Community Networks, Community, and Commerce:
Networking Through Communication Technology: an on-line review*

Introduction

Community Networks (CN) (often called Free-Nets or Civic Networks) are geographically centered computer systems that support the local community with information and communication services. These systems often have free or very low-cost dial-up Internet access. they are managed by volunteer groups, and are often supported by colleges, city government or public libraries. Usually, "Public Access" stations are available, often in public libraries so that community members without home computers can also use the system. (Civille, 1998) While just a handful of systems were operational in the mid 1980s, approximately 300 operating community networks now exist. This summary of the current on-line literature and comment regarding Community Networks focuses on three interrelated questions:

1. In what ways do Community Networks (CNs) contribute to community building and a general strengthening of civic networking?

2. What is the evidence that CNs really do lead to "converging opportunities," greater civic participation, and more effective forms of democratic processes? And:

3. Is there evidence of successful commercial activity for small, locally owned businesses networking through Community Networks? Does this activity lead to economic development strategies that move firms into high value markets?

Community Networks (CNs)

To some extent, the discussion on Community Networks is nested in a larger discussion on civic activity (or the lack of it) on both the national and

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community level.[1] An early on-line paper "Communications as Engagement," gopher://gopher.cdinet.com/11/millennium funded by the Rockefeller Foundation and published on-line by the Benton Foundation in 1995, identified "The New Communications" as an important tool of emergent civic networking. The report defines communications as "…the essence of revitalization. Without communications -- properly understood as dialogue, connection, and engagement in the process of being a citizen and living in a community- there is no revitalization."

The report included all modes of communication as central to community revitalization, but concluded that most community revitalization initiatives were not fully using the potential of telecommunications. Howard Rheingold, a veteran community-builder on the Web and author of The Virtual Community points to the workload involved in running a successful CN.

> Publishing to each other could be part of community, but it isn't sufficient, and putting up message boards and chat rooms is a step towards community, but online community does not automatically happen just by throwing tools at people. It requires thought. It requires talented hosts, log-in requirements that reduce anonymity and shared interests that will engage members and keep them coming back (In Janelle Brown's article, January1999, Salon)

Traditional community networks involve linkages between community members and groups through various forms of communication. The goal is sharing information and resources to develop the capacity of the community to take advantage of resources and opportunities for development. As new communication technologies emerge, the

[1] As an interesting side note, Robert Putnam, author of Bowling Alone: Civic Disengagement in America and what to do about it, a seminal book that spearheaded the national discussion on civic life, directs *The Saguaro Seminar: Civic Engagement in America*, an initiative at the John F. Kennedy School of Government at Harvard University. This multi-year dialogue focuses on how we can increasingly build bonds of civic trust among Americans and their communities. It can be viewed on-line at http://www.ksg.harvard.edu/~saguaro/

potential for new linkages becomes possible. The Association for Community Networking (AFCN) "Evaluation of Community Networking" Task Force has created the following working description of community networking:

> Community Networking (CN) projects bring local people together to discuss their community's issues and opportunities, learn about Internet technology, and decide upon and create services to address these community needs and opportunities. CN is comprised of a wide variety of groups that make up a community (eg., libraries, Universities, K-12 schools, local government, businesses, media, individuals), with special focus on including those who are traditionally left out of community decision making in general, and technology decision making in particular (eg., low-income, minorities, senior citizens). CN projects value collaboration and participation, and are usually noncommercial. (AFCN, http://bcn.boulder.co.us/afcn/index.html) 1998.

The AFCN listserv which started in 1998, as well as the older COMMUNET listserv are active subscriber lists concerned with issues of community networking and Free-Net utilization. COMMUNET has organized primarily around support and technical assistance for individuals starting up or managing community networks. The Communet Archive summarizes years of advice on building CNs and lobbying for the political support to continue the work. A more recent multi-layered ongoing dialogue on the nature of community on CNs is indexed by AFCN http://bcn.boulder.co.us/afcn/maillist/.

A recent AFCN newsletter reprinted “Four Rules of Thumb for Realizing Community Online” from a speech given by Garth Graham, board member of Telecommunities Canada http://www.tc.ca/realizing.html.

1. *It’s the community that’s the network, not the technology.*

In other words, the primary goal is the social networks created by individuals connecting to each other around shared interests.

2. *Now we make our networks and our networks make us.*
This point tries to capture the fact that electronic tools change how social networks evolve, even though they do not determine them.

3. *The role of community networks is to turn the experience of being social in electronic space into practices that serve local news.*
Graham emphasizes that it is essential to see that *real value of a community network comes from the degree of autonomy or control it gives a community over what it learns about change and about adapting to new circumstances.*

In other words, the information service provided by CNs is not the central value; it is the realization of community and the development of new and vital forms of social interaction.

4. On the net, community precedes commerce.
This concept is debated by many, but Graham posits a difference between communities of "special interest" that aggregate the market, and "communities of shared value" that define true community.

Assessment

Because computer-based community networking is still fairly new, few models for evaluation and assessment exist. In "Communities On-Line: Community Based Computer Networks, (1995)" Massachusetts Institute of Technology graduate Ann Beamish states that in order for community networks to be judged against long-term goals, they must first survive and grow. In her Masters Thesis paper, she claims that if allowed to continue and flourish, Free-Nets can be evaluated based on these central issues:

- Access by a diverse group of community participants;
- Public discussion and democratic participation; and
- Ability to aid in community development.

(Beamish, 1995. http://theses.mit.edu/Dienst/UI/2.0/Page/0018.mit.theses/1995-35/1?npages=172

Beamish does conclude that although CNs are successful (in 1995),they are being utilized by small groups of individuals.

Kim Gregson, a doctoral student in telecommunications at Indiana University, Bloomington, has provided a public service by collecting and publishing "Community Networks: Bibliography and Resource Guide" on her home page, http://php.ucs.indiana.edu/~kgregson/main_menu.html. Gregson's summary of CN evaluation models includes about 15 references, with 2 to 3 of them published in the past two years. Andrew Cohill, Director of the successful Blacksburg Electronic Village (BEV) has supported impact research on BEV from its inception. In a 1997 summary of "community impact," Cohill reports:

> The concentration of local information and services, local newsgroups, and other locally-focused material on the BEV web pages provide the environment in which social networks, social trust, and norms of mutual reciprocity can be supported, possibly even enhanced. From the outset of the project, users expressed their interest and satisfaction in being able to be more connected to their community. As noted above, 72% of BEV users report they expect the Internet to be somewhat or very helpful with civic affairs; 86% indicate they are somewhat or very interested in bulletin boards and newsgroups; 79% report they expect BEV to be somewhat or very helpful in social relations. In the 1997 round of the About Town Newsletter survey of the general population of Blacksburg residents, 28 % report being more involved in the local community since getting on the Internet.
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> In a random sample telephone survey conducted in November 1996 of the local calling area (Blacksburg, Montgomery County and environs), there was no statistically significant correlation between community involvement and access to the Internet. Nonetheless, 22% of respondents who use the Internet, reported that they were more involved in their local community since getting on the Internet. This "Community Involvement" study has established benchmark data to determine over time whether the community network supports, and possibly increases, social capital. **(http://www.bev.net/project/research/research95-97.html)**

"CivicNet 98," http://www.tmn.com/civicnet a virtual conference on the future of communities and civic networking, included a Discussion Forum on the value of community networks. A topic item on "Convincing Evidence" looked at the traditional evidence *of Numbers Served, Access Points, Numbers of Linkages, and New Linkages,* in addition to defining a baseline in order to study effect over time. The challenge with these measures, as with any traditional method, is the amount of extra work needed to track and analyze indicators of success. On the other hand, participant Richard Civille pointed out that the Web linked to a data base is one of the more powerful tools available to researchers. He cautioned,however, that "datamining" of community networks can lead

to information being harvested for marketing purposes which can create a very cynical or uncooperative response from users.

"CivicNet 98" key note speaker, Pat Wagner invited participants to consider the power of "stories" as evidence of community building online. She used the question, "Has anything happened online that has changed your life?" as an example of measuring impact.

The University of Michigan School of Information Community Networking Initiative http://www.si.umich.edu/Community/ includes an overview of evaluation tools for Community Networks. There is an entire set of questions related to the effectiveness of services offered by a Community Network. The tools used are traditional -- focus groups, interviews, surveys, and observation. Usage logs, that are often part of a server function anyway, are another measure of effectiveness. If no one logs onto a site, there is reason to suspect that users do not find it helpful or interesting. Measuring the extent to which CNs actually build civic society is more complex. Andrew S. Patrick set out to measure impact of CN use on community involvement by asking over 1,000 users of National Capital FreeNet (NCF) if NCF "encouraged you to be more involved in community life?" Although an increase in community involvement was reported, the overall change was slight. http://debra.dgbt.doc.ca/services-research/

The Issue of Access

Most Free-Nets are concerned with issues of access to services, particularly for low-income and minority groups. The study of the National Capital FreeNet in Ottawa Canada by Andrew S. Patrick, Alex Black, & Thomas E. Whalen (1995) is an early examination of who is actually using Free-Nets. Their National Services Research work, Rich Young Male, Dissatisfied Computer Geeks? showed that users were not a specialized group although they did tend to be predominately white and male. Strategies for overcoming access challenges are highlighted in Losing Ground Bit by Bit: Low-Income Communities in the Information Age, 1998, published by the Benton Foundation. In this report, projects from around the U.S. are highlighted as demonstrations of Internet

training and access, school-related programs, small business marketing, among others. The Benton Foundation also provides a set of Internet resources for assisting communities in their use of communications technology in the form of a"Best Practices Toolkit." Additional research regarding access issues for low-income and minority populations include:

- Bridging the Digital Divide: The Impact of Race on Computer Access and Internet Use, 1998.
  http://www2000.ogsm.vanderbilt.edu/papers/race/science.html

- High Technology and Low-Income Communities: Prospects for the Positive Use of Advanced Information Technology, 1996.
  http://web.mit.edu/sap/www/high-low/

- Falling Through the Net II: New Data on the Digital Divide, 1998.
  http://www.ntia.doc.gov/ntiahome/net2/

- Impact of CTCnet Affiliates: Findings from a National Survey of Users of Community Technology Centers, 1998.
  http://www.ctcnet.org/impact98.htm

- What Color Is the Net? 1997.
  http://www.hotwired.com/netizen/97/11/index2a.html

In a 1995 Rand report on "UNIVERSAL ACCESS TO E-MAIL," http://www.rand.org/publications/MR/MR650/index.html, Sally Ann Law and Brent Keltner report on research examining the use of email as the catalyst to stimulate individuals to use and benefit from community networks. They focus their case studies on CNs with a conscious mission to reach under-served populations or a goal of creating "electronic democracy." They found that email is the most commonly used feature of the networks (a consistent finding of communications researchers), and that it stimulates user participation in other aspects of network life. They also detail four categories of benefits that are packaged in the context of civic networks and

> are potentially attainable by all citizens regardless of income, education, race or other traditionally access-limiting characteristics:
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> 1. Network access provides individuals and groups with opportunities for new and more effective ways of communicating…Civic networks, therefore, have the

ability to support interpersonal relationships, local community-building, and social integration.

2. Civic networks serve an important information resource function. Via electronically accessible databases and direct on-line connections to service providers, individuals and groups can access, use, and distribute information relatively cheaply and effectively.

3. Civic networks can facilitate the formation and restructuring of organizations by combining both communication and information functions of networked technology. The primary goal of two of the networks (LatinoNet and Playing to Win) is to connect nonprofit and community-based organizations. Such organizations are typically resource-constrained, so having the ability to communicate rapidly and reliably with key stakeholders, e.g., potential collaborators, regulators, and clients, as well as being able to gain access to and advertise information, is of substantial benefit to them.

4. Civic networks may offer some services aimed at promoting greater efficiency and increased responsiveness of government institutions. An electronic network can change the status quo by restructuring delivery of government services, raising citizen awareness of local and national political issues, and encouraging participation in the political process.

Other researchers point out that the basic access issue is that very low income groups often have trouble accessing ongoing affordable telephone service and Internet access remains a luxury.

Do Community Networks Really Build Community?

While most proponents of community networking operate according to the assumption that computer communications is vital to establishing stronger relationships, some critics feel that Internet communication may actually contribute to the decline of collaboration and accommodation in American society. In his 1998 paper, (How) Does the Internet Affect Community? William Galston of the J. F. Kennedy School of Government at Harvard University states,

> In a diverse democratic society, politics requires the ability to deliberate, and compromise, with individuals unlike oneself. When we find ourselves living cheek by jowl with neighbors with whom we differ but from whose propinquity we cannot easily escape, we have powerful incentives to develop modes of accommodation. On the other hand, the ready availability of exit tends to produce internally homogeneous groups that may not even talk with one another and that lack incentives to develop

> shared understandings across their differences. One of the great problems of contemporary American society and politics is the proliferation of narrow groups and the weakening of structures that create incentives for accommodation. It is hard to see how the multiplication of online groups will improve this situation.
> (Galston, http://www.ksg.harvard.edu/visions/galston.htm)

Other critics, such as Jan Fernback and Brad Thompson in their 1995 essay entitled, Virtual Communities: Abort, Retry, Failure? discuss both the positive and negative aspects of "virtual communities." This paper is a good overview of the debate as it centers on the question whether computer-based Free-Nets are detracting from 'real-to-life' communications such as relationships between families, schools, churches, and other groups.

A related, but separate set of issues, has been created by the recent popularity of free Web page services (GeoCities, theglobe) that claim to build community and foster communication while simultaneously creating a huge market space for advertisers. Janelle Brown, writing in the January1999, Salon http://www.salonmagazine.com/21st/feature/1999/01/cov_19feature.html claims that

> **community** is quite possibly the most over-used word in the Net industry. True community—the ability to connect with people who have similar interests—may well be the key to the digital world, but the term has been diluted and debased to describe even the most tenuous connection, the most minimal interactivity. The presence of a bulletin board with a few posts, or a chat room with some teens swapping age/sex information does not mean that people are forming anything worthy of the name community.

Brown claims that while these companies boast about their active communities, "Most people, it seems, just want a place to slap up a picture of their cat."

The relationship between "sense of place" and CNs is also important to consider. Access to the Internet is often seen as a key service of CNs, but it is local content and character that helps to build a sense of community. Many CNs are really more focused on allowing local groups and individuals an opportunity to talk with each other. This recent (Jan. 1999) posting from a CN director on the Communet listserv illustrates the CN philosophy:

> We are moving away from our fairly static menu type pages to something much more dynamic and community controlled. Essentially, we are going to attempt a user driven series of community of interest sections. We are trying to tap into the folksy aspects of a small community newspaper, but joining many of these into a common site. Rather than us saying what the communities of interest will be, we are going to the people to find areas where people are already active, motivated and have a vibrant community. Bringing the tools to the need, rather than trying to find a need for the tool.

Douglas Schuler, author of New Community Networks: Wired for Change (1996), is a strong proponent of computer-based networking. His 1996 book explores the meaning and relationship of both "community" and "technology," and the topics of the first chapter *(The Primacy of Community, A Call for a New Community, Actions for the New Community, Building Community Technology, What is a Community Network? and Towards a Marriage of Community and Technology)* suggest that he views CNs as a way to community building. In Diminishing Hopes, Schulers' recent reply to an article in the Boston Review by John McChesney critiquing the American media support of democratic principles, Schular makes the claim that community networks are important to democracy.

> In the evolving realm of cyberspace, such networks may be the most viable options for nurturing and sustaining democracy in cyberspace, as they provide not unfettered freedom of speech put forth by a few, but inclusive and free access for entire communities without the usual economic barriers that stifle political communication.

A claim of proponents of CNs is that they build "strong," direct democracy. Frank Odasz, a private consultant has created a "Participatory Democracy Web Tour" (1998) which attempts to summarize best practice, innovative models and excellent resources for effective and powerful community building through electronic networking. http://lone-eagles.com/democracy.htm .

The Center for Civic Networking http://www.civicnet.org/ defines civic networking "interacting with others for mutual support regarding civil affairs; using computer or other electronic networks to interact regarding civil affairs." The Center has continued to take leadership in promoting electronic conferences, forums and other

conversations on how community networking is enhanced through the Internet and CN service functions.

There are no decisive answers to the question raised regarding the relationship between computer-based community networking and building a healthy civic society. However, because we are in the midst of profound changes in the way people in our society communicate with one another, the impact of computer networking on social fragmentation and isolation, along with its capacity for community building, should be considered.

> A 1994 paper by ACEnet on forming a community network, comments that
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> The most intriguing quality of the Internet, which is often ignored those planning new information/communication systems, is that it has been designed and developed in the absence of authority and control, through the very process of people's usage. It has developed not by strategic plan or consensus but by groups identifying possibilities or problems, working out specific solutions, and then sharing the solutions with the whole.

Community Networks and the Local Business Enterprise

Background

While some CN proponents argue that community networks should be focused on non-profit and non-commercial activities, other CNs are merging with their local CityNet sites, chambers of commerce, or other virtual marketplaces. Their goal is to facilitate collaborations not possible through traditional forms of communication, thus aiding small businesses and sparking local economic development, particularly in rural or disadvantaged areas. Still other CN proponents claim that supporting and developing local enterprise is part and parcel of community building akin to "buy local" campaigns. Some of the ways Community Network sites work to expand markets for local products are by providing various Internet services, along with encouraging networking between entrepreneurs through discussion groups, Internet conferencing, and more traditional face-to-face networking activity. In addition, some CNs create virtual marketplaces and other showcases for product and service promotion.

There are several examples of cooperative relationships between CNs and commercial development networks. For example, the Austin Free-Net and Austin CitySearch have worked together to exchange links, co-sponsor events, and distribute web guides, among other activities. Another example of a cooperative relationship between a CN and a community economic development organization is The Southeastern Ohio Free-Net (SEORF) (http://www.seorf.ohiou.edu/), and the Appalachian Center for Economic Networks (ACEnet). ACEnet, an innovative economic development organization located in Appalachian Ohio has experimented with linking SEORF with regional micro-enterprise groups.

CNs can serve as important niches to assist local economic development networks. Working together, these cooperative programs can provide computer services, training, and market research data, among other services. On a more basic level, telecommunications is the central, though invisible, infrastructure for commerce in the global economy. The information infrastructure provides access to the information used as "raw materials," in many goods and services produced today; it provides access to a production system, access to a distribution system and most importantly, access to markets. This access is central to all economic development. CNs can provide access to that infrastructure for small or low-income firms and entrepreneurs through Internet connections. The Public WebMarket, a virtual business incubator for small firms located in rural areas of four states is dedicated to that strategy. With both TIIAP and W.K. Kellogg Foundation support, ACEnet has been able to design a network architecture on SEORF that links local firms to the Public WebMarket project and to interactive conferencing forums, and to listservs organized and facilitated to build national networking among small firms.

The Public WebMarket (PWM) was designed by ACEnet, the Center for Civic Networking and the Old North End Community Technology Center to link "sense of place," and product and producer. The site encourages Internet users to purchase unique and locally produced products and to meet the producer of those products. Hot links move the view from cultural information about the producer's community to actual

products, creating a type of shopping experience linked to tourism. Consumers can develop a sense of loyalty to a product linked to place and person. Small firms are networked to link database tools to pinpoint and focus their marketing. The PWM is yet to become self-sustaining.

Issues Surrounding CNs and Economic Development

In Healthy Partnerships Between City Guides and Community Resources (1998), Peter Krasilovsky discusses some of the main issues surrounding commercial involvement in Community Networks at various levels based on several community models. Some of the issues involve non-profit status for CNs collaborating with commercial groups, boundaries of acceptable commercialism, and ways that working together can increase usage for both the CNs and the commercial enterprises.

A key question for CNs is whether, in fact, access to the Internet will assist local small business to develop markets. Madeline Brand, airing on the January 11, 1999 *Morning Edition,* National Public Radio, reports that although there was a 200% increase of 1998 holiday sales over the Internet from the previous year, most retailers have yet to make a profit on Internet sales. The only consistent profit segments on the Internet are pornography and financial services. Electronic commerce is still not a mainstream activity. Larger businesses expect Internet sales to jump as more households have Internet access through cable services. Several major players like Macys Department Store have come on-line during 1998. Although they still experience losses on the Internet, large businesses can justify it as an investment in the future. Smaller companies may not be able to make that same investment.

A recent publication by the Michigan Small Business Development Center (1998) reports on an Internet marketing study of 15 diverse small businesses from September 1996 to January 1998. (Internet: Force or Farce? 1998) Most small business in the study expressed frustration with the time necessary to make their Web pages work well. Their comments clearly point to the need for an intermediary service to support small firms efforts to use the Web. The study found the use of search engines by the businesses as a

marketing method was a complete failure. Businesses tried using "key words," a technique that has yet to be refined on Web searches. Many customers would not know which key word to use, and other key words are used by thousands of companies. Attempting to build effective links to their site was a major frustration for small businesses with limited staff and resources to dedicate to the task. Those businesses that actively marketed their site in every way (putting their URL on invoices, for example) reported slightly higher traffic on their site. Overall, sales directly connected to a Web site were minimal and disappointing for the businesses. Study participants reported that they did see the Internet as an economical marketing tool, they felt more "professional" from having a Web sites and they were generally optimistic about the future use. All participants received email or inquires from other countries and they felt encouraged about these "global connections," however minor. They also benefited from the low-cost communication services. For very small businesses, reducing long distance phone charges is also a very real saving. Several of the businesses had more concrete success with the Internet as a tool. One business, a horticultural design firm, had moved to on-line contracting and design work. Another firm found that they were able to focus and target their battery disposal market on-line.

On another level, Community Network advocates argue that the network goes beyond just the packaging, delivery, sale and advertising of products. The Internet platform allows for what Richard Lowenberg (rl@don.davis.ca.us) calls "the steep learning curve and processes inherent in becoming smarter and more economically generative participants in the new information economy/society." Amy Borgstrom, Executive Director, ACEnet, notes that small firms begin to access high-value markets by engaging in a "bundle" of ongoing Internet-based activities including locating new sources of inspiration for products, feeling comfortable in trend dialogues that typically begin on either the East or West coast, tracking new discoveries related to opening emerging markets, networking with peers outside their own community, and having access to innovative packaging and marketing. One response to this collection of needs is to build public access sites that can "bookmark" access to useful business information.

This is another level of the "training wheels " strategy which supports small firms to build the competency needed to succeed in global markets.

Some critics question whether allowing commercial and economic development uses of the CNs will only allow the large commercial industries to eventually capture the local market, out competing the small business utilizing the networking services. This has been an important issue for Andrew Cohill, Ph.D, Director of the Blacksburg Electronic Village (http://www.bev.net/). The Blacksburg Electronic Village, like many Free Nets offers a kind of "Yellow Pages" listing for local businesses called the "Village Mall." Approximately 215 firms are listed.. Another FreeNet, RTPnet, a community network for the Research Triangle Park area of North Carolina (Raleigh/Durham/Chapel Hill) offers a directory of local business Web pages organized by topic.

Competition with Local ISPs?

In some areas private Internet Service Providers (ISPs) feel that CNs or Free-Nets unfairly compete, although the general trend is for smaller businesses to use a Free-Net as a kind of "Trianing Wheels" for the Internet and to quickly "graduate" to ISP professional services. A 1997 summary of local business use (n=217) on the Blacksburg Electronic Village indicates that small businesses (fewer than ten employees) are most likely to take advantage of a Free-Net and that they perceive the free advertising and the opportunity to try the technology as the main benefits. In the BEV study, the majority of small business respondents also said that they sought to increase contact with clients. A smaller number (11%) indicated that they sought to increase contact with suppliers. The research did report increases in contact with both suppliers and clients. BEV Village Mall does not allow for commercial transactions, so this measure was not studied.

Richard Civille, Director of CivicNet has helped to frame the conversation on threats and barriers created by the challenge of financial sustainability. His article "Community Networks and Small Internet Service Providers" offers case studies on CNs that have developed successful partnerships with local ISPs.

http://www.civicnet.org/articles/casestudy/aztecisp.html Reporting on a case study of AzTec CN in Phoenix, Civille points out the mutual benefits of the collaboration:

> The free public access community network serves as pre-competitive market development for the commercial ISPs. As well, by highlighting links to AzTec, commercial providers add additional value to their services at no additional cost, providing convenient access to useful local information content. This relationship suggests that AzTec will not need to make continual investments in increasing phone lines and modem banks because much of the access requirements will be peeled off by the commercial sector. The commercial sector, focusing on direct access, does not specialize in developing useful local information content. The two roles, access and content, would appear to be complementary.

Unfortunately, not all ISP businesses perceive this complementary relationship. Some community networks supported by local colleges or universities have had to battle with local providers who view public support as "unfair government-supported competition."

Future Scenarios

Michael Gurstein, Director of the Centre for Community and Enterprise Networking at the University College of Cape Breton has developed an argument for going beyond using the Internet as a tool for marketing in small and rural communities. He suggests the possibility of on-line networks for distributed economic development and even production. In a paper prepared for the Victoria Association of Community Information Centres, Gurstein http://ccen.uccb.ns.ca/articles/flexnets-ict4led.html spins scenarios that allow rural communities to expand their Internet access to an economic development strategy that links multiple sites in production and distribution. He points out that the local economy (as opposed to the global economy) will share the fate and future of the local community and respond to local issues and conditions. He also sees the need for a CN or other intermediary access point for low income entrepreneurs or small firms with limited resources.

A viable community does not exist without an economic base, but the extent to which a Community Network can act as a strategy for economic development is yet to be proven. It is obvious that direct low cost access to the Internet is one step towards

supporting a local economy. However, as Gurstein points out, the role of information technology in local/rural economical development is yet to be determined. It is equally possibly that the technology can accelerate the decline of small businesses by opening access to the greater selection and cost competitiveness of metropolitan suppliers.

Conclusion

The number of Community Networks has not expanded much in the last five years. In some ways, CNs remain fragile and vulnerable as AFCN President Amy Borgstrom pointed out in her address to the European Alliance for Community Networking in summer, 1998:

> Sustainability is the key pressure on these networks, and the lack of sustainability is, I think, what keeps that number at around three hundred or so. Often our very backgrounds as community activists, and our very structure, as non-profit organizations make it hard for us to raise the funds we need to keep growing our networks.

Borgstrom ends with reminding her audience:

> the community network is about people and community capacity building, not technology. We use the community network as a platform to link small businesses with new and emerging markets, with resources both local and distant, with each other, and with other low-income communities around the world. We view the community network as one community asset in a whole range of social capital.

Those CNs that remain active and innovative continue to evolve models for building social capital through community networking. The CN trends towards specialization, partnerships and deliberate networks mirror much of the dynamics of the evolving global economy. It remains to be seen if these small and place-based community networks can provide the leadership needed to survive and nourish their communities.

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