Reference: O'Donnell, S., Perley, S., Walmark, B., Burton, K., Beaton, B., & Sark, A. (2007). *Community-based broadband organizations and video communications for remote and rural First Nations in Canada.* Proceedings of the Community Informatics Research Network (CIRN) 2007 Conference, Prato, Italy, November.

Community-based broadband organizations and video communications for remote and rural First Nations in Canada

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Our research is building understanding about how two community-based First Nations organizations in Canada are using video communications on broadband networks to support economic and social development in remote and rural First Nations. This study situates these two organizations within a broader social movement working toward self-determination for First Nations in Canada, exploring their use of video communications in this context. Video communications using broadband networks includes videoconferences (live and archived) and online videos. The research methodology for this study includes a content analysis of hundreds of archived videoconferences and videos on the servers of the two organizations as well as interviews with key informants using these technologies to develop remote and rural First Nations communities.

Keywords: broadband, video, communication, remote, rural, videoconferencing, Aboriginal, Canada, community, development, self-determination, social movement, First Nations

INTRODUCTION

In May 2007, Grand Chief Stan Beardy, Nishnawbe-Aski Nation, spoke via streaming video from Northern Ontario to the United Nations Conference on Indigenous Peoples' Communications for Development in New York. In his presentation, Mr. Beardy outlined the importance of videoconferencing and streaming video technologies for his remote First Nation communities. He remarked: "*My presentation to you today represents a remarkable achievement by our people to not only harness the power of information and communication technologies but also adapt these technologies to address our political, social and economic agenda.*"

In June 2007, students from Eel Ground First Nation School in New Brunswick produced a music video and shared it online as part of program to address youth suicide. The lyrics in the video, set to music with images of First Nations (Aboriginal) youth, describe what it feels like to be young, ignored, and "barely hanging on."

Both these activities - the videoconference with the UN and the online video expressing the feelings of First Nations youth - are examples of how First Nations in Canada are harnessing the power of visual technologies. This study explores how two community-based organizations - K-Net and the Atlantic Help Desk - are supporting the use of these technologies for community development in remote and rural First Nations (Aboriginal communities) in two different regions of Canada.

K-Net, based in Sioux Lookout, Ontario, has 70 First Nation and more than 30 non-Aboriginal communities and sites on its broadband network in Northern Ontario, Northern Manitoba and Northern Quebec. The second organization, Atlantic Canada's First Nation Help Desk & Mi'kmaw Kina'matnewey, based in Membertou First Nation, Cape Breton, Nova Scotia, has 30 sites on its network in the four Atlantic provinces. Among their other activities, both organizations provide broadband connectivity and services to First Nations schools in their role as regional management organizations for the federal First Nations SchoolNet program.

K-Net Services (www.knet.ca) is a program of Keewaytinook Okimakanak (KO), a First Nations Tribal Council serving six First Nations (Aboriginal communities). KO is a not-for-profit organization established by the Chiefs of each of the six First Nations to provide support services for their communities. K-Net's work, as directed by the Chiefs, is to develop and address local needs and priorities as well as transfer skills and capacity to the First Nations whenever possible. Some of the other services, beyond the videoconferencing and video production work provided by K-Net, include supporting partner First Nations in the development and operation of their locally owned telecommunication network (cable, wireless, fibre); operating and sustaining a private, IP-based, broadband network utilizing existing infrastructure where it exists and constructing infrastructure where required; owning and managing the C-band satellite infrastructure that provides connections for 44 remote Aboriginal communities in the northern parts of Manitoba, Quebec and Ontario; delivering a variety of online training and support services for First Nations and youth; providing web hosting, internet bandwidth, server and software development as well as storage and backup services; and partnering with government programs and agencies to connect First Nation organizations and services.

Atlantic Canada’s First Nation Help Desk (http://firstnationhelp.com) facilitates the development and use of ICT (Information and Communications Technologies) to foster excellence and development in education, innovation, and creativity. A large part of the organization’s focus has been to encourage youth to be producers, as well as consumers, of information. Monthly contests and initiatives such as MMTV News (Mi’kmaq/Maliseet TV) have been successful examples of this approach. The Help Desk has also been in the forefront of Native language initiatives (http://firstnationhelp.com/ali) and has developed a web site archiving video clips of elders (http://dearelders.ca). Videoconferencing is key to many initiatives including national meetings and sharing student generated content on legends, social issues, and education (examples at http://eelgroundschool.ca). The Help Desk has fostered positive growth in the young Mi'kmaw and Maliseet people of the Atlantic area. The Atlantic Helpdesk website is an educational resource for First Nations youth and interested mainstream students alike.

The focus of this current study is how these two organizations are supporting the use of video communications for community development activities other than telehealth and formal education. Our larger research project is exploring the implications of broadband video communications for social change and how the use of these technologies can be improved to support First Nations community development goals.

RESEARCH CONTEXT

More than a decade ago, the Canadian government's most extensive research inquiry into the situation of Aboriginal peoples identified many First Nation community development priorities that remain current today. The Royal Commission on Aboriginal Peoples (1996) found that the historical treaties with First Nations were replaced with policies intending to remove Aboriginal people from their homelands, suppress Aboriginal nations and their governments, undermine Aboriginal cultures, and stifle Aboriginal identity. The government's inquiry found that in First Nation communities: life expectancy is lower; illness, family violence and alcohol abuse are more common; fewer children graduate from high school; the homes are more flimsy, leaky and overcrowded; water and sanitation systems are often inadequate; fewer people have jobs; and more people spend time in jails and prisons. The Commission also found that Aboriginal people are seeking a range of remedies for these injustices; most of all they want control of their lives (RCAP, 1996). The most comprehensive historical research into the relationship between Aboriginal and non-Aboriginal peoples in Canada has documented how Aboriginal people have struggled for control over their lives (Miller, 2000). From resistance in Red River and the North-West Rebellion in the 19th century, to the development of political organization in the 20th century, to the current times, Aboriginal people and communities have been using whatever means have been available to rebuild and revitalize their communities.

Also more than a decade ago, researchers argued that the Internet could be used by Indigenous nations across the Americas to organize and to reach their development goals (O'Donnell and Delgado, 1995). Remote and rural First Nations communities in Canada have been increasing their capacity to use broadband networks. In 2005, the Assembly of First Nations leadership promised to seek the resources required for all First Nations to develop the broadband infrastructure required for video communications.

Broadband networks that support reliable video communications – including multi-site videoconferencing and online videos – offer remote and rural First Nations a unique means to support their community development goals. The most common uses of videoconferencing in remote First Nations are telehealth and distance education, and the research conducted to date on broadband video in Aboriginal communities has focused almost exclusively on these two applications (see Bale et al., 2005; Keewaytinook Okimakanak, 2005; Masum, Spence and Brooks, 2005; Muttitt et al., 2004; Aitkin et al., 2004; Elias et al, 2004; Ramirez et al., 2004; Fiser, 2004b; Care, 2001 and 2003; Downing, 2002).

Aside from education and health applications, however, there has been little research on how First Nations are using broadband video communication for other purposes. Research by Ferreira et al. (2004a, 2004b) has explored how participatory video in First Nations in Northern Ontario can lead to empowerment and policy development. Clearly there is potential for First Nations to use video communications on broadband networks for a range of social, economic, political and cultural activities (Perley and O'Donnell, 2006).

This current research situates the two First Nations organizations in the study as actors in a broad social movement. The conceptual link between social movements and computer networks was argued most strongly by Manuel Castells, who spent more than a decade writing his trilogy on the "network society" (1996, 1997, 1998). The central thesis of his earlier work (1989) is that since the end of the Second World War and especially since the 1970s, a combination of capitalist restructuring and technological innovation is the major factor transforming society. In his trilogy on the network society, Castells builds on this analysis to examine conflicts in contemporary society such as the "rise of the fourth world" (1998) and social movements (1997). Castells believes that at the same time that globalisation and "informationalization" are transforming the world, they are also disenfranchising societies. Social movements are rooted in the resentment that people feel because of their loss of control over their lives, jobs and environment. Castells insists that all social movements are different from each other and must be understood within their cultural, social and political contexts, and he sees digital networks as a transformative technology that can assist social movements to mobilize and influence social, political, economic and cultural change. In a later work, Castells (2001) identifies that social movements use communication systems to reach out to those who would share their values and affect the consciousness of society more broadly.

One of the organizations in this study, K-Net, has been researched extensively. Most notably, Fiser (2004a) and Fiser, Clement and Walmark (2006) have been studying the K-Net model for community broadband networks. This research underscores the important role a community-based organization plays in stimulating technology use and diffusion in communities. Other research (O'Donnell, 2003 and 2001) has also highlighted how community-based organizations are central to the deployment of information and communication technologies in communities.

Using Castells' theoretical framework and our focus on community-based organizations as social movement actors, we see the two organizations in this study as supporting broadband video communications for First Nations who use it as a tool for community development and to work toward political, economic and social change.The research questions for the current study are: To what extent are the two community-based organizations - K-Net and the Atlantic Help Desk - using broadband networks to support video communications for community development? Do the organizations understand their activities as supporting the development goals of First Nations? Are they part of a broader network working with other First Nations organizations and outside organizations for social, economic and political change?

RESEARCH METHOD

The research project is a partnership between the researchers and the organizations being researched. Developing and maintaining partnerships is an important part of doing research with First Nations (Perley and O'Donnell, 2006,

2005) The project partners are the National Research Council Institute for Information Technology (NRC-IIT) and the University of New Brunswick (UNB) in Fredericton, New Brunswick; K-Net in Sioux Lookout and KORI (the Keewaytinook Okimakanak Research Institute) in Thunder Bay, Ontario; and the Atlantic Help Desk in Cape Breton, Nova Scotia. K-Net and the Atlantic Help Desk are 3,500 kilometers (four separate flights) apart. The researchers in Fredericton are 650 kilometers (an eight-hour drive) away from the Atlantic Help Desk, and 2,850 kilometers (three separate flights costing $1,200) away from K-Net.

Our research uses a participatory approach adapted to the vast Canadian geography. In-person contact among partners is too costly and time-consuming to be feasible on a regular basis. We meet monthly by multi-site videoconferencing and use email and an online meeting space to communicate between monthly meetings. The study direction, activities and goals are discussed and agreed upon by the partners. The research follows ethical guidelines and community consultation guidelines developed by KORI. The Keewaytinook Okimakanak Research Institute (KORI) is the research wing of Keewaytinook Okimakanak (KO) (http://research.knet.ca/). Created by Chiefs resolution[1], KORI has a twin mandate to build bridges to the university community and to create research capacity at the community level. To support its mandate, KORI is a member of the CRACIN research initiative and a founding partner of RICTA and DERAC, two research clusters funded by the Social Sciences and Humanities Research Council of Canada (SSHRC). KORI has been commissioned to conduct a variety of research projects for third-parties in health, education and telecommunications. With K-Net Services, KORI facilitates on-line gatherings in areas of strategic interest for First Nations. In consultation with Elders and community members, KORI has drafted ethical guidelines for researchers planning to work in remote and isolated First Nations communities in Ontario's far north.[2]

For the current study, the researchers used a mixed methods approach: a content analysis of videoconference archives and online videos from the two organizations, a traffic analysis of the K-Net videoconference bridge log, and 15 in-depth interviews with staff and associates of K-Net and the Atlantic Help Desk. The study was conducted from September 2006 to April 2007.

K-Net and the Help Desk both have a videoconference bridge, equipment that allows the two organizations to connect more than three locations for simultaneous audio-visual exchange. As private networks, they are also able to ensure quality of service (QOS) for scheduled videoconferences. The researchers analyzed the bridge logs (the records of all scheduled videoconferences) covering a nine-week period from November 2006 to February 2007 excluding the December holidays, which was a typical period.

Some of K-Net's and the Help Desk's videoconferences are archived on a server. Videoconferences are archived when the content is public and of potential interest to others. Many types of videoconferences are not archived, including informal meetings, meetings where personal or confidential information is discussed, clinical appointments, and individual mentoring sessions - the analysis of the bridge logs suggest that 26% of the videoconferences are archived. In September 2006, the server held 293 archived videoconferences averaging an hour in length. A random sample of 100 of these archived videoconferences was selected for content analysis. The videoconferences were viewed and coded while viewing for variables in 11 categories including: total number of participants in the videoconference, the male/female ratio, the number of locations participating in the videoconference and their geographic range, and the main purpose of the videoconference and main topic of discussion. There was high inter-rater reliability, and our videoconference content analysis has a 95% confidence level with an error rate of 8%.

In October 2006, we searched for and found 207 online videos (available for public viewing via the Internet) on K-Net and Atlantic Help Desk servers. We conducted random sampling to select 100 videos for analysis. The videos were each viewed entirely and coded while viewing using a coding scheme with variables in 12 categories, including: total number of people visible in the video, female/male ratio, the location, background music and creative elements, participation of First Nations women, and the main topic and purpose of the video. There was high inter-rater reliability, and our online video content analysis has a 95% confidence level with an error rate of 7%.

[1] To see the KO Chiefs resolution, go to: http://research.knet.ca/images/upload/KORI.pdf
[2] To see the guidelines, go to: http://research.knet.ca/images/upload/06-12-11_Community%20Consultation%20Guidelines.pdf

In April 2007, the researchers traveled to Thunder Bay and Sioux Lookout, Ontario and conducted nine in-depth interviews with K-Net staff. In the same month, they traveled to Membertou First Nation in Sydney, Cape Breton, Nova Scotia and conducted six in-depth interviews with Atlantic Help Desk staff and associates and Membertou First Nation staff that use the Help Desk's video communication services. The interview respondents included nine men and six women in various roles including technical, administrative, support and managerial staff. The 15 semi-structured interviews averaged one hour in length, using an interview guide with 63 mostly open-ended questions under four headings: community development, videoconferencing, online videos, and organizational issues. Interview participants received a small honorarium. The interviews were recorded and transcribed. The interviews were confidential. The transcripts were analyzed with N-Vivo software and coded for common themes related to the focus of the study.

RESEARCH FINDINGS

The Organizations Actively Support Videoconferencing in First Nations

K-Net and the Help Desk both use their videoconference bridge to support videoconferences, multi-site videoconferences, and web streaming for simultaneous audio-visual exchange. K-Net's bridge handles an average of 19 videoconferences weekly with two or more sites. K-Net also works with its Ontario government telehealth partner to provide bridging services, infrastructure and community capacity for an average of 10 telehealth sessions a week in remote communities. In addition, both K-Net and the Atlantic Help Desk initiate many short test videoconference calls with communities and sites on their networks to ensure the functionality of networks and equipment and build community capacity to use the videoconferencing facilities. K-Net, the Help Desk, and the community sites on their networks, also initiate point-to-point (two site) videoconferences within and outside their networks.

The content analysis, bridge log analysis, and in-depth interview findings suggest that K-Net supports about 1,000 videoconferences a year, in addition to telehealth sessions. The findings suggest that the Atlantic Help Desk supports about 150 videoconferences a year.

Videoconferencing Fosters Many Community Development Initiatives

The content analysis of the purpose of the videoconference found that 62% were for learning related to personal, professional or community development; a typical example was a multi-site interactive seminar for community health professionals on diabetes prevention. For 14% of the videoconferences, the main purpose was a meeting. For 14%, the main purpose was a community get-together; examples are the popular ongoing elders' videoconferences to link elders in different communities who communicate using their Aboriginal languages. Finally, 9% of the videoconferences were streaming a large meeting to virtual participants; an example was a meeting in British Columbia about information and community technology in First Nations, with participants joining by videoconference from two other provinces, and streamed on the Web to other participants across the country.

The content analysis found that the most common topic of the videoconferences (59%) was health and wellness. For 14%, the topic was education and learning. For 9% the topic was culture and language. For 6% the main topic was information and communication technology; in addition, 32% of the videoconferences overall discussed information and communication technology as part of the other main topic of discussion. For 5% of the videoconferences, the topic was economic and community development. Finally, 4% of the videoconferences were on other topics and 3% were on more than one topic.

Videoconferencing Connects Many People and Locations

The videoconferences connect people and groups from many different locations (sites). The content analysis found that 44% of the videoconferences connected six to 10 sites, 28% connected three to five sites, 15% connected more than 10 sites, 9% had less than 10 sites with the exact number unknown, 3% connected two sites, and one videoconference, a training video, had only the one site.

The videoconferences mostly connect sites in one province but some are inter-provincial or international. The content analysis of the geographic range of the sites participating in the videoconferences found that 73% connected sites all in the same province, 16% connected sites in two provinces, 7% connected sites in three or more provinces, 1% included international sites, and 3% had an unknown range of sites.

The videoconferences connect groups of all sizes. The content analysis found that 66% of the videoconferences had more than 10 participants, 14% had six to 10 participants, 14% had less than 10 with the exact number unknown, 5% had three to five participants, and one, the training video, had only one participant.

The content analysis found that women are actively using videoconferencing in First Nations. In 48% of the videoconferences, the gender ratio could not be determined by the researcher by viewing the archives. However where the ratio could be determined, 36% of the videoconferences had more women than men participating, 7% had more men than women participating, 5% had only women participating, 2% had only men participating, and 2% had an equal number of women and men participating. In at least 90% of the videoconferences, at least one woman contributed to the discussion. Overall the analysis of the gender ratio suggests that videoconferencing is used more often and actively by women.

The Organizations Support the Production of Online Videos for Community Development

The second content analysis was conducted on a random sample of the 207 online videos found on the K-Net and Atlantic Help Desk servers. The analysis found that the main purpose of the online videos (80%) was a resource for learning related to personal, professional or community development. This finding suggests that videos are used primarily for the same purposes as videoconferences. In addition, 11% of the online videos were made to document a community event and 9% had another purpose.

The online videos address a range of topics important to First Nation communities. The main topic of 29% of the videos was community or economic development. The main topic of 11% of the videos was education and learning. For 10%, the main topic was culture and language. For 2%, it was health and wellness. Thirty-eight percent of the videos addressed more than one of these topics and 11% addressed other topics. Many of the videos (42%) discussed information technology or broadband development as part of a broader discussion of another topic.

Unlike the videoconferences, more males than females were portrayed in the videos. In 38% of the online videos the gender ratio of the persons or human characters was unknown or not applicable. In 30% of the online videos the persons or human characters were all male; in 11% they were all female; in 8% there were more males than females; in 7% more females than males; and in 6% an equal number of females and males. In half the videos (50%) at least one woman spoke.

The interviews with the organizations' staff and associates found that both organizations have supported the production of videos by First Nation community members, through training programs and seminars to produce specific video content.

The Organizations See Themselves as Supporting First Nation Development Goals

Both organizations see their core mission as getting the technology into the communities so that the communities can use them as they see fit for their own purposes. All the interview respondents identified the need to support the community development goals of the First Nations they work with. Although all communities need economic development, every First Nation community is unique and each has its own goals. The quote below emphasizes the fact that community development goals may be different in different First Nations.

"I think more people have to be more open-minded in regards to all our cultures. Even though we're all First Nations, we all have a different way of seeing things, and we have different perspectives and different goals." (Membertou First Nation staff member)

An ongoing challenge for both organizations is negotiating the fine line between supporting communities in their use of broadband and telling them what to do with it. Many interview respondents discussed the need to keep

focused on capacity building in communities rather than providing advice to communities. The two quotes below illustrate this point and the overall challenge:

The "we'll look after you" attitude is not a positive one in terms of the development of infrastructure, or resources, or people in the communities. I guess we're about as guilty of it as most, sometimes, without even knowing it. Like me, quite often I'll find it easier to do something myself remotely, than to go through the process of explaining to someone how to do it themselves. I'm trying to wean myself away from that. The biggest thing that's got to change is the: "We'll look after you." That's the first thing that's got to change, whether it be from government or from industry or whatever, that's got to change first. (K-Net staff member)

The Help Desk would … lend that helping hand. They don't do it for the community, but they say here are the steps and we're going to help you, and give you the support that you need in that way. (Membertou First Nation staff member)

The organizations' staff and associates see broadband infrastructure as a key component of community development. The organizations support community-based broadband solutions. K-Net in particular is known for championing community-based broadband infrastructure in remote communities, as illustrated in the quote below:

There's always a cost to bring in broadband, the costs are high, higher than urban centres closer to the main cities. So we have the ability to obtain funding and decrease the actual community cost so the service becomes affordable. And, in turn, what we encourage is building the community to own that broadband connection, to turn it into their own ISP - Internet service provider. And then, in turn, make that a business case and allow them to perhaps hire. And then becoming self-sustaining of that network, of their own network that they own, and they can bring in more applications. (K-Net staff member)

The Organizations Work Regularly with First Nations and Outside Organizations

As their contacts, networks and activities expand, both organizations bring awareness to outside of their regions of the issues facing First Nations and the need for community-based solutions.

They both work with a range of First Nation and Aboriginal organizations locally, regionally and nationally. They network and work together with the other regional management organizations in the First Nations SchoolNet program to move forward on common goals. They work with local, provincial and federal government departments and agencies. They work with colleges, universities and researchers. Both are regularly working with many organizations and open to working with more, as described by respondents below:

"We work with Industry Canada, now it's INAC, with Health Canada, First Nations and Inuit Health Branch, with Heritage Canada on some occasions. I guess, informally, there's the other five regional management organizations that compose this loose affiliation of organizations, so collectively we help each other out a lot." (Atlantic Help Desk staff member)

"*We work with a pile of organizations … We have worked with the universities, we've worked with corporations, we've worked with government, all government levels, municipal, provincial, federal. We've worked with Smart Communities all across Canada; we've worked with First Nations organizations across Canada; we've worked with community groups; we work with individuals, youth; we work with … anybody who will work with us, I guess, is the best way to describe it.*" (K-Net staff member)

Both organizations also work regularly with industry and business organizations, primarily companies in the telecommunications and computer networking fields, as suppliers and partners.

Whenever possible, the organizations use videoconferencing to communicate with partners. Several interview respondents described how they encourage the organizations they work with - from other First Nations organizations to universities and commercial companies - to use videoconferencing to communicate with them and the communities. One respondent described this below:

"We are always encouraging our partners to use the videoconferencing, not only with us, with our office, but with our community members. It's evolving; it's a process. We'd like to do more… The nature of the videoconference, being able to see the person and hear them, provides for an accelerated method of relationship-building. So when First Nations communities and other partners get to meet and see each other on video, it does work in building relationships after." (K-Net staff member)

The Organizations Recognize the Need For More Widespread Changes in First Nations and Canadian Society

All the interview respondents said changes will need to happen on many different levels so that First Nations can reach their community development goals. Respondents identified the need for an attitude change in First Nations communities so that they take more initiative for change. In many First Nations communities there is a big resistance to change. Respondents stressed that change cannot be forced from the outside but must be initiated at the local level. Within and among First Nation communities, people have to work together better to move forward.

Interview respondents identified the need for federal and provincial governments to develop a stronger mandate to support First Nation community development as a component of self-sufficiency and growth. More government staff should be living locally, not flying in from major urban centres for short visits. More government funding is needed to harness community champions and to support communities to reach their development goals. More public investment is needed in public works, education and skills development, and improving the relationship between First Nations and governments. Several interview respondents identified the federal *Indian Act* as having a major detrimental impact on First Nation community development.

Interview respondents said that more non-Aboriginal people and communities need to come forward to work with the First Nations willing and interested to work with them. Canadians need to see a more positive image of First Nations and have a fuller perception of First Nations culture. Publicly-funded anti-racism activities are needed on a national level. Several respondents said the mainstream Canadian media needs to provide more information about First Nation issues because most Canadians are uninformed and unaware of the situation of their First Nation neighbour communities. Urban Canadians need to understand that the rural lifestyle is legitimate and that subsistence living is a viable alternative to mass consumption and a materialistic lifestyle. The respondent quoted below is one of many who said there is a need for all Canadians to be more open-minded:

"I guess the perception of the culture is one thing. You know, as a Native person and as a Canadian person, it's always this cowboy and Indian mentality, I think, that still exists today. It's us versus them, on both sides. At a recent things, like the thing in Caledonia [land rights struggle], I'm hearing some of the comments from the cultural centre of the Canadian world, Toronto, and just seeing the rude comments kind of lets everyone know that that kind of attitude still exists. At the same time the Native people have a feeling that they have to throw barricades around just to be heard. So I think that there's a long way to go with both cultures to like really start working together, but who knows?" (K-Net staff member).

SUMMARY AND CONCLUSIONS

K-Net and the Atlantic Help Desk are supporting the use of broadband video communications for community development by the remote and rural First Nations on their networks.

The two organizations are actively supporting videoconferencing in First Nations. K-Net supports about 1,000 videoconferences a year in addition to telehealth sessions and the Atlantic Help Desk supports about 150 videoconferences a year. The communities are using videoconferencing to conserve financial and human resources and allow participation in events that may not otherwise be possible due to time and travel constraints. The videoconferencing provides more access to region-wide activities, and it promotes interaction between sites and groups that may not have connected previously.

Videoconferencing fosters many community development initiatives. The videoconferences are primarily for interactive learning related to personal, professional or community development, for meetings and for community get-togethers. The main topics of the videoconferences are health and wellness, education and learning, culture and language, information and communication technology, and economic and community development.

Videoconferencing connects many people and locations. Most of the videoconferences are in the same province but many are connecting sites in two or more provinces, or even internationally. Most of the videoconferences connect more than 10 participants, and women are actively using videoconferencing.

The communities are using online video to share their stories with each other, with other First Nation communities, and with the wider outside world. Both K-Net and the Atlantic Help Desk have supported the production of online videos through training programs, and both are hosting online videos on their servers made by First Nations community members. Similar to the videoconferences, the online videos are mainly used as a resource for learning related to personal, professional or community development. A third of the videos address topics related to community and economic development.

The organizations see themselves as supporting First Nation community development, recognizing that economic development is a priority for all First Nations and that each has its own community development goals. They recognize that they need to keep focused on getting the technology into the communities, not telling communities what to do with it. The organizations are fostering a community-based technology development model.

Both organizations have a strong awareness of the issues facing their First Nations communities and the need to foster community-based solutions to broadband diffusion and community challenges. They work with many different First Nation organizations, governments, universities and commercial organizations. As their network of contacts expands, they foster awareness in their partners and contacts of the importance of community-based solutions. Whenever possible, they use videoconferencing to communicate with their partners and contacts, and they encourage them to use videoconferencing with the communities on their networks.

The organizations recognize the need for more widespread changes in First Nations and Canadian society in order for First Nations to reach their community development goals. Changes are needed in First Nations and governments, and at the level of individual Canadians.

Clearly the two organizations are actors in the broader social movement working toward self-determination for First Nations in Canada. Their specific role in the context of this research is supporting the use of visual technologies - videoconferencing and online video - by First Nations toward their community development goals. The two organizations are providing opportunities for the communities to use their networks and technologies - originally developed to deliver telehealth and distance education - for a wide range of other community development activities.

This first stage of our research has highlighted the important role of the community-based organizations in supporting the use of video communications by First Nations in two different regions of Canada. The next stage will examine how the First Nation communities they support are using videoconferencing and online video for economic and social development.

ACKNOWLEDGEMENTS

The VideoCom project is funded by a SSHRC (Social Sciences and Humanities Research Council of Canada) grant for 2006-2009, with in-kind contributions from the National Research Council, Keewaytinook Okimakanak, Atlantic Canada's First Nations Help Desk, and the University of New Brunswick. The authors would like to thank the interview participants who contributed their thoughts and ideas to the study and to the KORI, K-Net and Atlantic Helpdesk staff who hosted the research visits.

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