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Multi-site Videoconferencing as a Public Sphere in First Nation Communities: A Case Study

Fenwick McKelvey
Ryerson University, Toronto, Canada

Susan O'Donnell
National Research Council, Fredericton, Canada

Abstract

The paper examines multi-site videoconferencing as a public sphere. The theory of the public highlights the political effects of multi-site videoconferencing and how the technology contributes to the well-being of the community. To analyze the political effects of videoconferencing, the paper describes a case of community use of multi-site videoconferencing based on video analysis and semi-structured interviews. The case occurred in 2007 and connected a number of First Nation communities across Canada for simultaneous audio-visual exchange. K-Net Services in Ontario hosted the meeting to gauge the feasibility of public meetings through videoconferencing and to document an example of community uses of the technology. K-Net Services works to develop their videoconferencing infrastructure as a public space. Our findings suggest K-Net's activities have developed a media institution best understood as a counter-public sphere for their service region. The case meeting shows a potential new opportunity to further integrate videoconferencing into community development.

Introduction

There are more than 600 First Nation (indigenous) communities in Canada, many in remote and rural areas. Over the past decade, a handful of First Nation organizations has led the development of broadband infrastructure to these communities and provides network and Internet services for their residents, schools, health centres, band council (local government) administrations, local businesses and other community organizations. Videoconferencing is one of the network applications offered by these First Nation service providers. Videoconferencing – high-quality synchronous audio and video communication among people separated by distance – is used by both community residents and organizations for a variety of purposes.

This paper explores the use of multi-site videoconferencing (connecting three or more geographic locations) by First Nation communities in the context of the public sphere. The public sphere is way of thinking about how media practices and institutions have a political effect and how they contribute to the well-being of the community. The public sphere is often used in media studies to evaluate the contribution of ICTs (Bimber, 1998; Dahlberg, 2004, 2005; Papacharissi, 2004). Scholars emphasize how the construction of the space allows public participation, facilitates deliberative decision-making, and enacts collective decisions (Fraser, 1992; Garnham, 1992; Joss, 2002).

Our analysis uses video analysis and semi-structured interviews to describe a case of community use of multi-site videoconferencing that connected a number of communities across Canada for simultaneous audio-visual exchange in 2007. The case exemplifies the many multi-site videoconferences happening between First Nations in Northern Ontario. The core organization involved - K-Net – is the leading First Nation provider of broadband network services to remote and rural First Nations communities in Northern Ontario. Many of the communities on its network are fly-in communities with no road access, and many are served by satellite networks. In July 2007, K-Net hosted a public meeting by multi-site videoconference with the title "Advancing the Green Agenda via Videoconferencing." Our research project is partnered with K-Net, and we supported the organization of the event to study the feasibility of public meetings through videoconferencing and to document an example of community uses of the technology.

Research and Case Study Context

Our research uses a community informatics approach. ICTs, to be effective, need to be adapted to suit the target community. Community informatics practitioners develop programs and concepts to appropriate new ICTs for community needs (Keeble & Loader, 2001) and community informatics researchers study ICTs in their community context. Jankowski, Van Selm, & Hollander (2001) suggest that practitioners should develop community communication through the development of local public spheres. Their work links the mandate of community informatics with the theory of the public sphere. Here communication is used to share knowledge, rather than transmit information (Carey, 1989). Many argue that the creation of regional public spheres through ICTs can help in local development through regional cooperation (Alkalimat & Williams, 2001; Gurstein, 2001; Jankowski, Van Selm, & Hollander, 2001).

Our use of the *public sphere* refers to work of Jürgen Habermas and subsequent academic discussion, particularly by Nancy Fraser. In theory, the public sphere creates an institutional space where private citizens can act collectively. Citizens' ideas circulate through an assemblage of physical and media spaces, such as coffee houses and the newspapers. Importantly, the spaces are public because all citizens have access to the space and all citizens are treated as equals within the space. Through a critical-rational discourse, citizens deliberate on public matters and through the 'unforced force of the better argument' make collective decisions. Thus, the public sphere contributes to a community by encouraging deliberative and participatory democracy (Calhoun, 1992; Habermas, 1989 [1962], 2000 [1974]).

Problematically, the original theory of the public sphere did not address the possibility of the conflict between mass media and marginalized groups, like women, and plebeian society (Habermas, 1992). Other theorists revisited the public sphere to provide an account for how alternative spheres could assist marginalized groups in their struggle. Fraser's theory of the counter-public sphere describes alternative institutions for groups excluded from the mass public sphere, more accepting of alternative values and allow members to advocate their cause. The strength of a counter-public would depend on how well it enacts its collective decisions (Fraser, 1992). Downey & Fenton (2003) posit that counter publics function by pushing their matters of concern into the greater public sphere. The transference of a concern from a counter-public to the public would be regarded as a successful action. In relation to First Nations, some authors argue that Indigenous newspapers in Canada and Australia created an Aboriginal public sphere (Avison & Meadows, 2000; Hartley & McKee, 2000). In our paper, videoconferencing presents a new media institution for research into an aboriginal public sphere.

Historical discrimination, racism, and social injustice have contributed to a situation in which First Nations have a lower quality of life than most Canadians (Royal Commission on Aboriginal Peoples, 1996). First Nations have mobilized, in response to their socio-economic conditions, through political and community

projects to push their development agenda (Miller, 2000; O'Donnell and Delgado, 1995). In 1994, Keewaytinook Okimakanak (KO), a tribal council, started K-Net Services. KO mandated that K-Net develop, provide, and support ICTs for community needs. The organization began by managing an electronic bulletin board system (BBS) as an after-school program. Through successful management and lobbying, the organization won government and industry support to create a regional broadband network for remote communities that would not otherwise have access. Today, K-Net is a leading First Nation broadband network providing connectivity solutions with local community networks in remote and rural Indigenous communities across Canada. It services more than 60 remote northern communities in Northern Ontario and Quebec. K-Net's work includes supporting videoconferencing in the region (Beaton, 2004; Fiser, Clement, & Walmark, 2006; Ramirez, Aitkin, Jamieson, & Richardson, 2004; O'Donnell et al., 2007).

Our observations and analysis suggests that videoconferencing creates a public sphere in First Nations communities in Northern Ontario. K-Net works to develop their videoconferencing infrastructure to better support this public space. Most of the literature regarding the uses of videoconferencing. First Nations focuses on telehealth and distance education (Aitkin, Jamieson, Ramirez, & Richardson, 2004; Bale, Brooks, Grummett, & Tymchak, 2005; Care, 2001, 2003; Downing, 2002; Elias, O'Neil, & Sanderson, 2004; Masum, Spence, & Brooks, 2005; Muttitt, Vigneault, & Loewen, 2004). However, an increasing number of studies focus on using video in community development (Ferreira, 2006; Fiser et al., 2006; O'Donnell et al, 2007; Perley and O'Donnell, 2006; Ramirez et al., 2004; Walmark, O'Donnell and Beaton, 2005). This research tends to focus on K-Net as it has the most developed infrastructure among Aboriginal broadband providers (Perley and O'Donnell, 2006). Ferreria (2006) used participatory video to connect remote communities to federal policy-makers. O'Donnell et al. (2007) completed a major content analysis of K-Net's video server and found that 62 % of video activity at K-Net supported some type of community development. The findings, along with other research, suggest the linkage between broadband video and the theory of the public sphere. Our research continues to build on this developing literature by emphasizing how videoconferencing develops a First Nation public sphere.

The success of multi-site videoconferencing in the region served by K-Net has little to do with the innate technology and more to do with K-Net's sustained support and appropriate use of the technology. K-Net is a community-led internet and broadband network service provider. It is important to remember that the success of broadband video in remote communities in Northern Ontario depends on K-Net. Their infrastructure developed, in part, after the organization lobbied for a new network that addressed the inadequate provision of government services. Today, videoconferencing allows for remote communities to access medical and educational recourses previously inaccessible (Fiser et al., 2006). By allowing government services to operate on their network, K-Net funds other community services. Simply put, K-Net uses the existing broadband infrastructure tactically for community development (Garcia & Lovink, 2001).

K-Net manages the network first and foremost as a community resource. Bandwidth sharing is an interesting example of how community values manage network resources. As K-Net struggles with limited bandwidth, there is not enough space on the network for many simultaneous videoconferences, especially in satellite-served communities. In a capitalist system, price would dictate access to the network. K-Net, conversely, uses a scheduling system and managed network where users need to book ahead to access the network. The managed network system gives more bandwidth to scheduled activities over other non-scheduled activities. When a telehealth worker books a consultation, the network administration reserves them bandwidth on the network. In this way, K-Net is not a neutral network as it deliberately promotes activities that engaged in sharing and cooperation by scheduling their time. The scheduling system is an important example of how community values manage the network. It both guarantees quality of service for

paid uses, and also allows K-Net to identify when the network is free for other public activities.

K-Net's sustainable use of the resources means that the technology is well-supported in the community, but it walks a fine line between pushing the technology and responding to community needs (O'Donnell et al, 2007). While K-Net wants to promote the technology, they do not want to push the technology on the communities. When a community does not choose to participate, K-Net does not push videoconferencing in the community. Many communities in K-Net's service region choose to participate and remote communities in Northern Ontario typically have at least three videoconferencing units - one each in the school, health centre and band office - and some have an extra unit in a public area. Access is not ubiquitous, but K-Net has focused on improving access to the best of its ability. K-Net works to provide, promote, and expand videoconferencing access in remote Northern communities.

The term "multi-site videoconferencing" refers to using broadband networks, IP protocols, videoconferencing hardware and software, and a videoconferencing bridge (an MCU) to communicate by synchronous audio and video among multiple geographic sites. For the multi-site videoconference discussed in this report, the use of the broadband networks, IP protocols and bridge were controlled by K-Net, with the videoconferencing hardware and software controlled by each of the participants at the different sites. During the meeting K-Net also streamed the audio-video feed to its streaming server and to the research project website on a K-Net server. Videoconferencing in this case, then, includes both an actual meeting and a public record of the meeting.

The multi-site videoconference event discussed in this paper is a paradigmatic case of videoconferencing (Flyvbjerg, 2006). Analysis consisted of participant observation during the event, interviews with key participants after the meeting, and video analysis of the transcripts that involved editing the archived meeting into four thematic segments and making them publicly accessible on the project website on K-Net. The four themes of the meeting were community uses of videoconferencing, personal experiences of videoconferencing, challenges and solutions, and future uses. After the event, we conducted semi-structured interviews with three meeting participants to explore the four themes.

The Multi-site Videoconference Event

On July 12, 2007, K-Net hosted a videoconference advertised as a public meeting to discuss the relationship between videoconferencing and the green agenda. The researchers, working in partnership with K-Net, decided to support the organization of this event and chose the topic of the meeting during its regular research partnership meeting the previous month. The green agenda event was meant as a test of how videoconferencing facilitates public meetings. More meetings are planned to continue this research and application of the technology.

Multi-site videoconferencing has recently attracted more attention as a green technology. The technology allows multiple people to meet in a shared mediated space. Organizations could cut down on carbon emissions related to travel and decrease their carbon footprint by using videoconferencing,. K-Net suggested that organizations could bank their emissions savings and trade them on the carbon market. The meeting hoped to discuss methods of calculating these savings, as well as discussing best practices for videoconferencing.

K-Net posted an announcement of the event on their web portal (http://media.knet.ca/node/2859). The post seemed to attract attention. During the meeting, one participant mentioned that he saw post on the K-Net website and joined the meeting. The announcement also included links for participants to learn more about the subject. Posters advertising the event were circulated by email to First Nation communities in the K-

Net and Atlantic Helpdesk regions. The main bridge linking the videoconference sites was operated by K-Net in Sioux Lookout. The K-Net bridge linked into the Atlantic Helpdesk bridge, which was linking the First Nation participants in the Atlantic region.

The authors participated in the meeting from our research institute on a university campus in Atlantic Canada, more than 1,000 kilometres from the central meeting location in Northern Ontario. On the day of the meeting, we all gathered around the desk of the videoconferencing room. The desk had been arranged in a semi-circle facing the two blank monitors of the Tandberg videoconferencing unit. At the given time, we turned on the equipment and, once connected, we found ourselves in the midst of a virtual room full of people busy preparing for the meeting. Participants adjusted their cameras, talked with each other, and organizers tried to help anyone with technical difficulties. Although we were physically still in our meeting room in the research institute. we felt like we had entered a large meeting hall.

The meeting demonstrated how multi-site videoconferencing technology allows remote locations to connect to key resources and to assemble into one meeting space for simultaneous audio-visual exchange among participants. Figure 1 illustrates the location of meeting participants. The meeting brought twenty-two different communities from across Canada into one mediated space, with seven sites in the Atlantic region, thirteen sites in Ontario, one site from Alberta, and one site from British Columbia.[1] In relation to other videoconferences, the event was quite large. (Typically, organizers like to have smaller meetings with around five sites participating in order to have more interactive discussion (Molyneaux et al., 2007.)

Figure 1: Map showing location of participants in the July, 2007 event

Estimating the exact number of participants is difficult because many participants were off camera.[2] We estimate that more than 40 people participated in the videoconference. The participants' locations were

[1] The complete list of sites: Atlantic Helpdesk, Membertou First Nation, NS (2 sites), Chapel Island First Nation, NS, Wagmatcook First Nation, NS, Waycobah First Nation, NS, Elsipogtog First Nation, NB, National Research Council, Fredericton, NB, Ottawa, ON (3 sites), Wikiwemikong First Nation, ON, M'Chigeeng First Nation, ON, KORI, Thunder Bay, ON, Sioux Lookout, ON (2 sites), Lac Seul First Nation, ON, KO, Balmertown, ON, Poplar Hill First Nation, ON Nibinamik First Nation, ON, Bearskin Lake First Nation, ON, Edmonton, AB, and Salt Spring Island, BC

[2] In one case, we had only heard one speaker from a certain site and we assumed that he was the only participant. Then this participant readjusted the camera and we saw that he was in a board room filled with other people who had been watching off camera.

clustered in Northern Ontario and Atlantic Canada, the areas covered by the two First Nations partners in our research project. In Northern Ontario, the participants were three individual telehealth workers in three different remote First Nation communities, four participants at the KO Research Institute in Thunder Bay, members of K-Net community services in Sioux Lookout, participants at the administration offices of Keewaytinook Okimakanak in Balmertown, a worker in a band office in remote Nibinamik First Nation, and band members from two First Nations on Lake Huron. The three sites participating in Ottawa were from two federal government departments: Environment Canada, and Indian and Northern Affairs Canada. In Atlantic Canada, the participants were telehealth workers from four First Nations, members of the Atlantic Help Desk administration in Membertou First Nation, Cape Breton, and five participants at the site of our research institute. There was also one participant in Edmonton, Alberta and one on Salt Spring Island, British Colombia.

As the meeting began, the two meeting chairs, in Sioux Lookout, Ontario and Fredericton, New Brunswick introduced the structure of the meeting. They divided the 1.5-hour meeting into three phases. The meeting followed their schedule accordingly. We began with a round of introduction with each site introducing themselves in turn. Following the introductions, the organizers had arranged for three speakers to talk about videoconferencing, and finally the floor was opened for a moderated discussion about videoconferencing and the green agenda.

The three presenters were a Northern telehealth worker, a member of First Nations School-Net and a consultant who has worked with K-Net to develop their videoconferencing strategy. The presentations focused on how they have introduced the multi-site technologies to the communities and some of the results. These efforts involved lobbying, promoting, and training. The consultant summed up these experiences when he reflected on seeing how videoconferencing was used in the well-supported community of Sioux Lookout. He said:

> *I noticed when I was up in Sioux Lookout that people were quite used to it, and this is one of the challenges that we're facing now. You had mentioned a change management process where people get used to adopting these technologies using them, and getting them to think that making a videoconference is just as quick and easy to do as a phone call. We're not quite there yet, however, I think sessions like this are a perfect example as to how coordinate and use this sort of technology.*

Beyond implementation, the presenters also expressed how the technology was helping communities. The telehealth worker spoke of the community benefits of videoconferencing. She described the real benefit as follows, "Patients don't have to leave home. They don't have to leave their families. They don't have to leave work." Access to medical support allows the sick to receive medical advice without having to leave behind the support of their family and home. The technology also allows the delivery of services that were once inaccessible to the community. Through a dramatic example, the telehealth worker explained how she helped to deliver a baby with the support of some physicians from Sioux Lookout who guided through the process over a videoconference connection. As she had no training on this procedure she normally could not have successfully delivered the baby.

The final part of the meeting opened the floor for discussion. The time was an opportunity for everyone to speak about his or her experiences with the technology. With a large group, sites look turns presenting their interests and concerns. Discussion was diverse and topics varied between sites. Many groups discussed how videoconferencing had benefited their respective organizations. One participant mentioned that they conducted job interviews by videoconferencing saving in the travel costs of applicants. Other participants used the technology for community development. As one explained:

I've done a lot of community engagement work through videoconferencing, training CTCs [Community technology coordinators working with the health centre], talking to CTCs and also, I've done presentations on KOTM, which is KO telemedicine. I've done presentations across Canada. And also I've delivered a seven-module course on tobacco prevention. One module that I thought we wouldn't be able to complete was role playing. And it turned out to be the best part of the course, because in each of our communities, we would pick a character from different communities, and because they were within their own space within their own environment, and people there knew they were able to ham it up a bit, so we ended up doing an extra day just on role modelling, because they were having so much fun.

Some meetings take place in the Native languages (in these regions, Cree, Oji-Cree and Mi'kmaq), allowing participants to expressing themselves in their first tongue. The technology has also been used to nurture local culture and history. One participated in an ongoing event using videoconferencing to connect Elders in different communities:

The most successful program we have is our Elders gathering. We have an Elders gathering once a month and the Elders really look forward to this… and we usually get over 100 Elders in one session

Communities and regional service providers have taken up videoconferencing. One captured this point nicely by saying:

I use videoconferencing almost every day of the week, now, since I started working here, just with the various committees and meetings with the different organizations. So it's really helpful. I really enjoy using it, and sometimes we double-book ourselves, because it's so easy. (Laughter) It's really easy to do that.

In sum, the presentations made in the videoconference validate claims made elsewhere that videoconferencing assists communities development in First Nations (Perley and O'Donnell, 2006).

Despite the various successful appropriate uses of technology, several participants discussed how to better integrate videoconferencing into their organization. Training remains a means of improving the usage of videoconferencing. Training ranges from technical explanations of placing a call to proper ways of conduct during the meeting. Potential users need to know how to present themselves during a meeting. One person explained these challenges:

Some of the other things are making sure they're aware of the etiquette. Many times I've watched different videoconferences where, you know, you only see part of a face, or you know, people don't realize they don't have to stand up and shout into the microphone, shuffling papers….So you sit with them and you talk to them about what that would change, explaining the different equipment that you have available, and try and come up with a plan to alleviate that from happening, and assist them with that.

Aside from training, participants also discussed how to integrate videoconferencing into their organizations. These challenges lessen as more people become aware of the technology. As one participant stated:

I do the basic training to the staff, and then I really want to see the light bulbs go on and the

eyeballs get big, because once you introduce them to this, I think they'll get creative and just take it over, because we have a lot of creative people on staff

Once people become aware of the technology and its capacities, they can find their own appropriate uses. To conclude, participants remained confident that the major obstacles to videoconferencing could be overcome through training and support.

Discussion about the green agenda tended to focus on promoting the usages of videoconferencing. By traveling less to attend meetings, communities reduced their carbon emission— the more people using the technology, the greater the savings. These savings could be banked for possible exchange on a carbon market. Measuring theses savings remains a challenge for banking carbon credits. One participant's work focused on developing measures to calculate savings. These savings could be used to justify investment and bank credits.

As part of the project, we prepared four videos that summarized the themes of the discussion. These can be accessed and viewed online. They are:

- Future Uses (http://media.knet.ca/node/2977)
- Experiences with Videoconferencing (http://media.knet.ca/node/2976)
- Community Uses of Videoconferencing (http://media.knet.ca/node/2975)
- Challenges and Solutions (http://media.knet.ca/node/2974)

These videos act a public archive of the event and we posted them on the K-Net server. We hope that readers will watch these videos in addition to reading this paper.

After the meeting, one of the authors opened a discussion board on the research project website to allow further discussion of the issues that arose. Notably, there was little discussion in the online forum; this is not surprising, given the poor participation record of many online discussion boards. In the future, videoconferences will need to address better integration of discussion boards and online paticipants, but this theme is beyond the scope of our paper.

In summary, the meeting involved more than 40 of diverse people from across Canada. Most participants already had institutional access to videoconferencing and prior experience with the technology. Although advertised as a discussion of videoconferencing and the green agenda, the meeting mostly focused on the use of the technology in First Nations communities. The meeting succeeded in giving participants a time to share their experiences and learn about how other communities were using the technology. During the meeting, several people stated they enjoyed the meeting and hoped that similar meetings would be organized in the future.

Conclusion: Re-Thinking the Public Sphere and Public Space

In conclusion, we will explore some of our thoughts about how the technology changes public space in the regions. For Anderson (1991), the printed word facilitated the transition from feudal states to nations. The newspaper and the book re-conceptualized the public's sense of time and space. Through shared rituals, like reading the newspaper, future citizens could imagine their place in a shared time. This imagined time allowed the public to think of themselves as citizens bonded together in a nation (p. 33-36). Anderson's work demonstrates the media's role in creating shared space for regional communities. As Wilson describes, Anderson's work explores how community bonding includes a "perceptual, emotive dimension" (2006, p. 26).

It can be argued that videoconferencing results in a similar re-conceptualization. However videoconferencing, a space-biased medium not a time-biased medium (Slack & Wise, 2005), overcomes the challenges of distance but does not directly address the problems of time. Videoconferencing is a more temporal medium and does not suspend time to allow for mass rituals, like newspaper reading.[3] Instead, the technology encourages people to feel temporarily like they exist in the same space. Like a map, videoconferencing connects remote communities so they can think regionally. As one speaker emphasized, "*videoconferencing, one of the enablers, is like you're walking into an office that feels like it's next door and it can be like 3,000 kilometres away, so that's a very good feeling.*" K-Net's efforts to implement, support, and grow videoconferencing create a media space dedicated to overcoming distance and creating a regional forum for deliberation.

To be clear, videoconferencing does not overcome all the problems of space and time, but it does allow individuals to be less concerned with distance. Participants often describe the technology as convenient. They do not have to travel to attend a meeting. A single office can work throughout the region. For example, at the administrative level, the technology allows different First Nations to hire shared employees, organize regional actions, and share knowledge. Videoconferencing creates a networked space for bands to interact. This space minimizes the cost of distance. Gurstein argues that flexible community networks encourage "distributed social, economic, and political organization and development" (Gurstein, 2001: 274). In short, videoconferencing allows bands to conceptualize their place in a networked space, instead of a geographic space.

The video analysis for the July meeting supports the statement of O'Donnell et al. (2007) that the technology "fosters many community development initiatives". During the conference, participants shared the ways they use videoconferencing for their communities. As one participant stated:

> *We also realized there that communicating amongst ourselves would be facilitated by this type of technology and we really do need to communicate on these types of issues to coordinate strategy. So I think from that sense, that was where my interest arose, and you can imagine there's many other uses for this technology, especially working amongst various communities.*

The theory of the public sphere is an important concept for community informatics because it helps conceptualize how media empowers citizens (Jankowski et al., 2001). The public sphere describes how an ideal configuration of media space and public processes that create institutions for deliberative decision-making. Habermas (2000 [1974]) defines the public sphere as "a realm of our social life in which something approaching public opinion can be formed" (p. 509). Similar to Anderson, Habermas uses the newspapers and the coffeehouses of the 18th century to describe the bourgeois public sphere. By enabling collective decision-making and action, these spaces allow private citizens to make the monarchy more accountable and develop the principles of representative democracy (Habermas, 2000 [1974]). As Garnham (1992) points out, the theory focuses upon "the indissoluble link between the institutions and practices of mass public communication and the institutions and practices of democratic politics" (p. 360). The theory links a society's politics to the media environment where politics occurs.

Fraser's theory of the counter-public sphere helps describe K-Net's involvement with videoconferencing. Fraser argues that media environments exclude certain interests or values. While meant at first as a critique of the bourgeois public sphere, Fraser finds that exclusion is constructive. Exclusion requires some consensus among participants over the common values and goals. If, as she argues, theory rejects the

[3] Online video archives, such as the one operated by K-Net, might offset this bias, by turning the video transcripts of the meetings into public archives. Such possibilities would need to be addressed in future research.

necessity of a singular public sphere, then it can become an extremely useful means of describing alternative media and media democracy. Just as the mainstream sphere excludes certain groups, these marginalized groups can create their own spheres. These sub-altern spheres would theoretically provide a better voice to their concerns and lobby for better recognition among other sphere, and technology can facilitate that voice (Fraser, 1992; O'Donnell, 2001; van Vuuren, 2006).

The K-Net region suffers from a double exclusion. First Nations are marginalized in mainstream culture (Voyageur, 2002) and the remoteness of the region distances it from geographic hubs. Exclusion, however, does not entail the homogenization of identity; rather, exclusion means finding commonalities (Willson, 2006). As Fraser highlights, exclusions can become productive and progressive. The K-Net region's exclusion from commercial internet service providers allowed K-Net to create a community-oriented network that allows bands to cooperate and share. Their exclusion from power resulted in creation of a regional network. K-Net constitutes an institutional media space for a counter-public sphere (Garnham, 1992). One participant in the July event summed the hopes as:

> *I think this meeting is a great example of the opportunities that we have to be able to come together and to be able to allow people on the edges… to participate in an equal way, being able to do e-work, how we start to be able to distribute the resources in an equitable manner rather than the people like us being left out on the edges waiting for decisions to be made or programs to be made.*

The results are similar to First Nation newspapers where the papers "provide sites for public opinion formation; sites where citizens can engage in collective efforts to bring their issues to the dominant public sphere; and sites where Aboriginal people can attempt to influence the policies of various governments through the pressure of public opinion" (Avison & Meadows, 2000). The network completes a major goal of community informatics: to use technology in a way that benefits the community (Gurstein, 2001; Jankowski et al., 2001; Keeble & Loader, 2001).

Videoconferencing is also beginning to connect to policy-makers. The policy development process for the Northern Table for Land Utilization between Nishnawbe Aski Nation and Ontario provincial government uses videoconferencing to host focus groups with remote communities. Community members are asked to give input and their responses help craft the resulting power. As more First Nations and governments agencies – like Environment Canada and Indian and Northern Affairs Canada – increase their use of videoconferencing, community members can become better connected to power. Most of the federal government participants at the July meeting suggested that the technology allowed better access to First Nations. Potentially, videoconferencing could facilitate more deliberative policy making (Hajer & Wagenaar, 2003). Such an outcome remains an important goal for videoconferencing as Fraser relates the efficacy of a public sphere to its ability to execute its decisions.

In the future more research is needed to explore the relationship between these theories and videoconferencing. A longer window of study might allow for a more informed discussion of the community uses of videoconferencing. This report from the field documents how videoconferencing was used to hold a public meeting. The authors hope that in the future more multi-site videoconference meetings will be held that would allow more thorough exploration of the links between the technology and the public sphere.

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