Policies for Digital Inclusion of Indigenous Populations: Consumers and Providers of Broadband Services

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Northern Canada: Context

- 3 northern Territories
 - Yukon
 - Northwest Territories (NWT)
 - Nunavut
- Northern parts of provinces
 - Similar in isolation
 - Remote indigenous communities
- High unemployment> 15%
- High cost of living
- Young population: 51% under age 25 in Nunavut







Northern Canada: Community Well Being Index: Scale 0 to 100 Indigenous communities poorer, less educated

Location Type/ Location	CWB Score	Income Score	Education Score	Housing Score	Labour Score
Inuit settlement	60	66	29	59	75
First Nation/Métis Settlement	64	66	28	63	72
First Nation reserve	51	46	17	54	63
Whitehorse (Yukon capital)	85	92	64	93	90
Yellowknife (NWT capital)	88	100	67	93	92
Montreal	80	83	62	92	84
Toronto	84	92	66	91	86
Vancouver	85 Irce: Conference Boar	91 d of Canada. July 201	69	93	86

Table 1: Lowest Cost High Speed Internet Packages inNorthern Canadian Territories

Location	Data transfer rate Down/up	Monthly Price
Pan-Provincian Average	2800/590 Kbps	C\$55 (average)
Yukon Average	2600/384 Kbps	C\$65 (average)
Northwest Territories Average	2900/560 Kbps	C\$64 (average)
Nunavut Average	1500/384 Kbps	C\$80 (average)

Northern Canada First Mile Connectivity Consortium



Keewaytinook Okimakanak: KO KNET

- Provides services to remote Cree and Ojibway communities in northern Ontario, and other communities across Canada
- Anchor tenants in health, education, etc.
- Provides videoconferencing, Internet telephony (VOIP), and mobile telephone services
- Computer training and skills development for communities
- Demonstrates model for far North:
 - Business model: largely public sector clients
 - Training and support for community networks
 - VOIP, Mobile telephony, cable TV

KO KNET Services (Northern Ontario)



K'atl'odeeche First Nation (NWT)

First Nation Community Network in NWT

- Initially connected through copper infrastructure installed by Northwestel in the early 1980s
- Built a community fiber network owned and operated by Band; trained locals; provides services
- Leasing infrastructure to carriers and others
- Possible model for economic development in the North



Other Canadian Indigenous Networks

Qiniq

- Established by Nunavut Broadband Development Corp (NBDC)
- PPP with Nunavut, federal government, private sector
- Delivers broadband by satellite to 25 communities in Nunavut
- Hires and trains local Community Service Providers

Gwaiitel

- Provides high speed Internet service to 7 communities on Haida Gwaii (Queen Charlotte Islands)
- North America's longest radio link to mainland
- Funding from Gwaii Trust and federal grant
- ECN: Eeyou Communications Network
 - Serves James Bay Region of Northern Quebec
 - Connects 14 communities over 1500 km of optical fiber
 - Provides services for health and education, wholesaler of data and transit services

Alaska: Context

- Largest state: 571,951 sq. miles
- **Population: >710,000**
- Lowest population density: 1.2 persons per sq. mile
- Half population in Anchorage
- Alaska Natives: 15% of population
- 6 major linguistic/cultural groups, 226 tribes
- 2/3 live in more than 200 villages
- Very limited road system
- Many villages accessible only by boat or bush plane







Southwest Alaska Survey: 65 villages: Will you sign up for broadband?

If 'No' or 'Don't Know', why not?



they subscribe at home (school, library, tribal office, etc.)

Report including "Before broadband" study and literature review available at <u>www.iser.uaa.alaska.edu/Publications/2012_11-TERRA.pdf</u>

Indigenous Activities in Alaska

- Telephone cooperatives
 - Arctic Slope: based in Barrow
 - OTZ: Kotzebue
 - Established with RUS (formerly REA) loans
- Two members on FCC's National Native Broadband Task Force
- No representation in state broadband planning



- Villages benefit from E-rate, healthcare subsidies
 - Discounted broadband for schools, libraries
 - Discounted broadband for rural hospitals and village clinics



Inutek: Indigenous Alaska Rural ISP

Inutek.net's service region includes ten villages in the Northwest Arctic. The new service includes either DSL or Wireless Internet depending upon the village.









Cooperative Consortium:

- <u>OTZ</u> is responsible for customer service, sign-up, billing, and the DSL system
- <u>Maniilag Association</u> handles installation, technical support, and the wireless system
- <u>GCI</u> maintains the satellite transport system.

Policy and Regulatory Structure

CRTC	FCC	
Telecommunications regulation across Canada	Interstate telecommunications only Intrastate: Regulatory Commission of Alaska	
Mandate limited to regulation	Regulation and policy directives	
No internal office for indigenous peoples	Office of Native Affairs and Policy	

In Canada, northern ICT policy linked to several federal agencies:

- Industry Canada (somewhat analogous to NTIA)
- Aboriginal Affairs and Northern Development Canada (AANC)
- Canadian Northern Economic Development Agency (CanNor)
- Canadian Heritage

Other agencies in U.S:

- NTIA in Department of Commerce
- Rural Utilities Service (RUS) in Dept. of Agriculture

U.S. National Broadband Plan Implementation: Policies for Remote and Tribal Regions

Federal:

- Connect America Fund:
 - CAF to ultimately replace all High Cost support
- CAF Mobility Fund:
 - \$300 million for mobile voice and broadband in high cost areas, plus \$500 million/year ongoing support
 - Tribal areas: \$50 million capital plus up to \$100 million/year
- Remote Areas Fund: \$100 million/year
- Broadband Lifeline Pilot Program: \$25 million
- NOTE: These funds available only to Eligible Telecom Carriers (ETCs)
- FCC Office of Native Affairs and Policy (ONAP)
 - National Native Broadband Task Force
 - Carriers receiving subsidies to serve Tribal lands, *must engage with Tribes*
- Rural Utilities Service (RUS): Some capex funds to extend broadband

State:

- Has prepared draft broadband plan
- Some carrier subsidies through RCA (Regulatory Commission of Alaska)

National Broadband Targets

U.S.: National Broadband Plan

- Every American should have *affordable access* to robust broadband service, and the means and skills to subscribe if they so choose.
- At least 100 million U.S. homes should have *affordable access* to actual download speeds of at least 100 megabits per second and actual upload speeds of at least 50 megabits per second.
- Every community should have *affordable access* to at least 1 Gbps broadband service to anchor institutions such as schools, hospitals and government buildings.

Canada: No Broadband Plan

- In 2011, CRTC set a target for broadband access of a minimum of 5 Mbps download and 1 Mbps upload
- Actual, not just advertised speed
- To be available to all Canadian homes by the end of 2015

Implications for Other Rural/Indigenous Regions

- Affordability remains key concern among people with limited or partially subsistence incomes
- Need for digital literacy training; infomediaries
- Community access remains important
- Support for remote regions must address sustainability (opex) as well as infrastructure (capex)
- Mobile broadband demand will increase with growth of smart phones, tablets, other portable devices
- Indigenous, other community representatives will likely need training to participate in rural ICT planning

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