THE SEAMLESS "WEB" AND COMMUNICATIONS EQUITY:

THE SHAPING OF A COMMUNITY NETWORK[1]

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ABSTRACT

Drawing on field data gathered from 1994 to 1996, I consider tensions in the development of community networks and highlight the decisions that shape particular types of networks. Four key decision points explored include: interface choice, content, interaction, and outreach. Discourse surrounding decision making is often dichotomized around civic and consumer social currents. Civic currents demand text only interfaces, non-profit content only, full electronic interaction capabilities for everyone, and deep outreach efforts. In contrast, consumer currents push graphical interfaces, the inclusion of profit-making content, limited interaction options, and meso to shallow outreach. While considering the influences of these currents, I problemetize the dichotomy and consider more specific social influences on decision making. I also suggest particular network decisions that may contribute to greater communications equity.

INTRODUCTION

Community networks connect via electronic communications people who also share a common geographic space such as city or neighborhood (Virnoche and Marx 1997). The least common denominator of community networks is the development of electronic forms of local information. Information can take the form of static web pages. It can also include rapidly changing electronic bulletin boards which weave together hundreds of electronic discussions. The networks store this information on a computer and make it available over the Internet.

Beyond the availability of some type of local information, we encounter variations which differentiate community networks. Network organizers who identify with the "community network movement" claim commitment to broader goals of local participation, community building and democracy (Schuler 1996) . A critical component of this philosophy and activism is assuring equity in access to the Internet.

Most community networks now present themselves on part of the Internet called the World Wide Web. This common stage contributes to a perception of uniformity in web development and decision making. In this article I pull apart the webbing and consider the social factors which contribute to variation in the development community networks. In addition, I consider the implications of these variations for communications equity and democracy.

THE SEAMLESS WEB

The field of technology studies has come to a point of synthesis (Bijker 1995). Much of the early research focused on technology as an exogenous variable which created social change (Ogburn 1957). Most current social shaping perspectives seek to uncover the social factors contributing to the creation and experience of technologies, as well as the social implications of particular technological formations (Bijker 1994; Constant 1980; MacKenzie and Wajcman 1985).

The shaping of technologies is often hidden in what Hughes (1986) has called a "seamless web." The seamless web refers to the all but invisible means by which technology becomes intertwined with structures which we label society, science, politics and economics. Building on the work of Callon (1980), Hughes suggests that an interactional analysis of technology should take actors and/or organizations as its focus. By not starting with hard analytic categories like

"economy," we have a better chance of uncovering the systems or networks that create technological momentum and the resulting technologies. In considering the actors and decision making processes which shape technologies, we make visible the social component inherent, but often overlooked, in the concept of technological impact.

In this article I bracket impact in terms of communications equity. Many of the theoretical discussions concerning communications equity occur within the broader research on media and democracy. Information equity and a diversity of participation are foundational to this broader goal of democracy (Chapman and Yudken 1993; Doctor 1992; Grossman 1995). Participative democracy models, as opposed to representative models, place a particularly high emphasis on information equity. Barber's conception of "strong democracy" (Barber 1984) theorizes citizens in direct and active involvement through town meetings and agenda setting. With awareness of issues of scale, Barber and others (Sclove 1995) have incorporated electronic communications into these models. With a focus on electronic communications, we can further explore communications equity in terms of access to media, ease of use, types of use, and also the control over the production of the information (Bagdikian 1987/1983; Murdock and Golding 1989).

Writing specifically about the Internet, researchers have identified civic and consumer use practices and their respective implications for democracy (Calabrese and Borchert 1996; George 1995). Calabrese and Borchert suggested that the civic model incorporating two-way communications tools will serve as magnet for a new class of technical and professional intelligentsia. The primarily one-way broadcast or consumer model will be common to a lower stratum and will facilitate relatively passive information retrieval. The communications disparity created by these two networking practices contributes to what Gandy has called the

antidemocratic consequences of an increasing gap in communications competence (Gandy Jr. 1988).

At the level of community networking, Rogers and others. (Rogers, Collins-Jarvis, and Schmitz 1994) documented the impact on democracy of public terminals and free accounts for Santa Monica women and low-income individuals. Guthre and Dutton (1992) considered broadly the influence of technological paradigms, local political cultures, interest groups, and organizational arrangements on community network adaptation and design in four U.S. cities. In this article, I look closely at everyday interaction and tensions in network decision making to unveil actors, interests, and experiences that shape a community network. In turn, I consider the impact of these decisions for democracy and more specifically communications equity.

METHOD

This study is based on field research conducted from 1994 -1996 with the Boulder Community Network (BCN)[2] and "LocalNet," an international online discussion group of community network advocates and organizers. I also considered a variety of primary and secondary electronic and print sources related to community networking and the Internet. The data were gathered using participant observation, guided conversation, private letters, and print as well as electronic media.

Nestled in the shadows of the Rocky Mountains, BCN was launched in Spring, 1994. The initial project was funded by a federal grant[3] and matching funds from the community and the University of Colorado at Boulder. Several months later I was invited by a BCN founder to study the network. As a participant observer, my membership role shifted quickly from peripheral to active (Adler and Adler 1987). I was assigned the role of official recorder, asked to do operations

tasks, and given community outreach responsibilities. I attended management meetings, training sessions, community planning meetings, and informal gatherings of those actively involved in the development of BCN. My research role remained overt as I usually introduced myself as a researcher along with other appropriate titles for any given task. On LocalNet, for the most part I remained an unknown observer (Lofland and Lofland 1971/1984). Internet users would simply call me a "lurker". To assist in the analysis, I used the NUD*IST (Richards and Richards 1994) qualitative data analysis software to systematically approach and organize the data.

COMMUNITY NETWORK DECISION MAKING

The civic and consumer network practices identified by Calabrese and Borchert can be understood as manifestations of broader social currents. While any dichotomy is an oversimplification, the framework of civic and consumer currents has been constructed and is part of the lived experience of a cadre of community network practitioners.

Polarization in the community networking discourse finds its origins in the confrontation between a techno-intellectual liberal computer culture and a fast-moving capitalistic computer industry. The former understands the Internet as a public preserve. Equity in access and civil liberties are cornerstones. The latter seeks to establish boundaries of private property and profit generation. The resultant currents resonate with those who have been involved in building community networks. Practitioners describe themselves as torn between idealism constructed around community networking and structural demands of running an organization and surviving in what has become a competitive Internet industry.

Incongruencies between these currents may surface and create tensions within and between community network organizers -- especially at key decision points or contingencies. In

the following section I identify and define four contingency variables found in the data which serve as tension points: 1) interface choice, 2) content profitability, 3) interaction tools, and 4) outreach (See Table 1). In the name of civic values, text only interfaces, non-profit content only, full electronic interaction capabilities for everyone, and deep outreach efforts are demanded. In contrast, consumer orientations push graphical interfaces, the inclusion of profit-making content, limited interaction options, and meso to shallow outreach. In exploring these tension points, I also problemetize the dichotomy, suggest more particular social influences, and add another layer of analysis to the social shaping of community networks.

Table 1

THE FACES OF THE WEB:

TEXT or GUI

While networking even into the early 1990s required considerable technical knowledge, current computer networking is accessible even to those of us who consider ourselves technologically challenged. This accessibility is partially attributed to the development of new interfaces which determine how the Internet looks and feels. While there are many different browsers available to access the Internet, most broadly speaking there are two types: text-based and graphical user interface (GUI)-based.

The text face contains text only and is navigated using command lines, cursor keys, and the return key. The GUI (pronounced gooh-ee) face is navigated with a point and click method associated with using a mouse. The GUI also offers colorful menu pages with pictures, graphics, and sound icons, in addition to text.

Text faces are unattractive and more difficult to read compared to GUI faces which can be

seductive with their flashy layout and point and click multimedia options. Navigating with a text

format is possible even with some of the oldest computing capabilities. The GUI face, however,

requires more sophisticated computer capabilities.[4] So even within a population of people who

have access to some type of computer, a technogap exists between those with computing

technology ready to use a GUI, and those with older technology limited to an Internet with a text-

based face (Table 2).

Table 2

      Those who are computer savvy and financially secure are literally giving away their old

computers and investing in newer models. Community networks are taking advantage of the swift

technological and financial depreciation on computers and rerouting the discarded technology to

organizations and agencies in need. Many people believe that some type of computer is better

than none; nevertheless, hand-me-down computing practices set a pattern for the ongoing

existence of some type of technogap.

      In addition, it is only after software is loaded and the computer configured that accessing

information with a GUI becomes easier than with a text interface. I emphasize "after" because

both equipment costs and technical expertise remain barriers to the easy position of "point and

click away." Just as more than half the people who own a VCR have never programmed their

clock (Gomery 1994, p. 14), people are more hesitant to carry out the steps needed to program

their computer for GUI use. Some people continue to use text browsers even though they have

the technology to use a GUI.

      Community network organizers, like others making information available on the Internet,

make decisions about how to design that information. Some have argued that designing for a text-

based face is more consistent with a civic framework. Information designed to be read by a text-

based interface is at least theoretically accessible to the greatest number of people. Many people only have access to text-based browsers. Even though more people can theoretically access information when it is designed for text browsers, real use may not occur until people actually have access to GUI technology. Many people just do not like text-based interfaces – especially once they have used a GUI.

The boom in the Internet can at least partially be attributed to the mass availability of GUI browsers. The Internet was not making the front pages and garnering weekly special sections of the newspapers when it was text-based. Text-based design and browsing theoretically reaches deepest into the population. Yet people find them uninteresting and cumbersome to use. GUI-based design and browsing is the attention grabber once it is available. Yet the technology accompanying GUI browsers involves greater costs and techniques.

A January, 1995, LocalNet discussion dealt with the text vs GUI dilemma. List participants discussed reasons for maintaining text interfaces including assuring that their networks were as accessible as possible to the general public. No one suggested throwing out the text formats. Their solution was a "dual formatting" approach. They argued that dual formatting made the networks accessible to those with older computing capabilities, and still allowed them to market their community networks to those people who wanted the glitz of the GUI.

Unlike virtual communities which can be magnets for dispersed homogenous people and/or interests, community networks are positioned uniquely because of their role of serving geographic communities often encompassing interests of stratified groups. This pivotal position has forced community network organizers to negotiate the greatest appeal of their networks (perhaps better served by GUI faces) while serving those with minimal technological capabilities

(perhaps better served by text faces). They struggle with tempering their own elite skills, interests, and desires for fun technologies, with providing information and access for everyone. Agreeing that information will be designed for both worlds seems the most logical route. Yet with thousands of new Internet pages popping up each day, assuring broadly accessible page design is a difficult task.

While information designed with very basic script to be read by text-based browsers is always accessible via GUI browsers, the reverse is not true. In fact, not even all GUI browsers can access information designed for each other. In 1995, while many people world-wide had only been able to access information with text-based browsers, much of the information had already been designed to be read by Netscape which had become the most popular GUI browser (Lewis 1995).

According to John, a technical advisor to BCN, "It's not just a question of the information looking bad when pulled up with other browsers -- it's (that the information is) totally dysfunctional."

Sarah, who also designed information for the BCN religious center reported that she has been frustrated by people designing only for Netscape. "I pulled up the page in Mosaic (another GUI browser) and it didn't come up. When I e-mailed the guy who designed the page to suggest that he add alternative text to make the information accessible by other browsers, he replied that it wasn't worth his time. Most people are using Netscape."

Even those with a strong civic information design orientation are a part of the technical elite who bubble with the creative potential of each new advance in design capabilities. Given a culture where "Disneyland is better" than the real thing (Roszak 1981), one can not underestimate the seductive power of designing for faster, more colorful, and moving information formats. We

live in a culture where fun is defined to a great degree by a hyper real consumerism. When it comes down to it, designing for GUI multimedia browsers may just be more fun.

<div align="center">DEFINING CONTENT:</div>

<div align="center">PROFIT OR NOT-FOR-PROFIT</div>

The above concerns related to interface choices overlap with another tension in community networking: defining acceptable content. While there are many facets to content, early BCN management meetings were dominated by debates over profit making information. Discourse of those opposed to commercial information was laden with idealism about community networking, and lament of an Internet infested with commercialism.

Management meetings included 7 to 15 university, community, and staff members. Participants crowded around an oblong table of a university conference room. For relief from the long meetings, many would steal glances out a wall of windows that framed the nearby mountains. The following discussions were typical of those early gatherings.

Bill, an owner of a local computer services business, said: "We should focus on all the stuff that is clearly public -- like government documents. BCN should not be commercial. " He felt volunteers should not be channeled toward profit-making businesses staking their claim on the Internet. "They are going to do it regardless if community networks

John agreed with Bill. John was an environmentally oriented computer consultant working out of his home. He volunteered many hours to get local non-profit information onto BCN. He was also concerned that BCN was being seduced by commercialism. "BCN doesn't want to mimic an imperfect world -- we want to do it right." John maintained that not more than a couple lines of text about a business should be allowed on the BCN server.[5]

Those who argued for profit-making information were more concerned with the sustainability and growth of BCN than with adhering exclusively to a non-profit service vision. Already scarce resources were focused on developing non-profit information for free. The money to support these efforts needed to come from somewhere.

Connie, a key BCN organizer, conveyed her sense of the sentiments of the major university players with a vested interest in BCN. "All those guys like the fuzziness of the commercial/non-commercial distinction. Right now they define commercial as a transaction." This narrow definition of profit-making information allowed BCN to carry information that those drawing on civic orientations deemed inappropriate.

Some suggested that the inclusion of commercial information was important to the promotion of the network. Much of the non-profit information was heavy in text and visually unappealing both because of lack of time and/or technical expertise of designers, as well as efforts to keep the information accessible with text browsers as discussed above.

According to Connie, "The only reason we have this (shopping and) menu guide on BCN is because it is the best in the country. The menu guide is one of the first things that those guys (university administrators and faculty) show when they go out and do demos -- and people go 'oooh -- ahhh'." The guide was searchable on multiple levels and housed many pictures of local restaurants, inns and shops. The positive response it generated was critical when the audience contained governors and other potential funders. In addition it helped to position the network, and the university by association, at the cutting edge of communications practice.

The profit/non-profit tension crystallizes a struggle between civic idealism of a community space free from commercialism versus financial and political factors which demand its inclusion.

Key decision makers thought that including and eventually charging for profit-making content or links could financially stabilize the community network. They also argued that businesses were an important part of the community that needed to be included. And for community members concerned about their own financial resources, civic idealism was not a high priority. As one BCN volunteer expressed on a related commercial/non-commercial issue: "For a free e-mail account, I'll put up with a few ads."

The dichotomy presented in the profit versus not-for-profit content issue over simplifies concerns which fuel the debate. The dichotomy demonizes commercial content and leaves not-for-profit content within a civic halo. Those who held out civic ideals for the network feared the power of capitalism to consume the network. Yet carrying exclusively non-profit information brings its own brand of hegemony. A substantial piece of the non-profit information carried by BCN included government agency and program information. The electronic availability of this information may further reify the position and interests of the state, especially when content is bracketed from feedback mechanisms. In the past, case workers have served as a conduit for critical feedback about programs and recipients. The electronic availability of program information and intake forms may substantially decrease case worker contact and feedback. Unless other feedback mechanisms are developed, the webbing of this information may divert particular voices from any channels of participation. In addition, concerns about commercial dollars driving network decision making can also be made of non-commercial dollars. Network organizers are well aware of populations and programs which catch the attention of granting agencies and foundations.

ALL TECHNOLOGIES ARE NOT CREATED EQUAL:

ONE WAY & TWO WAY TOOLS

Within BCN there was a tension between those who were satisfied with a public

information network and its broadcast model of networking and those who believed that

community networking had failed if interaction tools were not incorporated into the model.

Internet pages can generally be considered a one-way broadcast communication. E-mail and

discussion groups refer to mechanisms of two-way communications or interaction.

Those new to the Internet, for example people who had just completed a BCN orientation

session, often asked: How can I access the Internet? And how can I get an account so I can

communicate with people using the Internet? For those with financial resources, the answer was

simple. In August, 1995, the Boulder area had more than 20 commercial Internet service

providers (ISPs).

Some orientation participants were unable or unwilling to make the financial outlay for

home computers and Internet service. They were referred to public access sites for predominantly

one-way information retrieval. Free-Nets were another option for those who had the equipment

for home access and/or wanted an individual account. The Free-Net account allowed for

interaction and access to the Internet from home as well as from public sites. And in

1996 commercial groups began providing free web-based e-mail accounts[6] -- another financially

viable option for those whose only access was through public terminals.

BCN organizers struggled with concerns around providing interaction tools. While

organization resources were channeled into supporting BCN as one-way model, the issue of

providing e-mail and dial up Internet access accounts to at least some groups of people continued

to be a concern at early management meetings.   In this case, staff requested that an already

operating modem pool be opened to select groups of people, seniors and low-income single parents, with technical or financial access limitations.

Norm worked for a large telecommunications company. He argued that BCN should stay away from the troubles of providing accounts to anyone.   While he had latched onto civic discourse in arguing against commercial content, in this case the time and financial costs of account management outweighed his civic idealism. "BCN is an information source," he said. " People can get interactivity somewhere else."

John, a BCN technical advisor, agreed with Norm. The financial and logistical costs of maintaining accounts were too much trouble. John and Norm both agreed that in addition, they didn't want the network getting sidetracked with the hassles of managing a large modem pool.

Dealing with a modem pool does require the allocation of considerable staff and financial resources. Users often need a great deal of technical support. They forget passwords. They have trouble with their computers and turn to their Internet providers for help. On the other hand, providing accounts is just another decision related to prioritizing community network investments. In this case, those with a strong technical background were adamant about dodging the mundane problems of modem pool management. What they perceived as tedious work may have influenced their definition of being "on course" versus being "sidetracked."

According to Connie, a central network organizer, disparities in interaction capabilities were a central problem of the Internet. Connie was especially concerned about providing two-way tools to the low-income, single parent group that BCN had targeted for assistance. "(The low-income moms) need interactivity. For self-esteem reasons these people need to be able to communicate (on the Internet)!" She tamed her argument saying that only a few participants

would get accounts.

Patti, a non-profit community organizer, also argued that "the empowerment that interactivity allowed is important (for the low-income moms)." Connie and Patti often expressed beliefs that this technology could really make a difference for at risk and disenfranchised populations.

It is not surprising that two women were the most vocal advocates for these groups. Those involved in human services, particularly social work, are predominantly women (Lie 1997). While neither Connie nor Patti were social workers, they made it a point to be directly involved with that sector. Connie also had a strong technical background. She was well aware of the organizational costs of giving out even 20 accounts. Yet having placed herself in close contact with the groups around which this debate centered, she was willing to commit those resources anyway. Connie and Patti, like others, supplied civic discourse as a rationale for their position. Yet their gendered situatedness (Haraway 1988) perhaps best explains their adamancy for providing interaction when others who shared civic visions felt that the cost was just too high.

Frustrated with the reoccurring resistance to giving out accounts, Connie brought the illusion of productive debate to a halt. "This is not a policy decision. They (the principal investigators on the grant) have already decided that we will offer limited accounts and there will be discussion groups." While other pieces of the grant proposal had and would change, Connie had gotten the nod from those with ultimate control that limited account giving would stay. They trusted Connie's judgement.

While Connie and Patti both overestimated the initial meaning that these interaction tools would have for the day-to-day identity and empowerment of socioeconomically disadvantaged

women, they certainly understood the issue of disparity within Internet communications. Whether or not particular groups embrace interaction tools, without them they have a communications disadvantage.

Also important to note was that the one-way consumer model of community networking was predetermined for low-income women. Their access to interaction tools, allowing greater civic participation, remained open to debate. This design did not take into consideration the Internet infusion pattern common to the general population. Based upon reports from BCN community trainings and general observations, people commonly enter the world of the Internet using e-mail -- and only later investigate the Web.[7]

Decisions about interaction tools can temper or exacerbate the electronic stratification which is already emerging in society. Electronic stratification not only refers to variation in groups that have access to the Internet, but also to the types of Internet activities most common to particular groups. Even though some Internet technologies such as e-mail are developing broader use, high end information provision and exchange on the Internet may remain keystrokes of a technical and professional elite.

Months after the above discussions, account privileges proved popular among some of the target groups. Senior citizens became actively involved in BCN volunteering and became avid email users. Low-income moms were less interested in the Internet resources. The contrast between these two groups will be discussed further in the next section.

CONNECTING THE UNDERSERVED:

CHOOSING OUTREACH INTENSITY

Part of the vision of community networking includes involvement of a broad range of

community groups. The outreach is both for the purpose of increasing the volume of information on the network, as well as making the information widely available. While all efforts to involve the community can be understood as outreach, we can differentiate the focus of that outreach on least two participant variables: computer readiness and access likelihood. This type of analysis allows us to further differentiate between deep, meso and shallow outreach (See Table 3).

Table 3

The discourse of civic currents highlights the importance of deep outreach. It invokes an ethic calling networkers to travel into the inner cities and the dusty back roads of rural America. As illustrated in the words of Tom Grunder, founder of the National Public Telecomputing Network (NPTN):[8] "(Progress) will not be measured by the number of college graduates we can bring on-line, but by the number of blue-collar workers and their families...." (Peinhardt 1995). Consumer currents espouse more loosely defined outreach goals inclusive of meso to shallow outreach. Within this discourse the participation of the IBM retiree and Chambers of Commerce are celebrated along with that of the homeless veteran. In this next section, I will more fully define outreach intensities. I will then consider factors contributing to the choice of outreach levels, as well as outcomes generated by each at BCN.

OUTREACH INTENSITIES

Deep outreach involves those who have few or no computer skills. In addition, they have neither the educational nor financial capital which would make it possible for them to obtain the skills and equipment necessary for access. Participants in LocalNet and other discussions most often mentioned low-income groups in discussions of the under represented or what I call deep outreach groups. They referred to groups which, "left to their own means, might not otherwise be

included in the information age."

Meso outreach involves computer illiterate groups, or groups without the financial or educational capital often needed to get online. These efforts might include outreach to human service providers and government agencies. Community networks may provide financial and technical assistance to help organization staff make a smoother and faster transition.

Shallow outreach includes service to those who have computer skills, as well as the educational or financial capital making it likely that they could get online on their own. Individuals or organizations may disregard the potential limits of working with a community network as weighed against the costs of paying a commercial service. Community networks can provide a low risk, low cost means for testing the Internet .

COMPARING OUTREACH EFFORTS

In 1993 Patti and Nina, both involved for years in the human service sector, sat at a table with a group of computer professionals and talked about what should be included in a community network grant proposal. Hearing about the project at human service consortium meeting, they had decided to come to the planning meeting. Patti had ties to a program for low-income single parents. Nina had ties to senior services. The first grant proposal included these "target

BCN made available individual e-mail accounts, computer equipment and wiring which provided each group with Internet access at two community centers. In addition, BCN staff and volunteer time was directed toward working with targeted agency or organization staff and volunteers, publicizing the access sites, and training target group staff, volunteers, and members. Each target group generated very different results.

In focusing on the low-income parent group, BCN held a well attended orientation session. The orientation was integrated into an already existing program structure for participants who were mostly women. They were a captive audience. Survey data collected at that initial meeting suggested that participants were eager to use the Internet. Yet all subsequently scheduled sessions went unattended and the terminal stood silent in the computer lab at the community center of the housing development.

At first the low interest of the low-income single parent group had been attributed to a technological problem. As a representative of BCN, I was asked to meet with a staff member of the single parent group and get her input on creating a customized home page. Amy, the staff member, suggested that it was very different to have Internet access in a community center as opposed to in your home. She herself did not have much time to just "play" with the computer as it was not sitting on her desk. Amy worked closely with program participants and felt that: "If you are going to go out and use a public terminal, you need a pretty specific focus." She thought that participants might use the terminal if commonly needed information was made easy to find. According to Amy, many participants had real problems getting through to the people they needed to contact for various services and educational needs. She suggested that I include some of this information on the specialized web pages that Connie had asked me to create. Despite Amy's suggestions, publicized training sessions for both parents and kids, and personal phone calls to participants, BCN saw little participation from the single parent group.

One explanation was offered by a participant who told Connie, a BCN organizer who had secured interaction tools for this group, that the women did not choose this form of empowerment. She went on to say that it was pretty presumptuous to assume that they even

wanted the technology. (As a few participants have begun to use the Internet terminal, it appears that this opinion was at least not shared by all.) Patti, who had also lobbied for the group, offered an alternative explanation: "BCN is not unique here. We had a car maintenance program that people signed up for and no one attended. It's very disappointing sometimes. But they have child care and food and school to worry about. And the government is talking about cutting these things. Programs like learning about the Internet are just not high priority."

In tandem with efforts to reach low income single parents, BCN focused on the senior population. Information about BCN public orientation sessions was passed on by seniors who early on expressed interest. More than ten seniors surfaced who wanted to be senior volunteers for BCN. Additional seniors at a senior residence where BCN had installed a community computer formed a "computer committee" and helped those in their building learn about the Internet. Because seniors were a target population, members of these senior groups received email and dial up accounts on BCN.

Many of the core group of self-selected seniors were familiar with computer technology to varying degrees. Several were computer industry retirees. Others were less familiar with the hardware and programming aspects of networking, but had worked with word processing and were familiar with tools like e-mail. Many had computers at home. They helped each other troubleshoot and set up their home computers to access BCN and the Internet.

While efforts to reach both seniors and low-income single parents were strategies understood as reaching the underserved, neither effort fully achieved a level of success equivalent with deep level outreach. The entire low-income single parent population fit the description of "not likely to access on their own." Yet BCN staff and volunteers had not been able to entice

participants into using their public access terminal. Whether due to inadequate matching of

information to needs, time constraints due to demands of other survival necessities, or flat out

rejection of the technology by participants; efforts to reach this particular deep-level population

were not fruitful.

On the other hand, the senior outreach had generated an active and committed response.

 The outreach provided some seniors with a unique volunteer opportunity. For them, their

involvement was also a source of belonging and value. And seniors contributed to organizational

stability as they formed a core of committed volunteers. Residential seniors, without the time and

familial constraints of the low-income parent group, became avid users of their community

computers. Their site logged more hours online than any other public access site tracked by

BCN.

Yet seniors are not a homogenous population. They are an aging version of their

generation representing all socioeconomic and ethnic groupings. Some in the residential senior

group were likely deep outreach candidates. On the other hand, most in the BCN senior

volunteer group owned or quickly purchased computing equipment. Many also had some

experience with the Internet.   Although government funders and commercial interests aggregate

all seniors as a worthy (and lucrative) group, we can differentiate among seniors who become

involved.   There is an analytical difference between involving a wonderful group of people who

happen to be seniors, and involving seniors who would not have accessed the Internet without the

community network.

BCN also worked with more than 100 non-profit organizations and government agencies.

 These organizations varied in their commitment to community networking activities. They

turned to BCN because they thought they should get online. They did not necessarily know why.

Even those organizations with in-house information systems (IS) staff sometimes found BCN staff more helpful for Internet problems. More than once I heard BCN volunteers jokingly say, "Do not try to deal with the IS people at (the agency) -- they just don't get it." This statement suggests that just because people understood computers and databases; it did not necessarily mean that they understood the potential benefits of Internet technologies. It also suggests a certain Internet elitism.

Time and goal constraints of these organizations, as well as technical abilities, limited their commitment to community networking activities. Staff would request a BCN volunteer to help them set up their Internet access or develop a web page. Yet once paired with a volunteer, it was not uncommon for staff to tell the volunteer that they did not have time to meet with him or her. Still, most did make time. And these groups became central to grassroots content development on BCN.

While still facing constraints, these organizations were meso-level outreach groups. Most staff had an educational base that made them more likely than not to access the Internet. Network organizers also believed that these organizations were central to involving deep outreach groups. Yet the extent to which caseworkers and organization staff will actually pass on networking skills to clients is open to empirical investigation.

Most informative in considering the outreach efforts was the varying human resource needs required for different groups. The effort to involve seniors had attracted many with already existing experience and enthusiasm for the technology. Yet even working with this group required greater time commitments on the part of BCN than working with businesses and even

many government and non-profit organizations.

As with the issue of interaction tools, the decisions that community networks make regarding outreach have implications for electronic stratification.   The discourse of civic idealism in community networking circles may push networks directly to the deepest levels of outreach. Yet coordinating technical and human resources at these levels was difficult for BCN. Interest was inconsistent. Rewards were sporadic.   Resources directed toward meso and shallow outreach offered more immediate personal and organizational rewards.

One could certainly understand this focus on meso and shallow outreach within a consumer orientation. This orientation values high quantities over attributes of participants. Yet motivations for working with easier to involve meso and shallow outreach groups went beyond clear cut consumer oriented goals.   Personal rewards for network staff were abundant as groups like the senior volunteer group actively requested more training and involvement. In addition, this group caught the attention of the media and created publicity for the network.

The deepest of outreach, while often couched in civic idealism, also has roots in government funding sources.   Grant agencies may be more likely to finance networks which include low-income groups and seniors among others in their proposal. Yet if they are rewarding outreach to seniors who include a mix of outreach levels, then again, we must look deeper to understand network commitment to deep outreach. Connie and Patti were critical actors in maintaining outreach to the low-income single parent group for whom they had also secured interaction tools In the end, particular situatedness of these actors, may be an important component of explaining deep outreach efforts. Connie and Patti's first hand experience with the single parent group combined with civic ideals helped to maintain this outreach -- even when

organizational and personal rewards were scarce.

CONCLUSION

In this paper, I have suggested that civic and consumer currents shape the decision making process of community networks and account for some of the variation between them. These currents were particularly apparent at critical decision points in decision making. While arguments couched in civic discourse pushed text only interfaces, not-for-profit content, full electronic interaction capabilities for everyone, and deep outreach efforts; those drawing on consumer rationale espoused graphical interfaces, for profit content, limited interaction options, and meso to shallow outreach. While ambiguities around these decisions and their relationship to communications equity were discussed, the following model provides a starting point for discussing equity implications and ambiguities (See Table 4).

Table 4

While much of the debate among actors was couched in civic and consumer discourses, I suggested that particular actors often clung to those recognizable discourses because of their own situated experiences. Gender, technical elitism, and culturally specific constructions of fun were just a few factors that contributed to actor preferences in decision making. Unearthing these factors brought deeper understanding to the shaping of networks.

Having fun was one of several sentiments that contributed to the selection of GUI browsers over text interfaces. When the question was one of access to electronic interaction capabilities, women's entrenchment in the human service sector informed their advocacy for these tools for the low income and senior groups. Organizational survival was a concern for staff and organizers as they weighed various outreach and content choices. They kept a close eye on the

language of the latest foundation and government agency requests for proposals. Seniors and low-income groups were not only included in proposals for civic reasons, but also because they were popular groups for funders. While philanthropic and governmental targeting of these groups is more than justified given the impending communications gap (Gandy Jr. 1988), I would like to suggest potential unintended consequences of this type of outreach.

Electronic democracy, a piece of which is access equity, revolves thousands of interconnected small conversations concerning the issues facing our communities (Sclove 1995). While the desirability of including all voices in those conversations has been debated in liberal democratic theory -- the electronic democracy movement hales from the standpoint of broad inclusiveness. Yet in our efforts to establish access for everyone on the premise of democracy, could it be that we are doing a great disservice to the disenfranchised? Could we be so blinded an imperative of technological progress (Marx 1987) and democratic utopianism that we've neglected to question the implications of the electronic roadwork?

There is an underlying assumption within community networking -- and more generally within the electronic democracy movement -- that the infusion of Internet technologies for peripheral populations is inherently positive. To do anything but share the technology would be discriminatory. To withhold technology for fear that it might be harmful in some ways would be patronizing and elitist. But let us not then offer these technologies without warning.

Given our understanding of social stratification, we should expect across particular strata varying experiences of and impacts from information technology. Internet technology diffusion occurs in tandem with large-scale institutional changes. These changes may actually work against broad goals of democracy.

So herein lies the paradox. Community networks are focused on assuring

communications equity through a focus on equal access to use and understanding of the new information technologies. Yet will groups have equal opportunity to escape from the technologies? Here I suggest that lower strata groups will have fewer options to opt out of the Internet juggernaut..

For example, in a human service sector that is already highly bureaucratized and mechanical, there is an assumption that Internet technologies will ease the strain. As Amy, a low income parent group staff member suggested in this article, many people seeking human services have a hard time contacting the right people and getting information. It is expected that Internet technologies will make getting information easier. But what happens when they do not?

Streamlined information coupled with governmental downsizing may cut too many people out of the matrix. The process may leave particular groups that have high human service encounters spending a good deal of time in front of a computer screen. Already we have people frustrated with "more efficient" phone answering systems which leave you in a loop with no hope of speaking to a human being. Sometimes questions or problems do not fit into multiple choice categories. With good intentions of paving the human service information superhighways, could it be that community networks may be exacerbating these problems? In considering the impact of systems gone cyber: who is more likely to know the phone number that gets one around the system – the low-income single mother or the university president?

For those with the social or economic means, securing a human interaction may remain more feasible. They are more likely to know the direct phone number that avoids the crazy automated voice system. They are the ones who will still be able to arrange for a lunch meeting. And they will remain in the position to say, "Just explain this to me" (in person), rather being turned away with, "It's all on the Internet. Just look it up." As we share this technology, let us not

be naive enough to believe that we all share equally its impact.

It is ironic, but certainly not unpredictable, that in the wake of growing demands for human assistance, part of the solution becomes the technological fix. New technologies are being developed each day which will allow community networks to rely more fully on machines for information generation. For example, more flexible information automation programs were the focus of BCN in Fall, 1995. Specialized software groups swallow information from e-mail messages and transform it for a debut on the web. This same automation creates momentum for webbing endless amounts of information.

As we observe the diffusion of Internet technologies via community networks and other mechanisms, we need to consider the particularities of those technologies in the hands of various groups. As I have suggested, assuring access to peripheral populations may be a double edged sword. Situated experiences contribute to decisions of community networks. By the same accord, access to new information technologies will likely be experienced very differently across social strata and groups. Future research should consider these groups and how their lives are affected by efforts to bring "communications equity."

ENDNOTES

1. Author's Note: A different version of this paper was presented in January, 1997 at the conference on "Technology and Democracy -- Comparative Perspectives" sponsored by the Centre for Technology and Culture (TMV) at the University of Oslo, Norway.

2. See http://bcn.boulder.co.us and Klingenstein's (1995) discussion of BCN.

3. Between 1994 and 1996 BCN received two grants from the National Telecommunication Information Administration (NTIA).

4. The technologies here are modem speed, processing speed, and random access memory (RAM). Graphics and photos require faster modems and processors than text, unless you are willing to wait long periods of time for them to appear on the screen. They also require more RAM or temporary storage space to be viewed.

5. A server is a computer which makes available to many people at once information stored in its memory.

6. When you retrieve your mail on free accounts, you also see advertising.

7. It is also interesting to note that in legitimizing the demand for interaction tools for the low-income groups, the argument was often couched in terms of civic empowerment: "They can write to their congressman and tell him about why welfare should not be cut." This certainly holds the disadvantaged to much different expectations than we have for ourselves. I think that it is safe to say that outside academic circles, people tend to be much more excited about e-mail for general sociability and instrumental reasons -- as opposed to its civic potential.

8. NPTN filed for bankruptcy in 1996.

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8.NPTN filed for bankruptcy in 1996.

Table 1: Community Network Tensions

	Civic Currents	Consumer Currents
Interface	Text-only approach	GUI-only approach
Profit Making Content	No	Yes
Interaction	Full	None or limited
Outreach	Deep	Meso and Shallow

Table 2: Criteria for Differentiating Browser Interfaces

	TEXT	GUI
hardware requirements	older technology fine	newer technology needed
legibility	Good to fair	very good to excellent
design	limited (text only)	variety (multi-media)
costs	less costly	more costly
access pool to	broader range of people ready to access with given technology	smaller pool of people ready access with given technology
user friendliness	more likely to encounter frustration in users	users of all levels report "very easy" to use
network space (bandwidth) files	community friendly (not a space hog)	can be community hostile (downloading large graphics known to clog and drastically slow down an entire network)
technical expertise needed to set up	some	more

Table 3: Outreach Intensity Levels

	Computer Readiness (technical)	Access Likelihood (educational/financial)
Shallow	Yes	Yes
Meso	Yes	No
Meso	No	Yes
Deep	No	No

Table 4: Technosocial Decisions and Communications Equity

situated actors -----> **technosocial decisions** -----> **impact**
                _____/

Actors drawing on   *text only interfaces
civic discourse   -----> *not-for-profit content   -----> greater communications equity
and their own   *full interaction
situated experience   *deep outreach

Actors drawing on   *GUI interfaces
consumer discourse -----> *for-profit content   -----> less communications equity
and their own   *limited interaction
situated experience   *meso to shallow outreach
                _____/