate. Club members agreed to install a \$1,700 to automate the timing and reporting of racing events. Former and somewhat subjective views of the finish line have yielded to the calculating objectivity of a computer eye and there are far fewer debates about who wins the race, prize money, and status. The old style of racing, which one member called "heads up" (means seeing the whites of the chequered flag waver), is a thing of the past, unless the computers crash. Computers enable match ups between uneven competitors by calculating the appropriate head start for a racer with less horsepower.

A computer-run software program customized for coordinating drag racing events starts races using an electronic light "tree" countdown and an electric eye monitors the finish. Match ups between cars are orchestrated so those costlier high performance vehicles get handicapped start times in heats against slower competitors. Each driver is racing against their best time, despite the appearance of two drag racers running neck and neck at the finish. A member said this "takes the money out" of competitions because computers calculate an appropriate headstart between a VW beetle

racing a Mustang. The net result is a quicker pace of events for a race day and a shorter day overall, as one Roadrunner notes: "It speeds up everything...we get in more runs, burn up more gas and more tires..."

Winners and losers are published in the newsletter and then again on-line, on a club website hosted by Microsoft <http://communities.msn.com>. After arranging to post officer and organization profiles for the site, the club president informed club members afterwards through their newsletter. A former secretary adds that "he just did it" and that there were no objections. Within the club, relatively few members have Internet-able computers at home (26%), so the website appears underutilized within the club. Either through the newsletter, or via the website, local roadrunners are able to compare race results and standings. Because the local website is linked to the national organization, computer-using Roadrunners can easily measure their performances across various racetracks, and between and within clubs. There are pictures on the site too, but the person capable of taking digital photographs isn't a club member: he is hired for the day and drives in from the next largest city.

Among these four activity clubs, the Roadrunners stand apart due to heavy reliance on computers within their activities and their strong ties to their national organization. In order to hold nationally sanctioned competitions, the local chapter works closely with national. And this involves a great deal of CMC. The Roadrunner's Microsoft Service Network website is linked to their national organization's website which

also lists the club as an affiliate. The kind of connectivity between the local and national is more characteristic of service clubs. The Roadrunner's webmaster is not unlike Salmon's (93% penetration) Internet Communication Officer, for both individuals are responsible for posting and circulating electronic correspondence. Both interact with their national organizations through websites.

The Blue Herons (50% e-mail penetration) are a much smaller club than the Roadrunners, with only about 20 people gathering weekly to practice square-dancing. All ages attend practices, with elders present to transfer skills to the few young dancers on hand. During the 90-minute gatherings, frequent pauses between musical sets allow members to talk with one another in the public hall. The group is known for its periodic demonstrations around the region and within the community, including performances in the state's largest city. Practices themselves don't draw many spectators. A visitor is likely to be struck with awe upon walking into the scene and hearing the sound of a traditional "caller" speaking quietly over the music while instructing the dancers through the various moves.

Though active physically, the membership is aging and as one Heron put it: "Dancing on concrete is problematic for some of our older members." Mini-surveys were not collected, so a specific demographic sketch isn't available. Though early evening practices are wrapped up by 9:30pm and there's no alcohol, relatively few young people are present and

club members voice concern about replenishing their ranks with new young dancers. Some speculate that it is the allure of the Internet which keeps kids from coming on a "school night" to learn this rural tradition. Another Heron grumbles that "getting anyone on the phone" and reminding them about the dances can pose a problem, because "the phones are so tied up by kids plugged into the Internet!" The situation is undoubtedly exacerbated by slow modem connections common in rural areas. "You kind of figure out what's going on...their line's busy--they're on a computer" said a Heron while joking with others. Kids on Internet accessing computers in households with a single phone line may have parents reaching for the phone at 7:30am to call one another, or relying more heavily on face-to-face encounters.

Heron leaders do use computers to produce occasional fliers, minutes and announcements, however their regular newsletter ceased production about five years ago. Each year, they tick through a well-established practice schedule and routine annual appearances within the community, and one imagines that such a routine schedule may mitigate the need for logistics-related communication between members. E-mail may be useful if something interrupts the schedule, but there's not a lot of discipline for checking e-mail regularly among members. One member remarked that "I don't think I've ever gotten an e-mail regarding this club." One Heron "caller" does use e-mail to communicate with peers and schedule her appearances at dances in other communities. Strong old ties

between well-established dancers in clubs across the region makes the joint dances and performances among the four regional clubs possible, but usage of CMCs between the actual rank and file members still appears limited despite increased usage among callers. The Blue Herons are a part of a larger well-organized district featuring a regional website, but local members didn't seem excited about those web-based resources. A national organization of Herons exists, but the local club doesn't submit information regarding its members to either the regional or the national organizations. Ties to the national dancing association appear quite weak.

In Ruralville, both square-dancing and bowling appear to suffer from declining popularity. Putnam's (2000) observation about decreasing interest in bowling is certainly true in Ruralville. One local noted sadly the demise of the junior bowling league in 1999. Explanations for the slackening interest in bowling ranged from increased homework loads and Internet usage among students, to decreased funding for bowling from the high school. Two of Ruralville's bowling clubs were included in the analysis: one male league (the Muskrats) and one female league (the Geese). Currently, there are a total of seven leagues in town. Four women's leagues, two men's leagues and a mixed league encompass about 215 people (that reflects a slow decline from 350 involved in league play during the 1999-2000 season.) The local leagues are fairly "flat" non-hierarchical organizations with few barriers for joining; as one put it: "You just show up

and play." Bowling league dues are among the lowest of all rural clubs and even include a membership in a national.

Muskrat bowlers gather once weekly, but only during the winter months because long-summer evenings are better spent outdoors. In the winter evenings, alcohol and food are readily available at the bowling alley which also has an indoor smoking section. I was surprised to see that the bowling alley had old style overhead transparencies to project scores of the games underway; handwritten names and shorthand marks keep track of progress, so urban players accustomed to computerized scorekeeping are in for a surprise. More than a few bowlers said they were afraid of electronic scoring: "When we bowl elsewhere (in bigger cities), we have to deal with those computers." In that conversation others wondered about the accuracy of such scoring, or of its vulnerability in a power outage. Others just liked being hailed by a human instead of having to watch the computer screen to see when it was their turn. The rhythm of the game certainly encourages socializing; people may bring along their spouses and children for the evening and a small group of spectators form. People sit and talk around tables; there are a few video games, but relatively few screens (computer, television, or video). Scanning the league rosters posted in the alley I saw that four were clearly computer generated and three were handwritten—elegant examples of a dying art. Those lists turned out to be an important first clue to the relationship between computers and bowling.

The Muskrats (36% penetration) are a diverse group of men, ranging from the self-employed to those who work with the federal and county agencies. "We're here for recreation," said one Muskrat as he mixed easily in the lanes with men cut from different cloth. Some arrive to bowl still in their work uniforms, while others have clearly come from more formal office settings. The diversity of their workplaces is reflected in the views of computers: "Ain't no computer going to help me do my work, not unless they can walk, talk and carry my tools !" but a nearby office manager mentions that he just sent a few co-workers to a regional training and adds that whenever they have a computer problem in their office they can "holler over the wall" for help. Another adds: "I use 'em all day at work in an auto place selling parts and farm machinery."

Clearly it's a pretty heterogeneous group, with a variety of views and experiences with computers, but with regards to the club, they don't e-mail one another and computers aren't deemed essential for club advertising and administration. There is no regular newsletter; the club roster is handwritten. There appears to be little need for anything more than a good list of members in the club and their weekly scores. Event planning, and coordination among members, so prevalent among service clubs, is largely absent here. There is little need for logistics-related communication. Bowlers meet on well-established timetables and do not have special guests. Neither of the bowling clubs communicates creates a

newsletter, although admittedly both clubs have relatively small memberships.

The Geese (10% penetration) women's club gathers in the morning to bowl. Compared to the evening leagues this is a more homogenous crowd because school-aged children and spouses are noticeably absent. There's plenty of opportunities for socializing in the morning without the kids around and the women enjoy talking between frames; some gather around the tables to talk and/or smoke. Unlike the evening clubs, alcohol is not readily available until 11am for these bowlers. One says: "We don't do those 9-5 jobs," the kind which happen during business hours, and thus it is unlikely that they work for finance, insurance and real-estate firms. That is an important consideration because such firms frequently report higher computer usage (Leistritz et al. 1997).

Geese are a mixture of retirees, homemakers, unemployed and/or those who work second-shift. A lack of computer exposure in the workplace was triangulated by mini-surveys; only one of the ten focus group participants reported using a computer on the job and they also appear among the least likely to have e-mail in the home. Only elderly Dinosaurs (7.5% penetration) showed lower penetration than the Geese (10% penetration).

Computer literate leaders head both the Geese, and the Muskrats, but computers appear minimally applied in club administration, and mostly support club reporting to the national. Like drag racing, bowling is

an information-intense activity with lots of numerical data easily stored and facilitated by computers, but the bowling clubs don't seem as competitive as the drag racers. Only data about the best players are worth channeling up to the national. Consistently reporting data for the entire club involving thirty weeks of play involving thirty to forty-five players is a daunting task. As one Muskrat put it "some clubs are more serious about that reporting than others." So each leagues chooses how much data to report to national organizations, like <http://www.bowl.com>. Geese and Muskrats didn't see the national sites as very relevant to a local bowler, who is unlikely to rank nationally. As one Muskrat observes:

There's not much there for the average bowler...we're here for recreation--no one's that serious about bowling--I'd don't know what you'd access the site for unless you're getting really serious.

Really competitive bowlers seeking national standings need to identify a national organization, and then work through their local club to get their data channeled into one of the major national databases. A club leader's computer proficiency appears instrumental to getting national recognition for strong local bowler. It was generally difficult to get a handle around any club's affiliation with their chosen national. Clubs apparently vary in terms of the degree and frequency of reporting player's scores.

The Muskrats don't seem to place much emphasis on competing nationally, as opposed to the Geese who are actively filing their data with a national organization. Along with extensive reporting, the secretary

mentions the unspoken requirement about owning a computer: "They don't tell you to go buy one, but you really do need one...they [the national] wants their paperwork, their way." As unpaid and untrained volunteers, a rural bowling league secretary may feel like she's got being coopted by a formal organization and needs to "stay current with their skills." Local clubs provide neither a computer or training, and this but pressure on the secretary: "I've been threatened because I don't own a computer!"

CHAPTER 5: ANALYSIS AND DISCUSSION

A striking finding of this study is the distinction between activity and civic clubs, in terms of their patterns of computer usage and access. Civic-clubs had an average e-mail penetration rate of 47%, as opposed to activity clubs which have a lower rate of 27%. In the table, the total column illustrates an average of 40% penetration within all rural clubs sampled.

Table 18. Comparing E-mail Penetration – by Club Type

| | Civic Clubs (n=6) | Activity Clubs (n=4) | Total |
|-------------------------|--------------------------|-----------------------------|--------------|
| Total Members | 281 | 165 | 446 |
| E-mail in Household | 132 | 47 | 179 |
| E-mail Penetration Rate | 47 % | 28 % | 40 % |

Anthropological methods enable a holistic view of the clubs in their rural community context via an exploration of the physical, environmental, cultural and material conditions which appear to structure the opportunities for computer skill acquisition and usage. We know that historically, rural areas have been in the “digital divide” but are catching up. A discussion of the disparity between the clubs is helpful in exploring conditions which exacerbate the digital divide, as well as highlighting those which may mitigate it.

USERS

Higher income, better-educated and younger service clubs are excellent prospects for computer ownership, particularly if their households have children. Aside from the Dinosaurs and Bears, which were both shown to be "older" clubs with disadvantageous demographics for computer usage, the "younger" service clubs showed far deeper penetration when compared to activity clubs (Table 19.)

Table 19. E-mail Penetration – Overview of All Clubs

| Civic Clubs | | Activity Clubs |
|--------------------|------|-----------------------|
| Salmon | 93% | |
| Quails | 68% | |
| Kestrels | 56% | |
| Flamingoes | 50% | |
| | 50% | Blue Herons |
| Bears | 36% | |
| | 36% | Muskrats |
| | 26% | Roadrunners |
| | 10% | Goose |
| Dinosaurs | 7.5% | |

A variable like age, according the NTIA, predicts computer ownership at the individual level, and it appears to hold true at the club level as well. For example, a younger civic club like the Salmon (93%) had much higher computer penetration rates than the Dinosaurs (7.5%). Clubs with older demographics in terms of age, do appear to fall into the "digital divide." Critical mass theorists, like Markus (1987) would argue that activity clubs lack the mass to support and increase the idea of computer usage, which is

the semantic equivalent of Brown and Duguid (2000) arguing for the importance of peer networks. A mitigating factor for club's with disadvantageous age-related demographics, is strong technological leadership; the Bears (36%) fare better than the Dinosaurs because of the strong leadership of certain club officers who are "dragging other members along."

This finding about age suggests that income and education variables, which predict computer usage at the individual level, may serve to explain penetration rates at the club level. Income and education data within clubs were not collected, however research revealed anecdotal evidence of these variables. The three service clubs with highest rates of penetration also have occupational or educational attainment restrictions for membership. Service clubs also tend to collect a greater amount of dues from members (\$38-\$50 annually), and there's a far stronger emphasis on fundraising which prompts members to solicit and make donations as a form of club participation. Making donations and paying dues from year to year indicates a modicum of disposable income. In contrast, three of the four activity clubs had very low dues (\$10-\$15 annually), and there was no evidence of fundraising or solicitation. Quantifying education within the clubs is more difficult, but the manners of dress and the tone of meetings/ gatherings varied in ways which suggest that difference in education levels between the clubs types would be quantifiable.

As a variable at the club level, the impact of gender is unclear. For instance both of the clubs which produce and distribute electronic bulletins among their members and to their Nationals are women's clubs and ranked second and third in terms of e-mail penetration. This finding may counter notions that computer technology is gendered. More recent government reports reveal that gender has become less of an issue. "The disparity in Internet usage between men and women has largely disappeared. By August 2000, 44.6 % of men and 44.2% of women were Internet users"(NTIA 2000). The 3.2 % disparity which favored men in 1998, has shrunk to less than 0.5 %

Although the NTIA suggests parity between the sexes, fieldwork revealed a striking disparity between female service clubs and the women's bowling league. Women who bowl during the day (presumably not "professional" women), are quite unlike their service club women who have academic and professional experiences to draw from. This may partially explain the disparity between the female bowlers (10% penetration) and the female service clubs (Quails 68% and Kestrels 56%). The latter appear to be engaged in vibrant social networks that encourage opportunities to build self-efficacy through social support. Works of Eastin and LaRose (2000) suggest that positive experiences build self-efficacy and reflect the various arguments of Brown and Duguid's (2000) view on the value of peer networks. Income, though not verified, appears to figure prominently in this disparity.

An interest in the Internet and the desire (or ability) to own a computer is evidence of users or "near users" as outlined by Reddick (2000). Interviews and focus groups among service clubs members were sprinkled with anecdotes indicating interest and ability with computers. Among them are: "my very first computer," "my first job with a computer," and "the year we got the Internet." My experience with activity clubs was decidedly different. I noted fewer anecdotes, less enthusiasm and less interest in computers. Upon learning of my research topic, while hanging out in their natural setting, some would defer immediately, by leaving the room or withdrawing from conversation. A Blue Heron, headed out: "No comment! Never liked 'em, never will!"

According to Reddick (2000: 7) "distant users are those who are not likely to have the resources, social skills and interests to benefit from current access." Lower e-mail penetration within the activity clubs suggests that "distant users" are lurking in the shadows. Undoubtedly, computer phobia plays a role in people's reticence to talk about computers; both Reed (2000) and Reddick (2000) discuss how fear of technology inhibits usage of and comfort around the technology. Haight and Rubinyi (1983) note that a fear computers is problematic within small groups beginning to leverage technology. Computer phobia was noted in Dinosaurs, Goose, and Muskrat focus groups, and these three groups also reported lower rates of e-mail penetration and little usage of computers in support of club activities. Further research into computer phobia would shed light on the

phenomenon Compaine (2001) calls “voluntary non-users.” Unfortunately, a specific study of such non-users was beyond the scope of this work.

TIES TO FORMAL ORGANIZATIONS

Higher usage among service clubs’ reflects their ties to formal organizations in three ways: 1) workers from formal organizations populate the informal clubs and affect the computer using capacity within the community; 2) when partnering with formal organizations, informal organization must align themselves technologically and 3) each club’s national is a formal organizations which stipulates technology alignments.

A primary impact of the formal organizations is their effect on computer usage capacity in the community. Formal organizations influence informal ones through the provision of technical training which subsequently trickles into the rural community and its civic clubs. The abundance of these formal organizations in Ruralville has the net effect of increasing the number of computer users and computer literacy within the service clubs. Several different club officers said their skills came from work settings, and technology champions often bring with them extensive work experience from formal environments.

Haight and Rubinyi (1983), J. Johnson (2001), Markus (1987) and Oliver (1985) all discuss the importance of technology champions within organizations. The prevalence of computer literacy among leaders and the presence of “technology champions” within clubs was, not surprisingly,

concurrent with higher e-mail penetration rates across all clubs. As the tide of computer usage rises among rank and file members, expectations of club officer and leaders are poised to change as well. Proficiency with computers is an increasingly important consideration in the elections of leaders and officers. Because computer literacy is becoming a recognizable trait among members (those who are "good with computers") it also means the trait can be preferred. Two clubs appear to have consciously gravitated towards leaders who are "good with computers;" a local PAC administrator and the other the owner of the computer store now serve as presidents.

Those working for formal organizations heavily populate service clubs like the Salmon and the Quails, in which e-mail penetration is highest: 93% and 68% respectively. Members who work for formal, computer-using organizations are well-conditioned to see computer usage as a phenomena among networked users who are well-supported by material conditions. I believe that such workers "drag and drop" these expectations into their non-formal clubs. Such members may generously "volunteer" their skills sets, but they also bring along unrealistic expectations about connectivity, without necessarily considering the limited resources of their informal club setting. In essence, they may forget that the club's membership is digitally divided and lacks the unified technological infrastructure to which they're accustomed.

A second primary influence occurs when service clubs actively collaborate, plan, and communicate with formal organizations in the process of conducting the "business" of community service. Formal organizations increase dependency on computer usage, and CMC, making it a prerequisite for the rural civic clubs. In coordinating a project, arranging for a speaker, or soliciting funds, service clubs must mimic and engage formal organizations behaviors to effectively engage them. Club officers and members managing these partnerships, either use the skills they've gained while working with a formal organization or teach themselves. In either case, CMC usage increases within the informal club, due to the formal organizations usage.

The third primary influence of formal organizations is felt strongly within the service clubs, as a relationship with the national. Each club's national organization is also a formal organization seeking to maximize efficiency and productivity, while integrating its affiliates nationwide. Electronic reporting of membership and attendance has been discussed. Links to local websites are yet another form of ties. It should also be noted that, with the exception of the Roadrunners, activity clubs appear less effected by such ties influences. Table 20 details these relationships.

Table 20. Relationships with the Nationals – by Club Type

| | Civic Clubs (n=6) | Activity Clubs (n=4) |
|---|--|--|
| Percentage of club members with e-mail | 47 % | 28 % |
| Club and National using Computer-Mediated Communication (CMC) | Yes | Yes |
| Website linked to a National | 1 | 1 |
| Ties to National Organizations | All have strong ties to Nationals | Weaker, except for Roadrunners who have exceptionally strong ties. |
| Membership and Attendance (M & A) reported to a national organization ? | All 6 file M & A. 4 of 6 filing reports electronically | 2 file M & A, but none file electronically |

An overriding goal for the nationals is to standardize the reporting of the clubs, and this represents a major challenge to local autonomy.

Nationals may find it easy to migrate clubs towards increasingly electronic relationships through easily justifiable efficiency / productivity oriented benefits (i.e. reduced postages costs and quicker reporting).

However, there is also a power dimension. When the larger and more powerful party attempts to “force a shift in the medium of information exchange, “they may “gain greater control in specific hierarchical relationships”(Baba 1999:331). Well-planned and well-executed Information Technology (IT) infrastructures are increasingly mission critical to formal organizations and non-profits, thus nationals are seeking better IT linkages among affiliate clubs. A good example is the

Salmon's (93% e-mail penetration) recent addition of a "Internet Communications Officer." Whether these tighter alliances ultimately mean more control over the local club is unknown.

The net affect of these three primary relationships with formal organizations appears to be, in the long term, the cooptation of informal clubs by formal organizations. Professionalization of clubs means that they are, in essence, losing their informality. The trend is most clearly evident in the service clubs, which already exhibit characteristics of more formal organizations. Club structures which were more open, locally determined, and informal, appear to be hardening and becoming more complex, closed, and hierchial. In two clubs, the alignments between the national and local are more data intensive and appear to require quicker turnaround; the Salmon's Internet Communications Officer and the Roadrunner website are specific example of local clubs being expected to transmit and post data quickly. Managing website linkages, club profiles and membership rosters on-line requires astute users to prepare and present accurate data quickly. Such trends will need to be reconciled against the reality. Rural non-formal club officers are volunteers who leverage their computer skills without remuneration or club-sponsored training.

Unlike their formal organization counterparts, these clubs as informal organizations appear less equipped both materially and organizationally to deal with the demands of computerization. Many informal groups lack staff time and money for computers or do not plan

adequately for their implementation (Rubinyi 1989:112). Research revealed that all of the activity clubs and most of civic clubs do not appear to use any consistent formal decision-making or training processes to govern the usage of computers for club work. Currently, computer and e-mail usage for club work occurs for two reasons: the administrative or national organizations request the club to provide reports or other materials electronically; or, a club member, often acting without club consensus, decides to transfer an aspect of the club's work onto a computer. In the research, by-laws and club rules specifically addressing computer usage and adoption by officers were not evident.

The absense of governing by-laws, and formal decision-making processes around computer adoption/usage is entirely understandable; decision-making tends to be ad-hoc, consensus-based and situational. This research suggest that dissenting views about technology are likely to get short shrift in the light of non-users' and distant users' unwillingness to talk about computers or attend focus groups; their lack of exposure to the technology clearly makes them reticent to discuss or oppose it. Without any formal decisions being made within the group, non-users get dragged along by the members with various ties to formal computer-using organizations. Over time the situation increases the emphasis on computer skills for future club officers and among club leaders. Unlike formal organizations which overcome resistance through capacity building, informal organizations wait for non-using members to fade away.

Underlying the trend is the unspoken assumption that club members will eventually own computers and possess a modicum of computer literacy. It also creates new challenges and expectations for subsequent officers and leaders who may need to acquire skills or enlist the support of others, if they are not themselves computer literate.

Computers set into motion a variety of organizational change and management issues which small clubs and NGOs find themselves unprepared to handle. Studies of non-profits and non-formal organizations are relatively few compared the majority of corporate research supporting technology usage and adoption in formal settings. Consequently, the effects of increased computer usage in informal settings are neglected. Although the usage of computers has arguably increased the quality and efficiency of club communication, these technologies appear to change the nature of these clubs by making them more like complex, closed, and centralized formal organizations. Like the non-profits who now find themselves increasingly corporate, rural clubs also are being pulled along by members and organizations reliant upon computers.

RURAL COMMUNITY

The patterns and outcomes of computer usage in rural environments are barely understood. Freudenburg (1992) and Leistritz (1997) suggest that an economy's dependence on natural resources is negatively correlated with computer usage, but their thesis neglects the concomitant presence of

computer using government agencies administering said natural resources. In Ruralville, it appears that the critical mass of computing has been dramatically impacted by the presence of the two large government organizations administering natural resource assets. As two of Ruralville's largest formal organizations, they have actively trained and supported computer skill acquisition and development for civic club members. In this particular instance, natural resource extraction was superseded by natural resource administration. Consequently, the preponderance of low-skilled work associated with the latter was replaced by higher skilled work of the latter. The linkage between natural resources and computer usage needs to be re-examined. This work reveals that the computer-using critical mass can be the result of natural resources.

When locals are dealing with locals, they may prefer to engage face-to-face, even when both have e-mail. Evidence suggests that, in fact, CMC between rank and file club members was relatively uncommon, as opposed to officers who did engage each other by e-mail while conducting club business. Westmeyer's theory of channel choice (written, oral, e-mail) might be refined to reflect the realities of rural areas, where the choices may be different (Westmeyer et al; 1993). In the short term, increased reliance upon CMC impoverishes richer, more refined communication choices, some of which may be unique to their natural rural settings.

When locals do engage resources outside of Ruralville, the adage, "when in Rome" seems to apply. However, within Ruralville, the intimacy

of small rural communities seems to prevail and people shun e-mail with locals via slow connections: "Why send an e-mail when I can cross the street?" Research might reveal how channel choice for engaging resources is dependent on proximity to the community.

Sullivan et al. (2002) outlines the importance of community level IT strategies and suggests two primary types: 1) a hands-on approach involving integrated outreach and training, including targeted assistance to minority groups; 2) a hands-off approach—*laissez faire*, the traditional economic development supported by market forces. Ruralville appears to be a hybrid of the approaches, if one considers government-funded capacity-building as a form of "integrated outreach and training." The placement of two large, government-funded computer-using agencies in this rural community has certainly created a favorable climate for building computer usage and Internet access in other sectors, with the exception of the municipality itself. In addition to this passive capacity building, there are active components in the form of PACs which target specific segments of the population. In a truly hands-off approach and in the absence of the agencies, Ruralville would undoubtedly be deeper in the digital divide and this suggests that the hands-on approach has numerous beneficiaries.

CHAPTER 6: CONCLUSION

These six rural civic clubs and four activity clubs provide a snapshot of how computer usage and access affects the clubs and their members. This work occurs at a pivotal moment, as clubs begin to rely more heavily on CMC and CMI. The transition to new media reveals computer usage and access disparities among members. Clubs are also being forced to deal with the reality of "digitally divided" membership rosters as new e-mail bulletins and websites may not be reach certain members. This handicaps the participation of those lacking access and resources, while favoring the contributions, value and leadership of the computer literate.

Formal organizations (i.e. corporations) appear to influence computer usage within informal organizations (i.e. activity or service clubs) in three primary ways. 1) clubs leverage the expertise of those members who use computers on the job and capacity developed within formal organizations trickles into the informal rural clubs; 2) informal organizations frequently partner with formal organizations and must align themselves through technology to support the relationship; and 3) clubs are in direct affiliation with the national administrating body, which is itself a formal organization. These relationships require electronic documentation and reporting and more computer usage within clubs.

Within service clubs, where e-mail penetration and connectivity is high, ICT usage creates new priorities and responsibilities for club leaders. Technology and organizational management issues, more common to formal organizations, appear to be cropping up in the well-connected service clubs. The technologies appear to challenge the informal nature of clubs by making them more complex, closed and centralized systems, and thus more akin to formal organizations. Consequences of sustained computer usage within these rural clubs appears varied and in need of further study.

CMI and CMC make it easier for clubs to refer to others about practices, and the technology broadens the heterogeneity of resources available to members. Information appears to flow more freely, at least among those club members who are connected. But in service clubs, the barriers to participation, membership, and leadership are becoming more technologically determined. People are being thrust into leadership positions simply because they are good with computers. In activity clubs, where e-mail connectivity and e-mail penetration tend to be lower, the prospects for computer literacy appear less certain and merit further study.

This thesis confirmed that older clubs have lower rates of e-mail penetration, suggesting that other NTIA variables (like levels of income and education) shown to predict computer ownership at the individual level, may be equally valid at the club level. Further research concerning whether poorer and lower-educated clubs have lower e-mail penetration rates

should also determine if such rates are favorably impacted by the presence of technology champions and/or strong ties to formal organizations.

Although rural isolation make CMI and CMC attractive, rural towns offer a narrow range of opportunities for those wanting to learn how to use a computer. This in itself helps explain the reason for the digital divide. Without big employers, users groups, computer stores, and PACs, the critical mass of computer users diminishes and the "communities of practice" supporting computer usage weaken. Although the Internet is poised as a resource for acquiring computer skills, it is a problematic savior requiring access, literacy, and computer literacy.

The research method used in this study revealed but did not quantify the preponderance of computer-phobic individuals. Reddick (2000:6) calls "distant users" those who "have little or no interest at all in the Internet" or "perceive no value in the Internet to meet their everyday needs economic and social needs." It has been suggested that "voluntary non-users" may be more numerous in rural areas, but "scant attention has been paid them" (Compaine 2001: 328). Quantifying the prevalence of voluntary non-users in rural areas and in rural clubs will be important additional research.

The "digital divide" is rhetoric which presupposes that universal computer ownership is a desirable and even an attainable goal. This study helps separate the facts from the hype, by revealing that there are huge disparities within rural clubs and between different club types. The fact

that e-mail penetration is lower for entire "clubs" of people suggests barriers to usage/access may in fact be cultural. (The cultural-appropriateness of CMI and CMC, particularly among indigenous populations, has been questioned by (Denis 2001) and Marshall (2000)). Cultural barriers are incredibly complex and notoriously difficult to overcome.

For the National Information Infrastructure (NII) to become viable (with features like on-line taxes and social security), ICT technologies must penetrate deeply into rural areas. Designing policy and grounding expectations about technology requires more research of this nature, before there will ever be a computer in every American home.

Like the "dot com bubble" which drew in and then duped investors in small Internet companies, similar cracks are appearing in the promise and power of the web worldwide. Academics (Wresch 1996) openly fear that powerful information gathering tools will merely extend society's existing disparities. On the other hand, numerous technology sophists like Negroponte (2001) argue that ICTs can "transform people's lives." But, such catchy phrases neglect the neutrality of technology and its ability to do both harm and good.

The widespread belief that universal computer and Internet usage can resolve complex societal problems is akin to concept of the "paperless office." Chronic disparities in civic participation, income and education are unlikely to succumb to any hi-tech "silver bullet."

There is an increased recognition of the fact that the Internet and ICT will not, on its own, overcome the social and economic inequalities and cleavages in societies and communities. In fact it may aggravate them (Reddick 2000: 50).

CHAPTER 7: RECOMMENDATIONS

Recommendations here are offered to rural community leaders wishing to thoughtfully integrate new technologies into existing organizations, while seeking to avoid handicapping the participation of members unable or unwilling to use a computer.

- ▶ Develop electronic mail processing and posting procedures that ensure information flows equally among all club members, regardless of their ability to use or afford a computer.

- ▶ Formalize decision-making around technology-related issues, like organizational websites and electronic bulletins. Develop a forum by which users and non-users can raise their concerns and vote on major issues. Assume that silence from non-users, or distant users is not permission.

- ▶ Consider the benefit of club-sponsored capacity development initiatives. Current officers could partner with potential officers in order to develop computer skills to support personal and club development.

- ▶ Clubs can partner with the CTC and have a technology class or presentation to increase awareness and comfort with CMI and CMC. Club technology champions could take members on a tour of the Internet show sites relevant to club interests.

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APPENDICES

APPENDIX A: SIGN UP SHEET

Study of Rural Organizations:

How useful is the Internet and E-mail to your group ?

Fieldwork – Chris Cassell
 Department of Anthropology
 Oregon State University

Saturday, January 12, 2002

The goal of this project is to gather as much public opinion on these technologies as possible, as they relate to your members.

To gain the most valuable and comprehensive material in the next 30 days, I hope to conduct a “focus group” of 8-12 members. Getting all the views of your group is important to me. Focus groups should have a mixture of people with AND without computer experience. No one under 18 will be allowed to participate. Familiarity with computers is NOT necessary.

Depending on the dynamics of the discussions, I expect group sessions to last about an hour. This is a perfect opportunity to make your group's voice heard about the role of technology within rural community groups. Thank you for your consideration !

Yours truly,
 Chris Cassell
 Oregon State University
 Graduate Student

Sign up sheet:

| Name | Contact Phone |
|------|---------------|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |
| 8. | |

Please note that the focus group will meet on

Time:

Place:

Date:

APPENDIX B: SCRIPT

Application for Approval of the OSU Institutional Review Board
Dr. Nancy Rosenberger - principal investigator
Chris Cassell - MA candidate

Study of Rural Organizations: How useful is the Internet and E-mail to your group ?

Recruitment Script

Hello

I am conducting research on the rural organizations' in XXXXXX, OR and XXXXXX of the OSU extension office suggested that your group may be interested in participating. My name is _____ and we are calling to see if your group can participate. We are researching the usefulness of the Internet and E-mail to the work of rural community groups. The goal of this project is to gather as much public opinion on these technologies as possible, as they relate to groups in rural communities.

To gain the most valuable and comprehensive material within the month of January, we hope to conduct a focus group and have an in-depth interview with the group's leaders and/or primary computer users. We would greatly appreciate if anyone would be interested in participating. Depending on the dynamics of the discussions, I expect focus group sessions to last no longer than 1 hour, and in-depth interviews to last slightly longer.

This is a perfect opportunity to make your voice heard on the role of technology within rural community groups. Thank you for your consideration.

<open ended discussion about the detail and frequency of group meetings...>

APPENDIX C: MINI SURVEY

Please DO NOT put your name on this form.

Is there a computer in your primary residence.....Yes or No

Do you have any children born after 1965.....Yes or No

if yes, do any live outside Lake county Yes or No

| | Year of Birth | Ever used or now using a computer at work ? | Ever used or now using a computer at home ? | Who (or what) is your primary resource for learning about computers ? |
|---|----------------------|--|--|--|
| Circle one: | | | | |
| You Male or Female _____ | _____ | Yes or No | Yes or No | |
| And if there's a spouse... _____ | _____ | Yes or No | Yes or No | |

For Researchers use ONLY: Group Code: _____ R # _____