

Section 3. Cariboo Chilcotin Coast Telecommunications Infrastructure

The Cariboo Region of British Columbia is traversed by major highways and railroads serving the vast regions of Northern BC and Alaska. The three major communities of the region—Quesnel, Williams Lake and 100 Mile House—are located along this important traffic corridor. Just as these communities are well serviced by road and rail they also enjoy access to the best of today's communication technologies. Two of the province's largest communication providers, TELUS and RSL COM, have high capacity circuits passing through or near these communities and a third major provider, (Shaw), plans to build an additional fibre optic circuit through the Cariboo and on to Prince George.

Until recently, the residents of these communities had access to communication products and services available in larger cities at comparative pricing. In fact, not long ago local telephone service was less expensive in the Cariboo than in Vancouver. But deregulation in the communications industry has begun to change this situation, and Cariboo residents now pay more than their urban counterparts for local access service. Informants pointed out that the higher monthly costs provide a lower level of service, particularly outside the municipal centres.

Telecommunications backbone

Fortunately, the incumbent local service provider, TELUS, has constructed a fibre optic circuit through the region and will have upgraded the majority of its switching equipment under its RUP (Rural Upgrade Program) initiative. Through the use of new technology combining several subscriber circuits onto one copper pair, the utility has been able to bring private lines to virtually the entire region. In the area of access to the Public Switched Telephone Network (PSTN) only very small communities have basic-access issues today in our region. With the advent of satellite technology systems like MSAT, access to any location in the region can be provided at a price of \$1.55⁷ per minute (long distance charges included).

A measure of the quality of voice service is access to modern call management services such as call waiting or open access to long distance services providers. TELUS is the primary provider of these services in our region and has provided us with an update on the region's telephone

⁷ (In March 2000, Glentel charges 99¢ per minute.) As part of its commitment to making Canada the "most wired country in the world," the federal government announced on March 6, 2000 that it had entered into an agreement with SpaceBridge to investigate wireless technologies for rural and remote communities. The lower infrastructure costs may lead to broadband service in communities that would not otherwise be considered for high-speed Internet access.

switches. A summary of this is provided in Appendix 3G. Further information is provided from our survey. In general, the three major communities have most of today's call management services available for prices identical to those in the lower mainland.

Prior to the Internet, large companies and government in this region used a product called a T-1 for data communications between themselves and other locations. T-1's have a bi-directional data rate of 1.5 million bits per second. They are available in a variety of sizes from 128,000 bits per second (128 Kbps). Another digital data product is ISDN. With data rates of only 128 Kbps they are not considered broadband circuits. For those with even greater needs a direct fibre optic connection is available from TELUS with data rates of up to 100 million bits per second. These products are available at a slightly higher cost than an equivalent circuit in a large urban area such as Vancouver.

As competition and technological change affect the investment decisions of telecommunications companies, smaller markets are finding themselves passed over in the rush to bring new technologies to market in the most cost effective way. Compounding this situation is the explosion of data traffic caused by the arrival of the Internet in modern society. This whole new way of communicating has produced a demand for low-cost, high-capacity data circuits.

Broadband Internet

Today's hot communications product is called broadband Internet. Unlike dialup Internet access which offers data rates of 56,000 bits per second (56 K), broadband Internet delivers speeds up to 10,000,000 bits per second (10 Mbps). It is delivered to the end user through one of three technologies. These are ADSL, which is carried by existing copper telephone conductors, Cable Modem, which is carried through the coaxial cable network and LMCS Wireless which uses a variety of radio frequencies. A common factor among the products is low cost. (under \$100 per month).

TELUS & Shaw

As a legacy of the days of regulated communications our region is mainly served by the previous cable (Shaw) and telephone (TELUS) monopoly holders. In order to use their existing strength to compete aggressively in this new marketplace, both companies have designed a broadband offering that is priced at \$39.95 per month for the residential consumer. While this is good news for subscribers in large cities it has meant that the region's smaller centres, with lower subscriber density, have been left off of the construction and deployment plans for the year 2000. Actual commitments to provide service in 2001 are still under review by both major providers. Both companies have, however, committed to bringing these services to the Cariboo as capital and equipment become available.

The major companies involved today in broadband deployment plans in the Cariboo region are TELUS (formerly BC Tel), RSL COM Canada Ltd. (formerly WesTel Telecommunications), Shaw Communications and ABC Communications. All of the above companies have been very helpful in providing information about their present and future development plans. These are appended to provide a complete technical picture of circuit layouts and development plans. TELUS has also included information of the development plans for cellular sites and a detailed list of central office switch features.

NetShop in 100 Mile House and the Computer Access Centre and Stardate Computers in Williams Lake have also installed or proposed wireless broadband installations in those communities.

Broadband rollout in the region

The following is a summary of the information provided in the area of broadband services and dates of availability. This information is preliminary and is subject to revision by any of the companies as their plans develop.

RSL COM Canada does not offer ADSL or HDSL services. They are exploring a variety of options with respect to the possibility of being able to offer these services in the future; however, they have no specifics that can be communicated at this time.

Shaw Communications has announced planned construction of an \$11.2 million fibre optic circuit through the Cariboo starting in the summer of 2000. This circuit will allow them to provide cable Internet to those residents of the Cariboo currently serviced by cable. No date of service is yet available on this project.

TELUS has rolled out major components of ADSL in densely populated areas where they can meet the demands of more people by employing fewer resources. Concentrating on these areas first enables the company to generate revenues that will help support further expansion.

At this time, it is difficult to project when ADSL will be available in the areas of Quesnel, Williams Lake and 100 Mile House because of the many variables. However, TELUS hopes to provide some service by the end of 2001. ADSL is available only to those subscribers within a four kilometre radius of the central phone office.

Broadband is not currently being planned for the Bella Coola Valley nor for any of the communities off the Highway 97 corridor. Deployment in those areas will depend on future technological developments. NetShop began offering wireless, high-speed Internet access in 100 Mile House in May 1999. In Williams Lake the Computer Access Centre has been exploring high-speed options for the downtown core.

ABC Communications has plans to offer a wireless broadband service in the Quesnel area in April 2000. It expects to offer the service in Williams Lake in September 2000.

A segmented market, an uncertain future

Broadband infrastructure in the region is already segmented and will become more so. The Provincial Learning Network works with RSL COM to provide Internet access to schools and libraries throughout the region and to communities in the Chilcotin, as a result of a creative partnership described elsewhere.

The Government of B.C. has developed an intranet that connects government operations throughout the province, in cooperation with TELUS. Forest companies and other large organizations have built their own internal networks, linked to corporate headquarters elsewhere. Smaller businesses needing higher-speed Internet access have opted for costly ISDN or T-1 service. Shaw@Home will attract another major subset of potential broadband subscribers.

The result is that the market for broadband services is segmented, making it more difficult to formulate a persuasive business case for service improvements. The major players in education, government and industry who would otherwise form a solid market base have already been picked off.

The response in Northwestern Ontario has been to form partnerships that include the sectors mentioned above, as well as those not currently served by broadband infrastructure. They have managed to walk a careful line by involving representatives from diverse and competing interests, making the marketplace work for rural Ontario. This approach requires a combination of public and private funding and a major cooperative effort. The model is there. While it would have to be molded to the particular needs of this region, it provides a framework for a regional network that can demonstrate demand for advanced telecommunications infrastructure.

Local telecommunications pioneers

Credit for opening cyberspace to residents of Cariboo Chilcotin Coast is shared by companies that were quick to recognize the potential. Piggybacking on the infrastructure TELUS had built in the region, they gave the region a jump start in the online world.

The pattern of local initiative is significant. As the region pushes for broadband services, local providers are once again exploring options for enhanced telecommunications, this time bringing high-speed Internet access to communities that have limited investment appeal in a competitive market.

The pioneers listed here now compete with both multinational corporations and with newer, locally based companies. One of the ways these companies have held onto customer loyalty is through high levels of service. They provide community-oriented Web sites, configure computers for their subscribers, and respond to numerous questions about everything from e-mail problems to how to find long-lost relatives.

Cariboo Internet Service Providers see themselves as integral to their communities. Whether providing free Web space for non-profit organizations, volunteering for the Winter Games or serving as directors for the Chamber of Commerce, they are good corporate citizens. Their balance sheets would all show thousands of hours and dollars returning to the communities they serve.

ABC Communications, Quesnel & Prince George

Formed in Quesnel in 1989, ABC Communications is a leading telecommunications company in Northern B.C. Now with three locations in Prince George and Quesnel, ABC is the largest ISP in the north of the province. The company provides computers, networks, data cabling, commercial and industrial telephone systems, wireless systems, and Internet access. ABC also operates a complete electrical services division. The company was one of two Cariboo companies to be awarded contracts to provide broadband multi-point Internet access to local school districts, through the Provincial Learning Network.

ABC provides ADSL service in Prince George's downtown core and is poised to expand that service when the technology is made available to other Cariboo communities.

In 1999 the company was given the Technology Innovator of the Year award by the Prince George Chamber of Commerce and was noted by Performance 2000 as one of Canada's top 2000 private companies in 1998 and 1999. Profit 100 named the company one of Canada's 100 fastest growing companies two years in a row.

Central Coast Communications Society (CCCS), Bella Coola

A group of Bella Coola Valley residents (among them Ron Evans, Duncan Morgan and Larry Stranberg) saw the need for better communications and formed the Central Coast Communications Society. Still the only ISP in the valley, the CCCS operates as a non-profit society.

The first couple of years, despite less than reliable service, many were happy just to have local Internet access of any kind. The reliability of the service slowly improved along with the membership, eventually totaling approximately 150 members in 1999. The CCCS struck a deal with the

local school board and shared the cost of a dedicated satellite link that provided schools and CCCS members with Internet access.

All of the schools and dialup users shared a data connection of 384 Kbps incoming, 38.4 Kbps outgoing. An eventual upgrade to industrial equipment led to a noticeable increase in reliability. The original CCCS group had turned the society over to a new group. This would happen several times in the following year, seriously affecting further progress.

With the deployment of the Provincial Learning Network, the CCCS abandoned its expensive satellite link (over \$2000 a month) and chose to use PLNet bandwidth, free of charge from the schools. This allowed CCCS to be able to afford new equipment and improve the reliability of its Internet service.

Connection speeds are slow; busy signals are common, and the move to PLNet has not reduced membership fees. The CCCS places heavy demands on the valley's limited number of telephone lines so members typically connect at speeds much slower than 33.6 K.

While there are no competing ISPs in the valley, TELUS's flat-rate long distance plan has enabled some subscribers to opt for distant servers, in search of fewer busy signals, faster connections, and alternatives to the local \$30 for 30 hours subscription. Because this is a non-peak-hours service, local businesses have not been able to take advantage of this competitive option.

Computer Access Centre, Williams Lake

The Computer Access Centre set an early, high standard in the region for providing community information and services. From his operation's beginnings in 1995, Nick Sardy has made a commitment to bringing Williams Lake online and bringing the world to Williams Lake. One of his early ventures was a computer newsletter that brought news and reviews to a far-flung audience that grew even larger when he migrated from print to an online electronic magazine.

The Computer Access Centre was a Williams Lake pioneer in offering Internet accounts to local subscribers. Sardy developed the Williams Lake Web site to provide business and community information. Now with over 150,000 visitors a month, the Williams Lake site attracts a stream of activity from around the region and around the globe.

A visit to the Williams Lake business directory shows an impressive number of small businesses in the community and a largely untapped potential for online commerce. Within each category only a handful of businesses have e-mail addresses and even fewer have Web sites. Some of those are simply electronic brochures, while others such as People's Foods and Paradise Cinemas give people a reason to return regularly.

Sardy's Internet subscriber list has grown steadily during the last five years. Constant upgrading, addition of modems and lines and services, and attention to customer needs keep the company thriving in spite of the number of competitors that now vie for Internet users.

With an E1 line providing a 2.048 Mbps connection to its upstream provider, 100 Mile NetShop, the Computer Access Centre is able to offer 28.8 K to 56 K digital dialup access to its Internet subscribers. Web site hosting, FTP (File Transfer Protocol, which allows people to upload files to the Centre's server) and VOIP (Voice Over Internet Protocol, which enables users with compatible software to talk with each other through an Internet connection) round out the company's Internet services.

Sardy has been consulting with the City of Williams Lake and downtown businesses as he has moved forward with plans for wireless communications. He expects to be able to offer broadband wireless and cable Internet access by mid to late 2000.

One of the projects Sardy is currently promoting is establishment of a high-tech centre in Williams Lake. His idea is to find office space that can be wired to offer advanced telecommunications features such as broadband Internet access. Local companies wanting to launch e-commerce ventures would have the infrastructure they need at an affordable price, but Sardy looks beyond the Williams Lake market as well. He sees the project as a way of attracting high-tech companies away from high-cost urban areas.

As an enthusiastic proponent of e-commerce, Sardy sees the need for economic development and business groups in the region to provide public education. The potential for local and intra-regional commerce and community networking still lies like an iceberg beneath the small tip of Internet applications visible in the region. A commitment to helping organizations, businesses and individuals understand what the Internet makes possible would create momentum that could lead to a more diverse economy.

100 Mile NetShop

NetShop was the first ISP to bring Internet to the South Cariboo (February 1995), putting this area's residents and businesses online. The company provides service from Chasm in the south to 132 Mile in the north, east to Lac Des Roches and west as far as the telephone lines reach. In that widespread region, only Mahood Lake has long distance charges. The company holds its edge over the majors by offering the personal service that is the hallmark of the region's independent ISPs.

Although the market for broadband is still small, Lunn foresees rising demand. He can provide T1 access and has been offering wireless high-speed Internet since May.

100 Mile NetShop's entry into broadband has been aided by the company's contract with the Provincial Learning Network. Charged with providing high-speed links for three schools in 100 Mile House, NetShop was able to invest in infrastructure that can now provide enhanced services for other users.

Lunn has now put digital service into NetShop, which has T1s running via fibre, enabling customers to connect at 56 K. With upgraded switches in the area, the company could purchase lines to provide DSL.

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In 1995 the Tatlayoko Think Tank (TTT) applied for and received an Industry Canada Community Access Program ([CAP](#)) contract to establish Internet access for three Chilcotin telephone exchanges. Before this could happen, improvements in basic telephone service were needed and a way to eliminate long-distance charges had to be found.

The TTT organized two years of intensive lobbying by concerned groups and individuals to establish affordable Internet access in the West Chilcotin. Building upon these successes, the TTT, in partnership with the Alexis Creek Indian Band, BC TEL, School District #27 (Cariboo-Chilcotin), the Provincial Learning Network (PLNet), and the Information Technology Services Division (ITSD) of the Province of British Columbia, negotiated a unique pilot project to implement its CAP contract.

The TTT oversees the operation of four community access sites: the Tatlayoko CAP site located on TTT premises and three satellite CAP sites located at the Tatla Lake Library, the Anahim Lake Library, and the Tatla Lake Community School. Strong community support continues to be a valuable component of this CAP project. The TTT, as part of its CAP mandate, is also administering the details of dial-up community Internet access in the three West Chilcotin exchanges.