

# KO-KNET - Travelling from Winter Roads to Digital Highways

**Video produced by Cal Kenny**

Script by Susan O'Donnell and Brian Beaton

Images by KO-KNET Staff and KO Community Members

Keewaytinook Okimakanak - [www.knet.ca](http://www.knet.ca)

February 2013

This is the story of how Keewaytinook Okimakanak – a small group of six remote First Nations in Canada's far north - developed KO-KNET Services and a digital highway connecting their member communities.

To understand KNET's history, the political and social context needs some explanation. First Nations are politically autonomous communities of Indigenous peoples. The Canadian Constitution recognizes First Nations as one of the founding peoples of Canada. The European newcomers signed treaties with the original peoples of Canada to share the lands and resources.

After the settler people outnumbered the First Nations people, the new settler government implemented policies and new laws aimed at removing First Nations people from their homelands and suppressing and undermining their governments, languages, cultures and identities. The residential schools, the land claims process, the reserves, the *Indian Act* are all well documented examples of these efforts by the Canadian government to assimilate First Nations into their Western European culture and economic system.

The Canadian province of Ontario is sparsely populated in the North. The most northerly communities are geographically isolated First Nations. The winter road network connects these communities during a short period each winter but for the rest of the year everyone flies into or out of these First Nations.

The Nishnawbe Aski Nation territory in northern Ontario - Treaties 9 and 5 - is roughly the size of France. This region is home to about 25,000 people, mostly Indigenous First Nations people living in remote communities with 300 to 900 inhabitants.

Their geographic isolation results in additional isolation from the decision-making and policies that influence their communities and members. These remote First Nations are innovating in many ways to ensure their ongoing survival and self-determination.

Having community control over governance, education, health and the many other services that communities need is an important element of their political self-determination.

In 1991, the leadership of seven First Nations in Northwestern Ontario formed the Keewaytinook Okimakanak tribal council to ensure more First Nations control over community services, operations and activities. Keewaytinook Okimakanak (KO) means Northern Chiefs in Oji-Cree. The languages and cultures in these communities are Oji-Cree, Cree and Ojibway.

The six KO First Nations today include Fort Severn, North Spirit Lake, Keewaywin, Deer Lake, Poplar Hill and McDowell Lake. All are remote fly-in communities without all-season roads.

In 1994, the KO organization and KO First Nations developed a “Stay in School” project to establish a computer bulletin board system (BBS) so that parents in the communities could have regular and reliable communications with their children in school in the far-away urban centres. At the time, telephone service only existed in three of the six First Nations. The new network was called the Kuhkenah Network, shortened to KNET. *Kuhkenah* is an Oji-Cree term for *everyone, everywhere*. And the journey on the winter roads of telecommunications in the far north began.

With vision and determination, the KO First Nations developed KO-KNET over 18 years from a basic bulletin board system to a regional support service for vibrant and active e-Communities - community-owned and operated online infrastructure that makes possible many community-managed services and interactions.

Today the carrier-class broadband network managed by KNET is the core of its operations. KO-KNET is a **First Nation community owned and operated, not-for-profit business**. As a business, KO-KNET has contracts with many organizations, including First Nations, governments and private companies. Today KNET has points of presence – or POPs – in 94 First Nations in Ontario alone and works with many other communities and regions across Canada to support the network services within a cooperative framework. Government departments pay KNET to use the network for the many community services it supports including telehealth, distance education, justice services by videoconference and others.

As a business, KO-KNET is a cooperative model with its budget and strategic plan developed in collaboration with the leadership of the KO First Nations. KNET’s management team includes a coordinator, business, operations and network managers. Most of KNET’s dedicated staff of 16 are First Nation people from the region, and staff turnover is very low. KNET’s business contracts for its network services, training services and other KNET services support all its operations, with surplus revenues dedicated to further capacity building and network upgrades in the First Nations it serves.

**Training with and in First Nations** is a primary focus of KNET’s operations. KNET has successfully expanded its training services to other First Nations across the district. Specific training for youth includes summer technology camps and many opportunities for young people to develop their ICT skills to the professional level.

Training with community members and community services staff is also important, including training for schoolteachers and administrators in the use of educational management systems, training technicians for community water plant operations, telehealth technicians and many others.

KNET also works with educational institutions to develop and deliver distance education courses to community members using the KNET videoconferencing system, for example Confederation College’s Aboriginal Teacher Assistant Program and the teacher education degree program from Brock University.

KNET has also been **creating and supporting the development of skilled employment positions in First Nations**. Employment, especially youth employment is a big priority. Many new jobs were created when KNET became one of Industry Canada’s SMART communities and secured the resources required to hire and train staff in the KO communities.

**Support for effective use of information and communication technologies** has been another core focus. The KNET support services includes toll-free telephone service, online support and a fully staffed support helpdesk. Again, the support extends well beyond the KO communities to many other First Nations across Ontario.

In 1996, KNET services began maintaining a helpdesk for the First Nation SchoolNet program. This support for First Nation schools throughout Ontario continues to the present day.

KNET supported the Community Access Program development in the KO First Nations and other remote First Nations, involving establishing, staffing and maintaining public access points, or e-Centres in the communities.

KNET has been developing many kinds of **broadband infrastructure** in partnership with the communities and strategic partners.

From 1999 to 2001, KNET Services led extensive telecom infrastructure development in its service region, including upgrades to digital radio services, satellite services and digital data services in its KO member First Nations and the wider Sioux Lookout zone. At the same time, KNET supported the development of a wide area computer network to provide remote support for the Band Office programs, Health services and Education services in each KO First Nation.

First Nation cable plants and community-owned cable networks connecting all the buildings in each First Nation began in 2001. Now there are 24 First Nation owned cable networks working with KNET to provide internet and other services throughout each community. The Community Cable Network Management software along with the Bandwidth Management Software lets local technicians manage their own networks, adding and suspending customers as required.

In 2005, KNET, with its Indigenous partners in Quebec and Manitoba, officially launched the Northern Indigenous Community Satellite Network – or NICSN - that began operating in 2000 in two remote First Nations. KNET continues to support the NICSN network and is now working with several First Nations to move from satellite to their new fibre infrastructure. The major Bell Aliant fibre network build that will reach 24 remote First Nations in the region over the next few years is another example of the work KNET is doing on major infrastructure developments.

One of the most ambitious telecommunications infrastructure development projects launched by KNET in collaboration with partner First Nations is Keewaytinook Mobile, or K Mobile, a First Nations community-owned cellular and data services network. Among the many innovative features of this service is a billing system devised by KNET that allows K Mobile customers to manage their own service and cell plans. The K Mobile service has been extremely popular in First Nations and valuable for community members as both a communication tool and safety device while out on the land.

**KNET is developing and supporting new core First Nation community services using the network.**

Two of the most notable success stories evolving from KNET Services are the Keewaytinook Internet High School (KiHS) and KO Telemedicine (KOTM).

KOTM, the only Canadian telehealth network managed and operated by Aboriginal people, provides telehealth services in First Nation communities across northwestern Ontario. KOTM recognizes the importance of incorporating First Nation values and beliefs into its operations and the value of respecting and instilling local beliefs and culture to ensure the adoption and acceptance of new health tools and methods.

The Keewaytinook Internet High school - KiHS - the first accredited First Nations digital school in Canada began delivering online courses in 2000. KiHS is a network of more than a dozen high school classrooms located in remote First Nations in Ontario's far north connected to each other by a robust broadband network supported by KNET.

**KNET has been creating, adapting and making available many other new ICT applications, resources and services.**

KNET's web-based email service, an immediate hit in the remote communities in the region when it was introduced in the early days, remains the most popular email service in First Nations in Northern Ontario.

Alongside the email service, KNET developed the MyKnet.Org social networking service that was also a huge hit with more than 20,000 home pages. Even after the introduction of Facebook, MyKnet.Org remains a popular way to communicate among friends and family in the north.

KNET's introduction of videoconferencing network and bridging services in 2000 in each of the KO First Nations and with First Nation partners across Canada is another example of KNET's leadership in telecommunications services. The ability to connect face-to-face yet separated by distance opened up a new way of doing business in the First Nations. KNET's bandwidth management software ensures that community members have a quality video experience. Now KNET supports desktop videoconferencing to make video technology even more accessible.

One of the most innovative aspects of KNET operations is its development of new applications to ensure the most effective use of the network and technologies. Examples include the videoconference booking system, the cable plant management system and others that support remote troubleshooting and management of community networks.

KNET strategically uses web-based environments and open source software, adapting it to the specific requirements of First Nations. An example is the Moodle platform that KNET has configured to support the Keewaytinook Internet High school and many online meeting spaces. KNET's use of Drupal to support online environments and Linux for operating systems are other examples.

Along with these new applications, KNET has developed a wide range of online resources including a KNET news service, numerous videos, photographs and other digital media available online.

KNET is heavily involved in **developing strategies to provide adequate broadband infrastructure and telecommunication services** in not only the KO First Nations but also all the First Nations across Canada as well as **negotiating agreements with strategic government and commercial partners to benefit the First Nations.**

KNET is working to support the **development of federal, provincial, regional and local First Nation and government telecommunication policies** that are appropriate for First Nations. This includes KNET's active participation in the Assembly of First Nations national IT working group as well as representation on national policy bodies such as the National Broadband Task Force. KNET makes numerous submissions and presentations involving policy consultations at regional, national and international levels, most recently to the World Summit on the Information Society working group on Indigenous ICT development.

An outstanding policy achievement is KNET's development of the e-Community model of community-owned and managed local broadband infrastructure. In 2005, KNET presented the e-Community model to the Canadian Prime Minister Paul Martin. The e-Community has become the core model nationally for First Nations telecommunications development, supported by the Assembly of First Nations.

Most recently, KNET is again leading the way with implementing a KO e-Community learning and information exchange using Drupal and Facebook to engage community members and raise awareness of technology developments and opportunities in their community.

KNET is sharing their significant experience by participating actively in **research and presenting and co-writing publications.** KNET has worked with numerous graduate students, including five PhD students from universities in Canada and Europe writing dissertations about KNET services and operations.

KNET has made significant in-kind contributions to many research projects, including, most recently, the First Nations ICT Innovation research project with partners in Quebec, New Brunswick and Nova Scotia, a five-year project funded by the Social Sciences and Humanities Research Council of Canada that will study how the KO First Nations are engaging with e-Community services and innovation.

A major component of KNET's work has been to establish ways of initiating and sustaining dialogue - consulting with First Nation communities and leaders, planning and implementing projects and moving information to where it is most needed, refining and improving online communication tools, answering questions from network users and acting as a meeting place for First Nations people and their issues.

These successes have clearly been a Kuh-ke-nah effort. They have counted on and benefited from the help, support and planning of "everyone, everywhere" - local and regional partners and government and private sector interests. KNET's many successes demonstrate that it has introduced a model for integrating the interests and capacities of First Nations in determining their local and regional telecommunications environment.

Clearly, KO-KNET is part of the broad social movement of First Nations in Canada working together to provide opportunities for the communities to reach their self-determination goals.