

Reference: McMahon, R., Whiteduck, T., Beaton, B. (2013) Shaping First Nations broadband policy in Canada: Indigenous community intermediary organizations in the age of austerity. World Social Science Forum, Montreal, QC, Canada. October.

Shaping First Nations broadband policy in Canada: Indigenous community intermediary organizations in the age of austerity

Rob McMahon
University of New Brunswick
rob.mcmahon@unb.ca

Tim Whiteduck
First Nations Education Council
twhiteduck@cepn-fnec.com

Brian Beaton
University of New Brunswick
brian.beaton@unb.ca

Introduction

Among the digital divides present in Canada today are those faced by remote and rural First Nations. The development patterns of the majority society left these communities disconnected from the infrastructures of the emergent ‘network society’ (Castells, 2010). At the same time, many indigenous communities have been quickly appropriating newly available digital information and communication technologies (ICT) (Budka, Bell & Fiser, 2009; Fiser & Clement, 2012; O’Donnell, Kakekaspan, Beaton, Walmark, Mason & Mak, 2011; O’Donnell, Perley, Walmark, Burton, Beaton & Sark, 2009). This work, which takes place at both regional and local levels, negotiates a delicate balance. First Nation peoples remain closely tied to the place-based communities and territories that ground their customary laws, institutions and practices (Borrows, 2010). People who choose to live on First Nation territories also need to access the public services and economic development opportunities that make that possible. Broadband infrastructures open up many new possibilities for these peoples and their governments but the combination of a policy environment grounded in relations of colonialism and the extension of digital networks and ICT into these communities challenges their political and institutional autonomy (McMahon, O’Donnell, Smith, Walmark, Beaton & Simmonds, 2011).

In this context, politically autonomous First Nations have set up organizations that mediate their relationships with federal and provincial governments (Whiteduck, 2010; Whiteduck, Beaton, Burton & O’Donnell, 2012). These regional organizations have a broad mandate that includes technology as one component of their work. In this paper, we frame these organizations as ‘community intermediaries’ and demonstrate how one of their functions is to act as a bridge between remote First Nations and various federal and provincial government agencies. These intermediary organizations operate complex digital networks and applications while supporting their First Nation constituents to assert self-determined development goals in a complicated and dynamic multi-stakeholder environment. In linking remote communities with federal and provincial agencies, they mediate between organizations, set up and operate state-of-the-art, industry standard IT infrastructure, and deliver a host of broadband-enabled

online applications. They work closely with individual First Nations to provide these services. They also benefit governments. For example, they work with government and telecommunications companies to provide broadband access and services in regions left underserved by private sector initiatives. They also contribute to policy development and help centrally-located government agencies maintain communications with people living in remote communities.

However, these organizations face significant challenges in conducting this work, given structural conditions associated with neoliberal governance regimes. Growing demand among constituents for their services, declining funding and institutional support, and an increased focus on reporting and accountability from government all threaten to undermine their sustainability. At the same time, people working in government agencies must contend with their own challenges arising from budgetary cuts and other reforms associated with austerity measures. A focus on ‘evidence-based’ quantitative research for policy development is also challenging in a context where available data is partial, ever-changing, and difficult to access (Fiser, 2012). This dynamic environment affects both government agencies and community intermediaries.

Our paper draws on six in-depth interviews with representatives from federal government agencies and First Nation community intermediaries in the Canadian province of Quebec. Undertaken in summer 2013, these interviews focused on the challenges and opportunities these parties face in constructing and maintaining effective relationships and working with their constituent First Nations. We analyzed them to draw out themes to guide our further research in this area. In articulating points of convergence and divergence among these partners, we hope this project contributes to ongoing efforts to generate mutually beneficial solutions.

Community Intermediary Organizations and Government Partners

Policy analysis that draws from fields like economics and political science historically employed a dichotomy between public and private sectors. However, this fails to account for the diversity and internal dynamics of the various ‘third sector’ organizations (Ostrum, 2010). In recent years, scholars have expressed a renewed interest in researching the perceived role and importance of such third sector organizations, particularly in the context of ‘structural adjustment’ policies associated with neoliberal governance regimes around the world (Harvey, 2005). A diverse array of third sector organizations has emerged to meet the need for public services formerly provided by government agencies (Gibson, O’Donnell & Rideout, 2007; MacDonald, Longford & Clement, 2012; Quarter & Mook, 2010). These include non-governmental organizations, civil society organizations, not-for-profits, cooperatives, community economic development organizations, public sector non-profits, and a host of others.

In this paper, we focus on a type of third sector organization that mediates between local associations (in place-based villages or communities) and large-scale public and private sector financial, technical, and political institutions typically situated in urban and metropolitan spaces (Carroll, 1992). These ‘community intermediaries’ operate differently from other third sector organizations. Rather than distributing resources directly to aid recipients, they act as mediators between local stakeholders and the external entities – typically governments – that have a stake and interest in their well-being. Mobilizing capital, technical assistance, and other resources, community intermediaries aim to empower local stakeholders to enhance their own conditions and development opportunities (Quarter & Mook, 2010; Thomas Liou & Stroh, 1998). Broadly speaking, community intermediaries associated with the

emergence of the network society utilize digital networks and ICT to support and deliver public services like health and education, as well as economic development opportunities (Rideout & Reddick, 2005; Rideout, Reddick, O'Donnell, McIver, Kitchen & Milliken, 2007; Servon, 2002). Over time, their work became increasingly sophisticated and differentiated into various organizational forms, including place-based Community Technology Centres (often associated with community development organizations) and online Community Computing Networks (like Free-Nets and Community Development networks). By the early 2000s, such community technology projects operated in communities across North America (Longford et al, 2012; McIver, 2010; Myles, 2004; Pejovic, Johnson, Zheleva, Belding, Parks, & Van Stam, 2012; Powell, 2011; Shade, 2010;).

We focus here on First Nations community intermediaries operating inside a policy framework created by government that are contracted and funded by various agencies to provide services to their member communities. First Nations direct their work and give them a mandate to provide support services, including technology as one component of their work. Governments also benefit from their efforts. Intermediary organizations have strong connections with their member communities (located in rural and remote regions) and so can deliver various services efficiently, effectively, and in line with the goals and aspirations of First Nations (O'Donnell et al., 2009).

In Canada, First Nations across the country established community intermediary organizations to provide support services to their constituent populations. In the context of technology development, this work was supported by a federal policy framework designed to drive connectivity in rural and remote communities during the late 1990s and early 2000s. The *Connecting Canadians* policy framework, and associated programs like First Nations SchoolNet and the Community Access Program, contracted a national network of regional First Nations community intermediary organizations to administer programs on a regional basis. When Industry Canada decentralized First Nations SchoolNet in 2002, these six (later seven) First Nations Regional Management Organizations (listed in Table 1) became involved in this work.

Through these developments, aside from the Atlantic provinces (collectively administered by Atlantic Canada's First Nation Help Desk), every province in Canada now has its own First Nation community intermediary. They are mandated to administer technology programs, advocate federal and provincial governments for funding and policy support, and develop and operate infrastructure and broadband services. They also manage and support public and community services, including online education, ICT training, and e-health. These various services are funded through contracts from federal and/or provincial agencies.

Table 1: First Nations Community Intermediary Organizations associated with First Nations SchoolNet (circa 2010)

Region	Organization	Acronym
B.C.	First Nations Education Steering Committee working with First Nations Technology Council	FNESC (FNTEC)
Alberta	Technical Services Advisory Group	TSAG
Saskatchewan	Keewatin Career Development Corporation	KCDC
Manitoba	Keewatin Tribal Council working with Broadband Communications North	KTC (BCN)
Ontario	Keewaytinook Okimakanak K-Net Services	KO-KNet
Quebec	First Nations Education Council	FNEC
Atlantic Region	Atlantic Canada's First Nation Help Desk	FNHD

While they share many goals, distinctions among the regions led to a diversity of organizational structures and strategies among the First Nation community intermediaries (McMahon, 2011). Partnerships with government agencies and private sector organizations are rooted in these regional contexts, as well as the complex patterns of state-Aboriginal relations in Canada. However, community intermediaries all reflect a strong focus on consultation and engagement with their membership of geographically dispersed, politically autonomous First Nations (Middleton & Crow, 2008; Mignone & Henley, 2009; Ramirez, 2007). This makes them unique when compared to other regional technology organizations. For example, Fiser (2010) concluded that although private sector incumbent telecommunications companies provided low-speed digital infrastructure in 70% of Aboriginal communities in Canada (as of 2009), they remained divorced from the geographic and cultural contexts of communities, lacked flexibility and accountability in their relations with local users, and did not reflect a deep understanding of the history and development goals of indigenous communities. In comparison, First Nations community intermediary organizations receive organizational mandates directly from their constituent communities. Their governance structures, and the various support programs they administer, are generated by and accountable to the local communities they represent.

The work of First Nation community intermediaries is supported on a national level through the Assembly of First Nations (AFN). A national political organization composed of the elected Chiefs of all formally incorporated First Nations in Canada, the AFN meets several times a year on issues of common concern. It provides a centralized point of contact and advocacy for its members. Among the topics considered by the AFN are technology development and ICT use in and by First Nations. Over the years, Chiefs-in-Assembly have passed several resolutions that defined digital networks and ICTs as tools to support First Nations self-determination and supported community intermediaries in pursuing that strategic goal. To this end, the AFN advocates federal government funders to increase the resources and administrative responsibilities of the intermediaries. The AFN also formed an ICT Working Group, a national network of technical experts (including staff from community intermediary organizations) supported through funding from Aboriginal Affairs and Northern Development Canada (AANDC).

The various activities of the AFN and the First Nation community intermediaries are collectively guided by a conceptual framework called the e-Community ICT model. This strategic planning initiative aims to establish a skilled public service in every First Nation (Whiteduck, J., 2010). First introduced by Keewaytinook Okimakanak's KNET (KO-KNET) services in 2005 and adopted in a 2008 AFN chiefs'

resolution, the e-Community ICT model was presented at the 2009 Aboriginal Policy Research Conference (Carpenter, 2010; Whiteduck, J., 2010). It encompasses five broad themes: capacity building; broadband infrastructure and connectivity; human resources; information management; and service delivery. Since their emergence through the First Nations SchoolNet program, community intermediaries have worked with their member First Nations to establish this model in local contexts and received a mandate from the national Chiefs to engage in this work. Most recently, in December 2011 AFN Chiefs-in-Assembly passed *Resolution 53-2011* which supported members of the ICT Working Group in building local e-Community projects (see for example Whiteduck, Tenasco, O'Donnell, Whiteduck & Lockhart, 2012).

Yet even as the roles and responsibilities of First Nations community intermediaries has grown over time, they face an increasingly challenging operating environment, particularly in light of structural changes to government policy frameworks. Caught between the twin pressures of increased demand for services from their member communities and off-loading of responsibilities from government departments, the long-term viability of these groups is under threat. Challenges include financial pressures, political tensions, and challenges to organizational viability (Middleton & Crow, 2008; MacDonald et al., 2012; Rideout et al., 2007). Government funders are putting in place additional accountability and reporting requirements. Partnerships with private sector or other organizations strain limited human and technical resources (MacDonald et al., 2012). 'Evidence-based' policy development draws on quantitative data that is partial, ever-changing, and challenging to access in the context of remote and isolated communities. At the same time, funders are withdrawing financial and other resources due to recent austerity measures. First Nations, community intermediaries, and governments are presently grappling with the impact of these converging trends.

A case study of a First Nations community intermediary in the province of Quebec presents a grounded example of these challenges. In the next section, our discussion of the First Nations Education Council reveals how people are articulating points of convergence and divergence in the ways they perceive the effects of structural changes described above. We hope that this analysis contributes to the efforts of these parties to generate mutually beneficial solutions to these challenges, while also taking into consideration extenuating factors like power imbalances, misunderstandings, and points of disagreement. In the conclusion to this paper, we suggest that our early-stage research can inform future work in this area.

The First Nations Education Council: Case Study of a Community Intermediary in Quebec

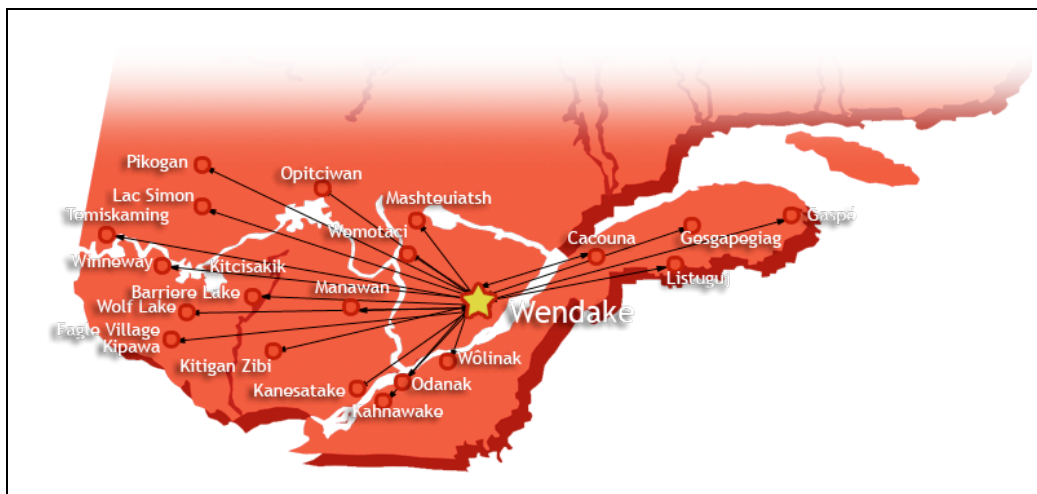
The First Nations Education Council (FNEC) in Quebec was founded over two decades ago by First Nations in that province. It represents 22 member communities¹ from eight nations located in the south of the province: Abenaki, Algonquin, Atikamekw, Huron, Malecite, Mi'gmaq, Mohawk, and the Innus community of Mashteulash (see figure 1). FNEC provides a variety of services to its members, including programs in special education, youth training and employment, and Aboriginal languages. The majority of First Nations schools in Quebec are funded by the federal government and not eligible for provincial programs such as *Villages Branches* (which enabled schools across the province to access broadband). (Exceptions to these restrictions include the Cree and Naskapi school boards, due to the outcome of land

1 Cacouna, Kipawa, Gesgapegiaq, Gespeg, Kahnawake, Kanasatake, Kitcisakik, Kitigan Zibi, Lac Barriere, Lac Simon, Listuguj, Manawan, Mashteuiatsh, Odanak, Opitciwan, Pikogan, Timiskaming, Wemotaci, Wendake, Winneway, Wolf Lake, and Wôlinak.

claims negotiations). FNEC works with federal agencies and First Nations to manage funding and programs to support educational initiatives in its member schools and communities.

In the late 1990s, FNEC began providing technology services to its member First Nations. When Industry Canada decentralized the First Nations SchoolNet program in 2002, FNEC became the Regional Management Organization for Quebec. The organization's internal IT department took on the administration of that program which now encompasses 33 communities (including those of the Innu Nation) with an approximate combined student enrollment of 10,000.

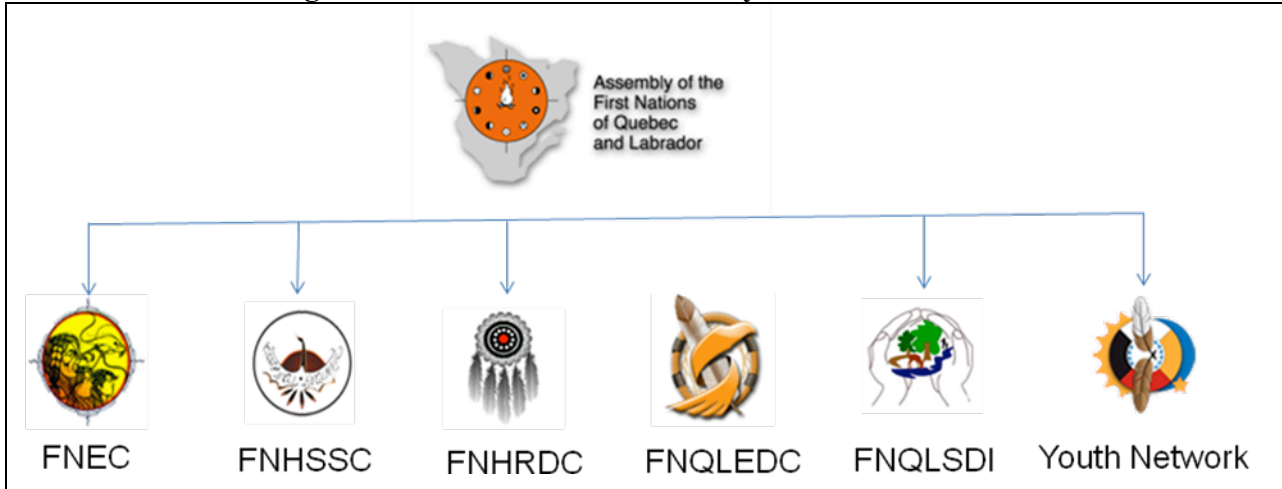
Figure 1: Map of FNEC member communities



FNEC is a strong example of a First Nation community intermediary organization. Its mission is to develop, implement, and execute technology initiatives in ways that realize the needs and priorities of its First Nation members. To this end, it aims to ensure that all students in its member communities receive a quality education that takes into account the distinct conditions present in their diverse contexts. Authority for decision-making regarding FNEC's activities rests with member communities, who engage the organization to support various local initiatives, and FNEC's governance structure is designed to ensure that communities retain this level of authority.

FNEC is linked to the Assembly of First Nations of Quebec and Labrador, a political association comprised of all 43 First Nations Chiefs in the province. The Assembly convenes four times a year to establish mandates carried out by six regional commissions in Quebec that are tasked by their member communities to address various public services, including education, health and social services (see figure 2). Although they focus on different sectors, these organizations regularly meet to ensure that their visions and goals are aligned and to coordinate strategic advocacy efforts. Through this governance framework, FNEC carries out mandates passed down by the Assembly's General Assembly (consisting of one education representative per member community) and the Special General Assembly (consisting of the Chiefs). This ensures that FNEC's activities are directed by its 22 member communities, who engage the organization to support their self-determined needs in various ways.

Figure 2: First Nations Community Intermediaries in Quebec



Over the years, the Chiefs of FNEC’s member First Nations have tasked the organization to undertake consultation, support, and advocacy activities encompassing various aspects of technology development including infrastructure, services, and applications. Inside member communities, and following the e-Community model described earlier, broadband connections are centralized in a PoP and distributed across all public sectors: schools, health centres, Band administration, training centres, policy stations, youth centres, and so on. Key regional infrastructure initiatives include deploying a network of videoconference systems and a multi-phased initiative to install fibre optic connections in all member communities (Whiteduck & Beaton, 2013). Both projects involve partnerships with several government agencies, including AANDC, Health Canada, and the province of Quebec.

Through AANDC’s *New Paths in Education* program FNEC provides a suite of ICT services to the 33 enrolled communities in Quebec. These include supporting connectivity, equipment, training, web and email hosting, and technical support services. FNEC also provides communities with capacity-building opportunities through technical training and employment programs. To provide cost-effective high-speed Internet and videoconferencing services in its member communities, FNEC manages agreements with private sector organizations. It secured special rates and interconnection options with the three telecommunications carriers in Quebec: Bell, Telus, and Telebec. According to FNEC, these agreements – combined with funding to subsidize connectivity costs - enabled communities to reduce the costs of their Internet access by two-thirds and at the same time substantially increased their Internet connection speeds. By pooling technical and financial resources and supporting economies of scale in these ways, FNEC achieves significant cost savings for their member communities. In the words of one interview participant from a government agency:

“[FNEC has] been playing a huge role. Not only economies of scale but also pooling resources and knowledge. For example, [FNEC] was able to secure and provide services directly to First Nations at a lesser cost. They were able to sit down and talk as one voice, with some service providers that are there. When you represent 22 First Nation interests...you have much more presence” (interview 2).

FNEC also partners with First Nation community intermediary organizations working in other sectors. Over time, this role has expanded FNEC's technology activities to areas beyond education. For example, FNEC manages broadband connections for Internet and videoconferencing communications and extends technology support services to the commissions focused on Health and Social Services and Human Resources.

Finally, FNEC works closely with government agencies, including AANDC and Health Canada. This enables it to lobby government to strategically support community technology development initiatives and propose reforms to policy and funding frameworks to ensure they are delivered effectively, in ways that correspond to the needs of local communities. Staff from government agencies describe FNEC's key role as a mediator between their offices (in Ottawa or in regional centres like Montreal and Quebec City) and the remote communities where it provides services. Government agencies benefit from the points of communication established by FNEC. Several interviewees noted it is much easier to engage with a single organization that represents a number of First Nations rather than working directly with individual communities. Describing intermediaries like FNEC as "active representatives" and "voices" of the communities, they believe this aggregated approach is reflected in the successes of FNEC's projects over the years (interview 2). In one person's words: *"Especially when you're sitting in an office in Gatineau...IT RMOs have enabled us to more efficiently and cost-effectively reach a range of funding recipients"* (interview 6). Government agencies also point to FNEC's understanding of First Nation approaches to service delivery in areas like education. Close relationships between FNEC and its member communities provides government agencies with a level of insight into local contexts they otherwise lack. FNEC also provides technical, management, and strategic planning assistance to government agencies:

"We don't have the expertise. In my team I don't have anyone in computer science. We sit down with suppliers, and they're talking megabytes, DSL, what the heck? We don't have that expertise. If you tell me you need to bring pipe in a community and bring water, no problem, you're talking my language. I'm not an engineer but I know what you're talking about. Connectivity, it's hard" (interview 2).

As a result of these activities and relationships, since the late 1990s FNEC has observed tremendous growth in broadband infrastructure and the use of ICTs among its member communities. This development has been made possible through the support and resources provided by government programs like First Nations SchoolNet and New Paths in Education. However, these publicly-funded programs face significant challenges at the contemporary moment of austerity. Funding levels remain uncertain and tied to discrete projects and sectors, while FNEC continues to take on additional project management and service delivery roles. Training and capacity-building remains a key challenge in communities, with local engagement restricted due to high program entry requirements and competition with other employment opportunities that can pay higher salaries. Technology issues can also be a challenge for local leadership to bring forward, given other pressing priorities.

In the next section, we explore some of the ways that FNEC and its partners in government agencies perceive the impacts of structural trends of austerity measures and neoliberal governance practices on their work. This discussion forms the basis of themes to explore in our future research.

Challenges and Opportunities in First Nation Broadband Policy

“[G]overnment’s gone through their cuts and people have come and gone...So now it’s almost a feeling of, there’s a lull in the action. And so who’s now going to pick up the baton. We’ve been hit with a howitzer, who’s picking it up?” (interview 7).

The structural trends described earlier – and noted in the above quote - impact the ways that the programs the First Nations community intermediaries are responsible for are administered, funded, and delivered . They also shape the policy frameworks that enable these organizations to conduct and sustain their work over time. Our analysis of the interview data suggests large differences in perception inside and between government agencies and First Nation community intermediaries regarding issues of technology and broadband development . Interviews suggest a divergence of understanding among these parties: increased consolidation of ICT functions across government sectors on one hand, and continued fragmentation and divergence on the other. For example, staff working in some government agencies described a trend towards a 'whole of government' approach to ICT services and infrastructure. They described this process of ‘simplification’ as a means to integrate and consolidate IT functions across multiple government sectors. The goal of this work is to generate a more holistic, shared approach to IT services that offers a single point of contact with communities (framed as ‘clients’).

At the same time, other interviewees from both First Nations organizations and government agencies point to the persistence of ‘silos’ inside government and between different agencies in terms of ICT services. For example, one interviewee stated that: *“Health Canada and INAC don’t speak together [about technology policy]. They have started that but it’s very slow. The impact is terrible for communities and the organizations”* (interview 1). Another questioned which agencies are involved in technology development projects: whether linked to federal, provincial, or First Nations governments. Others described a lack of integration among different government departments and communication problems regarding internal processes, program contacts, or responsibilities.

While many interview participants from government agencies are aware of the ‘e-Community’ strategy, it has not yet been formally adopted in policy frameworks, nor is it well understood across the different agencies of the federal government. First Nations community intermediary organizations operate in different sectors too, which complicates this environment. As exists in other regions, First Nations organizations tasked with providing services in different sectors address their mandates in ways that make cross-sectoral collaborations challenging. For example, in Quebec several First Nations organizations work in different sectors, including education, health and social services – although they are partnering in certain areas, including data management and connectivity services. This complex and dynamic environment raises challenges for government agencies to take a holistic approach to technology funding and administration. However, the First Nations organizations face similar issues in their interactions with government agencies. At present, the policy frameworks and funding initiatives that fund their work are still tied to sectoral mandates established by government agencies. For example, FNEC, through *New Paths in Education* (NPE), is only mandated to serve schools. Although the organization offers connectivity to First Nations organizations in other sectors, FNEC faces constraints that could be addressed if programs are funded more globally. Inside communities, funding is similarly associated with distinct services, such as education, health, and social services. These conditions make it challenging to connect multiple sectors into a holistic e-Community strategy (interview 1).

Government interviewees identified increased requirements for accountability, such as new reporting and proposal forms associated with the NPE program. These mechanisms are designed to consolidate education data into a centralized information system database to enable First Nations and government to share key information, generate reports, measure the effectiveness of programs, and so on. At the same time, federal and provincial agencies are encouraging First Nations to take on more project management and administration activities. However, these new pressures are not accompanied with any additional funding for already under-resourced First Nations and their community intermediary organizations so they can properly address these additional responsibilities (see Gibson, O'Donnell & Rideout, 2007).

Inside government, the environment of austerity has reduced the resources available to departments that in turn must reduce their costs. For example, despite positive evaluations from both government funders and support from user communities, First Nations SchoolNet (now funded under AANDC's multi-sector NPE program) has faced more than a decade of continual funding reductions and uncertainty. By March 2004, annual funding levels for the general SchoolNet program decreased from \$45M to \$25M, and in fiscal year 2005-06 its budget was further cut in half. Of the remaining budget of \$12.5M, around half (\$6.68M) was allocated to FNS (Indian and Northern Affairs Canada, 2009). With funding scheduled to end after fiscal year 2006/07, FNS was transferred to AANDC's jurisdiction. An AANDC departmental reallocation in fiscal year 2007/08 brought funding levels up to \$9.78M, thanks in part to effective lobbying and information-sharing by the First Nation intermediary organizations. However, in fiscal year 2008/09, funding dropped to \$6.9M (Indian and Northern Affairs Canada, 2009). Initially scheduled to terminate at end of the following year (fiscal year 2009/10), the program was extended to 2011. In 2010, AANDC transferred the FNS program to the NPE program. The agency did not transfer any FNS funds at that time, resulting in existing NPE community programs such as language, culture and elders services being cut from the First Nation schools. However, budget reductions in 2009 impacted FNEC's work: 50% of the Quebec allocation of \$881K was used for recurring fees, such as connectivity. Although NPE continues as a program, for First Nations community intermediaries its long-term sustainability remains uncertain.

One result of these austerity measures has been an increased focus among government and First Nations organizations on creative approaches to partnerships and combined funding programs. Unfortunately, very few government program officers have the resources and capacity available to establish, facilitate, and maintain these complex relationships and projects. As a result, requirements to manage public-private partnerships become another responsibility for First Nations and their organizations. Interview participants also identified that this is further complicated by the fragmentation of accountability and reporting requirements among government departments.

The ways that broadband and associated infrastructure and services are funded is also framed differently across multiple departments. For example, AANDC initially funded broadband as a component of economic development, rather than regional infrastructure. As a result, the agency had no authority to engage in connectivity issues, which Industry Canada was mandated to address. During one infrastructure build in Quebec, AANDC (and its provincial partner through the *Villages Branches* program) had to transfer funds through Industry Canada (the federal agency with authority over broadband at that time). This situation – among others – led AANDC to change its policy framework to formally recognize broadband as core infrastructure necessary to support essential public services. This shift was identified as a positive development by staff in both government agencies and First Nations community intermediaries. Broadband can now be funded as an eligible category under the First Nation

Infrastructure Fund (FNIF). (So far, FNIF has only been available during a funding window that ended in 2012 and AANDC is currently evaluating the program).

Another example of a challenge that arises from existing policy frameworks is the distinction between capital (physical infrastructure) and ongoing O&M costs (including connectivity). While technologies always have recurring costs, funding initiatives do not always include them as eligible expenses. For example, AANDC's FNIF program only pays for physical infrastructure: the cost of bringing service to a community's Point of Presence. It does not fund connectivity or other services. Several interviewees from federal agencies recognize this challenge and expressed concerns that First Nations have to use funding from public services (such as e-Health or online education) to pay recurrent costs for basic connectivity. With AANDC's national funding formula being capped at 2% since 1996, this means that the First Nation schools lack the financial resources to pay for the connections they require under their present funding arrangements with AANDC. In one person's words:

"[AANDC is] not there for recurrent funding. There are no O&M costs under our program at this point in time which are tied to connectivity. For example you build a school, we have an O&M program. For that given school, we fund a First Nation x hundred thousand dollars a year to run and maintain a school. Okay, fine, that's clear. For connectivity, we don't have that" (interview 2).

First Nation community intermediaries also pointed to a lack of inclusiveness and consultation in policy-making. These organizations expressed frustrations with lines of communication and authority between government agencies, and the First Nations and community intermediary organizations they work with. Definitions of what constitutes 'consultation' was one point of disagreement. For example, First Nations community intermediaries expressed strong reservations over the form and degree of consultations over proposed educational legislation presently being developed by AANDC. In one person's words, it reflected:

"The worst consultation process ever. They established a national experts committee that travelled across Canada to collect feedback. AFN and the communities disagreed with this panel. The process, they complained about it right from the start. Still, INAC education is continuing with the legislation...It does have impact...And it's going to modify the funding frameworks for education in First Nations. Also, we're not sure how the IT RMO here is going to be impacted...[I]f INAC decides to change the funding framework – and we don't know what's going to happen – what does it mean for our IT RMO?" (interview 1).

In contrast, staff from government agencies described the consultation process leading to the new legislation as a model and a success story in terms of engaging communities. One AANDC staff member saw consultation on this file as a "key area of focus for the education branch", and a means of looking at how legislation could be developed to meet the needs of communities (interview 6).

Finally, these partners must contend with ongoing and complex jurisdictional challenges, such as between provincial and federal governments. First Nations education has many specific requirements in terms of the relationship between federal governments and First Nations. In one interview participant's words: "The way we work is not the same as other agreements. It goes to the nature of the historic relationship between the federal government and First Nations people" (interview 6). That said, many

participants (at least from government agencies) felt these challenges are improving. In one person's words:

"It's getting better. 10 years ago it was a stalemate, nobody moving. And then things started to get better. I really feel First Nations organizations have big role to play in that. Being the mediator of the two other parties [federal and provincial government agencies] around the table... There has to be a close link with our provincial colleagues. Gone, or slowly going, are the days of jurisdictional battles" (interview 7).

In this context of ongoing challenges, interviewees from FNEC described how the organization continues to advocate government to establish policy to better support its activities. The group requests increased investments in First Nations ICT development and permanent funding to support its activities. This requires new investments at both community and regional levels. Funding for regional groups like FNEC must work in tandem with funding for local First Nations, and take a holistic approach so these First Nations across Canada can take advantage of economies of scale. Finally, given the frequency of changes to Band Council administrations, FNEC also proposes that resources identified in their proposals be secured over the long term, so the organization can complete the work given that constraint.

Conclusion

In past decades, governments around the world have been retracting their support for public services, a structural shift described as one component of neoliberal governance practice (Harvey, 2005). In this context, scholars are examining the role of the 'third sector' organizations that are emerging to fill these service gaps (Ostrum, 2010). Of these diverse organizations, community intermediaries are unique in their aims to both empower local stakeholders and support public sector entities. Their work is situated in a structural environment that shapes how these organizations, and the communities they work with, carry out their community and economic development goals (McMahon, 2011). In Canada, a network of regional intermediary organizations has emerged to support the self-determination of First Nations through partnerships with public and private sector organizations (Carpenter, 2010; Fiser & Clement, 2012; McMahon et al., 2011; Mignone & Henley, 2009; O'Donnell et al., 2009). They are guided by formal mandates that reflect their strong ties to culturally and political autonomous First Nations, and play an important role in supporting their members in leveraging digital networks and ICT.

However, even as the roles and responsibilities of First Nation community intermediaries have grown over time, they face an increasingly challenging operating environment, in part due to uncertain, complex, and fragmented policy frameworks (Gibson, O'Donnell & Rideout, 2007; MacDonald et al., 2012). Castells (2009; 2010) and others (Tongia & Wilson, 2011) have written about how the structural logic of the network society threatens to concentrate and centralize flows of power and resources. These processes can negatively impact those nodes valorized by dominant entities as peripheral to the structure and operations of emergent systems. In this context, community intermediary organizations that work closely with local constituents in marginalized spaces are well positioned to propose strategies and reforms that might counteract these tendencies. As Canada's digital economy develops, they will play a key role in efforts to ensure that remote and rural indigenous communities can participate in an equitable and democratic manner.

The issues discussed in this paper present an early-stage analysis of some of the challenges and opportunities available to both government agencies and community intermediary organizations in the contemporary environment. Through initial interviews conducted with federal agencies and staff from First Nations organizations, we discerned several themes that will guide our future research in this area. These themes include differing perceptions concerning 'holistic' and 'siloed' approaches to technology policy, approaches to 'consultation', and ways that existing funding and policy frameworks impact on-the-ground work undertaken by First Nations and their organizations.

In the coming year, we plan to build on these themes. We will conduct interviews with staff in federal and provincial agencies, First Nations community intermediary organizations, the AFN ICT Working Group, and community ICT experts. Through this work, we will identify common challenges while also recognizing the diverse policy and institutional environments these parties are operating in. Drawing on the conceptual framework of the e-Community ICT model, we hope to contribute to ongoing efforts to shape a mutually-beneficial approach to indigenous broadband policy in Canada.

Acknowledgements

This paper is a collaboration from the First Nations Innovation (FNI) research project (<http://fn-innovation-pn.com>). The authors would like to acknowledge and thank the First Nation communities we work with who have contributed to the ideas and developments discussed. The FNI project is funded by the Social Sciences and Humanities Research Council of Canada (SSHRC), with in-kind contributions from the project partners: Keewaytinook Okimakanak (KO-KNET and KORI) (www.knet.ca), the First Nations Education Council (www.cepn-fnec.com), Atlantic Canada's First Nation Help Desk / Mi'kmaw Kina'matnewey (www.firstnationhelp.com) and the University of New Brunswick (www.unb.ca). The FNI project works closely with the First Mile project (<http://firstmile.ca>). We welcome feedback on this paper.

References

- Borrows, J. (2010). *Canada's Indigenous Constitution*. Toronto: University of Toronto Press.
- Budka, P., Bell, B., & Fiser, A. (2009). MyKnet.org: How northern Ontario's First Nation communities made themselves at home on the World Wide Web. *Journal of Community Informatics*, 5(2). Retrieved March 9, 2011 from: <http://www.ci-journal.net/index.php/ciej/article/view/568/450>
- Caroll, T.F. (1992). *Intermediary NGOs: The supporting link in grassroots development*. Hartford: Kumarian Press In.
- Carpenter, P. (2010) The Kuhkenah Network (K-Net). In White, J.P., Peters, J., Beavon, D., Dinsdale, P. (eds). *Aboriginal Policy Research VI: Learning, Technology and Traditions*. Toronto: Thompson Educational Publishing: 119-127.
- Castells, M. (2009). *Communication power*. Oxford and New York: Oxford University Press.
- Castells, M. (2010). *The rise of the Network Society* (2nd Ed). Malden, Oxford and Chichester: Wiley-Blackwell.

- Fiser, A. (2012). *AFN Discussion Paper: First Nations E-Community. First Nations IT labour force & human capacity: What are the socio-economic indicators* (DRAFT: February 17, 2012).
- Fiser, A. (2010). A map of broadband deployment in Canada's Indigenous and Northern communities: Access, management models, and digital divides (circa 2009). *Communication, Politics & Culture*, 43(1), 7-47.
- Fiser A., & Clement, A. (2012). A Historical account of the Kuh-Ke-Nah Network: Broadband deployment in a remote Canadian Aboriginal telecommunications context. In A. Clement, M. Gurstein, M. Moll, & L. R. Shade (Eds.), *Connecting Canadians: Investigations in Community Informatics* (pp.255-282). Edmonton, AB: Athabasca University Press.
- Gibson, K., O'Donnell, S., & Rideout, V. (2007). The project-funding regime: Complications for community organizations and their staff. *Canadian Public Administration*, 50(3): 411-435.
- Harvey, D. (2005). *A Brief History of Neoliberalism*. Oxford and New York: Oxford University Press.
- MacDonald, S., Longford, G., & Clement, A. (2012). "Community networking experiences with government funding programs: Service delivery model or sustainable social innovation?" In A. Clement, M. Gurstein, G. Longford, M. Moll & L. R. Shade (Eds.), *Connecting Canadians: Investigations in Community Informatics* (pp. 393-417). Edmonton: Athabasca University Press.
- McIver, W. J. (2010). Internet. In M. Raboy & J. Schtern (Eds.), *Media divides: Communication rights and the right to communicate in Canada* (pp.145-174). Vancouver and Toronto: UBC Press.
- Middleton, C. & Crow, B. (2008). Building Wi-Fi networks for communities: three Canadian cases. *Canadian Journal of Communication*, 33(3), 419-441.
- Mignone, J. & Henley, H. (2009). Impact of information and communication technology on social capital in Aboriginal communities in Canada. *Journal of Information, Information Technology, and Organizations*, 4, 127-145.
- McMahon, R. (2011). The institutional development of indigenous broadband infrastructure in Canada and the U.S.: Two paths to 'digital self determination'. *Canadian Journal of Communication*, 35(3), 115-140.
- McMahon, R., O'Donnell, S., Smith, R., Walmark, B., Beaton, B., Simmonds, J. (2011). Digital Divides and the 'First Mile': Framing First Nations Broadband Development in Canada. *The International Indigenous Policy Journal*, 2(2).
- Myles, J. (2004). Community Networks and Cultural Intermediaries: The Politics of Community Net Development in Greater Manchester, *Media, Culture & Society*, 26(4), 467-490.
- O'Donnell, S., Perley, S., Walmark, B., Burton, K., Beaton, B., & Sark, A. (2009). Community Based Broadband Organizations and Video Communications for Remote and Rural First Nations in Canada. In Stillman, L., Johanson, G., and French, R., editors, *Communities in Action*. Newcastle upon Tyne, UK: Cambridge Scholars Publishing. 107-119.

- O'Donnell, S., Kakekaspan, G., Beaton, B., Walmark, B., Mason, R., & Mak, M. (2011). Research in Brief: A new remote community-owned wireless communication service: Fort Severn First Nation builds their local cellular system with Keewaytinook Mobile. *Canadian Journal of Communication*, 36(4), 663-673.
- Ostrum, E. (2010). Beyond Markets and States: Polycentric Governance of Complex Economic Systems. *American Economic Review*, 100(3): 641-672.
- Pejovic, V., Johnson, D.L., Zheleva, M., Belding, E., Parks, L., & Van Stam, G. (2012). The Bandwidth Divide: Obstacles to Efficient Broadband Adoption in Rural Sub-Saharan Africa. *International Journal of Communication*. 6, 2467-2491.
- Powell, A. (2011). Metaphors for democratic communication spaces: How developers of local wireless networks frame technology and urban space. *Canadian Journal of Communication*, 36(1), 91-114.
- Quarter, J. & Mook, L. (2010). An interactive view of the social economy. *Canadian Journal of Nonprofit and Social Economy Research (ANSERJ)*, 1(1): 8-22.
- Rideout, V.N. & Reddick, A.J. (2005). Sustaining community access to technology: Who should pay and why! *Journal of Community Informatics*, 1(2): 45-62.
- Rideout, V.N, Reddick, A.J., O'Donnell, S., McIver, W., Kitchen, S., & Milliken, M. (2007). *Community Organizations in the Information Age: A study of community intermediaries in Canada*. National Research Council and University of New Brunswick. Fredericton: Community Intermediaries Research Project.
- Servon, L. J. (2002). *Bridging the Digital Divide: Technology, Community, and Public Policy*. Malden, Oxford, Melbourne, Berlin: Blackwell Publishing.
- Shade, L.R. (2010). Access. In M. Raboy & J. Schtern (Eds.), *Media divides: Communication rights and the right to communicate in Canada* (pp.120-144). Vancouver and Toronto: UBC Press.
- Thomas Liou, Y. & Stroh, R.B. (1998). Community development intermediary systems in the United States: Origins, evolution, and functions. *Housing Policy Debate*, 9(3): 575-594).
- Tongia, R. & Wilson, E.J. (2011). The flip side of Metcalfe's Law: Multiple and growing costs of network exclusion. *International Journal of Communication*, 5, 665-681.
- Whiteduck, G., Tenasco, A., O'Donnell, S., Whiteduck, T. & Lockhart, E. (2012). Broadband-enabled community services in Kitigan Zibi Anishinabeg First Nation: Developing an e-Community approach. Paper for the 2012 International Rural Network Forum, Whyalla and Uppser Spencer Gulf, Australia, 24-28 September.
- Whiteduck, J. (2010). Building the First Nation e-community. In J.P. White, J. Peters, D. Beavon, & P. Dinsdale (Eds), *Aboriginal policy research VI: Learning, technology and traditions* (pp.95-103).

Toronto: Thompson Educational Publishing.

Whiteduck, T. (2010). First Nations SchoolNet and the migration of broadband and community-based ICT applications. In J.P. White, J. Peters, D. Beavon, & P. Dinsdale (Eds), *Aboriginal policy research VI: Learning, technology and traditions* (pp.105-117). Toronto: Thompson Educational Publishing.

Whiteduck, T., Beaton, B. (2013). *Building First Nation Owned and Managed Fibre Networks Across Quebec*. World Social Science Forum, Montreal, QC, Canada. October.

Whiteduck, T., Beaton, B., Burton, K., & O'Donnell, S. (2012). *Democratic Ideals Meet Reality: Developing Locally Owned and Managed Broadband Networks and ICT Services in Rural and Remote First Nations in Quebec and Canada*. Keynote paper for the Community Informatics Research Network (CIRN) Conference, Prato, Italy, November. Retrieved Jan. 15, 2013 from: <http://meeting.knet.ca/mp19/file.php/16/Publications/2012-CIRN-paper.pdf>