RURAL BROADBAND
THE KASLO EXPERIENCE

A BC Rural Centre Case Study, October 2016

The BC Rural Centre — *Helping Rural Communities Succeed*

Background: Why Rural Broadband Matters

In a recent forum hosted by the Centre for Rural Strategies, Professor Sharon Strover of the University of Texas noted that rural communities will be economically crippled without broadband access. Internet access is increasingly necessary for a growing number of economic, political, and social transactions. Not having access to these mechanisms means being cut off from opportunities and from what are increasingly defined as normal communications channels. To be clear, broadband access is simply the first, necessary step — it's what communities *do* with it that matters most. Having broadband access allows a community to keep its head above water. Not having it means sinking.

While broadband access may assist in both job creation and attracting new forms of online entrepreneurial enterprise in rural settings, institutions such as libraries, healthcare facilities, and schools often lead the charge in demonstrating the benefits of high speed Internet access. In some cases, broadband services that allow e-health and e-learning services may mean the difference between a community retaining its health clinic or school, or seeing them close. Additionally, broadband affords rural communities the ability to effectively communicate with one another and the rest of there world.

Context

In Sweden, a large, sparsely populated country by European standards with a climate similar to Canada's, the government aims to reach 90% of the population with 100-megabit broadband services by 2020, and has approved an expenditure of nearly $600 million to support rural expansion in particular over the next six years. Most of Sweden's broadband infrastructure was developed, funded, built, and supported by local and national governments, with "last mile" infrastructure and connecting fibre loops accessible to a variety of telecoms, cable service providers, and Internet Service Providers — all with equal access to the consumer-facing and core networks on "equal and non-discriminatory terms." This has created intense competition, forcing prices down as providers are encouraged to develop new features to differentiate themselves from their competitors.

> *"Broadband Internet access has become fundamental to modern life, and has the power to transform rural and northern Canada. Networks contribute to economic growth by improving productivity, providing new services, supporting innovation, and improving market access. Unfortunately, the "broadband gap" remains a reality in rural and remote communities, as some are without broadband coverage while others remain underserved by insufficient bandwidth and network capacity to meet rapidly evolving user demands."*
>
> ### Federation of Canadian Municipalities

Here in Canada, major telecom providers argue that because of the country's vast geography and sparse population, there is little incentive to lay down broadband infrastructure in rural and remote regions of the country. In 2010 the CEO of telecom provider MTS Allstream told the CRTC it would cost over $7 billion to

close Canada's urban-rural digital divide — a number that appeared daunting at the time. Yet Australia, facing similar structural challenges, including an urban-rural divide, has spent $43 billion to ensure broadband access to every corner of the nation. Norway and Finland guarantee their citizens broadband access, regardless how remote their communities.

A combination of new federal funds earmarked for rural broadband with the emergence of significant BC initiatives such as Pathways to Technology (focussed on providing BC First Nations with broadband access), and Columbia Basin Broadband Corporation (CBBC, a wholly-owned subsidiary of Columbia Basin Trust with a mandate to connect almost 40 Basin communities with high speed fibre), holds the potential to see remote BC communities establish their own broadband networks, based on local needs and capacities.

Kaslo

Kaslo is a small village located an hour's drive north of Nelson on the shores of Kootenay Lake, surrounded on all sides by water and rugged mountains. Kaslo is shrinking and ageing. It is generally poorer than the BC average, and has less ethnic diversity than the province at large. Kaslo's current population hovers around 1,025. There are roughly 400 households in the village proper, with approximately 20% of these second residences. The following chart reflects population, earning, and employment numbers from 2005, comparing Kaslo's figures with those for the entire province.

	Population Increase/ Decrease	Median Earnings	Low Income Earners	Employed	Unemployed
Kaslo	— 4%	$14,717	23,4%	50,6%	8,4%
BC	+ 5%	$25,722	17,3%	61,6%	6%

At a glance, tiny, isolated, ageing, relatively poor Kaslo would seem an unlikely candidate to create its own community-controlled non-profit, fibre optic-based high speed network.

Kaslo's Internet History

Kaslo's community-based efforts to improve connectivity emerged because, like many small rural communities and remote regions in BC, Kaslo had historically struggled to obtain usable Internet bandwidth. In the mid to late 1990s, the Kaslo Public Library administered Public Access Terminals, providing slow dial-up service to the public unable to obtain Telus service. Then, led by two local teachers, a consortium that included the Kaslo Public Library, VV Humphries School, Selkirk College's Kaslo office, and DESK (Distance Education School of the Kootenays) helped establish the Kaslo InfoNet Society (KiN). The new organization set up a bank of modems at Kaslo's JV Humphries School in the late 1990s, which provided a local dialup Internet number for people living in and north of Kaslo previously unable to connect (or unable to afford) using Telus. KiN charged $120/year for a rickety service that at its best provided users with 28.8 Mbps connectivity.

Up until the last few years, KiN's primary focus was on the rural areas around Kaslo — the village itself was served by Telus and Nelson-based NetIdea, piggybacking on Telus equipment. Available bandwidth was severely limited by Telus' ADSL, copper wire-based infrastructure — the company made it clear it had no intention of extending fibre into such a small, remote market.

It was becoming increasingly obvious that Telus' combination of slow bandwidth and poor service was standing in the way of the community's development. When Columbia Basin Trust (CBT) approached the Village of Kaslo in 2013 with a proposal to bering a 100 Mbps fibre link to Village offices at a cost of a few hundred dollars a month, the Village quickly said "yes, please," and invited KiN to administer the bandwidth, using it to make truly high speed Internet access available to local and regional residents, businesses, and NGOs.

Through a series of shareholder loans, KiN was able to begin building out both "air fibre" and trenched fibre in and around Kaslo, beginning in the spring of 2014, while it, with the assistance of CBBC, (successfully) sought funding for its fibre expansion through the federal Connecting Communities program and the Northern Development Initiatives Trust.

KiN is currently extending underground fibre in Upper Kaslo and areas to the south and north of the village. It is working with CBBC to apply for additional federal and other funding that will allow it to bring up to 48 strands of fibre across Kootenay Lake to Balfour, then run it north, all the way to Meadow Creek, providing rural residents with the possibility of accessing gigabyte bandwidth — as fast or faster than the best service available in major centres around the world — at rates competitive with or lower than industry standard charges for comparable services.

How KiN Works

KiN works closely with both the Village of Kaslo and Area D of the Regional District Central Kootenay. In terms of expanding fibre infrastructure, it collaborates with CBBC, which acts as an intermediary, placing itself between the telcos and KiN — when KiN accesses fibre, it accesses it through CBBC, a well-funded regional organization with the ability to negotiate favourable bandwidth access terms with the major providers.

KiN has historically turned to federal, provincial, and foundational funding for capital expenses. As noted above, cashflow shortfalls have been bridged by directors via debentures. Once fibre is in place it has a lifespan of at least 40 years, with little or no maintenance required. This allows KiN's pro forma financials to project quite healthily, as users switch from Telus and NetIdea to KiN, with its offering package that features faster, more reliable connectivity coupled with better bandwidth, leading to increasing monthly cashflow with significant decreases in capital expenses and physical labour costs.

KiN believes it can achieve at least an 80% penetration rate in the Kaslo market.

Projected Kaslo Customers	Monthly Average Rate	Monthly Revenue	Annual Revenue
320	$55	$17,600	$211,200

It's important to note that this is nearly a quarter million dollars a year — over $1 million in five years — that previously flowed out of the tiny village to Telus — revenue that will now stay and work in and for the community.

KiN currently offers the following plans and pricing. All are based on direct fibre connectivity, and provide customers with equal upload and download speeds. This latter point is crucially important for entrepreneurs and businesses that depend on the ability to upload the content they develop. All three KiN plans offer this — the only Telus plan that does so is not available in most rural BC areas.

KiN Plan	Speed (down & up)	Monthly Bandwidth	Monthly Fee	Unlimited Data
Fibre 10	10 Mbps	100 GB	$45	$25
Fibre 20	20 Mbps	150 GB	$55	$25
Fibre 30	30 Mbps	200 GB	$65	$25

In comparison, Telus has the following offerings:

Telus Plan	Speed (down & up)	Monthly Bandwidth	Monthly Fee	Unlimited Data
Internet 15	15/1 Mbps	200 GB	$68	$15
Internet 25	25/5 Mbps	300 GB	$73	$15

KiN's plans offer synchronous up and download speeds, the reliability of fibre over ADSL, the ability to increase customer bandwidth with "the flick of a switch" (an advantage inherent to fibre), offers locally-based service, and carries with it multiple community benefits.

FIRST, A FREEWAY. THEN AN OFF RAMP…

KiN would not have been able to access fibre, if CBBC hadn't stepped in. The existence of a big, decently funded regional player able to negotiate major bandwidth purchases from the big telcos made all the difference.

Think of it like this: the telcos "own" info freeways, and have no interest in building "off ramps" to small, isolated communities — not enough customers, too expensive, not lucrative enough, they argue. So CBBC is building its own freeway, in the Columbia Basin, and wants to include lots of off ramps, to 38 places in all — including Kaslo. Here's an excerpt from CBBC's 2016 Strategic Plan:

To meet the needs of residents and communities, Columbia Basin Trust has made broadband one of its strategic priorities. It created a wholly owned subsidiary, the Columbia Basin Broadband Corporation (CBBC), to work toward providing connectivity to a broadband network across the region and fostering the development of services over that network.

The Trust provides funding support for CBBC's ongoing operating costs, and the costs of activating CBBC's fibre optic network in the region. A significant portion of CBBC's initial goal has been achieved: to light up the regional network. We are now working with communities and rural areas to interconnect them to the network, while exploring and pursuing opportunities to expand the network where appropriate.

Kaslo — and KiN — are leading the charge in working with CBBC to "interconnect" and "expand the network." There are clearly opportunities for other CBT-like players across BC to emulate the CBBC—KiN experience — and valuable, ongoing lessons to be learned from their experiences.

Benefits to the Community

Kaslo and the North Kootenay Lake region reap multiple benefits from having a locally-controlled, non-profit Internet Service Provider with KiN's ability to provide homes, businesses, and NGOs with high speed fibre connectivity. These include:

Direct & Indirect Job Creation   KiN currently has 4 full time employees, and a crew of 4 additional part time workers. Purchases of goods & services in the region support employment among KiN's service providers — virtually all of KiN's growing subscriber revenue stays and works in the community.

Economic Development   Kaslo is able to promote itself as a desirable place for entrepreneurs and small businesses reliant on reliable, high speed Internet, to relocate. KiN has become an important partner in Kaslo & area's overall strategic economic development plan. Over time, as revenues grow while costs remain stable, KiN has the potential to become a significant economic actor, working closely with stakeholders such as local and regional government, the Kaslo & Area Chamber of Commerce, School District 8, Selkirk College, etc.

Population Attraction   Potential (often younger) newcomers concerned with their ability to effectively connect to the outside world who are otherwise attracted by the region's natural and cultural amenities can now happily consider the move.

Quality of Life Enhancement   The presence of high speed Internet allows the community to take advantage of new & emerging web-based health, educational, business, media, cultural, and entertainment opportunities.

"It's this central technology that kind of underpins everything, it's like talking about electricity."

Oana Spinu, Executive Director, Nunavut Broadband Development Corporation

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Could the Kaslo Experience Be Replicated?

It is difficult to directly extrapolate from Kaslo's experience. Every rural community's situation is relatively unique. There are, however, some broad observations that can be made. These include a handful of key factors that have enabled KiN to evolve:

— **Key Talent**   KiN has been fortunate to attract key talent to its board — people with extensive industry experience with a willingness to apply that experience to help build out a successful community-controlled ISP, along with others whose construction, organizational, and communications backgrounds have contributed to KiN's progress.

— **Backbone Access**   KiN would not have been able to create its own fibre network without having access to the Internet backbone, facilitated by CBBC. The ability of tiny, non-profit ISPs like KiN to negotiate access with the major telcos, then have the resources to bring fibre from a backbone access point to their communities is virtually nil. For other communities in the Columbia Basin, KiN stands as both a model, and a potential source of know-how and support. For other isolated, rural BC communities wanting to establish their own community ISPs, it may be first necessary to seek the establishment of well-funded, capable backbone access providers like CBBC in their respective regions.

— **Community Buy-In**   KiN's ability to build out its fibre network was contingent on local government's recognition of the importance of high bandwidth, and its willingness to strike an initial agreement with CBBC. The existence of KiN then allowed the operational mandate to be handed over, as local government itself lacked the capacity to build out local or regional networks from the CBBC fibre terminus at Kaslo Village Hall. Subsequently, KiN's ability to persuade local residents, businesses, and NGOs to switch to their local ISP, was and remains crucial to its success.

Further Information

If you would like to know more about rural bandwidth, click here.

For more information on KiN, click here.

If you have questions, comments, or would like to receive the BC Rural Centre newsletter, send us an email or call us — we'd be happy to hear from you.

ruralbcinfo@gmail.com

(250) 353-3016

Appendix

There are multiple layers involved in providing rural communities and First Nations with high speed Internet access. The following web links provide useful background and information. We will periodically update this list, as well as publish further material of practical interest to anyone interested in rural bandwidth as it becomes available and/or is generated by our staff.

Columbia Basin Broadband's 2016 Strategic Plan

Kaslo InfoNet Society

Internet in BC (Government of British Columbia)

'Connecting Canadians' Rural Broadband Initiative (Government of Canada rural broadband project)

Pathways to Technology (BC's First Nations connectivity initiative)

First Nations Technology Council

Rural Broadband in Canada is Still a Mess (Motherboard)

Lack of Rural Broadband Access Creating Divide Among Canadians (Huffington Post Canada)

Center for Rural Strategies Study on Rural Broadband (Center for Rural Strategies)

O-Net (Olds, Alberta's community-owned high speed Internet provider)

SandyNet (Sandy, Oregon's municipally-owned & operated high speed Internet provider)