

Canada's Northern Communications Policies: The Role of Aboriginal Organizations

ROB MCMAHON, HEATHER E. HUDSON,
AND LYLE FABIAN¹

INTRODUCTION

In this chapter, we² examine how various institutions and policies have shaped the development of information and communication technologies (ICTs) in Canada's northern regions. We also outline how Aboriginal non-profits have mobilized to advance policy and regulatory reforms. This activity often arises from conditions of scarcity, reflecting this anthology's consideration of social justice as encompassing full and equitable participation among all citizens in society. Bringing reliable ICT infrastructures and services to the remote and sparsely populated North presents both technological and financial challenges. In these regions, the market alone cannot support the development and ongoing operations of ICT resources that support core public services and economic development initiatives. But over the past four decades, the activities of Indigenous and northern residents not only supported ICT development, but also led to the formation of non-profit ventures that contributed to that process in significant ways. These actors have worked to shape public policies in ways that govern the development of ICT infrastructures and services to provide a basis for long-term economic and community development.

These efforts have been an ongoing struggle. The historical record points to the lack of formal opportunities for non-profit citizen and consumer groups to influence broadcast, telecommunication, and broadband policies (Babe 1990; Rideout 2003; Shade 2008). Challenges to the advocacy efforts of non-profit organizations³ are increasing with the rise of neoliberal regulatory and policy discourses that favour the “free hand” of the market (McChesney 2013). But at the same time, they are not fixed. As Pickard (2013) points out, policy discourses can be changed, and play an important role in shaping whether and to what degree government intervenes in media and telecommunications markets (339). The structural frameworks of laws, policies, and regulations that shape the “rules of play” in these negotiations are sometimes subject to binding decisions resulting from the outcomes of regulatory hearings or legal cases (Carpentier, Dahlgren, and Pasquali 2013). At certain key moments, state institutions do provide formal opportunities for stakeholders to express their views. These opportunities reflect the agenda of the government in power, the changing policy and regulatory landscape, and the availability of funds, among other factors. In the specific context of Indigenous peoples in Canada, these activities are influenced by the unique relationship between Aboriginal peoples and the state, which is supported by the inherent Aboriginal and treaty rights enshrined in section 35 of the Canadian Constitution Act (1982) and expressed in different ways among a diversity of Indigenous groups (Borrows 2010). In leveraging the opportunities opened by these conditions, Aboriginal non-profit organizations can shift policy discourses to better meet the needs of their constituents.

The struggles that take place in these formal arenas are also informed by the activities of individuals and groups. In the context of northern development, the lack of private-sector ICT investment in their territories led Indigenous parties to undertake their own community-based projects, convincing some policy-makers to reshape policy discourses to support this work. In this chapter we frame these initiatives as examples of Indigenous ICT4D (information and communication technologies for development) (Unwin 2009; Heeks 2002, 2009; Kleine 2013). Initially encompassing radio, television, and telephony development, after the advent of the network society this process included the diffusion of networked digital

infrastructures (Castells 2009). Scholars, including Hudson (1984; 2006; 2011), Valaskakis (1992), Alia (2010), and Roth (2005), have all examined how Indigenous peoples have helped develop telecommunication and broadcast systems. Using both formal and ad hoc avenues of participation, Aboriginal non-profits secured policy and regulatory outcomes to help them introduce new technologies and services in their communities.

Importantly, the technical characteristics of ICTs play a key role in these activities because they enable small, geographically-dispersed, and/or rural groups to connect with one another, and with policy-makers, quickly, cheaply, and over long distances (Hudson 2006; Löblich and Wendelin 2012). We suggest that recent activities associated with digital ICTs reflect a rearticulation of strategies deployed by Aboriginal groups in past efforts to assert ownership and control over broadcasting and telecommunications infrastructures (Whiteduck et al. 2012; O'Donnell et al. 2009). The emergence of new digitally-enabled services, social actors, and institutional frameworks all reflect the persistence of ongoing dynamics linked to long-term and ongoing projects of Indigenous self-determination.

THE NORTHERN CONTEXT: PARTICIPATORY COMMUNICATION FOR RURAL AND REMOTE DEVELOPMENT IN CANADA

Northern and Aboriginal ICT policies should be considered within the context of the political economy of northern Canada. For the purposes of this chapter, our definition of Canada's "North" includes the three territories (Yukon, Northwest Territories, and Nunavut), and the northern regions of the provinces. Despite different geographies and political demarcations, these regions share characteristics that affect the diffusion and use of ICTs (Fiser and Jeffrey 2013). For example, in northern Ontario and Manitoba, thousands of lakes pepper the landscape, whereas northern Québec is isolated from the province's more populated south by hundreds of kilometres of wilderness. Yukon and northern BC (British Columbia) share mountains and forests, whereas communities in Nunavut are separated by vast stretches of tundra and ocean.

Factors other than geography shape the social conditions in these regions. Isolated northern communities range in size from a few

hundred to several thousand residents. Many are located on the traditional lands of diverse Indigenous nations, such as the Inuit, Dene, Cree, Ojibway, and Gwich'in peoples. While small in absolute numbers, these populations are also young and growing rapidly. Demographic models show that these northern Aboriginal communities will continue to constitute a majority or significant minority of the residents of the northern territories of Nunavut and the Northwest Territories (NWT), and the remote regions of provinces such as Québec (Nunavik), Ontario, Saskatchewan, Northeastern Labrador (Nunatsiavut), and Manitoba.

Government policies of resettlement and containment, combined with the uneven development patterns of the majority society, have contributed to social problems in these communities, such as high levels of violence, suicide, family breakdown, unemployment, and household poverty (Palmater 2011). Although many villages are located near profitable sites of resource extraction, their residents often lack a significant share of revenues from these ventures or participation in the economic activities they generate (Jacobs, Berrouard, and Mirellie 2009). Communities also lack the transportation, electrical, and communications infrastructures that residents of the South take for granted.

While the diverse approaches taken by Aboriginal peoples in negotiating their relationships with the state are too complex to address here, many groups are advocating for increased participation and autonomy in jurisdiction over natural resource and economic development, education, and health care (see [chapter 6](#) on failed advocacy in a natural resource context). In part, these negotiations link to the unique status of Aboriginal peoples, as expressed in the Canadian Constitution. As a result of historic and “modern” treaty negotiations – land claims agreements and other activities – the federal government has certain fiduciary responsibilities to the original inhabitants of the territories now known as Canada. Treaty and Aboriginal rights affect many services available in northern communities today, including health and education. Desire for self-government in the administration and delivery of these services – alongside other areas of self-determination like economic and community development – has led Aboriginal northerners to establish their own governing institutions and service providers.

As described below, these initiatives include the formation of non-profit Aboriginal communication societies, which have

Table 10.1 ICT4D in the Canadian North: Key stakeholders

<i>Indigenous Broadcasting</i>	<i>Indigenous Communications Organizations</i>	<i>Consumer Organizations</i>	<i>Government agencies</i>
IBC	FMCC	CAC	CRTC
TNI	ECN (non-Aboriginal entity that includes First Nations)	NAPO PIAC	Canadian Heritage
Wawatay	KNET (for-profit entity with First Nations owners) NBDC		Industry Canada / ISED CanNor Provincial and territorial governments CBC (Crown corporation)

CAC: Consumers Association of Canada; CRTC: Canadian Radio-Television and Telecommunications Commission; FMCC: First Mile Connectivity Consortium; IBC: Inuit Broadcasting Corporation; ISED: Innovation, Science and Economic Development; KNET: Kuh-ke-nah Network; NAPO: National Anti-Poverty Organization; NBDC: Nunavut Broadband Development Corporation; PIAC: Public Interest Advocacy Centre; TNI: Taqramiut Nipingat Incorporated

played prominent roles in both advocating for and administering a variety of ICT4D projects and services (see Table 10.1). These organizations emerge from diverse Indigenous communities with defined powers of self-government and customary laws, institutions and practices. Indigenous governments leverage funding mechanisms established by the federal government's Indian Act (1985) and implemented by Aboriginal Affairs and Northern Development Canada (AANDC), as well as other federal agencies, to use ICTs to deliver public services and economic development opportunities. Their activities also include attempts to reform policy and regulatory frameworks created for more populous and southern regions. Aboriginal non-profits used these negotiations to advocate for reforms that better fit the unique contexts of the Canadian North, and to secure funding and material support for their initiatives.

CANOR: CANADIAN NORTHERN ECONOMIC
DEVELOPMENT AGENCY

Changing Technologies and New Opportunities

People living in remote and rural Indigenous communities historically transmitted messages in person as they travelled by canoe or kayak, on foot and by dog team. Later, they established more permanent transportation and communication links using technologies developed in the urban South. Often moved to action by the lack of corporate services, northern residents formed non-profit and commercial organizations to establish infrastructure and services in their communities.

Radio and Television Broadcasting

The path to regional Aboriginal ICT4D is linked to the introduction of northern satellite services in the 1970s. In 1971, researchers funded by the federal Department of Communications visited First Nations leaders from remote areas of the provinces, and the Yukon and Northwest Territories, to ascertain their communications needs and priorities (Kenney 1971). This study was undertaken in preparation for Canada's first communication satellite, Anik (for "little brother" in Inuktitut), launched in 1972. Aboriginal leaders said their first priority was reliable telephone service (to get help in emergencies, keep in touch with family and friends, contact government agencies, and so on) followed by radio and television broadcasting. At that time in the Far North, radio reception was restricted to the Canadian Broadcasting Corporation's (CBC) shortwave Northern Service, while residents in the northern parts of provinces could only receive AM radio from distant cities in Canada and the US at night. After reviewing these findings, the Department of Communications funded the Northern Pilot Project to introduce community-controlled High-Frequency (HF) radios and radio broadcasting stations in remote Northwestern Ontario and the Keewatin region of the NWT. The subsequent evaluation of this project highlighted community operation, training of Indigenous participants, and benefits for social and economic development, and informed a government green paper in the mid-1970s (Hudson 1974).

Other technological advances at that time included low-power FM radio stations, which brought the possibility of inexpensive

local broadcasting. Northerners saw the potential of this technology to develop their own non-profit radio stations. For example, Taqramiut Nipingat Incorporated (TNI) or “Voice of the North” was a non-profit organization founded in Nunavik in 1975 to promote Inuit culture and language in that region. As community radio stations became established across the North, the CBC began to explore ways it could carry some of its news and public affairs programs. The solution adopted was to form a partnership between the CBC and the non-profit community radio stations. The CBC designated the northern stations as affiliates, which could receive the public broadcaster’s content via satellite and rebroadcast it to their communities. This initiative included capacity-building benefits, as local staff received training in the legal and ethical requirements of licensed broadcasters. Formal agreements signed between the CBC and the radio stations outlined the terms of their arrangement, and their obligations as stations licensed by the federal regulator, the Canadian Radio-Television and Telecommunications Commission (CRTC) (Hudson 1977). In short, this initiative enabled northerners to gain experience in both the operational and the policy aspects of radio broadcasting.

Community radio has since flourished in the North and across Canada; as many as 120 Aboriginal community radio stations were operating in 2013 (Roth 2013). Northern residents listened to southern news, sports, and music; broadcast Aboriginal-language content; and relayed messages between communities and to people at fishing and hunting camps. These radio stations also supported public services. For example, in Ontario the Wawatay (originally Wa-Wa-Ta) Native Communications Society partnered with the Wahsa Distance Education Centre to deliver adult education courses over radio. Today, radio stations remain an important and popular channel for public dialogue within northern communities.

Television arrived in the north in the mid-1970s, as part of the federal government’s Accelerated Coverage Plan (1974), which required the CBC to make its content available in every community in Canada with 500 or more residents. A few communities, including Igloodik in Nunavut, initially chose to reject television until more Inuktitut-language programming became available, given television’s perceived negative effects (Savard 1998; Roth and Valaskakis 1989). Valaskakis (1992) identified several challenges stemming from Inuit exposure to the technology: non-Indigenous people acquired authority over

Inuit peoples through their control over knowledge of and access to media, and the media content they produced introduced political and economic ideologies that contributed to the erosion of community, social and political structures, and cultural values. However, many northerners embraced television, purchasing TV sets at local Hudson's Bay Company stores to watch hockey and other southern content (Hudson 1990).

Aboriginal leaders considered how to manage the diffusion of these new broadcasting services. The easiest option was simply to open the door to information and entertainment from the outside world. Yet there were still concerns that one-way transmission of English and French language programs would undermine Indigenous languages and cultures. The strategies taken by the Aboriginal non-profits to address these issues varied, reflecting a key aspect in the shifting terrain of ICT4D policy in northern Canada: the growing diversity of organizations and communities involved.

For example, in Northern Ontario, Wawatay focused on radio, because content was relatively easy and inexpensive to produce, and several community radio stations already existed in the region. The non-profit society chose to create regional Oji-Cree radio programming that could be fed to northern communities by satellite and transmitted through local stations. The federal Department of Communications (later part of Industry Canada) provided resources for this strategy, reflecting government engagement in and material support for this initiative. In 1975, the experimental Communications Technology Satellite (also known as Hermes) began transmitting Wawatay's regional Oji-Cree news programs for free to several community radio stations in northern Ontario. After this experiment concluded, high commercial tariffs for dedicated audio satellite channels led Wawatay to negotiate an agreement with TV Ontario to piggyback its audio signal on the southern network's transponders on the Anik B satellite. Inside the communities, the signal was split, with the TV component rebroadcast over a low-power TV transmitter, and the radio signal delivered to the community radio station, where it was retransmitted locally (Hudson 1990).

Elsewhere, Inuit non-profits focused their advocacy strategy on television. They believed that television could not be ignored and so aimed to harness it to deliver northern and Inuit content. This initiative reflected another collaboration among Aboriginal non-profits and

the federal government. Inuit Tapirisat (now Inuit Tapiriit Kanatami), the major political organization representing the Inuit, used satellite capacity and funding provided by the government for video production and videoconferencing over the Anik B satellite. This project, called Inukshuk, linked six Inuit communities in three Arctic regions (with different dialects and time zones) in a one-way-video, two-way-audio teleconferencing network. During a nine-month period, Inukshuk produced more than 320 hours of programming, of which about half were interactive teleconferences. According to Hudson (1990): “The project not only fostered communication among Inuit across three regions about issues of land claims, education, and cultural identity, but also demonstrated to all – including the federal government, the Northwest Territories government, and the CBC – that the Inuit were capable of producing their own programs” (99).

Later, the Inuit used the experience and visibility gained from these satellite experiments to lobby government for funding for their own non-profit network, the Inuit Broadcasting Corporation (IBC), which was established in 1981. Other community-based media projects included an initiative in Igloodik, where local residents founded Isuma to create and distribute their own media content (Evans 2008; Roth 2014).

The success and visibility of community radio and TV projects became a key source of evidence that Aboriginal non-profits used to advocate for policy and regulatory support. Formal opportunities to contribute to policy formulation became platforms of mobilization where coalitions of Aboriginal non-profits secured several key reforms, including the Northern Native Broadcasting Policy adopted in 1990 and the recognition of the “special place” of Aboriginal peoples within Canadian society in the 1991 Broadcasting Act. Before discussing these policy reforms, we outline the role of Aboriginal non-profits in establishing telecommunications and Internet infrastructure in the North.

Telecommunications and Internet Infrastructure

Northern telecommunications development reflects a similar dynamic to broadcasting: the extension of southern-based infrastructures into remote regions alongside community ICT4D projects undertaken by non-profit organizations. Although the focus is on transmission rather than content, development patterns echo similar strategies and

challenges. Before telephone service was widespread in the North, most isolated communities only connected to each other and the outside world through unreliable high-frequency (HF) two-way radios that were often inaccessible to local residents, except in emergencies (Hudson 1974). Each community might have one or two HF radios at the nursing station and Hudson's Bay store. Some communities had local telephone service, but their link to the outside world was via HF radio.

Analogue telephone services arrived in the late 1970s and early 1980s as a result of regulations that required incumbent telecommunications providers to extend services in remote regions. To meet these requirements in smaller communities, the companies typically provided a single pay phone. Local exchanges linking households used outdated equipment, with periodic maintenance undertaken by fly-in technicians. Partly due to the lobbying efforts of Indigenous organizations, residential telecommunications services with external links via microwave and satellite became more widespread in the 1980s. In the 1990s, inadequate telecommunications infrastructure resulted in slow and congested circuits that restricted access to emergent applications like email and the Internet.

Compared with their early support for broadcasting technologies, policy-makers were initially sceptical of the need for high-capacity digital networks and services in remote northern communities because they did not anticipate the demand for high bandwidth applications like distance learning, telemedicine, and videoconferencing. However, Aboriginal non-profits used a strategy similar to that used for broadcasting: leveraging evidence from their community ICT initiatives to demonstrate to funders the benefits of applications like telemedicine and distance education (Whiteduck et al. 2012) (similar to [chapter 3](#) on "evidence").

As with broadcasting, these projects reflect the diversity of the stakeholders involved. In the northern regions of provinces, Keewatinook Okimakanak's KNET (the Kuh-ke-nah Network) was among the first Aboriginal non-profit service providers – although others are in place today, including the First Nations Education Council (FNEC) in Québec and the Atlantic Canada First Nations Help Desk (FNHD) (O'Donnell et al. 2009). Established by a tribal council set up by the chiefs of six remote First Nations in Northwestern Ontario (Keewatinook Okimakanak), KNET has provided access and services to remote Cree and Ojibway communities in Northern Ontario (and

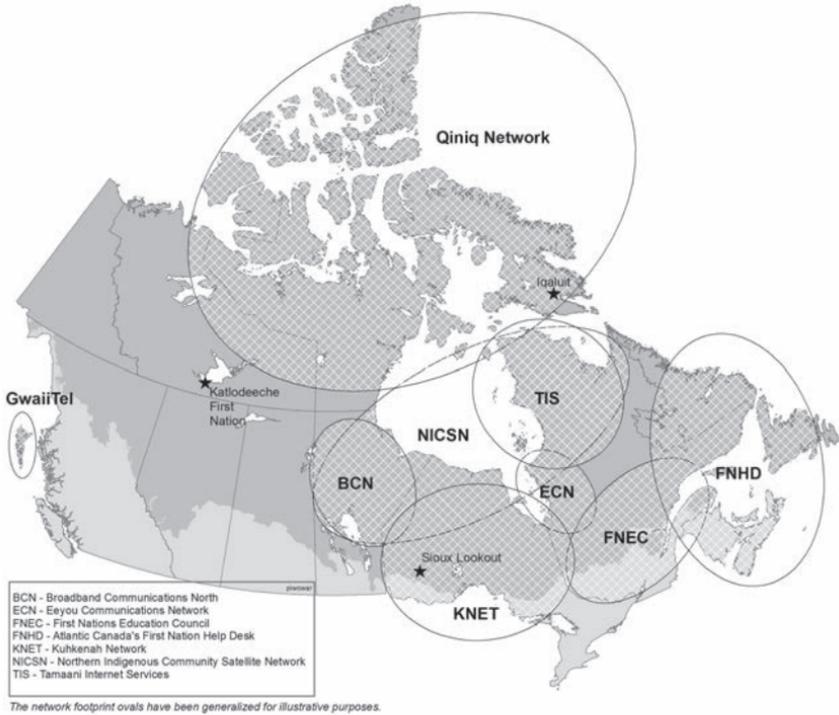


Figure 10.1 Indigenous non-profit networks discussed in this chapter
 Source: Produced by J. Piwowar, University of Regina.

other communities across Canada) since 1994. The organization – which now operates on a for-profit basis but remits any profits to its owners, which are First Nations communities – also contracts with health care providers to provide telehealth networks and with the Ontario Ministry of Education to support an online high school (Potter 2010). It offers computer training and skills development, as well as videoconferencing, Internet telephony, and mobile telephone services (O'Donnell et al. 2010). KNET also engages in partnerships with other regional First Nations and Inuit providers. For example, it is one of three partners in the non-profit Northern Indigenous Community Satellite Network (NICSN), which services communities in the northern regions of Quebec, Ontario, and Manitoba (McMahon 2013). Although managed from Sioux Lookout, Ontario, each of NICSN's regional partners follows its own operational and development model. The network is financially sustainable in terms of

operations and maintenance, but, like other satellite providers in the North, requires public funding to cover the high costs of bandwidth.

Another First Nations non-profit telecommunications operator, GwaiiTel, provides high-speed Internet service to residents of seven communities on the islands of Haida Gwaii in BC. GwaiiTel was formed by the Gwaii Trust, a non-profit organization established to enhance environmentally sustainable social and economic benefits to Haida Gwaii. It connects to the mainland over North America's longest over-water radio link for Internet transmission. GwaiiTel invested more than C\$1 million to build infrastructure connecting the communities, with funding from the Gwaii Trust Society and a grant from Industry Canada's Broadband for Rural and Northern Development (BRAND) (GwaiiTel 2006).

First Nations community broadband projects also exist in the northern territories. For example, K'atl'odeeche First Nation was funded by the Canadian Northern Economic Development Agency (CanNor) to build its own fibre-optic network. The Band-owned KFN Community Network serves the community of approximately 325 people living near Hay River in the NWT. In 2009, the Band received funding from CanNor to build a 48-strand fibre network to interconnect facilities such as the administration office, school, health clinic, adult education centre, day care centre, and Elder-care facility. The community network still faces bottlenecks because of the aging infrastructure that connects its local network to "backbone" transport networks, but in 2010 an entrepreneur from the community began working on a project to address this challenge.

In Nunavut, residents established the non-profit Nunavut Broadband Development Corporation (NBDC) to identify the territory's broadband needs. With support from the BRAND program, NBDC contracted a commercial provider, SSi Micro, to build and manage broadband through public and private sector investment. This network, Qiniq (meaning "to search" in Inuktitut), began offering satellite-based commercial wireless broadband infrastructure to all twenty-five Nunavut communities in 2005. SSi Micro owns and operates Qiniq's infrastructure and pays a small commission to local agents, who distribute modems, manage billing, and assist with local troubleshooting (Mignone and Henley 2009). Connectivity remains a challenge, given the limited bandwidth, high costs, and latency problems associated with satellite broadband. Although it is a commercial enterprise, like other service providers in these regions Qiniq

is dependent on public sector support to pay for bandwidth (Nunavut Broadband Development Corporation 2010). Other regional networks operating in northern Canada reflect both commercial (e.g., AirWare in the NWT – also managed by SSi Micro) and non-profit models (such as the Eeyou Communication Network or ECN in Quebec, which is a non-Aboriginal organization that includes First Nations members). Regardless of their ownership structure, these organizations are all dependent to some extent on government regulations and policies for capital and operational funding.

INTERVENTIONS IN POLICY AND REGULATORY PROCEEDINGS: ENGAGING WITH STATE INSTITUTIONS

ICT policy is the responsibility of federal departments, primarily Innovation, Science and Economic Development (ISED) (formerly Industry Canada), whose portfolio includes telecommunications, trade and commerce, science and technology, and other industry-related fields. In 1996, the department absorbed the functions of the Department of Communications, which was established by the Trudeau government in 1968. The CRTC is responsible for regulating telecommunications and broadcasting. Several other federal agencies also play a role in northern ICT4D. For example, Canadian Heritage is responsible for broadcasting policy and digital media, while the Canadian Northern Economic Development Agency provides some infrastructure funding in the far North. Indigenous and Northern Affairs Canada (INAC) (formerly Aboriginal Affairs and Northern Development Canada, or AANDC), is responsible for most policies affecting Aboriginal peoples, and provides some funding for Aboriginal connectivity. For example, INAC administers the First Nations Infrastructure Fund (FNIF), which has been available to First Nations (but not Inuit) applicants since 2009 and includes broadband as an eligible expense. All FNIF projects involve public–private partnerships among government, private sector entities, non-profits, and First Nations organization. INAC also monitors broadband deployment in northern Aboriginal communities (AANDC 2012).

This summary illustrates how government policy to support broadband in remote and rural Indigenous communities is coordinated among many different departments and program areas (McMahon et al. 2014). Since 1996, a variety of regulations, funding initiatives,

strategies, and projects have been put in place to support broadband development in these communities. However, these initiatives face tensions with market-oriented development models that fail to address the unique conditions and challenges present in northern regions. The road to changing policy and regulatory frameworks can be long and contorted. It often requires drafting legislation that may or may not be adopted, or persuading politicians or senior administrative officials to adopt new policies, set regulations, or release funds. The outcomes of proposals raised by advocacy groups are also subject to pressures from political and economic elites (Freedman 2008; Crawford 2013). The format of regulatory proceedings is also formidable. While public participation is encouraged and agencies like the CRTC have established funding and other support mechanisms, hearings tend to be formal, legalistic, and dauntingly complex. Government staff and well-resourced corporate stakeholders use technical and legal language that can be challenging for citizen and consumer groups to engage with, and can discourage advocates who lack professional advisers or legal counsel (see [chapter 2](#)).

Nonetheless, interventions in the formation of broadcasting and telecommunications regulatory frameworks do provide opportunities for interested parties to participate. The CRTC hosts public consultations, as laid out in its governing legislation. In contrast, ISED's consultation process is much less transparent, with fewer direct efforts to encourage public involvement (Shepherd, Taylor, and Middleton 2014). But the CRTC's decisions are not necessarily binding; they can be appealed to the courts, and the governor-in-council (Cabinet) can choose to "vary" (i.e., change or reverse) them. Yet there is a strong tradition of public advocacy in the form policies and regulations for Canada's communications system – see, for example, discussions about public service radio in the 1920s and 1930s (Raboy 1990).

In short, while they appear complex and legalistic, regulatory proceedings have the advantage of resulting in binding and enforceable decisions – at least compared with government policy statements or plans, which may never be enacted or funded. Public hearings also provide an opportunity for stakeholders to address policy-makers directly, and to include their concerns and evidence in the public record. They also provide a means of obtaining information from incumbent telecommunications carriers about matters such as quality of service, costs of providing services, and plans for service expansion or upgrades that companies may not otherwise release. However, participating in this process requires that parties follow

procedures and understand legal and technical terms that may be unfamiliar to community-based non-profit organizations.

Aboriginal non-profits provide many examples of strategic interventions in these processes. Their efforts are constrained by power imbalances and other inequalities. However, by forming partnerships, mobilizing community-held knowledge and resources, and using the opportunities to participate opened by government agencies, Indigenous actors have had many successes in this area. For example, they intervened with the Consumers Association of Canada in the 1970s, the National Anti-Poverty Organization in the 1980s, and, more recently, with the Public Interest Advocacy Centre. These coalitions provided capacity-building benefits for Aboriginal groups, who gained experience in preparing written testimony and appearing at hearings. At the same time, consumer organizations benefited from the Aboriginal groups' knowledge of their ICT requirements and issues affecting remote northern communities. In the next section, we explore these activities in detail, and provide examples of how over the past several decades, coalitions of Aboriginal organizations have influenced the regulatory and policy frameworks of ICT4D in the North.

Aboriginal Participation in Broadcast Policy and Regulation

Aboriginal non-profit organizations worked with several federal agencies during the 1980s to obtain policy and regulatory support to produce and distribute their own media content. For example, the Northern Native Broadcast Access Program was established by the Department of the Secretary of State (now Canadian Heritage), with \$40 million in federal funding between 1983 and 1987. By 1990, the program had funded thirteen non-profit Native Communications Societies (including Wawatay and TNI) to establish production facilities, train broadcasters, and produce and distribute Aboriginal content (Hudson 1990). This support led to a vibrant Aboriginal newspaper and radio sector across Canada (Avison and Meadows 2000).

The formation of the federal government's national broadcasting policy and regulatory framework – a process that culminated in an updated Broadcasting Act in 1991 – provided another opportunity for Aboriginal groups to mobilize and advocate for change. This activity was linked to a series of public hearings held by the CRTC focused on Northern Native Broadcasting, and the Federal Task Force on Broadcasting Policy (1986). A consortium of Native communication

societies joined the CBC and territorial governments to propose a government-funded northern satellite distribution system. To support this proposal, the group gathered evidence demonstrating the success of community ICT projects (Roth 2005). In 1988, the federal government committed \$10 million over four years to develop a northern regional broadcast network, and Television Northern Canada began broadcasting to ninety-six northern communities in January 1992. However, unexpected budget cuts during the 1990s forced nine of the Native Communications Societies to close down during that decade (Roth 2005).

Inuit and First Nations communication organizations leveraged the broadcasting and technical expertise built up through their involvement in these projects to advocate for the federal government's Northern Native Broadcasting Policy, issued in 1990 (Valaskakis 1990). This effort was informed by the CRTC and its Regulatory Framework for Aboriginal Broadcasting (1989). Through this process, Aboriginal groups articulated five key principles (described in Baltruschat 2004):

1. greater access to a range of programming choices in the North;
2. participation in the CRTC's decisions over the form, quality, and placement of programming broadcasted in Aboriginal communities;
3. access to broadcast distribution channels to maintain Aboriginal cultures and languages;
4. programming featuring Aboriginal issues, and content produced by Aboriginal peoples; and
5. regular consultations between Aboriginal representatives and government to develop broadcasting policies.

The new policy relaxed rules on content and advertising, so that some Aboriginal broadcasters could adopt a more commercial business model. As a result, they shifted their content to attract advertisers and expand to new regions, including southern Canada (David 2012).

These various developments culminated in reforms to the language of the 1991 Broadcasting Act (which significantly revised the 1968 Act). Several waves of community mobilization, public consultation, and regulatory intervention carried out by Aboriginal non-profits succeeded in adding language to the Act recognizing "equal rights, the linguistic duality and multicultural and multiracial nature of Canadian society and the special place of aboriginal peoples within

that society” (Broadcasting Act, section 3(1)(d)(iii)). Once this language was incorporated in legislation, it was invoked in subsequent interventions from these parties. For example, during a CRTC hearing in 1997, Aboriginal groups used it in a proposal to develop their existing broadcasting system into the national Aboriginal Peoples’ Television Network (APTN). A year later, APTN received Category 1 status from the CRTC, making it a “must carry” channel on basic cable packages across the country – a status the network retains today.

Aboriginal Interventions in Telecom and Digital Policy and Regulation

Aboriginal non-profits also participated in policy debates and regulatory proceedings associated with telecommunications. For example, 1970s regulatory proceedings held by the CRTC to review carriers’ requests for rate increases became a vehicle for First Nations subscribers to improve their services. In Northern Ontario, the incumbent’s quality of service was often poor, with outages, billing errors, and no staff who could communicate with Indigenous subscribers. The Wawatay Native Communication Society partnered with the Consumers Association of Canada, with the assistance of expert witnesses and participants from northern communities, to intervene in the proceedings. Bell Canada stated that it was unable to find Indigenous-language speakers to hire for its regional offices and therefore could not provide services in those languages. Wawatay responded that bilingual interpreters could be located in the North and provide services by telephone. The CRTC subsequently approved the establishment of a service called “Translataphone,” which northern customers calling Bell’s customer service could use to reach a Native-language speaker. Bell was also required to fund a bilingual (English and Oji-Cree) version of the Northern Ontario telephone directory (CRTC 1978; Hudson 1984).

Aboriginal communication organizations built on this experience in 1984 and 1985. A coalition of groups – including Inuit Tapirisat, Taqramiut Nipingat Inc., and Wawatay – collectively intervened in CRTC hearings concerning rates in Bell Canada territory. As a result of these efforts, the CRTC ordered Bell Canada to publicize discounted inter-exchange rates that could be used by northern subscribers, and also ordered Bell not to increase the existing direct-dial long distance rates in the remote regions (CRTC 1985).

These early activities became the forerunners of Aboriginal advocacy for digital ICTs. In the mid-1990s, several First Nations non-profits in Ontario (including KNET) formed a coalition to petition the CRTC to require incumbent carriers to extend digital infrastructure to communities located in so-called High Cost Serving Areas (HCSAs) (CRTC 2005). This group included Wawatay among its members – with the Ontario-based Native Communication Society providing key expertise in the process and format required in the CRTC’s regulatory hearings. The coalition of northern and Indigenous non-profits argued that access to broadband (1.5Mbps) be included as an “essential service” in the HCSAs, which had previously been exempt from universal service provisions. Although the incumbent carriers resisted the provision of 1.5Mbps service, in 1999 the CRTC did establish a new definition of “basic service” that included a requirement for the carriers to provide digital switches that could connect lines for low-speed data transmission (56 kbps) at local rates (users had previously paid long distance charges) (Fiser 2010).

Parallel to these First Nations activities, Inuit groups also launched activities to improve connectivity in the far North. In 1994, the non-profit Inuit Broadcasting Corporation hosted consultations in twenty-seven communities, where Inuit debated issues of digital divides, the effects of connectivity on culture and language, capacity-building, maintenance and use of technologies, participation, and funding. Hundreds of people participated in these consultations using television, community meetings, fax machines, and phone-in sessions. The federally-appointed Nunavut Implementation Commission used the group’s final report during the formation of the territory in 1995, arguing “the road to Nunavut is along the information highway” (Alia 2010). To this end, from 1999 to 2001, the Government of Nunavut’s Department of Sustainable Development convened the Nunavut Broadband Task Force. Its 2002 report *Sivum-uqpalianiq: Moving Forward: Strengthening our Self-Reliance in the Information Age* supported the creation of the Nunavut Broadband Development Corporation (NBDC), a non-profit organization tasked to manage connectivity solutions for the territory. NBDC then lobbied the federal government to obtain bandwidth and facilities for the for-profit Qiniq network. In 2008, NBDC released its five-year business plan, called *Managing Bandwidth – Nunavut’s Road Ahead*, and the following year signed a five-year contribution agreement with Infrastructure Canada.

A key avenue for digital ICT4D advocacy opened in 1994, when Industry Canada established the Information Highway Advisory Council (IHAC) to direct national broadband development. At that time, non-profit groups from across Canada united to address public interest issues in the formation of digital policy, although the process remained dominated by corporate entities, commercial media, and telecommunications corporations (Moll and Shade 2013; Shade 2008). Among these actors were Aboriginal organizations, including KNET. However, although IHAC's action plan, *Building the Information Society: Moving Canada into the 21st Century* (1996), supported universal, affordable, and equitable access, it offered few concrete suggestions on how to address issues specific to remote, northern, and Indigenous communities (Bredin 2001). Despite these challenges, that same year, First Nation organizations began partnering with the federal government and carriers to extend Internet connections to schools (First Nations SchoolNet) and public Internet access sites (Community Access Program) (Moll 2012). The federal government provided funds and decentralized the management of these programs allowing Aboriginal non-profits to administer them. This approach provides an example of how these non-profit organizations helped the federal government achieve its policy objectives – for example, to connect First Nations schools – while benefiting from funding provided to carry out those tasks. These programs also laid the groundwork for future advocacy, through the federal government's *Connecting Canadians* suite of policy initiatives.

Seven years after IHAC, Industry Canada launched the National Broadband Task Force. As in earlier initiatives, most of this group's membership consisted of representatives from industry and government, with some involvement from non-profit organizations (including KNET). Nonetheless, in its final report, the Task Force concluded that broadband networks and digital ICTs could support social and economic goals, and that government could play a role in deploying infrastructure in regions that lacked a business case for private sector development – including in the North. Industry Canada implemented these goals through *Connecting Canadians*, which provided almost \$600 million between 1998 to 2006 in seven broadband initiatives: the Community Access Program (CAP); SchoolNet/First Nations SchoolNet (FNS); Library-Net; VolNet (for charitable and not-for-profit organizations); SMART Communities; Canadian Content Online; and Government Online. While usage levels varied and they

faced ongoing challenges to their long-term financial sustainability, these programs provided access, training, and economic development opportunities to residents in remote and Indigenous communities (Pacific Community Networks Association 2006; AFN Chiefs Committee on Economic Development 2010). For example, in 2002 a network of seven non-profit First Nations regional management organizations – including groups like KNET with past experience in ICT development and advocacy – gained control over FNS program design and delivery. These organizations formed a national coalition that regularly convened to discuss challenges, best practices, and strategic development (Whiteduck, T. 2010).

The Aboriginal non-profits associated with *Connecting Canadians* also leveraged several short-term funding programs targeting infrastructure development. These included the federal government's BRAND and National Satellite Initiative initiatives, which encouraged private-public partnerships between community intermediary organizations and incumbent telecommunications providers. Indigenous networks like KNET and NICSN, as well as for-profit networks like Qiniq, benefited from this funding and regulatory support.

Aboriginal Internet and broadband activities also faced many challenges and setbacks during this time. For example, in 2003, Aboriginal groups engaged with government departments to develop the (now defunct) Aboriginal Canada Portal (Alexander 2009).

However, despite the funding they provided, government departments, rather than Indigenous organizations, drove much of this work. Ironically, lack of infrastructure also meant that many northern residents could not access the portal's digital content. During consultations held by government to address this issue, participants at three Connecting Aboriginal Canadians forums from 2002 to 2004 concluded that while the federal government should support their work through appropriate funding programs, communities must drive development, and programs must include opportunities for local engagement (O'Donnell et al. 2010).

Around this time, the Aboriginal Policy Research Conference was established by several partners, including the University of Western Ontario (now Western University), the Strategic Research and Analysis Directorate of Indian Affairs and Northern Development Canada (now Indigenous and Northern Affairs Canada), and the National Association of Friendship Centres. Designed to build bridges between research and policy, the event was held three times – in 2002, 2006, and 2009 (Aboriginal Policy Research Consortium). Participants in

these events identified the challenges that First Nations and Inuit groups continued to face, including limited planning capacity, few opportunities to participate in decisions, a lack of technical capacity, and conflicting jurisdictional responsibilities among government funders (AFN Chiefs Committee on Economic Development 2010). Some commentators pointed out that these state-led initiatives reflected the government's lack of awareness and/or appreciation for the challenges within Indigenous communities (Alexander 2001). For example, rather than support Aboriginal efforts, government programs often forced communities to compete with one another for scarce, short-term funding (see Gibson, O'Donnell, and Rideout 2007) (see [chapter 11](#)).

Motivated by the lack of an inclusive policy framework, the First Nations regional non-profits associated with *Connecting Canadians* mobilized to establish their own community-based ICT4D strategy (O'Donnell et al. 2010). Led by KNET, this "e-Community" initiative encompassed five broad themes: capacity building; broadband infrastructure and connectivity; human resources; information management; and service delivery. It was advanced as a resolution at the 2008 annual AFN chiefs' assembly, presented at the 2009 Aboriginal Policy Research Conference, and re-affirmed in AFN *Resolution 2011-09* (Whiteduck, J. 2010). As of 2013, several First Nations had begun to implement the model in their communities (Keewaytinook Okimakanak e-Community).

Several contextual factors shaped these activities, including a shift in federal administration. In 2007, the newly elected Conservative government introduced broadband policies intended to reduce digital divides and promote economic development opportunities. *Broadband Canada: Connecting Rural Canadians* carried out these goals by providing subsidies for private sector entities to build and operate infrastructure. However, critics argued that this undermined the sustainability of local networks and service delivery in remote and rural communities (Rideout 2008). The Aboriginal non-profits involved in this work also criticized these policy shifts, partly because they were not consulted during their planning or involved in their implementation. For example, Industry Canada's 2010 consultations on the national digital economy strategy did not include any mention of Aboriginal issues (McMahon 2011); although some First Nations and Inuit organizations submitted position papers and identified principles to drive the digital economy (see for example Nunavut Broadband Development Corporation 2010; Whiteduck

et al. 2010). A research project conducted at that time confirmed that many staff in First Nations and Inuit technology organizations felt they lacked substantive opportunities to contribute to digital policy, and that funding from federal agencies remained short-term, uncoordinated, and lacking support for their ongoing operations and maintenance costs (McMahon et al. 2010).

This overview – summarized in [Table 10.2](#) – demonstrates how, in the context of northern ICT4D, Aboriginal non-profits have emerged as mediators between local stakeholders and external entities such as

Table 10.2 Summary of Indigenous ICT4D initiatives in the Canadian North

<i>Decade</i>	<i>Government-driven Initiatives</i>	<i>Sector</i>	<i>Aboriginal/Non-profit-driven Initiatives</i>	<i>Sector</i>
1970s	Introduction of northern satellite services	B, T	Man in the North report: Arctic Institute of North America	B, T
	Northern Pilot Project (NW Ontario; Keewatin region of NWT)	B, T	Low-power community FM radio stations	B
	CBC licenses Aboriginal radio stations as affiliates	B	Regional Native Communication Societies (e.g., Taqramiut Nipingat Inc; Wawatay)	B, T
	CBC Accelerated Coverage Plan	B	Cooperative projects (e.g., Wawatay works with TV Ontario)	B
	Experimental satellite projects (Hermes, Anik B)	B, T	Wawatay intervention in CRTC Bell Canada hearings	T
1980s	Northern Native Broadcast Access Program (1983)	B	Inukshuk Project: Inuit start video production and videoconferencing in 6 communities	B, T
	Federal Task Force on Broadcasting Policy (1986)	B	Inuit Broadcasting Corporation (1981)	B
	Regulatory Framework for Aboriginal Broadcasting	B	Aboriginal coalition secured discounted inter-exchange and long-distance rates at CRTC hearing	T

<i>Decade</i>	<i>Government-driven Initiatives</i>	<i>Sector</i>	<i>Aboriginal/Non-profit-driven Initiatives</i>	<i>Sector</i>
1990s	Northern Native Broadcasting Policy (1990)	B	Consultations held by Inuit Broadcasting Corporation (1994) led to Nunavut Broadband Task Force (1999–2001).	B
	<i>Broadcasting Act</i> revisions (1991)	B	Early telemedicine; distance education applications (e.g., Wahsa)	D
	CRTC hearings on digital services in high-cost areas	T, D		
	Industry Canada's Information Highway Advisory Council	D	Forum for Inuit organizations to advocate for connectivity solutions in Nunavut	D
2000s	National Broadband Task Force and <i>Connecting Canadians</i> policy initiatives (2001)	D	Telemedicine; distance education applications (e.g., Keewatinook Internet High School; Keewatinook Okimakanak Telemedicine)	D
	Aboriginal Canada Portal Broadband Canada	D D	Government/Aboriginal events (e.g., Aboriginal Policy Research Conference & Connecting Aboriginal Canadians Forums)	B, T, D
	First Nations Infrastructure Fund (includes broadband as eligible funding area)	D	Nunavut Broadband Development Corporation formed Research and advocacy strategies among First Nation non-profits (e-Community; First Nations Innovation, First Mile) Growth of Aboriginal operators and ISPs: KNET, NICSN, ECN, First Nations Education Council, Atlantic Canada First Nations Help Desk, KFN, GwaiiTel, etc.	D B, T, D T, D
Sector:	B: Broadcasting: radio, television T: Telecommunications: telephony, teleconferencing D: Digital ICTs: Internet, broadband			

Copyright © 2017. MQUP. All rights reserved.

government funders. These organizations operate complex networks and applications while enabling their constituents to assert self-determined development goals. They reflect a diversity of organizational structures and strategies to match the conditions present in the regions they operate in, but collectively they reflect a strong focus on consultation and engagement with their membership of geographically dispersed, politically autonomous First Nations (McMahon et al. 2014).

Yet despite increased levels of policy engagement by these Aboriginal non-profits, conditions are not necessarily improving over time. In fact, during the previous federal government's administration engagement became more difficult in some areas, given that some federal funding for Aboriginal non-profits was cut due to the effects of government austerity measures. For example, between 2010 and 2015, the AFN suffered major cutbacks to its operational funding from the Harper government, as did First Nations technology organizations such as the First Nations Technology Council in BC. These pressures are accompanied by a growing demand for services among the Indigenous constituents of these organizations. These converging trends reflect deep challenges to the long-term sustainability of these organizations.

CONCLUSIONS AND FUTURE DIRECTIONS

This chapter describes how over the past four decades, a growing and diverse collection of Aboriginal non-profits has joined with experienced consumer organizations, policy experts, and academics to shape ICT4D in Canada's Far North. These activities reflect the shifting field of policy discourse – shaped by technological and political change – as a platform of mobilization as well as a focus of advocacy. We suggest that such activities are part of a long and varied history. Canadians have been involved in grassroots participation in both media production and the use of ICTs for advocacy from the era of farm radio forums on the Prairies during the 1930s (Sandwell 2012) and the National Film Board's (NFB's) "Challenge for Change" programs in the 1960s and 1970s (Waugh, Winton, and Baker 2010). The dynamics of these initiatives reflect the persistence of common goals, strategies, and challenges alongside new avenues of participation opened by technological change.

This chapter has discussed how Aboriginal non-profits have increasingly contributed to, and in many cases, led these initiatives. A diversity of organizations established radio, TV, telecommunications, and Internet facilities and services across the North, and helped to shape policies to address their unique needs as northerners and as Indigenous peoples. The proof of their successes is reflected in funding programs, regulatory decisions, policy principles, and even the language of the Broadcasting Act (1991). Yet despite these efforts, many challenges persist – particularly in the area of digital ICTs.

Today, access to digital infrastructure in Canada's Far North remains limited. A significant and multifaceted digital divide – influenced by factors including availability, affordability, speed, and quality of service – persists (CRTC 2012). The federal government is taking some steps to address these challenges. For example, in 2013 the northern economic development agency CanNor announced funding to develop a strategic connectivity plan covering all three northern territories, and provided support for community broadband projects like the KFN Community Network discussed earlier (CanNor 2013). As well, in 2015 the CRTC launched a national review of what constitutes “basic telecommunications services” and encouraged the public, consumer groups, and Aboriginal communication organizations to participate (CRTC 2015). Nonetheless, the North still lacks adequate infrastructure and bandwidth for residents to fully use services such as e-health and distance education, e-services, e-commerce, e-governance, and cloud-based applications. Finally, the lack of capacity, resources, and operational subsidies undermine the sustainability of Aboriginal community networks – in spite of the clear benefits they offer to northern residents.

Policy and regulatory commitments can address some of these challenges, as demonstrated in the ICT4D initiatives discussed in this chapter. But without long-term guarantees of revenue-sharing or operational subsidies, Indigenous-led community networking projects will continue to struggle. In this context, Aboriginal non-profit organizations are involved in several projects aimed at reshaping policy discourses to better meet their needs. The “e-community” strategy that KNET first articulated in 2005 and which First Nations across Canada widely adopted is one promising initiative. Research projects like the First Nations Innovation project at the University of New Brunswick (First Nations Innovation) continue to collect and present evidence of Aboriginal communication organizations as

providers as well as consumers of digital infrastructure and services. Such research initiatives highlight the successes of locally owned and operated Indigenous digital infrastructure, while also describing ongoing challenges.

These activities are accompanied by efforts to reshape policy discourses. One organization engaged in this activity is the First Mile Connectivity Consortium (FMCC), which was founded in 2010 by a coalition of university-based researchers, First Nations regional technology organizations, and individual First Nations.⁴ The FMCC was formally incorporated as a non-profit association in 2014. Its membership extends across Canada, but is concentrated in rural and remote regions. The organizations that belong to the coalition are diverse but share a common interest in showcasing how community-driven broadband policy can support development, highlight local innovation, and overcome digital divides. The FMCC frames locally-driven broadband infrastructure projects as an alternative to the “last mile” link from service providers to subscribers (see Strover 2000; Paisley and Richardson 1998). The concept of the First Mile provides language that proponents can use as shorthand in policy discourses to stress the need for rural and remote user communities to generate and operate their own infrastructures. In the context of Indigenous communities, it provides a way to reframe broadband policy and regulatory frameworks to better fit diverse Indigenous laws, customs, values, and institutional arrangements (McMahon et al. 2011).

In 2013, the FMCC intervened in a CRTC consultation concerning services provided by Northwestel (the incumbent telecommunications carrier in the three northern territories) (McMahon, Hudson, and Fabian 2014). Focusing on issues of access, affordability, and the potential for infrastructure development in the North to support community and economic development, the group argued that northern residents should be offered opportunities as producers as well as consumers of telecommunications services. In its decision, the CRTC recognized that broadband Internet access is, more than ever, an important means of communication for northern Canadians, and is needed to achieve a number of social, economic, and cultural objectives. The Commission agreed with the FMCC’s position that the North lacks competitive markets. It recognized the special conditions and challenges in the North, and that market forces alone are not addressing them. In 2014, recognizing that many isolated northern communities remain dependent on satellite connectivity,

it launched an inquiry into satellite transport services and in 2015 began a national review of the Basic Service Objective (including whether broadband should be considered a basic service available to all Canadians, like telephony).

At the time of writing, the CRTC had just released its decision to declare broadband a basic service, with a new \$750 million fund to extend infrastructure to under-served regions of Canada.⁵ The FMCC, as well as other Indigenous organizations, participated in these proceedings with the goal of continuing to highlight the need for communities to contribute to the development and provision of networked digital services. While the long-term impacts of this regulatory decision remain uncertain, the involvement of Indigenous peoples in the process leading up to it is but one example of how they are continuing to strategically participate in opportunities to shape Canadian communication regulations and policies.

NOTES

- 1 This chapter was made possible thanks to the support of the First Nations Innovation project (<http://fn-innovation-pn.com>), which receives in-kind contributions from Keewaytinook Okimakanak, the First Nations Education Council, Atlantic Canada's First Nation Help Desk, and the University of New Brunswick, and by a grant from the Social Sciences and Humanities Research Council of Canada (SSHRC). The authors thank our friends and colleagues at these organizations and in these communities. We also acknowledge the dedication of the community practitioners and public servants involved in this work. We hope this history accurately captures some of their efforts.
- 2 Disclosure: the authors are members of the First Mile Connectivity Consortium.
- 3 Some of the non-profit organizations referred to in this chapter have since become for-profit cooperation/social enterprise organizations. These organizations are owned by communities and return any revenues to community stakeholders. Since these are collective organizations that continue to provide benefits to community members, and also given the sheer number of organizations and extensive time period covered, we do not make these distinctions.
- 4 For more information, please visit: www.firstmile.ca.
- 5 The CRTC decision is available at: <http://www.crtc.gc.ca/eng/archive/2016/2016-496.htm>.

REFERENCES

- Aboriginal Affairs and Northern Development Canada (AANDC). 2012. *Connectivity and Partnerships Website*. Ottawa: AANDC. Accessed 4 April 2013. <http://www.aadnc-aandc.gc.ca/eng/1343229993175/1343230038242>.
- Aboriginal Policy Research Consortium. Accessed 14 Dec 2013. <http://www.aprci.org>.
- AFN Chiefs Committee on Economic Development. 2010. *Overcoming the Digital Divide: An Historical Overview of First Nations Connectivity. DRAFT*. Ottawa: Assembly of First Nations, Chiefs Committee on Economic Development paper.
- Alexander, C.J. 2001. "Wiring the Nation! Including First Nations? Aboriginal Canadians and the Federal E-government Initiatives." *Journal of Canadian Studies. Revue d'études canadiennes* 35:277-96.
- (with Adamson, A., Daborn, G., Houston, J., and Tootoo, V.) 2009. "Inuit Cyberspace: The Struggle for Access for Inuit Qaujimajatuqangit." *Journal of Canadian Studies. Revue d'études canadiennes* 43:220-49.
- Alia, V. 2010. *The New Media Nation: Indigenous Peoples and Global Communication*. New York, Oxford: Berghahn Books.
- Avison, S., and M. Meadows. 2000. "Speaking and Hearing: Aboriginal Newspapers and the Public Sphere in Canada and Australia." *Canadian Journal of Communication* 25:347-66.
- Babe, R.E. 1990. *Telecommunications in Canada: Technology, Industry and Government*. Toronto: University of Toronto Press.
- Baltruschat, D. 2004. "Television and Canada's Aboriginal Communities." *Canadian Journal of Communication* 29:47-59.
- Borrows, J. 2010. *Canada's Indigenous Constitution*. Toronto: University of Toronto Press.
- Bredin, M. 2001. "Bridging Canada's Digital Divide: First Nations' Access to New Information Technologies." *Canadian Journal of Native Studies* 2:191-215.
- Broadcasting Act. 1991. *Broadcasting Act of Canada*. Ottawa: Government of Canada. <http://laws-lois.justice.gc.ca/eng/acts/B-9.01/>.
- Canadian Northern Economic Development Agency (CanNor). 2013. *CanNor Supports Northern Connectivity: Northern Territories Plan Improvements to Connectivity*. Whitehorse: Press Release, 5 March. Accessed 10 December 2013. <http://www.cannor.gc.ca/mr/nr/2013/11nr-eng.asp>.

- Canadian Radio-Television and Telecommunications Commission (CRTC). 1978. *Telecom Decision 78-7*. "Bell Canada, General Increase in Rates." Ottawa: CRTC, 10 August.
- 1985. *Telecom Decision 85-16*. "Bell Canada – Interexchange Rates in the Remote North." Ottawa: CRTC, 7 August.
- 2005. *Report to the Governor in Council: Status of Competition in Canadian Telecommunications Markets. Deployment/Accessibility of Advanced Telecommunications Infrastructure and Services*. Ottawa: CRTC. <http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2005/gic2005.pdf>.
- 2012. *Telecom Notice of Consultation CRTC 2012-669-1*: "Review of Northwestel Inc.'s Regulatory Framework, Modernization Plan, and related matters". Ottawa: CRTC, 6 December. <http://www.crtc.gc.ca/eng/archive/2012/2012-669.htm>.
- 2015. *Telecom Notice of Consultation CRTC 2015-134*: "Review of Basic Telecommunication Services". Ottawa: CRTC, 9 April. <http://www.crtc.gc.ca/eng/archive/2015/2015-134.htm>.
- Carpentier, N., P. Dahlgren, and F. Pasquali. 2013. "Waves of Media Democratization: A Brief History of Contemporary Participatory Practices in the Media Sphere." *Convergence (London)* 19 (3): 287–94. <http://dx.doi.org/10.1177/1354856513486529>.
- Castells, M. 2009. *Communication Power*. Oxford, New York: Oxford University Press.
- Crawford, S. 2013. *Captive Audience: The Telecom Industry and Monopoly Power in the New Gilded Age*. New Haven, London: Yale University Press.
- David, J. 2012. *Original People. Original Television. The Launching of the Aboriginal Peoples Television Network*. Ottawa: Debwe Communications Inc.
- Evans, M.R. 2008. *Isuma: Inuit Video Art*. Montréal: McGill-Queen's University Press.
- First Nations Innovation Project. Accessed 14 Dec. 2013. <http://fn-innovation-pn.com>.
- 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* 43:7–47.
- Fiser, A., and A. Jeffrey. 2013. *Mapping the Long-Term Options for Canada's North: Telecommunications and Broadband Connectivity*. Ottawa: The Conference Board of Canada.

- Freedman, D. 2008. *The Politics of Media Policy*. Cambridge: Polity.
- Gibson, K., S. O'Donnell, and V. Rideout. 2007. "The Project-Funding Regime: Complications for Community Organizations and their Staff." *Canadian Public Administration* 50 (3): 411-36. <http://dx.doi.org/10.1111/j.1754-7121.2007.tb02135.x>.
- GwaiiTel. 2006. "GwaiiTel Launches High Speed Internet Services in Haida Gwaii." B.C.: GwaiiTel, 28 November. <http://www.gwaiitel.com/newscontd.html>.
- Heeks, R. 2002. "i-Development not e-Development: Special Issue on ICTS and Development." *Journal of International Development* 14 (1): 1-11. <http://dx.doi.org/10.1002/jid.861>.
- 2009. *The ICT4D 2.0 Manifesto: Where Next for ICTs and International Development?* Manchester: University of Manchester, Development Informatics Working Paper Series. Accessed 4 December 2013. http://www.sed.manchester.ac.uk/idpm/research/publications/wp/di/di_wp42.htm.
- Hudson, H.E. 1974. *Community Communication and Development: A Canadian Case Study*. Unpublished PhD dissertation, Stanford University.
- 1977. "The Role of Radio in the Canadian North." *Journal of Communication* 27 (4): 130-9. <http://dx.doi.org/10.1111/j.1460-2466.1977.tb01868.x>.
 - 1984. *When Telephones Reach the Village: The Role of Telecommunications in Rural Development*. Norwood, NJ: Ablex.
 - 1990. *Communications Satellites: Their Development and Impact*. New York: Free Press.
 - 2006. *From Rural Village to Global Village: Telecommunications for Development in the Information Age*. New York: Routledge.
 - 2011. "Rural Broadband: Strategies and Lessons from North America." *Intermedia* 39:12-8.
 - 2013. "Beyond Infrastructure: Broadband for Development in Remote and Indigenous Regions." *Journal of Rural and Community Development* 8 (2): 44-61.
- Jacobs, P., D. Berrouard, and P. Mirellie. 2009. *Nunavik: A Homeland in Transition: An Environmental and Social Evaluation of Northern Development: The Kativik Environmental Quality Commission, 1979-2009*. Kuujuaq: Kativik Environmental Quality Commission. Accessed 6 December 2011. <http://site.ebrary.com/lib/sfu/Doc?id=10368047&ppg=1>.
- Kennedy, G.I. 1971. *Man in the North: Parts I and II*. Montreal: Arctic Institute of North America.

- Kleine, D. 2013. *Technologies of Choice? ICTs, Development and the Capabilities Approach*. Cambridge, London: The MIT Press.
- Löblich, M., and M. Wendelin. 2012. "ICT Policy Activism on a National Level: Ideas, Resources and Strategies of German Civil Society in Governance Processes." *New Media & Society* 14 (6): 899–915. <http://dx.doi.org/10.1177/1461444811432427>.
- McChesney, R.W. 2013. *Digital Disconnect: How Capitalism is turning the Internet Against Democracy*. New York, London: The New Press.
- 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* 35:115–40.
- 2013. *Digital Self-etermination: Aboriginal Peoples and the Network Society in Canada*. Unpublished PhD dissertation, Burnaby: Simon Fraser University.
- McMahon, R., M. Gurstein, B. Beaton, S. O'Donnell, and T. Whiteduck. 2014. "Making Information Technologies Work at the End of the Road." *Journal of Information Policy* 4:250–69. <http://dx.doi.org/10.5325/jinfopoli.4.2014.0250>.
- McMahon, R., H. Hudson, and L. Fabian. 2014. "Indigenous Regulatory Advocacy in Canada's Far North: Mobilizing the First Mile Connectivity Consortium." *Journal of Information Policy* 4:228–49. <http://dx.doi.org/10.5325/jinfopoli.4.2014.0228>.
- McMahon, R., S. O'Donnell, R. Smith, B. Walmark, B. Beaton, and J. Woodman Simmonds. 2011. "Digital Divides and the 'First Mile': Framing First Nations Broadband Development in Canada." *International Indigenous Policy Journal* 2 (2). <http://dx.doi.org/10.18584/iipj.2011.2.2.2>.
- McMahon, R., S. O'Donnell, R. Smith, J. Woodman Simmonds, and B. Walmark. 2010. *Putting the 'Last-Mile' First: Re-framing Broadband Development in First Nations and Inuit Communities*. Vancouver: Centre for Policy Research on Science and Technology (CPOST), Simon Fraser University, December. Accessed 10 September 2013. <http://www.firstmile.ca>.
- Mignone, J., and H. Henley. 2009. "Impact of Information and Communication Technology on Social Capital in Aboriginal Communities in Canada." *Journal of Information, Information Technology, and Organizations* 4:127–45.
- Moll, M. 2012. "Appendix B: A Brief History of the Community Access Program: From Community Economic Development to Social Cohesion

- to Digital Divide.” In *Connecting Canadians: Investigations in Community Informatics*, edited by A. Clement, M. Gurstein, M. Moll, and L.R. Shade, 485–90. Edmonton: Athabasca University Press.
- Moll, M., and L.R. Shade. 2013. “From Information Highways to Digital Economies: Canadian Policy and the Public Interest”. Paper presented at the World Social Science Forum, Montreal, Quebec. October.
- Nunavut Broadband Development Corporation. 2010. *Submission to the Digital Economy Consultations on behalf of the Nunavut Broadband Development Corporation*. Iqaluit: Nunavut Broadband Development Corporation, 9 July. Accessed 10 October 2013. <http://de-en.gc.ca/wp-content/themes/clf3/upload/1891/Digital%20Economy%20submission%20-%20NBDC.pdf>.
- O’Donnell, S., M. Milliken, C. Chong, and B. Walmark. 2010. *Information and Communication Technologies (ICT) and Remote and Rural First Nations Communities: An Overview*. Paper presented at the conference of the Canadian Communication Association (CCA), Montreal, Quebec. June.
- O’Donnell, S., S. Perley, B. Walmark, K. Burton, B. Beaton, and A. Sark. 2009. “Community-based Broadband Organizations and Video Communications for Remote and Rural First Nations in Canada.” In *Communities in Action*, edited by L. Stillman, G. Johanson, and R. French, 107–19. Newcastle upon Tyne, UK: Cambridge Scholars Publishing.
- Pacific Community Networks Association. 2006. *New Opportunities for Canada in the Digital Age: Recommendations on the Future of the Community Access Program*, 10 May.
- Paisley, L., and D. Richardson. 1998. “Why the First Mile and not the Last?” in *The First Mile of Connectivity: Advancing Telecommunications for Rural Development through a Participatory Communication Approach*, edited by L. Paisley and D. Richardson. Rome: Food and Agriculture Organization of the United Nations (FAO). Accessed 15 August 2013. <http://www.fao.org/docrep/x0295e/x0295e03.htm>.
- Palmater, P. 2011. “Stretched Beyond Human Limits: Death by Poverty in First Nations.” *Canadian Review of Social Policy* 65/66:112–27.
- Pickard, V. 2013. “Social Democracy or Corporate Libertarianism? Conflicting Media Policy Narratives in the Wake of Market Failure.” *Communication Theory* 23 (4): 336–55. <http://dx.doi.org/10.1111/comt.12021>.

- Potter, D. 2010. "Keewaytinook Internet High School Review (2003-2008)." In *Aboriginal Policy Research VI: Learning, Technology and Traditions*, edited by J.P. White, J. Peters, D. Beavon, and P. Dinsdale, 147-55. Toronto: Thompson Educational Publishing.
- Raboy, M. 1990. *Missed Opportunities: A Story of Canada's Broadcasting Policy*. Montreal: McGill-Queen's University Press.
- Rideout, V. 2003. *Continentalizing Canadian Telecommunications: The Politics of Regulatory Reform*. Montreal: McGill-Queen's University Press.
- 2008. "Public Interest in Communications: Beyond Access to Needs." *Global Media Journal: American Edition* 7: 1-11.
- Roth, L. 2005. *Something New in the Air: The Story of First Peoples Television Broadcasting in Canada*. Montreal, Kingston, London, Ithaca: McGill-Queen's University Press.
- 2013. "Canadian First Peoples' Mediascapes: (Re)framing a Snapshot with Three Corners." In *Mediascapes: New Patterns in Canadian Communication*. 4th ed., edited by L.R. Shade, 364-89. Toronto: Thomson.
- 2014. "Digital Self-development and Canadian First Peoples of the North." *Media Development* 2:5-10.
- Roth, L., and G. Valaskakis. 1989. "Aboriginal Broadcasting in Canada: Case Study in Democratization." In *Communication for and Against Democracy*, edited by M. Raboy and P. Bruck. Montreal: Black Rose Books.
- Sandwell, R.W. 2012. "'Read, Listen, Discuss, Act': Adult Education, Rural Citizenship and the Canadian National Farm Radio Forum." *Historical Studies in Education* 24:170-94.
- Savard, J.F. 1998. "A Theoretical Debate on the Social and Political Implications of Internet Implementation for the Inuit of Nunavut." *Wicazo Sa Review* 13 (2): 83-97. <http://dx.doi.org/10.2307/1409148>.
- Shade, L.R. 2008. "Public Interest Activism in Canadian ICT Policy: Blowin' in the Policy Winds." *Global Media Journal: Canadian Edition* 1:107-21.
- Shepherd, T., G. Taylor, and C. Middleton. 2014. "A Tale of Two Regulators: Telecom Policy Participation in Canada." *Journal of Information Policy* 4:1-22. <http://dx.doi.org/10.5325/jinfopoli.4.2014.0001>.
- Strover, S. 2000. "The First Mile." *Information Society* 16 (2): 151-4. <http://dx.doi.org/10.1080/01972240050032915>.

- Unwin, T. 2009. *ICT4D: Information and Communication Technologies for Development*. Cambridge: Cambridge University Press.
- Valaskakis, G.G. 1990. "The Issue is Control: Northern Native Communications in Canada." In *Proceedings of the Chugach Conference: Communication Issues of the '90s*. Anchorage: University of Alaska Anchorage, 5–6 October: 15–20.
- 1992. "Communication, Culture and Technology: Satellites and Northern Native Broadcasting in Canada." In *Ethnic Minority Media: An International Perspective*, edited by S. Riggins, 63–81. Thousand Oaks, CA: Sage.
- Wagh, T., E. Winton, and M.B. Baker. 2010. *Challenge for Change: Activist Documentary at the National Film Board of Canada*. Montreal: McGill-Queen's University Press.
- Whiteduck, J. 2010. "Building the First Nation E-community." In *Aboriginal Policy Research VI: Learning, Technology and Traditions*, edited by J.P. White, J. Peters, D. Beavon, and P. Dinsdale, 95–103. Toronto: Thompson Educational Publishing.
- Whiteduck, J., K. Burton, T. Whiteduck, and B. Beaton. 2010. *A First Nations Perspective on a Digital Economy Strategy and an Aboriginal Connectivity Strategy*. Consultation Paper, submitted to Industry Canada's Digital Economy Strategy consultation and to Indian and Northern Affairs Canada. Accessed 20 October 2016. <https://www.ic.gc.ca/eic/site/028.nsf/eng/00397.html>.
- Whiteduck, T. 2010. "First Nations SchoolNet and the Migration of Broadband and Community-based ICT Applications." In *Aboriginal Policy Research VI: Learning, Technology and Traditions*, edited by J.P. White, J. Peters, D. Beavon, and P. Dinsdale, 105–17. Toronto: Thompson Educational Publishing.
- Whiteduck, T., B. Beaton, K. Burton, and S. O'Donnell. 2012. *Democratic Ideals Meet Reality: Developing Locally Owned and Managed Broadband Networks and ICT Services in Rural and Remote First Nations in Québec and Canada*. Keynote paper presented at the Community Informatics Research Network (CIRN) Conference, Prato, Italy. November.