



MEETING EDE 44-19-20

**STANDING COMMITTEE ON ECONOMIC DEVELOPMENT
AND ENVIRONMENT**

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MONDAY, DECEMBER 7, 2020
COMMITTEE ROOM 'A' / TELEMERGE
12:00 PM

AGENDA

1. Prayer
2. Review and Adoption of Agenda
3. Declarations of Conflict of Interest
4. Public Matters:
 - a) Technical Briefing with the Department of Finance on the Canadian Radio-Television and Telecommunications Commission (CRTC)
 - b) Briefing with Lyle Fabian, President of KatloTech Communications
 - c) Briefing with Jeffery Phillip, Founder and CEO of SSI Canada
 - d) Briefing with Tom Zubko, President and Founder of New North Networks
5. In-Camera Matters:
 - a) Wrap-up Discussion
6. Date and Time of Next Meeting: Tuesday December 8, 2020 at 9:00 a.m.
7. Adjournment



Canadian Radio-Television and Telecommunications Commission (CRTC)

Department of Finance December 2020

Government of
Northwest Territories

Overview

- The CRTC
- GNWT and the CRTC
- Milestones
- Northwestel TN 1099
- CRTC TNC 2020-367 Regulatory Proceeding
- CRTC Survey
- Further Information
- Questions



The CRTC

The CRTC is an administrative tribunal that:

1. Regulate telecommunications carriers (service providers), including major telephone companies.
2. Promote compliance with regulations.
3. Approve tariffs.
4. Encourage competition.



The CRTC

Federal Telecommunication Act key objectives:

“... telecommunications performs an essential role in the maintenance of Canada’s identity and sovereignty and that the Canadian telecommunications policy has as its objectives

- ***(a) to facilitate the orderly development throughout Canada of a telecommunications system that serves to safeguard, enrich and strengthen the social and economic fabric of Canada and its regions;***
- ***(b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;***
- ***(c) to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications;***
- ***(d) to promote the ownership and control of Canadian carriers by Canadians;***
- ***(e) to promote the use of Canadian transmission facilities for telecommunications within Canada and between Canada and points outside Canada;***
- ***(f) to foster increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, where required, is efficient and effective;***
- ***(g) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services;***
- ***(h) to respond to the economic and social requirements of users of telecommunications services; and***
- ***(i) to contribute to the protection of the privacy of persons.***



The CRTC in the North

In 2013 the CRTC decided it would regulate, on an “exceptional basis” residential and business internet rates offered by NWTel in the North.

- NWTel is the only internet service provider whose retail rates are regulated
- NWTel is the only service provider where the CRTC will take specific service complaints from consumers.



GNWT Objectives

The GNWT's objectives in CRTC matters are to ensure:

1. The CRTC considers the interests of NWT residents and businesses in its decision making.
2. Northerners have access to affordable, competitive and reliable telecommunication services.



GNWT and the CRTC

The GNWT is an intervenor in CRTC matters.

- The telecommunications area of regulatory affairs applies to telephone and data communications services provided by the many telephone companies across Canada;
- In matters involving the CRTC, the GNWT position must be in the best interests of all Northern stakeholders;
- The GNWT takes steps to inform Northerners about proceedings that may impact them by posting them on the website;
- The GNWT engages a CRTC Regulatory Consultant who is retained to provide expert advice on such matters.



Proceedings over the Years

There has been 15 Major Regulatory Proceedings over the past 23 years and although the technology changed over the years, the themes have been remarkably consistent, largely being, Affordability, Subsidy, Competition, and Quality of Service.



Progress and Key Milestones

Local Phone Service:

- 1993 – Regulatory Consultant Hired
- 1993 – Community Service Outage Reporting
- 1995 – Extension of basic telephone service to 7 unserved communities



Progress and Key Milestones

Affordability:

- 1999 – High Cost Serving Area designation
- 1999 – CRTC determined NWTel had an “Obligation to Serve”
- 2000 – NWTel receives first subsidy from National Contribution Fund
- 2018 – 3-year phase out program of local subsidy program



Progress and Key Milestones

Competition:

- 2001 - Long distance competition permitted
- 2011 – NWTel obligation to serve continues
- 2011 - Local service competition permitted
- 2013 – Wholesale Connect obligations raised



Progress and Key Milestones

Regulatory Framework:

- 2000 NWTel quality of service standards
- 2007 Price Cap regulation
- 2007 911 Service was not part of “Obligation to Serve”
- 2011 Obligation for modernization



Progress and Key Milestones

Modernization Plan:

- 2013 - NWTel Modernization Program begins
- 2018 - 4G mobile service in every NWT community



Progress and Key Milestones

Internet Service:

- 2011 – CRTC sets target of 5/1 Mbps
- 2013 – CRTC regulates rates for NWTel Internet services
- 2016 - Universal Service Objective
- 2019 - Broadband Fund Established



Northwestel TN 1099

Northwestel's tariff application to provide Unlimited Internet to four communities:

- Interim approval granted by the CRTC.
- SSI Canada has raised concerns this tariff.
- GNWT supports introduction of unlimited service.
- But GNWT wants to see fair access to transport infrastructure to support competition.



CRTC TNC 2020 – 367

Review of the Regulatory Framework for Northwestel and the state of telecommunications services in Canada's North. The Commission will consider:

1. The affordability of telecommunications services.
2. The need for additional regulatory measures for example, to improve resiliency of Northwestel's network or to further foster competition and improve wholesale services.



CRTC TNC 2020 – 367

Key upcoming proceeding milestones:

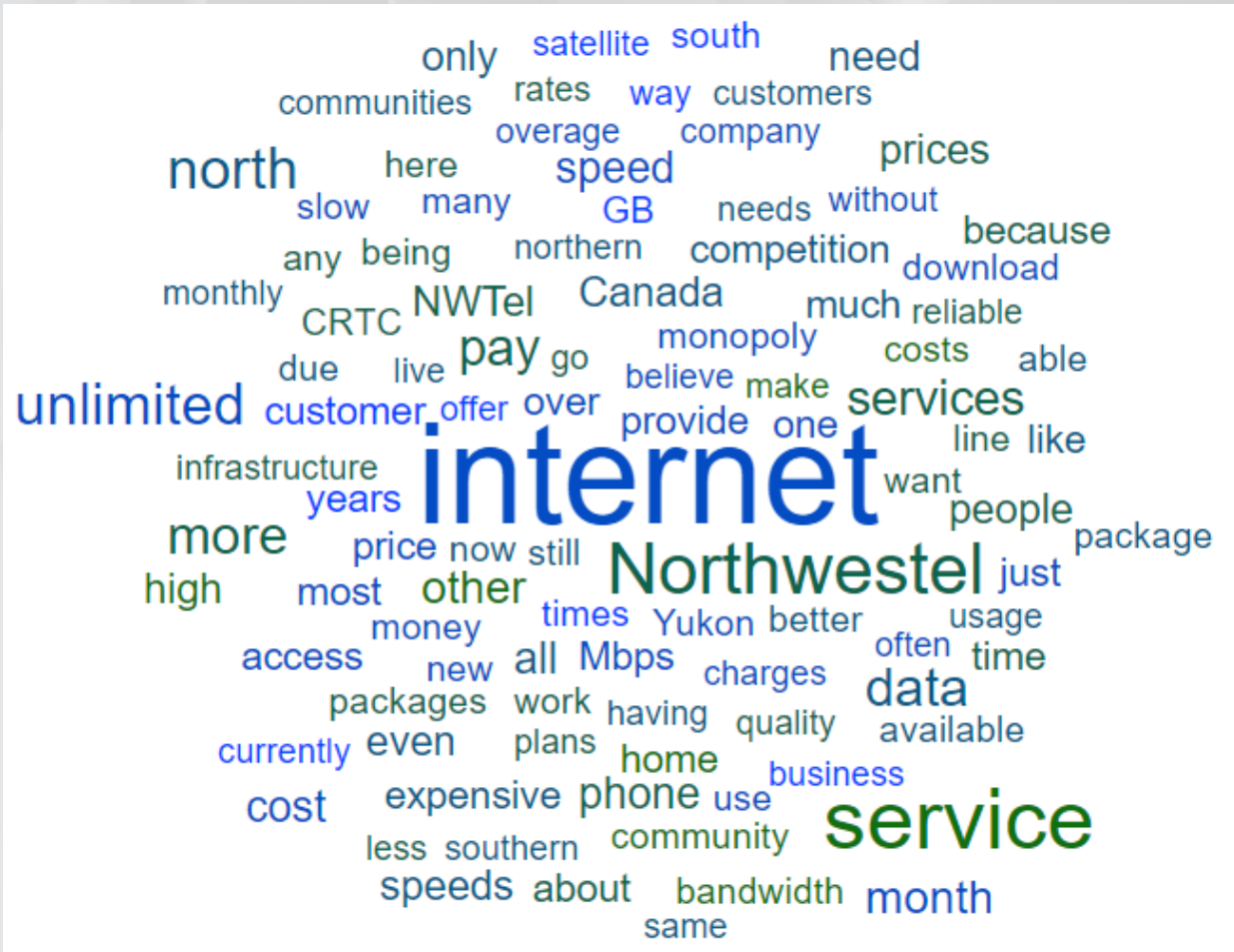
- Initial Interventions – January 20, 2021
- CRTC Reply – March 24, 2021

Further process details will be announced:

- Anticipated timeframes
- Public Hearings



Northerner's Concerns CRTC Survey



GNWT Priorities

Affordability

- Phase out the local rate subsidy (LRS)
- Fair pricing of service for residents and business

Quality of Service

- Service Resiliency
- Service Reliability

Competition

- Fair wholesale rates
- Third Party Internet Provider access



Further Information

- [CRTC Daily Releases](#)
- [CRTC Home Page](#)
- [Past CRTC Decisions, Notices and Orders](#)
- [Statutes and Regulations](#)





Thank you

Government of
Northwest Territories



KatloTech
COMMUNICATIONS

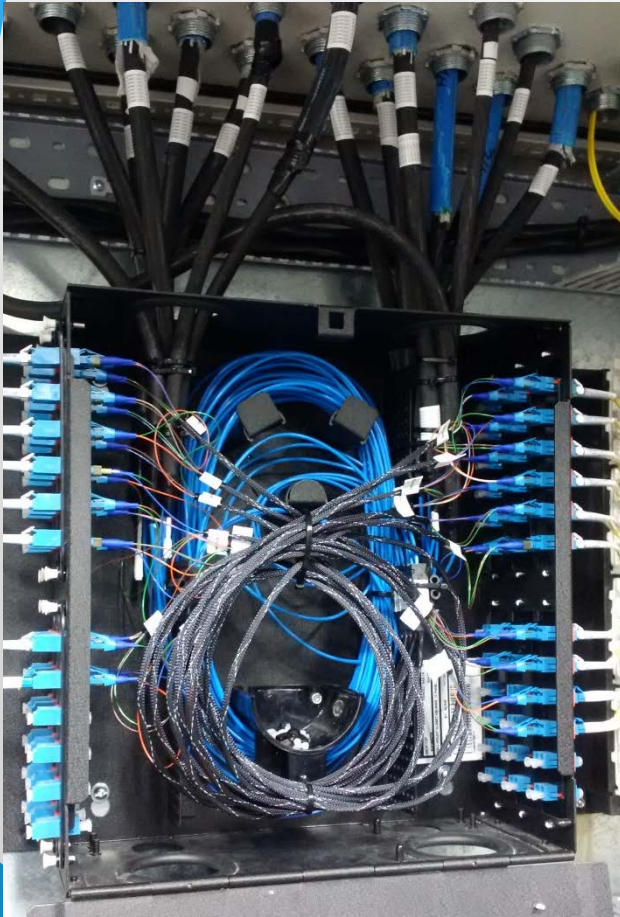
First Nations Future in Broadband Ownership & Data Center Technology

Lyle Fabian | KatloTech Communications Ltd.

Technology for Indigenous Communities

It has long been a wish of Indigenous peoples to both live in their communities on traditional lands, and prosper in the modern global economy. How can we contribute in the modern day economy and build stronger independent communities

Fiber Optics

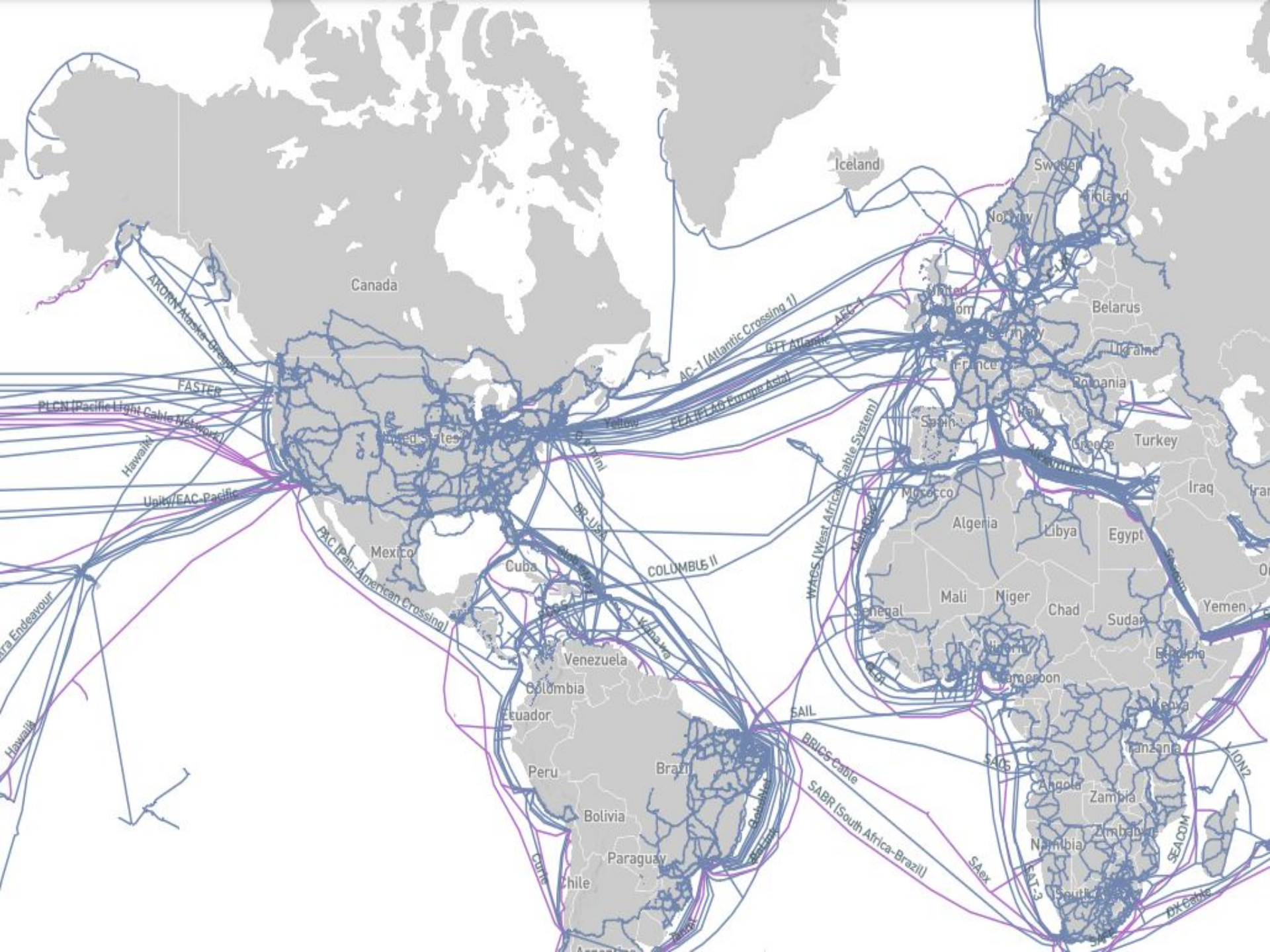


KTC's work at DeBeers Diamond Mine

- Light transmitted through glass fibers
- Delivers information 1000 times faster and 100 times further than copper-wire and satellite technology
- No interference, and delivers clear and secure signal
- Fiber optics maintenance costs are low over long runs
- Fiber is upgrade future proof, change electronics on each end of the fiber

Short History of Fiber Optics

- In the late 50's a laser light was invented by Charles H. Townes.
- In 1988 the first Fiber optic cable was laid between US, United Kingdom, and France. Network speeds of 280 Mbit/s equivalent to 40,000 telephone circuits at a cost of \$335 Million dollars.
- Where are we today?



Alberta Owned Network

- Alberta SuperNet 2005
 - The SuperNet initiative is to establish an IP-network infrastructure for Alberta.
 - Alberta Government Investment of \$240 Million
 - Promote competition
 - Affordability and Standard rates
 - Choice of providers
 - 4200 schools, hospitals, libraries and government and municipal offices
 - Connecting 429 Communities



SuperNet Drives Economic Development

Statistic	Before SuperNet	With SuperNet
Rural Alberta Residents Buying Broadband Services	0	225,000
Communities with Broadband Services	7	384
Total Service Providers in Alberta	2	78

Wholesale SuperNet Pricing Comparison

Bandwidth Services	Current Carrier Rates MRC 338 Communities	SuperNet Rates 402 Communities	Percent Savings
1.5 Mbps	\$195	\$75	62%
44 Mbps	\$1,554	\$1,000	36%
155 Mbps	\$3,717	\$1,904	49%
622 Mbps	\$6,202	\$2,500	60%
10 Gbps	\$21,822	\$5,100	77%

Clear Sky Connections

- Clear Sky Connections is the largest Indigenous-owned telecommunications network in Canada
- Deploy thousands of kilometers of fiber optic cable into all Manitoba First Nations (MFNs)
- Construction progress June 2019 to October 2019 for Nelson House Cree Nation
- The final construction to be completed after the thaw in spring 2020
- Katlotech was contacted as an advisor for initial materials and construction practices



Mackenzie Valley Fiber Link

- MVFL has invested \$60 Million dollars for the design, build, and installation of a 1,154-kilometre high-speed telecommunications system from McGill Lake (approximately 80-kilometres south of Fort Simpson, NWT), to Inuvik, NWT
- MVLF Point of Presence locations are now located in Fort Simpson, Wrigley, Tulita, Norman Wells, Fort Good Hope, Inuvik, and in High Level
- Fiber Cable consists of 48 individual fibers, each capable of 88 Dense Wavelength Division Multiplexing (DWDM) channels per fiber, and 100 Gbit/s per (DWDM) channel

MVFL CONSTRUCTION PROGRESS

FALL 2016



Indigenous Fiber Optic Ownership

Culture & Language Preservation

- Media storage of audio & video
- Teaching and demonstration of culture, language, history traditional practices
- Sharing this information either locally or world wide

Economic Development

- Enabling creation of viable online business & entrepreneurial opportunities
- Attract new industries and creating new jobs
- Providing access to regional, national, and global markets.
- Owning & controlling the fiber network will keep revenues and profits generated within the region instead of flowing to outside entities
- Skilled technology jobs will be created to operate and maintain the network central office facility and outside network infrastructures

Education

- Online learning enables both younger students and people in remote communities overcome the barriers of time and distance
- Community members with young children can continue educational pursuits while raising their families and reducing childcare costs and constraints
- Sharing of education providers in remote communities to provide quality teaching and learning resources with video streaming, zoom, teams etc.

Health and Wellness

- Improve the health and well being of First Nations members with increased options for Telehealth , Telemedicine and Video Health
- Remote diagnosis, treatment, monitoring, and consultations with medical specialist in major medical centres
- Reduced travel costs for remote communities

First Nation Governance

- Controlling the Fiber can secure all sectors of business, residential, institutional, and community government
- Nation to Nation video interaction that can reduce travel costs
- Electronic government can streamline interactions with community leaders, government departments
- Secure electronic storage of sensitive data.
- Decentralize government services

Strengthening Our Connections

- The sharing of our Indigenous interests like culture, sporting events, local meetings, research, news, history, and technology
- Connections both within our own communities and amongst other communities across the country will be strengthened
- Our social and economic prosperity will be enhanced by the development of a community owned and controlled communications infrastructure

Our Beginnings

2009 – CanNor 2 year Funding Grant

- Trained and educated 2 KFN members as new network technician (Cisco Certification)
- Connect all administration building on a single robust and secure wireless network
- Computers networked to a single backup server
- Build new website and trained website developer
- Introduced video conferencing
- Feasibility study to build fiber network
- Local transfer speeds are 54Mbps over a 1 Km distance

2009 KFN Broadband Project

KFN Wi-Fi Network

D-Link 2700 AP

Indian Reserve Rd

54Mbps

D-Link 2700 AP

54Mbps

D-Link 2700 AP

2011 – CanNor 2 year Funding Grant: \$193,250.00

- Designing of a one kilometer 48 strand fiber optic network
- Develop ICT curriculum for delivery of Cisco Certification
- Trained 8 KFN members on heavy equipment to trench and lay conduit and fiber
- Added 2 additional servers to network
- Network speed of 1Gbps

2011 KFN Broadband Project

KFN Local Fiber Optic Network



2013 – CanNor 2 year funding grant: \$279,000

- One kilometer network was bottlenecked by Telco's DSL services
- Design and deploy 14km of fiber to connect off reserve
- Training of aerial fiber deployment
- Feasibility study in learning to be a local ISP, benefits, bottlenecks and pros and cons
- We wanted to enhance our community through broadband innovation
- KFN purchased their own power poles for the project

2013 KFN Broadband Project

KFN 14km Aerial Build Fiber Optic Network

Northwestel
Fiber Cable

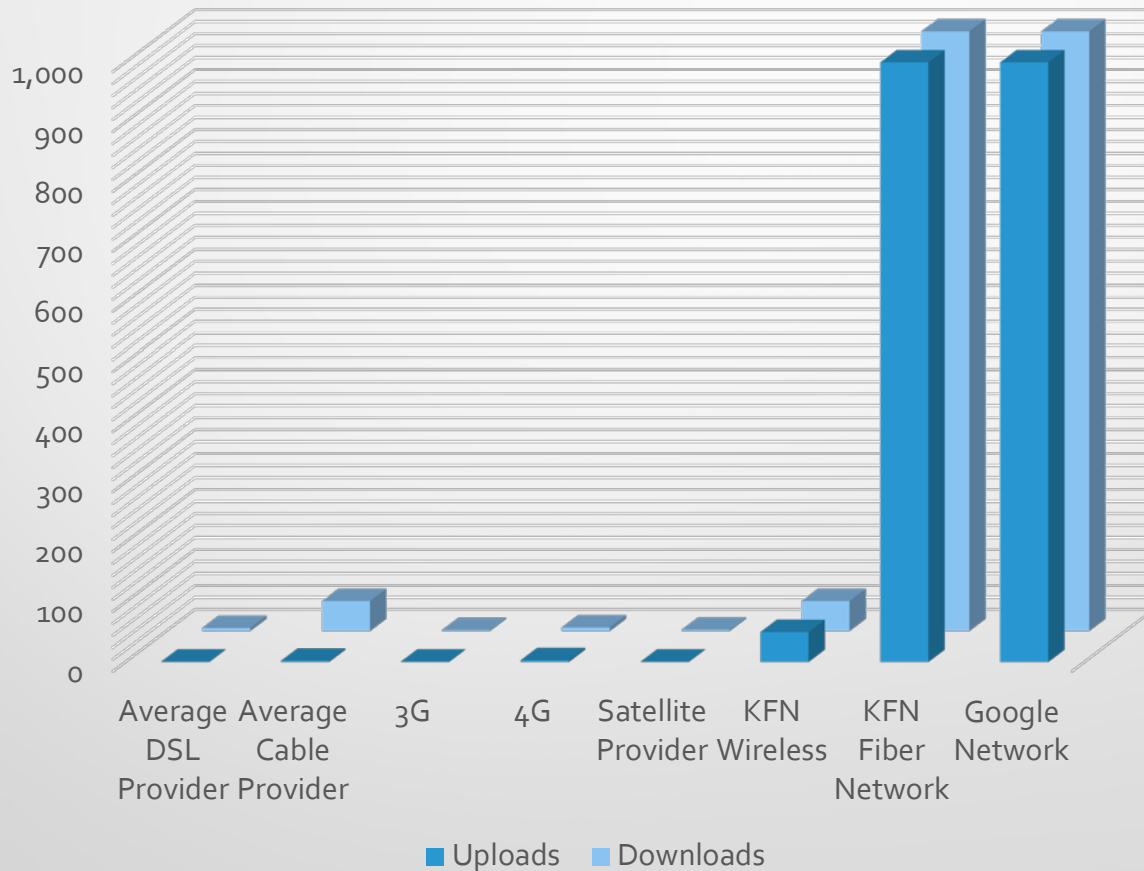
Town of Hay River

KFN
Community

KFN Fiber Cable



KFN estimated network speeds





2016 Yellowknives Dene First Nation Wi-Fi Project

Approved 1 year funding grant: \$48,000

- Northwestel quoted a 1.2 million dollar project to bring better DSL services for the YKDFN
- KTC design and engineer a 12 kilometers wireless backbone 1.3 Gbps network to connect both YK Dene communities together
- Our goal was to build a robust infrastructure and bring better broadband services
- We wanted to enhance our community through broadband innovation



2016 YKDFN Wi-Fi Project

YKDFN
Ndilo
Community

1.3 Gbps

1.3 Gbps

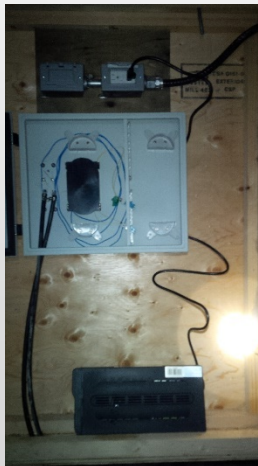
YKDFN
Dettah
Community

City of Yellowknife



Other Projects

- IT Fiber optic Wireless Infrastructure deployment for Giant Mine Remediation Project – Completed June 2015



- IT Fiber optic Infrastructure deployment throughout Gahcho Kue Diamond Mine Project – Completed June 2016



KatloTech Communications Future?



KatloTech
Fiber



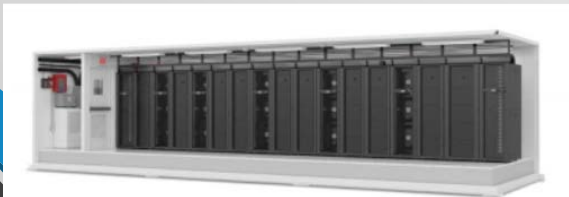
KatloTech Next Generation Fiber Optic Project

- Build & deploy an Indigenous owned next generation fiber optic network for added redundancy
- We can facilitate three layered Broadband Open Access, which provides access for industry, ISP's and local providers
- KTF is not the Service Provider but a Local Transport Provider
- KTF manages the Network and provide turnkey variety of services to ISP's
- Our approach will focus on fiber optic transport services and the delivery of higher-quality of service at a lower cost with added Modular Data Centers

Modular Data Center REIT



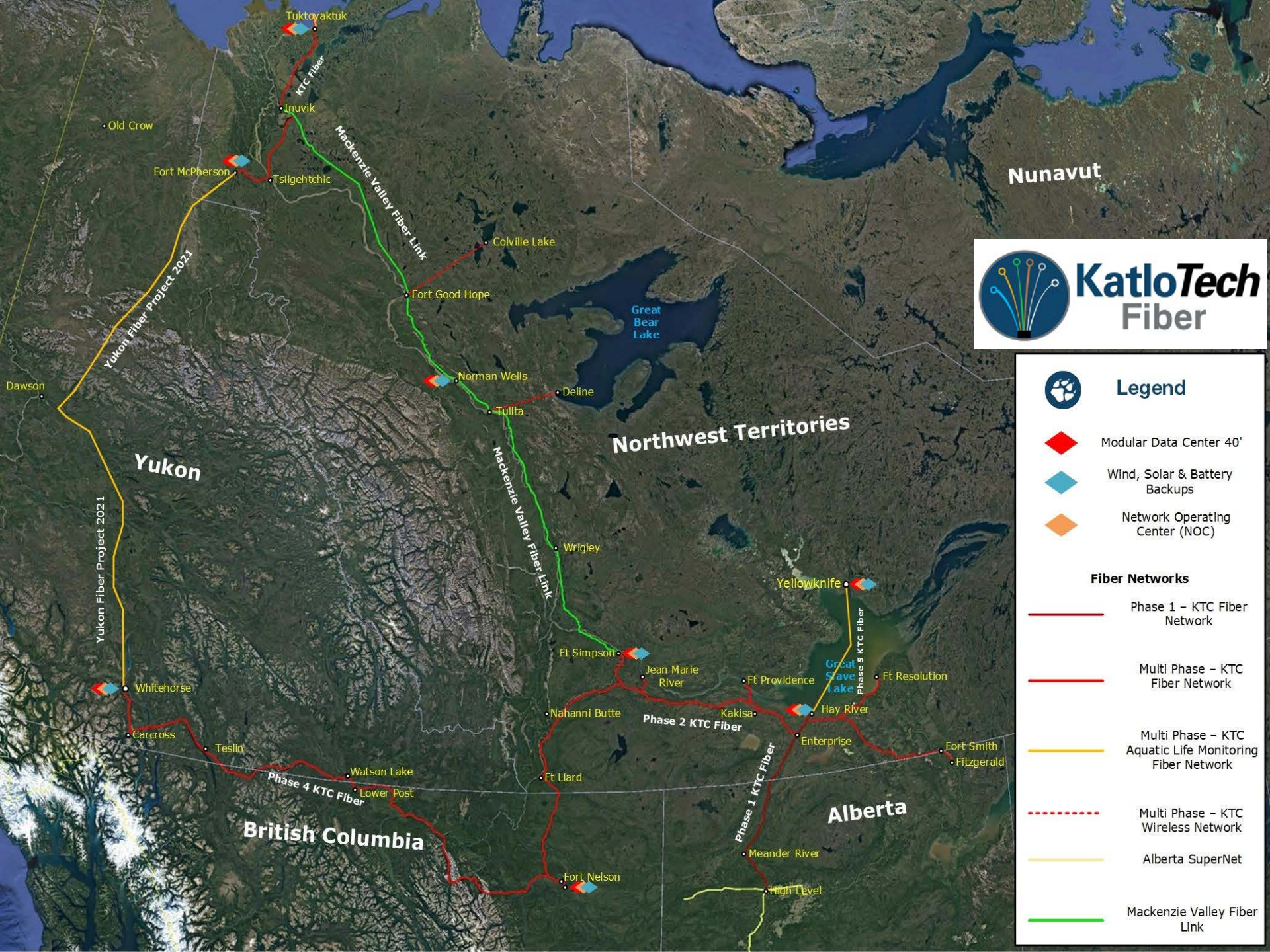
- MDC are flexible and scalable
- Small environmental footprint and real estate cost, leasing options, renting rack space etc
- We can ship our MDC anywhere on the network within weeks for deployments
- 100kw solar panels, with Xant 100kw wind generators and variable speed gen sets
- No environmental disasters such as tornados, flooding and earth quakes, our data center are kept cool 9 months out the year in northern climate
- Situated on open 13,000sq ft facility, located on Indigenous Lands






Modular Data Centers;

- UPS Symmetra PX 100kw, 208V with Startup
- Power Distribution – APC 100kVA
- Battery type – VRLA
- Cooling – ACRD61 – Air cooled Condensing unit
- 11 Racks – 42U x 600mm(w) x 1200mm (d) housing 144 servers potentially
- Fire suppression – Novec 1230/Netobz 750 w/EcoStruxure Software











Legend

-  Modular Data Center 40'
-  Wind, Solar & Battery Backups
-  Network Operating Center (NOC)

Fiber Networks

-  Phase 1 – KTC Fiber Network
-  Multi Phase – KTC Fiber Network
-  Multi Phase – KTC Aquatic Life Monitoring Fiber Network
-  Multi Phase – KTC Wireless Network
-  Alberta SuperNet
-  Mackenzie Valley Fiber Link



KatloTech Fiber will help build community owned Network

- KTF will leasing Indigenous owned community fiber networks and in turn lease stands to telecoms generate revenues
- Federal Government can invest up to 80% for community builds
- Community owned network still have room to operate its own local networks



KatloTech
Fiber

- Leasing infrastructure creates new business, competition, innovation, and competitive rates
- Communities can take market share or reinvest into additional expansions
- Indigenous owned community network benefit economically for the life of the network
- Currently there are 663 Indigenous communities throughout Canada
- Our 20 to 30 year goal to expand to each and every community

Project Supporters



CITY OF YELLOWKNIFE



Mahsi Cho!
Thank you!



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