Can Competition Help to Reduce the Digital Divide?

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ISER: More than 60 years
*of public policy research*

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The Need

- **Information: finding, sharing, using**
  - **Needed to participate in the digital economy**
  - **Rural and remote areas have barriers of distance and cost**
- **Connectivity**
  - **Can overcome barriers of distance**
  - **Can yield significant social and economic benefits**
    - **Education and training**
    - **Health care**
    - **Fishing, mining, construction**
    - **Businesses and organizations**
    - **Transportation and logistics**
    - **Emergency services, e.g. video from drones of natural disasters**
- **Huge increase in demand during the pandemic**

"The services provided to northern communities disconnect us from essential services like mental health support, education, and other opportunities. It results in feelings of isolation and as though we aren't a part of Canada."
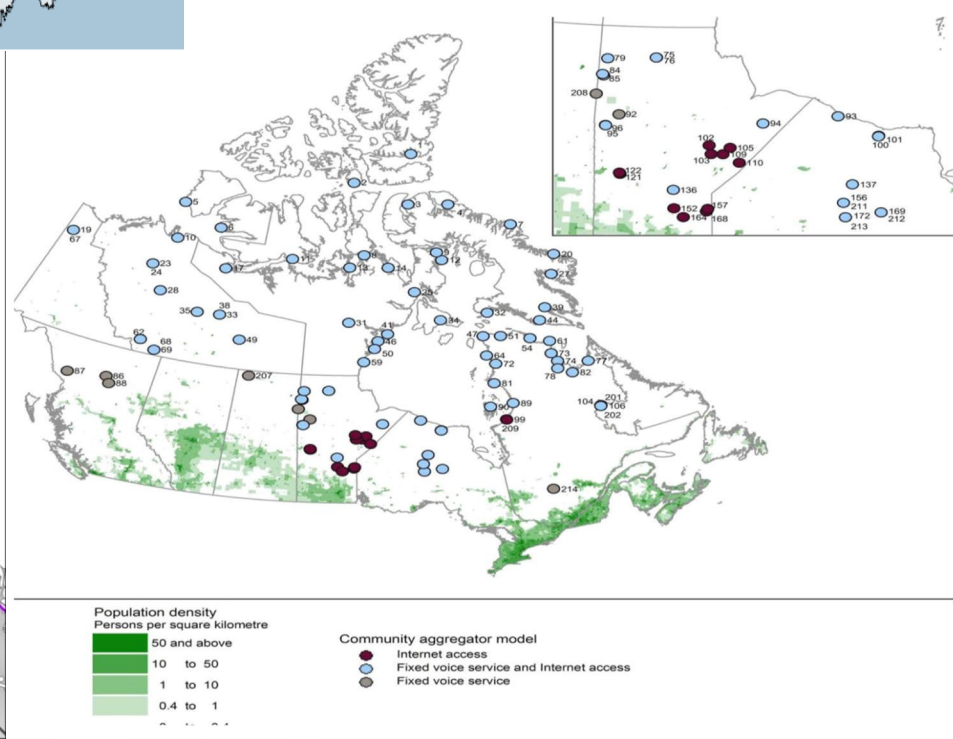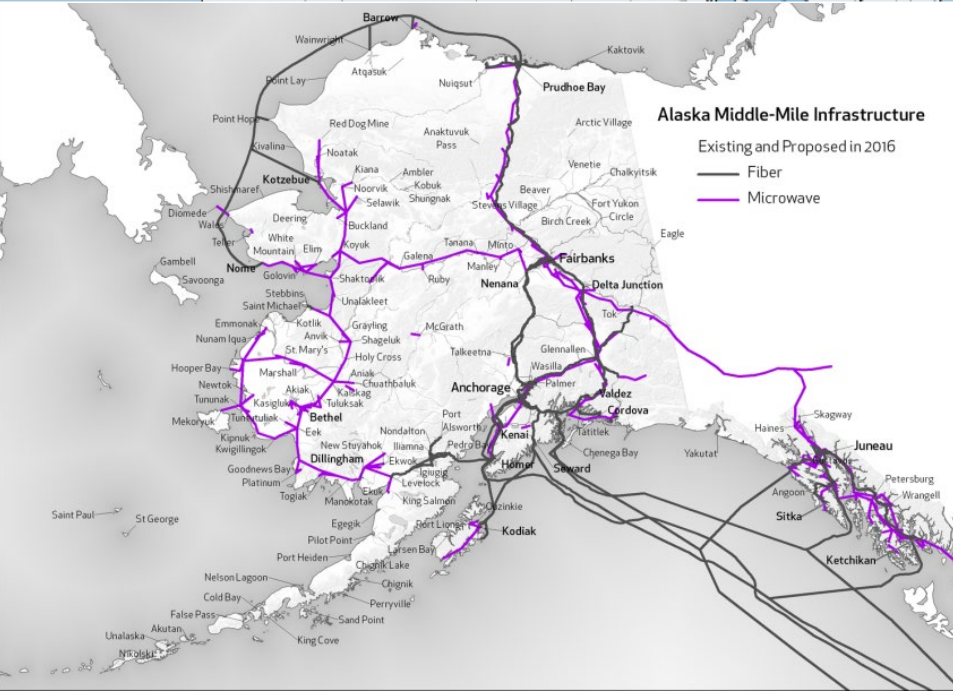
-- Rural Internet user in Northern Canada
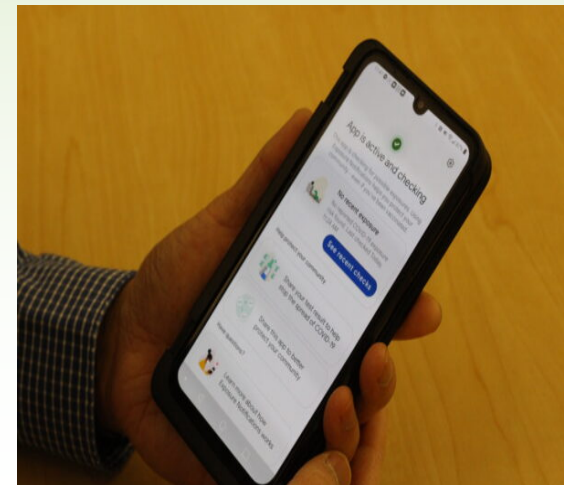
Aboriginal peoples of North America's Boreal region

U.S. and Canada: Remote regions

The Problem

- **Serving unserved and underserved populations**
- **Serving rural and remote communities**
  - Relatively high cost, low revenue regions
  - Small communities
  - Young population, crowded households
  - Seasonal/low incomes
- **Major incumbents have duty to their shareholders, so limited incentive to serve these regions**
  - But may also be reluctant to give up these franchises!
- **Small providers may have limited access to capital**

Competition: Part of the Solution

- **Some competitors:**
  - may offer innovative technical solutions
  - may be able to reduce installation and operating costs
  - may understand market, terrain, customer needs
  - May have local contacts as sources of employees, outreach
- **Incumbents may discourage competitive entry**
  - May anticipate reduced revenues
  - May claim they will have no incentive to invest or upgrade
  - BUT problems with reliability and affordability lead to consumer requests for additional providers
  - Also growing demand for broadband may exceed capacity projections by incumbent

Competition in Rural and Remote Regions

- **Facilities-based competition**
  - **Expensive duplication?**
  - **Redundancy?**
    - **Fiber cuts – undersea, permafrost, muskeg, etc.**
  - **But different technologies offer opportunities: intermodal competition**
    - **Mobile services**
    - **Fixed wireless**
    - **Satellite connectivity, now especially LEOs**
  - **May also share facilities:**
    - **Mobile towers, poles, ducts**
  - **Fiber operated by electric utilities, railroads**

Open Access

- **Using existing facilities, especially fiber**
  - **Commercial fiber networks**
  - **Dark fiber – extra fiber strands**
- **Middle mile/backhaul**
- **FTTN, FTTP**
- **Canadian federal funding requires wholesale access**
- **Requires regulation**
  - **Terms and deadlines for access**
  - **Pricing**
  - **Alaska example**

"I am happy with my recent switch to [a wholesale-based competitor]. I ony wish there were more companies like them, willing to provide high quality services at lower prices."

-- Rural Internet user

Disruption and Innovation

- **Part of the continuing evolution of telecom technologies and services**
- **Starlink:**
  - **Very popular in rural Alaska and northern Canada**
    - **Residential use; some purchased by communities**
      - **Like picking up pizza boxes when they arrive!**
    - **Credit cards on ferries**
    - **Fishing boats**
    - **Construction crews**
    - **Emergency responders: drone video of disasters, etc.**
- **Other LEOs:**
  - **OneWeb, Telesat, Amazon, Google, etc.**
- **Short term or interim solutions?**
  - **Will be replaced by fiber?**
  - **Will become back-up?**

GEO satellite antennas
-signals redistributed in community

LEO satellite antenna
- typically for individual household or business

Submarine fiber

Competition: Innovation in Technologies and Services in Rural/Remote Regions

- **Mobile phones in developing world**
  - **Not only cheaper networks to install than wireline**
  - **Competition: cheaper phones, prepaid service**
- **Northern Canada: Indigenous Providers**
  - **FTTP in Cree communities along James Bay**
  - **Internet high school for adults to complete GED**
  - **Northwest Territories (NWT)**
    - **VOIP phones for community in NWT**
    - **Fixed broadband wireless for business in Yellowknife**
    - **WiFi phones for free access in homeless shelter**
  - **Alaska:**
    - **"smart" renewable power**
    - **Wind turbines outside villages controlled by computers at UA in Fairbanks**

Creating Incentives

- **Subsidies for users**
  - **Institutional: U.S. E-rate and rural health care programs**
    - **Subsidy goes to the user, NOT the provider**
    - **Approved schools, libraries, clinics request competitive bids**
      - **Examples: Oregon, Alaska**
  - **US Lifeline and Affordable Connectivity Program (ACP)**
    - **Individuals or households qualify for discounts**
    - **Portable subsidy: can be used with any provider**
    - **Provider is reimbursed**
- **Regulation**
  - **Requiring "reasonable rates" to allow competition**
  - **Setting terms and timelines for competitive access**

Policy Challenges

Canadian Policy Direction (February 2023):

(a) encourage all forms of *competition* and *investment*;

(b) foster *affordability* and lower prices, particularly when telecommunications service providers exercise *market power*;

(c) ensure that affordable access to high-quality, reliable and resilient telecommunications services is available in *all regions of Canada*, including *rural areas, remote areas and Indigenous communities* …

(e) *reduce barriers to entry* into the market and to competition for telecommunications service providers that are new, regional or smaller than the incumbent national service providers…."

Smart Communities and Northern Ingenuity
"As Iñupiaq people … we adapt. We always adapted."

Thank You!

For more information:

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Telecommunications in Alaska
from Telegraph to Broadband

**Connecting
Alaskans**

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