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The First Mile Approach to Community Services in Fort Severn First Nation

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Introduction

Across Canada, remote and rural First Nations (Indigenous communities) are responsible for delivering services to community members. They use broadband networks for many kinds of service delivery including health, training and education, government and administration, language and culture, lands and resources, justice and policing and others (O'Donnell, Milliken, Chong, Walmark, 2010). Since the arrival of the European colonial powers, First Nations have been in an ongoing struggle to maintain control of their lands and resources (Royal Commission on Aboriginal Peoples, 1996). Increasingly, their struggle is to control the essential services their people need, and the infrastructure and resources to deliver those services in a holistic manner taking into consideration the unique cultural, linguistic, political, social and geographical contexts of these remote and rural communities. From a holistic perspective, broadband and technology have little value in a community unless they benefit everyone.

Fort Severn Washaho Cree Nation is a small, remote northern community on Hudson Bay in Ontario, Canada. The community services delivered in Fort Severn are managed and controlled by the local community leadership working in collaboration with their regional tribal council Keewaytinook Okimakanak and other strategic partners. At the invitation of the Fort Severn community, researchers visited Fort Severn three times to meet and interview community residents and learn how they are delivering and using broadband-enabled services.

Fort Severn's broadband-enabled community service delivery is discussed in the context of the "First Mile" policy approach (<http://firstmile.ca>). As outlined in a recent report: "Putting the 'Last-Mile' First: Reframing Broadband Development in First Nations and Inuit

Communities,” First Nations such as Fort Severn are employing locally owned or administered digital networks and technologies to support their community and economic development goals (McMahon, O’Donnell, Smith, Woodman, Simmonds & Walmark, 2010). The forward to that report includes a statement by Matthew Kakekaspan, at the time the Chief of Fort Severn First Nation, about the importance of First Mile approaches to his community.

2 First Mile: Supporting Community-Centred, Broadband-Enabled, Service Delivery

In "traditional" telecommunications terminology the “last mile” refers to the final leg of connectivity from the telecommunications provider to the home. The "First Mile" concept turns that around. Developed in the late 1990s, "First Mile" refers to policies and practices supporting decisions by remote and rural communities concerned with having a measure of control over their broadband connectivity (Paisley & Richardson, 1998). More recently, “First Mile” has been used to refer specifically to ensuring that First Nations communities are connected to broadband in ways that support sustainable, locally-driven services and activities (McMahon, O’Donnell, Smith, Woodman Simmonds & Walmark, 2010; McMahon, O’Donnell, Smith, Walmark, Beaton, Simmonds, 2011).

It should be noted that the First Mile approach has been developed in a policy vacuum in Canada. The federal government currently has no overall digital infrastructure policy that would support broadband development in the remote and rural areas of the country, including the traditional territories of many First Nations located in remote and rural regions.

Similarly, there is no regulatory mechanism to force Internet Service Providers (ISPs) to provide services in any particular area of the country; Canada’s commercial ISPs say they need to have a business case (a proven return on investment) before developing broadband infrastructure and services in rural and remote areas. They have been reluctant or slow or have refused altogether to provide connectivity without significant government investment. As a consequence, it can be very challenging to build the partnerships necessary to develop broadband infrastructure and provide internet services in many remote and rural regions of the country.

Given the lack of commercial interest, different levels of government in Canada have become involved as partners and contributors in developing broadband infrastructure in remote and rural areas. However, government policy to support broadband in remote and rural First Nations communities is underdeveloped and uncoordinated among many different departments and program areas. Since 1996, a variety of funding initiatives, strategies, and projects, usually with limited time frames and specific objectives, have been implemented that have supported the development of broadband infrastructure and increased use of Information and Communications Technology (ICT) in First Nation communities.

The First Mile should be seen as a bottom-up emerging policy approach and a framework for understanding locally-driven broadband and ICT development. It supports First Nations

in using broadband networks and ICT for community-controlled service delivery in a holistic manner: supporting community members to use these technologies effectively and ensuring that they have the capacity to do so. This perspective aligns with the theoretical approach of Community Informatics, which insists that technology in itself will not support community development if the collective capacity is not available to use the technology effectively. In a community context, Gurstein (2003) defines “effective use” of a technology as the capacity and opportunity to successfully integrate ICT to accomplish collaboratively-identified goals.

The First Mile approach also aligns with practices and policies in Canada and internationally related to First Nations control and self-determination. In Canada, OCAP – ownership, control, access and possession – principles are now being applied in several policy areas. OCAP is a response to the role of knowledge production in reproducing colonial relations and was originally developed by First Nations to apply self-determination to research (Schnarch, 2004). OCAP applied to telecommunications, or self-determination applied to broadband networks, has at least two implications. First, that First Nations must retain access to and possession of the capacity and resources to effectively manage the content, traffic and services on their local network. Second, that First Nations have a right to own and control the local broadband network in their communities in order to support the flow of information and services.

On an international level, the First Mile approach is supported by the UN Declaration on the Rights of Indigenous Peoples (United Nations, 2007). UNDRIP recognizes that indigenous peoples continue to suffer injustices as a result of colonization and dispossession from their lands, territories and resources. These ongoing injustices prevent indigenous peoples from exercising their right to development in accordance with their own unique needs and interests. The UN Declaration supports control by indigenous peoples over developments affecting them that will enable them to maintain and strengthen their communities, institutions, cultures and traditions, and to promote their development in accordance with their aspirations and needs (United Nations, 2007).

Policies sensitive to First Mile concerns would focus on and invest in local, rural development instead of the traditional corporate or institutional-centred approaches that are most often created by centralized, urban-centric agencies. To develop and maintain broadband infrastructure in many remote and rural First Nations, it is necessary to build multi-sector partnerships involving First Nations, federal, provincial or territorial governments and telecommunication companies (Fiser and Clement, 2009; O'Donnell, Milliken, Chong, Walmark, 2010). Building these partnerships in an appropriate way would be greatly facilitated by strong federal policy that recognizes and respects the sovereignty and leadership of First Nations and is developed in partnership with their organizations. To ensure local control, national and regional plans need to involve First Nations in the program design and implementation, including for broadband development (Ramirez, 2001).

The national organization representing First Nations across Canada, the Assembly of First Nations (AFN), has an active interest in broadband development and an Information

Technology (IT) working group focused on this issue. By 2009, the AFN had passed five resolutions at their annual general assemblies recognizing the need for First Nations communities to have adequate broadband connectivity and access to ICT. At a major Aboriginal research and policy conference in Ottawa that same year, the AFN outlined a strategy for an equipped First Nations broadband network. They see this broadband network as part of a broader plan for economic, social and cultural change based on knowledge and information. The AFN's "e-Community ICT model," originally developed by Keewaytinook Okimakanak, builds upon a common network model employed by Canadian institutions and corporations. It has five themes: First Nations capacity development, First Nations connectivity, human resources development, information management, and service delivery and partners (Whiteduck, J., 2010). The AFN is also proposing that First Nation communities and organizations oversee the public funding required to develop and control the broadband infrastructure in their communities. The AFN's e-Community ICT model is very compatible with a First Mile approach.

Fort Severn First Nation

We now turn to the case of Fort Severn First Nation, which is putting First Mile concepts into action. To put the study into context, a brief overview of the community is appropriate. The Washaho Cree Nation at Fort Severn is on the western bank of the Severn River near where it flows into Hudson Bay. Fort Severn, the most northern Arctic community in Ontario, is home to about 500 people; another 150 community members live away from the community most of the time (O'Donnell, Kakekaspan, Beaton, Walmark, Mason, & Mak, 2011). Most community residents speak Cree, and the school-educated people speak English. Elders have a prominent leadership role in the community. Every two years, Fort Severn community members elect their local government: a Chief and Band Council. Fort Severn is a member of the Keewaytinook Okimakanak (KO) Tribal Council and the Nishnawbe-Aski Nation (Treaty #9 and Ontario portion of Treaty #5).

For approximately two months each winter, Fort Severn and other remote communities in the region are connected by winter roads to each other and to the southern road network and it is possible to drive to Sioux Lookout, the closest regional centre, in about 24 hours. After the winter roads have melted, Fort Severn is very isolated and expensive to visit. The flying distance from Toronto to Fort Severn is 1,495 kilometres. A return flight from most Canadian cities to Sioux Lookout costs more than \$1,000. The follow-on return flight from Sioux Lookout to Fort Severn costs about the same, making the total return airfare cost to Fort Severn approximately \$2,000.

Good communication links and infrastructure are important for all First Nations and particularly so for very isolated communities like Fort Severn. Even before bringing digital infrastructure and communications into their community, Fort Severn as a collectivity demonstrated its leadership by developing and implementing a community radio station in the 1980s and a community cable TV service in the early 1990s (Fort Severn First Nation, 2011).

In early 1999, Fort Severn's tribal council, Keewaytinook Okimakanak (KO), commissioned a study of the telecommunications needs of the KO communities (Keewaytinook Okimakanak, 1999). The consultants reported that data communications were severely limited in Fort Severn. As with other KO communities, the primary local bottleneck was the satellite outbound connection. In the consultation process, Fort Severn community members identified several key priorities: 1) network services - building a network to connect all members of the community, and making internet more useful through the use of videoconferencing; and 2) health and education - bringing more education services into the communities; supporting the health service for people who are sick; and mental health and health services (Keewaytinook Okimakanak).

Study Methodology

The current study explores the links between the First Mile approach and how Fort Severn First Nation has developed its service areas using broadband networks over the past decade. The focus is on the areas the community identified in 1999 as priorities for broadband development: network services, education and health.

The analysis in this article is a team effort with the support of the Fort Severn community leadership. Researchers and KO liaison staff made three multi-day visits to Fort Severn from March 2010 to March 2011. They conducted a total of 59 interviews with a wide range of Fort Severn residents; interviews were semi-structured and averaged 30 minutes in length. Everyone interviewed was at least 18 years of age and represented a variety of roles within the community, including health workers, band council staff, teachers, caregivers, elders, and community leaders.

Researchers followed ethical protocols that were reviewed by their home institutions, and researchers, and partners strove to respect Ownership, Control, Access, and Possession principles (Schnarch, 2004). In addition to the community-based research, the researchers analyzed past reports and presentations about broadband development and ICT in Fort Severn and the wider region. Finally, the study included a snapshot log analysis of Fort Severn's network use over a one-year period.

Fort Severn First Nation and its First Mile Infrastructure Development

The discussion in this section focuses on how the community developed and is currently using its locally owned and operated broadband network, a little more than a decade after identifying three areas as future priorities for broadband deployment: network services, education and health.

Network services

KO-KNET is the telecommunications division of the KO tribal council. In May 2000, the proposal made by KO-KNET was successful in a national competition for "SMART" communities that were funded to develop their connectivity. KO-KNET became the Aboriginal SMART demonstration project. The funding allowed KO-KNET to further

develop the telecommunications infrastructure to its member communities and to work with the communities to develop applications using the available bandwidth. As a partner in this project, Fort Severn developed many broadband applications to support the local community and its residents.

In that year, with funding from Industry Canada (FedNor), KO-KNET installed a hub C-Band earth station in Sioux Lookout and in Fort Severn. Fort Severn was part of the community network to share the bandwidth, available for 128kbps Internet and 512kbps on-demand video. In the summer of 2001, the Fort Severn community worked with KO-KNET to use the existing community TV cable network to add a cable modem service to households. Fort Severn set up a community E-Centre for residents without home internet access. In early 2002, the connectivity was able to be upgraded to support medical quality videoconferencing and X-Ray transfer with bandwidth from half the Industry Canada public benefit transponder provided by Telesat Canada (Kakekaspan, 2002). IP videoconferencing plays a continuing and growing role in many service areas in addition to health, including distance education, government and justice (court) services.

Fort Severn is one of the communities in the Northern Indigenous Community Satellite Network (NICSN- <http://smart.knet.ca/satellite/>). NICSN is a jointly-managed, inter-provincial partnership between First Nations and Inuit communities in northern Quebec, Ontario and Manitoba. NICSN has demonstrated that a satellite network can be locally and regionally owned, managed, operated and maintained. The NICSN group successfully secured bandwidth (one transponder) for 15 years (2004 – 2020), with 100 per cent of costs covered by the federal government (Industry Canada) and Telesat. In 2005, NICSN launched the first inter-provincial community-owned and operated broadband satellite network in Canada. In 2007, under Canada's National Satellite Initiative, the NICSN consortium was able to secure two additional transponders for eleven years (2008 to 2019) to further improve the bandwidth capabilities of the satellite network service. In 2011, the Quebec NICSN partner is adding two more transponders to the network to further improve services in their region for the next five years (2011 to 2016).

The manner in which Fort Severn First Nation developed its network services with its strategic partners is a clear example of the First Mile approach in action. This was outlined in a report (Jansen & Bentley, 2004) that found Fort Severn had gained experience in broadband that other communities could benefit from. These included: Fort Severn developed and documented a clear and far-reaching vision; the community applied strategic planning principles; Fort Severn had effective leadership, as evidenced by the success of the implementation of broadband initiatives; the community was fully engaged in the planning and execution of the initiatives; the community had local control of the distribution system; and they chose satellite delivery of broadband as a best practice choice (Jansen & Bentley).

More recently, Fort Severn leadership worked with their tribal council Keewaytinook Okimakanak (KO) to develop the community-owned and managed cell service, Keewaytinook Mobile (KM), launched in the community in November 2009. A recent

publication about the KM service in Fort Severn discusses how the service quickly became essential to supporting land and resource based as well other activities in the community. For the Fort Severn government, the KM service has made it much easier for elected officials to communicate with community residents. Prior to setting up the IP supported Keewaytinook Mobile service in the community, Fort Severn depended on Bell Aliant / Telesat's satellite system for their local phone service. Now community members can use the locally-owned KM service to reach their Chief, council members and key band administrative staff by cell phone, wherever they happen to be in the community or if they are travelling outside the community (O'Donnell, Kakekaspan, Beaton, Walmark, Mason & Mak, 2011).

These developments are possible because the Fort Severn IP network established in partnership with Keewaytinook Okimakanak's Kuhkenah Network (KO-KNET) is operating on a private locally managed wide-area network service. Online, open source network management tools such as for coax cable management, videoconferencing bandwidth booking and local bandwidth management support the effective use of the Fort Severn IP network. Each of these tools are used to provide regular and sustained maintenance of the network by the local Fort Severn ICT technician. As well, the equipment (computers, routers, satellite equipment, modems, videoconferencing units, phones, cell phones and so on) along with the cabling throughout the community requires consistent and sustained maintenance and upgrading.

Fort Severn's use of bandwidth is increasing every year. An analysis of the total bandwidth used by the community found that the bandwidth used on an average day in July 2011 is almost double that used on an average day in August 2010.

Education

Staff working in Fort Severn's education sector use the community's broadband network actively. They deliver education services in the Washaho elementary school and the Keewaytinook Internet High School (<http://kihs.knet.ca>). In addition to these core services, staff members of community organizations and individual community members use the network for professional development, training and learning through the Wahsa Distance Education Centre or for group or individual study.

The Washaho Elementary School building constructed in 2008 consists of four portable double classrooms around a central open courtyard and playground. The internet is used extensively for school administration. School administrators use email regularly to connect with the band office and the community education director who is often travelling outside the community. Email is particularly convenient for teachers who only have a few minutes between classes; it is difficult for them to find the time to use the telephone to connect with parents and others outside the school. Since most of the pupils are on Facebook some teachers use it to coordinate school events.

Washaho School teachers and pupils use the internet for pedagogical purposes. Teachers use the Web to download educational programs and to conduct research for preparing

classes. Pupils in the senior classes use the Web for doing research. Pupils use the computer lab when they need to use a computer because computers are still a scarce resource - all the existing computers in the old school had to be destroyed due to mould contamination.

The community set up a Keewaytinook Internet High School (KiHS) classroom to enable students to study for their high school completion in the community; prior to this, young adolescents were required to leave the community and travel to an urban centre for their high school education (Walmark, 2010). The Fort Severn KiHS is located in one of the portable classrooms in the Washaho School complex. Outside it looks like any other portable classroom but inside it is a high-tech classroom; students and the classroom assistant use many different kinds of ICT for their education and learning. The room is colourful - the walls full of images and other information - and lined neatly with computers, cables and equipment.

KiHS is a provincial high school, the first online high school accredited by the Province of Ontario (Potter, 2010; Walmark, 2010). The KiHS Fort Severn classroom uses ICT more intensively than other Ontario schools because it is an online school. The class is coordinated by a classroom assistant who mentors students and organizes the local program and activities. The teachers are based in KiHS classrooms in other First Nation communities in the region. All communication between students and teachers is online, while the classroom assistant has an important mentoring role.

The main KiHS platform is an open source online Moodle environment modified to meet the needs of First Nation students and educators (MoodleFN – <http://moodlefn.knet.ca>). All the courses are online and the students, teachers and classroom assistants use the internet extensively – email, the Web and many online tools. Because they use online technology so intensely, KiHS students and the classroom assistant have excellent ICT skills. KiHS in Fort Severn uses videoconferencing to connect with monthly gatherings of all KiHS classrooms, for special educational sessions, for staff training and for school administration. The KiHS students in particular enjoy the videoconferences where they have the opportunity to interact with KiHS students in other First Nations communities.

Health Services

The health centre is a large and busy building next to the band office in the centre of the community. It contains offices and clinical health spaces, meeting and activity rooms, and apartments for visiting health workers. Health centre workers use ICT extensively for health administration, clinical health services, professional development, and community wellness activities.

The internet has become an essential tool for the health staff. They use email daily for health administration, especially to schedule appointments with patients, and they use internet (Internet Protocol) telephones. As well they sometimes use Facebook (FB) to contact community members as FB is quickly becoming the best way to reach some in the community. Health staff also use videoconferencing for health administration. Some staff

schedule monthly videoconference meetings with staff in other communities. Videoconferencing is also used extensively for professional development courses and information sessions for health professionals and community members concerning all aspects of health and wellness.

The community worked with KO Telemedicine (KOTM) to increase the range of health services offered via videoconference to residents. Health is the only service area that has a dedicated staff person in Fort Severn specifically to facilitate the effective use of the ICT to deliver services. That position is called the CTC – the Community Telehealth Coordinator. The KOTM CTC in Fort Severn is responsible for supporting all kinds of telehealth visits and activities for community residents. Health staff use telehealth and telemedicine (primarily videoconferencing) when a patient needs to see a health professional in an urban centre and wants to remain in the community. The telehealth visit typically takes place in the health centre, but staff can also bring a mobile videoconference camera to the patient's home when required.

KOTM has a community-driven and community-led philosophy. When researchers visited the community in 2010, health staff reported that they were using videoconferencing to support a lot of family visits. One explained: *"We have two elders staying at long-term health care in Sioux Lookout. And we try and do at least three family visits a month, try and connect with their family here. Or sometimes they would request to see their family. And some people here have their kids in other family living in different reserves, and they request that they would have their own family visit here. And they would see their grandchildren that they haven't seen yet or their daughters or how they're doing, that they would just see and talk to them instead of just over the phone and all that. They really enjoy that because a lot of people have been requesting that."*

Challenges for First Nations Applying First Mile Concepts for Service Delivery

First Nations like Fort Severn looking to apply First Mile principles face a number of challenges primarily rooted in paternalistic policies and attitudes, which in turn are aligned with economic systems that privilege corporate entities over non-profit, community-managed telecommunications networks and services.

In Canada, federal government policies aimed at broadband development in remote and rural regions of the country do not include provision for substantial consultation with First Nations governments in these regions, even though First Nations are recognized as sovereign entities in Canadian law and "a duty to consult" exists for development projects on First Nations territories (Aboriginal Affairs and Northern Development Canada, 2011). The Canadian position is in contrast to the practice in the USA, where the federal government has supported a consultation process with Native American communities to develop plans for broadband in their communities (McMahon, 2011). In Canada, policy to support broadband specifically in remote and rural First Nations communities is historically fragmented, underdeveloped and uncoordinated among many different departments and program areas. The Canadian government has been promising for years to develop a strategic plan for broadband in First Nations; that plan has yet to appear.

As discussed earlier, developing and maintaining broadband infrastructure in many remote and rural First Nations requires building multi-sector partnerships involving First Nations, federal, provincial or territorial governments, and telecommunication companies. However, the broadband infrastructure development programs funded by federal and provincial governments require approved Requests for Proposals from corporate and established telecom providers before funding is awarded, leaving most rural and remote communities unable to compete with corporate entities. The recent Broadband Canada funding insisted that funding contracts had to be directly between the telecom provider and the government program instead of including a First Nations project proponent. From the perspective of the First Nations, too often these partnerships reproduce colonial dependency relations and result in a master – slave “partnership” with the communities forever dependent on the corporate telecom provider and forever paying this external entity for their service (Philpot, Beaton and Whiteduck, 2014). In contrast, the First Mile approach to these partnerships makes it possible for the community to be in control of their own infrastructure resulting in local development opportunities.

The Fort Severn leadership is working closely with its tribal council (KO) and its telecommunications division (KO-KNET) to manage the content, traffic and services on their local network. Several significant challenges remain to ensure that the Fort Severn community has sufficient local capacity to do this effectively. Most obviously, Fort Severn’s capacity is under-resourced. For example, Fort Severn needs more local capacity to manage the traffic on the local network. According to KO-KNET, there should be enough bandwidth in the community to meet its needs, but many community service staff and community members are complaining that the internet connection is far too slow. This was a particular problem in the Washaho school and KiHS but also mentioned by band office staff and health workers. Having more local capacity to identify the source of the bottlenecks and address them would alleviate some of this problem.

When the SMART communities project was taking place, Fort Severn was able to create and fill three IT-related positions, including a multi-media person who looked after the website among other duties. Now that SMART is finished, there are just enough funds for one IT position – the e-Centre manager, who also provides IT support to the band and community members who subscribe to the community ICT services, including the community internet, community cable TV, and Keewaytinook Mobile. The community clearly requires more IT support and development capacity to more effectively deliver education services and community government in particular. The Washaho School needs more IT equipment, resources and support. The band would like to expand its use of ICT for government and community administration - for example, they would like to complete land-use planning and land-use studies using GPS and mapping technology - but will require more staff, technical and related resources to do it.

Professional development and training of staff working on service delivery is a big challenge for the Fort Severn community. Many of its service areas require budgets for training new staff. One band staff member explained that many of the people they hire in health and education require both more experience and training to be in their position but

they are the best candidates available. The public funds provided for the staff position often do not cover training, so even if distance education is available for that person, they are challenged pay for it.

Another significant challenge is maintaining and upgrading the existing and future hardware and software that is using the broadband network. For example, at the time of the interviews in March 2011, half of the 12 computers in the Washaho School computer lab had viruses and other problems that prevented them from being used. The school requires a full-time IT technician to complete ongoing maintenance and upgrades but currently is largely dependent on external resources. School staff said the school computer situation is getting steadily worse. Teachers would also like to have Smart boards (internet-enabled whiteboard displays) in the classroom but funding for these or other technologies is also a challenge with so many other priorities and needs and a small school population. In December 2010, open source educational software was installed on all the school computers and a local teacher was trained to support its use but the staff person left after Christmas leaving the school dependent on the software the staff was already familiar with. The staff agrees that the school could use more computers. One staff member said: *“Most schools have one or two computers for individual students to work on at the back of the [class] room. We don't have that. That is important, especially in the primary grades because they're getting basic skills from those computers, and they're not getting that daily practice because we don't have enough computers to allow them daily practice.”*

The health services staff has identified that some community members need more support to ensure that they can effectively use the broadband-enabled health services the community is delivering. This includes ensuring that the internet connections in all community homes are hooked up and that community members have access to IT support services when they have computer problems, so they can more effectively use their broadband connections to access health information and services.

Conclusion

The First Mile is both an emerging policy approach and a framework that supports holistic and community-centred broadband development and use by First Nations. First Mile implies community management and control of local broadband infrastructure and services. The First Mile approach maximizes the value of broadband networks and new technology coming into a community by ensuring they benefit the community as a whole.

This study described how Fort Severn First Nation is putting First Mile concepts into action. Working with their tribal council, Keewaytinook Okimakanak, and other strategic partners to develop the broadband networks in the community, Fort Severn has shaped these technologies to meet the community's needs. Community priorities for broadband-enabled services identified more than 10 years ago included network services, education and health. This study demonstrates how today the broadband networks in Fort Severn are cross-sector enablers that support the community's delivery of these core community services and activities.

Using a First Mile framework to understand Fort Severn's delivery of community services has several implications. First, it underlines that First Nations can own, control and manage their broadband networks and the services that use the broadband to meet the needs of community members, and this can be accomplished under very challenging geographical conditions in a satellite-served community. Second, the discussion suggests that a significant shift in thinking, attitudes and policies will be required by governments. Instead of their current practice – flowing funding and resources directly to corporate telecommunications companies to provide services to First Nations communities – governments should work with First Nations to determine how they can take on the leadership role to effectively develop and manage their networks themselves. At the heart of this shift will be moving away from the current paternalistic attitude toward First Nations and moving toward a relationship of respect and reciprocity.

Using a First Mile approach for federal broadband policy related to First Nations will mean starting with a question: how can the multi-sector broadband development partnerships be structured so that First Nations can most effectively control and manage their broadband networks to meet their needs now and into the future?

Clearly part of the required policy approach will be to develop models that support more local capacity for management and control of the information and services flowing through their local networks. This means having more than one IT support position in the community and having training dollars available to ensure continuous professional development for these positions. The communities will need support for long-term planning with their strategic partners and for the sustainable satellite or fibre connectivity to broadband networks required to deliver these services. The models will also recognize that community members themselves need support to ensure that they can effectively use the broadband-enabled services available to them.

The First Mile approach also recognizes that First Nations like Fort Severn work closely with their tribal councils and other regional First Nations organizations and strategic partners to do this work. The reporting and direct supervision required to make all the broadband-enabled services successfully work in each First Nation is always going to be a challenge as management and personnel continue to change. This will require support from dedicated regional support organizations that work closely with First Nations, such as KO/KO-KNET in Fort Severn's case (see O'Donnell et al, 2009; Whiteduck, T., 2010). The support role played by these regional organizations must be recognized by funding programs. Funding models must evolve beyond the current practice of paying only for one-time capital expenditures without supporting the sustained training and capacity building required in communities. In Fort Severn's case, control of local broadband and the community services using the network means that they can support community development in a way that meets their own unique needs.

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