Civic culture meets the digital divide: The role of community electronic networks

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Abstract

We draw on the concept of *social capital* to examine the ways in which social and political context influence the diffusion of information technology in two rural Minnesota communities. Social capital reflects the norms and social relations embedded in the social structure of societies that enable people to coordinate community action to achieve desired goals. Our research focuses on the role that norms of cooperation and civic and political culture play in addressing the "digital divide" in computer use and Internet access. We review quantitative and qualitative evidence which suggests that the communities have adopted different approaches to technology diffusion. Whether information technology is viewed as public or private good depends in part on the civic culture of a community.

Civic culture meets the digital divide: The role of community electronic networks

Community Context and Technological Change

The effects of social and political context on the diffusion of information technology have emerged as a recent theme in the social scientific study of technological change (Tsagarousianou, Tambini, & Bryan, 1998). For example, Guthrie and Dutton (1992) conducted a case study of four California communities, three of which implemented a version of a community electronic network. They found that existing uses of technology and the local political climate, rather than the financial resources of the communities, played the most important roles in determining the structure of the networks, including public access, availability of electronic mail, and restrictions on content. Virnoche (1998) also concluded that the social context surrounding the development of several electronic community networks in Colorado significantly affected the shape of the networks. She contrasted non-profit and market-based networks, the choice of which depended on considerations such as access for underserved populations, the status of local businesses as part of the community, and civic idealism. Other studies, focusing on the implementation of computer networks in organizations, suggest that patterns of technology use rest on the social networks and organizational culture already in place (Ashburner, 1990; Kanungo, 1997; Pickering & King, 1995; Rubinyi, 1989; Sankar, 1988).

In exploring the role that social context plays in the implementation of information technology, we draw upon the concept of *social capital*. Social capital is defined as the norms and social relations embedded in the social structure of societies that enable people to coordinate action to achieve desired goals (World Bank, 2000). It is described as a feature that communities possess to varying degrees, with the key elements being social trust and civic engagement

(Coleman, 1988, 1990; Putnam, 1993, 2000). The presence of these elements supports norms of cooperation and reciprocity, creating a "civic community" that is able to address public issues collectively, as a community of citizens rather than a collection of private individuals. Putnam (1993), in his study of differences between northern and southern regions of Italy, observed that regions of the country with differing levels of social capital showed marked differences in political culture. Regions with high levels of social capital were marked by a respect for political equality and an expectation that civic participation be organized on the basis of cooperation among citizens for the common good, rather than competition between citizens of unequal status and resources.

The role of social capital and its attendant norms of cooperation in fostering collective action has been illustrated in several contexts including local economic development (Fukuyama, 1995; Putnam, 1993; 2000), education (Coleman, 1988; Schneider, Teske, & Marshall, 1997), political participation (Knack & Kropf, 1998; La Due Lake & Huckfeldt, 1998), and public health (Kawachi, Kennedy,Lochner, & Prothrow-Stith, 1998; Wilkinson, 1996; 2000). The concept of social capital has also been applied to the study of technological change, with research focused on whether new information technologies have the potential to create new forms of social capital and reverse the current trend of declining social capital in American society (Calabrese & Borchert, 1996; Kling, 1996; Wellman, Salaff, Dimitrova, Garton, Gulia, & Haythornthwaite, 1996). In our program of research, we take a somewhat different approach by viewing access to information technology in a community as a potential collective action problem. In this article, we focus on the role that norms of cooperation and civic and political culture play in addressing disparities in access to information technology. *We maintain that whether information technology is viewed as public good, with an accompanying collective*

obligation to provide access, or as a private good, best provided by the free market, is in part determined by the civic culture of a community. Drawing on our longitudinal study of two rural Minnesota communities, we present evidence based on survey results, focus groups, and historical contextual analysis to suggest that the two communities have adopted different approaches to technology diffusion. We conclude that these different avenues to providing access to information technology in turn have different consequences for equality of access.

The Narrowing but Persistent Digital Divide

Along with the rapid spread of computer technology among households in the United States over the past decade, disparities based on income, race, and urban versus rural settings have also emerged. The National Telecommunications and Information Administration (NTIA) has been tracking this digital divide since 1994, and most recently reported that gaps between groups based on income levels, education levels, and geographic locations began to shrink dramatically at the end of the decade (NTIA, 2000). The NTIA reported that by August 2000, 51% of American households owned computers, compared to 42% in 1998, and 41.5% had access to the Internet at home, compared to 26.2 % in 1998. Despite these recent gains, however, the NTIA finds a persistent divide in computer use and Internet access that separates the information haves and have-nots. The NTIA 2000 survey found that 85% of households with incomes of $75,000 and higher have a computer at home, compared to just 19% of households in the $15,000 and under income bracket. Similarly, 78% of households at the highest income levels have Internet access, compared to only 13% of low-income households. In addition, there is a significant racial digital divide with Blacks and Hispanics continuing to experience the lowest household Internet penetration rates, at 23.5 and 23.6% respectively, compared to 46.1% among Whites.

Of particular interest to our study, the NTIA survey reports that Americans living in rural areas also continue to lag behind their urban and suburban counterparts, despite recent gains. The gap between rural households and the nation as a whole with regard to Internet access narrowed from 4.0 percentage points in 1998 to 2.6 percentage points in 2000. This represents an impressive 75% increase in Internet access among rural households, from 22.2% in December 1998 to 38.9% in August 2000. However, low-income rural households continue to have the lowest rate of Internet access, 11.3%, compared to low-income households in other geographic areas. Furthermore, rural cities and towns are lagging behind urban areas in access to high-speed broadband services, the most recent new information technology development (NTIA, 2000). This disparity in high-speed Internet access limits opportunities for rural businesses with regard to electronic commerce, and puts rural communities at a disadvantage in trying to attract new high-tech companies to their areas.

Rural communities have thus begun searching for collective solutions to reduce this digital divide between their citizens and the rest of the nation. One approach they have increasingly turned to is the community electronic network. Such a network may provide a number of services including electronic access to government employees and information, community-oriented discussions, electronic mail, electronic bulletin boards, information about community organizations, and access to the Internet. Ideally, community electronic networks also seek to fulfill a number of civic goals including access to technology, education and training, enhancing community cohesion, and bolstering informed citizenship and public participation (Anderson, Bikson, Law & Mitchell, 1995; Schuler, 1994). In order to maintain a healthy economy and a vibrant workforce, electronic networks are one way some rural

communities are attempting to catch up to urban areas and reduce the information gaps that exist among their own citizens.

Introducing ItascaNet

One of the first rural communities in Minnesota to initiate an electronic network was the town of Grand Rapids, located in the north-central area of the state, with a population of 8,400. In Minnesota, there are significant differences between the Twin Cities metropolitan area and rural cities and towns such as Grand Rapids. As in many small Minnesota towns, the average Grand Rapids resident is getting older, and the tax base is shrinking. Trying to convince the city's youth to stay in the area to ensure the community's future has become a common concern. Trailing metro-Minnesota on measures of economic strength, education levels, population growth, standard of living, and percentages of citizens living in poverty, the citizens of Grand Rapids have a firm desire not to be left behind as technology advances explode across the country.

Against this backdrop, planning for a community electronic network was initiated in 1995 when the local superintendent of schools gathered leaders from various community agencies to discuss the state of their computer technology. After exploring their options, a partnership was formed and the group decided to create GrandNet, a community electronic network, to meet their collective technology needs. In late 1995, grant funding was sought and secured locally from the non-profit Blandin Foundation and through the Telecommunications and Information Infrastructure Assistance Program (TIIAP) of the U.S. Department of Commerce. GrandNet's goals included several of TIIAP's aims: increasing the community's access to and use of the national information infrastructure, reducing disparities in access levels

among community residents, increasing information available to community members, and facilitating the sharing of data and information among the partner organizations.

In late 1997, with five partner agencies in place and routinely cooperating to achieve common goals, the group purchased a server, laid cable for connections, and the partners linked into GrandNet. In keeping with the network's community goals, Internet-linked computers were made available to students in the public schools and citizens in the public library, and free computer training classes were offered to the community. Over the last several years, the GrandNet project has expanded. Efforts to provide computer access and training to residents in all of Itasca County, where Grand Rapids is located, are underway. To reflect this goal of providing access to a broader rural community, the project has been renamed ItascaNet.

To facilitate the long-term study of the effects of the ItascaNet community network on the community of Grand Rapids, we identified a similar Minnesota community on the basis of a cluster analysis of demographic and social factors across Minnesota (see Sullivan, Borgida, Jackson, Riedel, Oxendine, & Gangl, 2000 for details). The city of Detroit Lakes proved to be a close statistical match to Grand Rapids, and was therefore selected to serve as a non-equivalent control group . The city of Detroit Lakes initiated its own electronic network, called LakesNet, through its municipal utility in 1997. This city-managed network supplies low-cost Internet access to the local schools and public library, and offers Internet service to citizens for a monthly fee. There is also a small private communications company based in Detroit Lakes which has recently begun offering Internet access to local residents at competitive rates. By contrast with the city of Grand Rapids, the approach to networking in Detroit Lakes has thus been driven by an entrepreneurial spirit in which various networking enterprises in the community in effect compete with each other to establish a dominant market share in town. The kind of cooperative

social networking that gave rise to a multi-group partnership in Grand Rapids was not present in the Detroit Lakes community. As such, Detroit Lakes represents an ideal comparison to Grand Rapids in assessing the roles of community resources and civic culture in the approach taken to technological change.

Survey Assessment of the Two Communities

In 1997, we conducted a baseline survey of 2,000 households in Grand Rapids and Detroit Lakes, with a response rate slightly above 40 percent for each community. The survey covered attitudes toward computer use, technology ownership, attitudes toward the community, political engagement (interest, knowledge, efficacy, and participation), membership in civic organizations, social attitudes (alienation and interpersonal trust), sociability (frequency of social interactions), as well as various demographic indicators. In late 1999, we administered a second round of surveys in the two communities, expanding the sample to also include residents in the counties surrounding Grand Rapids (Itasca County) and Detroit Lakes (Becker County). This second survey also included the revised UCLA loneliness scale (Russell, Peplan & Catrona, 1980) and the social support subscale assessing "belonging" used in the original HomeNet survey (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay & Scherlis, 1998). Surveys were sent to a total of 2,791 households in the second round, with an overall response rate of 64 percent.

Using our two rounds of surveys from 1997 and 1999, we investigated whether the ItascaNet network in Grand Rapids was making a difference in terms of access to computer technology (Gangl, Oxendine, Jackson, Riedel, Sullivan, & Borgida, 2000). Linear regression models were estimated for each community with computer use (having ever used a computer) as the dependent variable. While controlling for demographic characteristics commonly associated

with the digital divide (income, education, social class, gender, age, and political knowledge) we examined the interaction effects of each characteristic with city (or county). In the 1997 survey data, we found that income predicted computer use in both communities, but to a significantly lesser extent in Grand Rapids. With the 1999 data, income ceased to predict differences in computer use in Grand Rapids while the income-based divide remained in Detroit Lakes. This evidence suggests that the cooperative community-based approach to electronic networking in Grand Rapids has had a positive impact on improving equality of access in that community, whereas the competitive market-based approach in Detroit Lakes has so far failed to reduce existing disparities in access.

Historical Perspectives on Community Differences

In our efforts to understand why these two very similar rural Minnesota communities have taken such different approaches to technology diffusion, we have begun to examine the historical and cultural aspects of civic life in each community from the time of their founding in the nineteenth century. A systematic historical analysis of civic organizations and public participation in these two communities over time is currently underway. However, our preliminary investigation suggests that the differences in civic culture that we have observed in our surveys may have their roots in historical trends. A key facet of Putnam's (1993) theory of social capital is the extent to which social capital is strongly tied to historical patterns. In his extensive case study of Italy, for example, Putnam (1993) located the roots of differences between the northern and southern regions in social patterns originating centuries ago. Likewise, the different approaches these two Minnesota towns have adopted to bring information technology to their citizens may reflect historical differences in cooperation between the public and private sectors and community support for projects providing public goods.

Grand Rapids began as a settlement when Itasca County was formed in 1849. Like other towns in northern Minnesota, including Detroit Lakes, it primarily provided services for farmers and lumberjacks. In contrast to Detroit Lakes, civic organizations and projects have proliferated throughout Grand Rapids' history. At the turn of the century, women's church organizations often sponsored well-attended events, and secret societies and fraternal organizations were popular among the town's residents, with a dozen different clubs to choose from (Boese, 1984). An analysis of youth services in Grand Rapids conducted in the early 1950s documented 39 civic organizations that met regularly in the town, with 14 of these devoted specifically to helping young people (State of Minnesota Youth Conservation Commission, 1952). Grand Rapids also has a long history of successfully supporting local projects to assist the poor. In 1916, for example, local voters approved a $50,000 levy to establish the first county hospital in Minnesota, and in 1917 Itasca County became one of the first in the state to establish its own welfare program (Boese & Cain, 1991).

While the timber industry played an important role in the origins of many northern Minnesota towns, it took a particularly central role in the Grand Rapids community that remains to the present day. The Blandin Paper Mill, which began operation in 1902, has long been a major employer in the city, accounting for about one-fifth of the local labor force. The original owner of the mill, C.K. Blandin, professed a strong commitment to promoting the advancement of Grand Rapids and northern Minnesota, and to that end, established the non-profit Blandin Foundation in 1941. The Foundation has supported a variety of civic groups, public buildings, scholarships, and economic development projects in the region, disbursing 35 million dollars between 1941 and 1991 in Grand Rapids and Itasca County alone (Boese and Cain, 1991). Although the role of The Blandin Foundation in promoting civic life in Grand Rapids has been

significant, it cannot single-handedly account for the community's active civic culture. Local organizations and projects that may benefit from the Foundation's support also require the ongoing commitment and participation of community members to remain vital. Many projects that received initial funding from the Blandin Foundation have successfully gone on to become self-sustaining through the active support and involvement of community members.

Detroit Lakes was founded in 1868, aided by the Federal Homestead Act which granted Civil War soldiers 160 acres of land. It quickly grew, becoming a township by 1871, with its economy based mainly on agricultural services. By 1873, it became the home of the "first grain elevator built on the Northern Pacific Railroad west of Duluth" (Wilcox, 1907, p.344). Although many northern Minnesota communities have turned to tourism in recent decades to revitalize declining local economies, Detroit Lakes did so quite early in the century and has remained oriented toward attracting tourists ever since. As early as 1912, pamphlets were published with the aim of drawing convention visitors to the city. By the 1920s, a number of associations took an active part in promoting tourism, with events added to their winter carnival with this purpose in mind (Becker, 1971).

Despite the mutual interest of promoting tourism by civic associations and businesses, the history of Detroit Lakes reveals a rather mixed record on public projects oriented towards the local residents. For example, in 1902 the Detroit Lakes Record newspaper suggested that a lack of civic concern resulted in the failure, due to poor community attendance, of several meetings called to investigate the feasibility of building a municipal electrical plant. "Of one thing there is no doubt and that is that it would be folly to invest in a municipal plant or to make our village government any more cumbersome than it is at present, until our most responsible businessmen

are willing to give public affairs that careful attention which alone will insure economical management and success. We are far from that at present." (*Detroit Lakes Record*, May 9, 1902)

Other projects, aimed more directly at those lacking economic resources, also tended to receive little public support throughout Detroit Lakes 's history. A county-sponsored food stamp program closed in 1943 after serving only 200 cases. Proposals to issue bonds to build new schools were defeated in 1895, 1969, and 1970, with a 1930 addition to the high school approved only by a narrow margin of 30 votes (*100 years of Progress*, 1971). Exclusively private endeavors, such as the founding of the Detroit Lakes Boys Club in 1958, the first one chartered in the state of Minnesota, were more typical of the civic successes enjoyed by Detroit Lakes.

Focus Group Insights

In addition to our survey research in these two communities, we have periodically conducted focus groups, first in Grand Rapids and later in Detroit Lakes, to assess community members' attitudes on a host of issues related to our study. Such issues have included general opinions about the community and its strengths and weaknesses, the extent of residents' experiences with computers and the Internet and their perceptions of those technologies, and attitudes towards their community's involvement in fostering the availability of information technology. This last component specifically tapped into perceptions and attitudes towards ItascaNet in Grand Rapids and LakesNet in Detroit Lakes. Focus group participants were selected from among respondents who completed the 1997 or 1999 mail surveys. Respondents were initially asked to indicate on a postcard whether they would be willing to participate in a focus group. Survey data were then used to select a sample of willing participants who were diverse by age, gender, and socioeconomic resources.

In summer and winter 2000, two sets of focus groups were conducted in Detroit Lakes and Grand Rapids, with the second set retaining several members of the previous group, in a quasi-panel design. Content analysis of the transcripts of the December focus groups in each community was carried out in which moderators' and participants' comments were coded as reflecting either *individualistic*, *interpersonal*, or *community-oriented* issues and concerns. Comments coded as *individualistic* included, for example, references to personal computer use, individual initiative, responsibility, choice, and individual privacy concerns. Comments reflecting *interpersonal* themes included references to computer-mediated interpersonal communication, and concerns over decreasing face-to-face communication and increasing social isolation. Comments were coded as *community-oriented* if they made reference to the local community or economy, public institutions, civic organizations, or community concerns such as public access to technology, or education. Two members of the research team coded the focus group transcripts for each community using a standard coding scheme. Intercoder rates of agreement were 88.5% for moderator statements and 84.5% for participant statements.

The types of questions and comments made by the *moderators* were consistent across both focus groups, with the majority of comments reflecting community-oriented themes (79% in Grand Rapids; 88% in Detroit Lakes) and the remainder classified as individualistic (21% in Grand Rapids; 12% in Detroit Lakes). Difference of proportions tests show that there are no statistically significant differences between the two communities for moderators' comments. *Participants'* comments did reveal significant differences across the two communities, however. Grand Rapids focus group participants made significantly more community-oriented statements (62%) than their Detroit Lakes counterparts (48%), ($p<.05$). Detroit Lakes participants made twice as many comments reflecting interpersonal concerns (14%) as Grand Rapids participants

(7%), ($p<.05$), reflecting greater concern about social isolation and decreasing face-to-face interaction. The percentage of individualistic comments was not statistically different across the two communities (31% in Grand Rapids; 37% in Detroit Lakes). This quantitative summary of the content analysis thus reflects qualitative differences in the types of issues and concerns raised by residents of these two communities with regard to the social impact of technology diffusion. Excerpts from the focus group discussions also provide insight into the substantive significance of these differences.

In the Detroit Lakes focus group, for example, the issue of providing access to information technology for those who cannot afford it was raised several times by the moderators. Detroit Lakes participants generally liked the free computer access provided by the local public library, although currently limited to two machines with a 15-minute time limit. Several participants also suggested that a new community center that is currently under construction should provide similar public computer resources. However, they also expressed the view that technology access was not an obligation of the community and to the extent that it was provided, the private sector should be relied upon for grants and donations. The following excerpt from the December Detroit Lakes focus group illustrates this viewpoint.

> Moderator: Is there a sense among the people who may not be able to afford to have computers at home or Internet access, that the community has a responsibility to provide those services? To provide free access? Or are you not hearing that kind of thing? It sounds like with the suggestion to make computers available at the community center, that some people think that would be a good idea. But is there, a sort of movement, or a lot of talk about that, or not?
>
> DL Participant: No, I just thought through a grant they could get it. . . .
>
> DL Participant: This is something private business and service organizations and clubs in town can take over as a project.

> Moderator: Sounds like there's some general feeling that it's not a community responsibility-- it may be goodwill, but it's not a community responsibility. But I'm kind of curious, why is it not a community responsibility, or for those who might disagree and haven't said much so far, why is it a community responsibility?
>
> DL Participant: No, I don't think so.
>
> Moderator: Why not?
>
> DL Participant: I would think that would be picked up eventually by those various companies. They're interested in putting this out. And we have enough welfare fringes and benefits. I think that for the most part, I think this is something we're capable of doing on our own, or some corporation.

By contrast with the Detroit Lakes focus group, when Grand Rapids participants were asked about opportunities to use computers and the Internet, they readily described a number of community programs, several of which involved ItascaNet. These included computer training classes provided by Itasca Community College and the public school district as well as public access provided by the local library, access that had recently expanded to 30 machines with a new, larger library building. In further contrast to their Detroit Lakes counterparts, Grand Rapids focus group participants readily supported the goal of reducing disparity in information technology access, as the following excerpt demonstrates.

> Moderator: Do you think there are people in this community that are being left behind? Who can't afford computers at home and may not know about the resources that are available?
>
> GR Participant: Absolutely.
>
> --General assent from the rest of the group—
>
> GR Participant: That's the problem with me, I was left behind in school. It took me all my life to get where I am now.
>
> GR Participant: But they weren't doing computers then, you know...

> GR Participant: No, but I was doing stuff that we were into. You know, it's the same difference whether it's computers or reading or writing, it's the same difference. And, you get the slower ones and somebody's got to take care of them, whether it's computers or what it is, they need help.
>
> Moderator: Who do you think needs to take care of them? Is that the responsibility of the community or the government? Whose responsibility do you think it is to make sure there's not this divide, or that people are not left behind?
>
> GR Participant: The community. Every individual has their own problem, so you have to set up a governmental unit that will do the best they can. You know there's bureaucrats and that, but you know it's not a perfect world. But you have to start someplace and you have to help the ones that need the help. Actually, they will learn, and they'll be interested. It'll take time.

When the possibility of greater community involvement in computer technology was mentioned favorably in the Detroit Lakes focus group, it was by a relative "outsider" to the community, a woman who had recently moved to Detroit Lakes from a larger city in the region and worked in a senior citizens' residential facility. She suggested that there was need for public leadership on this particular issue.

> Moderator: You mentioned that you deal with computers every day, kind of all the time. What's your sense about Detroit Lakes? Is there all the opportunity that people want? Is there too much opportunity to use information technology? What do you hear?
>
> DL Participant: Well, I guess in my experience I think, you know I lived in Fargo [North Dakota] before. It used to be the thing. It probably is a little slower here. But that's just from a small town. And I grew up in a small town and it's the same way there. But I think it is catching on. I think what we probably need in Detroit Lakes is some energetic leaders to kind of bring to the limelight of the community what kind of opportunities exist that we can do with the Internet. You know, I would love with my work to set up programs between the schools and the students and my residence, and hooking up on email, on a weekly or monthly basis, where they can communicate and do those intergenerational programming types of things.

This participant also went on to talk about opportunities and her plans to participate in college courses online. For the Detroit Lakes focus group, this quickly led to a discussion

between the participants over how the Internet may affect social relationships and concerns that on-line relationships might become a substitute for the initiation and maintenance of off-line relationships (McKenna, Gleason, & Green, this volume). This focus on the effects of the Internet on interpersonal communication and patterns of social interaction became a recurring theme in the Detroit Lakes group, as the following exchange illustrates.

> DL Participant: The disadvantage is the fact that, people relations, you're losing that. We're becoming so technological that we're forgetting the whole purpose of people.
>
> Moderator: Do you think that's happening even here in Detroit Lakes?
>
> DL Participant: I think that's funny . . . I taught for 23 years and I think back in the '80s when I got out of teaching, the seventh graders were coming up and getting passes from study hall to go down and work in the computer room. What really fascinated me was how they were absorbed in this thing. And just observing young people today and people in general, I get the feeling almost that people are losing the ability to articulate. I think they spend almost too much time in front of this thing. That they're absorbed and don't have the opportunity to communicate with other human beings. Well, it's not quite that bad. But it's not like a group situation where you sit around and shoot the breeze.
>
> DL Participant: I get all these emails. I get all these emails with stories over and over from one person, about four of them right in a row. It's like, don't you have a life? Get outside or something!

Several times near the end of the discussion, Detroit Lakes participants were asked about the danger of negative effects from information technology, particularly that of social isolation, and what could be undertaken to alleviate those effects. Their answers were generally individualistic in tone, even when pushed for more community-centered action. Most respondents ultimately emphasized personal self-control and family responsibility. It is not that Detroit Lakes participants thought of the community as lacking cohesion and civic involvement. As a group they were unanimous in the opinion that Detroit Lakes fared better than many other

towns and regions of the country in this regard. Social and community involvement was in fact touted as the appropriate alternative to spending time online.

Only one of the Detroit Lakes participants expressed an awareness of the social science-based debate about technology and social isolation (e.g., Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998; Markoff, 2000). But concerns about the social effects of computers did arise in different ways in each community. In both focus groups, the potential for technology to either isolate people or foster relationships was not asked about directly by the moderator until it was raised first by a participant. In the Detroit Lakes group, such concerns arose rather early in the discussion after the moderators asked about the general effects and availability of information technology. In Grand Rapids, on the other hand, the potential effects of computers and the Internet did not focus on social relationships. Rather, other issues were more central to the discussion, including concern over the availability of pornography over the Internet, privacy concerns, and the use of computers for education and for developing the local economy. It was only at the very end of the Grand Rapids focus group that one of the participants asked other group members about the effects of information technology on social relationships.

> GR Participant: I've got a question to pose to the group, just something to think about. How do you feel sitting in front of the computer, maybe back in your computer room, spending a few hours there, compared with picking up the newspaper, sitting in your living room, and your wife is knitting next to you and you're talking about different things that are going on in the paper, the relationship in your family. Are we getting off by ourselves more with computers?
>
> Moderator: What do you guys think?
>
> GR Participant: That hasn't happened in our house.

GR Participant: It hasn't happened in ours either. Everytime I get on the computer I've got the whole family talking...

GR Participant: I think that there are different things, I mean, I wouldn't want to spend the whole day with my husband. [laughter] I'd rather spend the whole day with him than anybody else, but I don't want to spend the whole day with him, because I have my life and he has his life. But there may be some of that, that some people just focus on the computer, but I don't know if anybody here does that.

GR Participant: That's what I've heard, I have friends that they'll be on there til 2 in the morning...

GR Participant: There are people addicted, addicted to the Internet. I mean, it is a problem.

GR Participant: But I think at our house at least, there's a lot of times like when we're planning a vacation or something where we'll go on the Internet, and we'll sit there together and kinda go through it, and look at all the options.

GR Participant: In my family it's improved communications, I'll say hey, come here and look at this.

GR Participant: But it does sound like that sometimes in the newspaper, that you read about people that are just focused on it, and some senior citizens. Actually, it's broadened their lives tremendously, so they don't feel so alone, when actually they are alone in their apartments, but they can communicate. They can't even get out, but they communicate over the Internet. So I don't, I don't know, I think it's like anything else, you know you've got a lot of men that'll just sit and watch football all the time!

The responses by focus group participants in Detroit Lakes and Grand Rapids thus reflect rather different views of information technology and the Internet and help to provide qualitative insights into the potential effects of technology in these two communities. In Detroit Lakes opportunities and choices about how to use such technology tended to be seen in individualistic terms. Access is mainly left up to the free market and possibly private organizations. Detroit Lakes residents were not ignorant of the potential community-based uses for such technology, but still viewed technology use primarily in terms of individual choice and responsibility.

Social isolation resulting from the use of computer technology was also a concern raised frequently in the Detroit Lakes focus groups. Grand Rapids participants, by contrast, made reference to computer technology in relation to the community more often. They tended to discuss technology use in both individual and community terms, with participants readily agreeing that there is an obligation to provide access to this technology. Fears of social isolation and concerns about the negative impact of this technology on social life were also much more subdued in the Grand Rapids focus group.

Conclusions

As the evidence reviewed in this article suggests, the two communities we have been tracking over time have been responding in very different ways to the question of how to create and maintain access to information technology. Our survey data to date suggest that the competitive, market-based approach in the community of Detroit Lakes has not been successful in reducing existing disparities in access, whereas in the community of Grand Rapids, income no longer predicts differences in computer use and Internet access. Our preliminary historical analysis of the civic cultures of these two towns also suggests, though not in a systematic sense, that Grand Rapids and Detroit Lakes have in the past adopted different approaches to cooperation between the public and private sectors with regard to a range of other civic issues.

Finally, our focus group analyses in both communities provide additional and more in-depth insights into the nature of the concerns that citizens have about technology diffusion. Importantly, these findings are in line with the insights drawn from our survey database and from our historical analysis. Participants from Grand Rapids were generally more supportive of the goal of reducing the digital divide as it exists in their community. They indeed recognize that it exists and recognize the importance of public leadership in moving the community toward effective solutions. In Detroit Lakes, by contrast, technology access was not seen as a

community responsibility but rather as a matter that the private sector should address more directly. Interesting, from our perspective, were the findings from our focus groups suggesting that participants in Detroit Lakes had more interpersonal concerns about technology diffusion than their Grand Rapids counterparts. There was more concern in Detroit Lakes about social isolation and decreasing face-to-face interaction than there was in Grand Rapids, where participants were much more focused on other community-oriented issues and concerns.

While our data, as presented in this article, generally address the question of whether Internet access is improving participation and the store of social capital in community life, the data do not directly address the extent to which technology diffusion and Internet access are improving *or* harming patterns of social interaction and social relationships (see McKenna & Bargh, 2000). The data presented here also cannot address the long-term question of whether civic life is enhanced or hindered by the different patterns of technology access and use, though we are currently examining these issues in our ongoing longitudinal project. What our focus groups *do* suggest, however, is the intriguing possibility that extant community structure and levels of social capital may play an important mediating role in understanding the impact of Internet access on social relationships and psychological well-being. Similarly, extant community structure and levels of social capital also may mediate the impact of Internet access on the forms of individual and collective action in a community. Research on the personal and social motivations that dispose people to volunteer and to sustain their volunteerism (e.g., Snyder & Omoto, 2000), for example, suggests that communities with strong social ties and connectivity may be more promotive of volunteerism and other forms of citizen participation than communities characterized by lower levels of social capital (Snyder & Omoto, 2001). Certainly a more complete understanding of these issues should take into consideration the social and

political context of Internet access and technology diffusion. Our program of research, especially the next waves of our survey panel study, will hopefully enable us to examine these latter questions more directly.

Authors' Notes

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