

**EXPLORING CONNECTIVITY, USE AND USEFULNESS  
OF INFORMATION AND COMMUNICATION  
TECHNOLOGY IN A NORTHERN COMMUNITY SETTING:  
A CHURCHILL CASE STUDY**

**The Churchill Connectivity Story**

**January 26, 2005**

## **Rural Development Institute, Brandon University**

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## **Purpose**

The Churchill Connectivity Story chronicles Churchill's Internet connectivity experience over the past nine years. This story has been documented for the Churchill Community Network's Board of Directors, its membership, the Churchill town council, interested community members and other communities that are interested in understanding connectivity in a northern setting.

## **Research Method**

A research team of Dr. Robert Annis, Dr. John Everitt and research assistant Deatra Walsh from Brandon University conducted eight face-to-face interviews with Board members of the Churchill Community Network and Churchill Council members in June 2004. This research team also collected background documents such as meeting notes, contracts and reports related to the Churchill Community Network. Susannah Cameron wrote up the story in October 2004 using the interviews and background documents. The Board members of CCNet reviewed the story for accuracy.

## **Seeking connectivity through dial up**

“Over generations the Industrial Age hollowed out rural communities by exploiting their resources, limiting their opportunities and robbing them of their young people – their future. One of the most powerful characteristics of the Information Age is that the barriers of distance and time are being reduced to insignificance. Your town may now be more competitive than many urban sites for a wide variety of knowledge-based and value added products. You have our best wishes in making the Information Highway work for you and your fellow citizens.” (From a letter written by Doug Hull, Director General, Science Promotion and Academic Affairs, Industry Canada on December 19, 1995.)

In January 1996, the newly formed Churchill Community Network received this letter from Industry Canada informing them of their successful bid to receive funding to set up their own community network in Churchill, Manitoba.

The Churchill Community Network has its roots in a group of Churchill community members who met informally in the mid 1990s to discuss computers and Information Communications Technologies (ICT). Calling themselves the Churchill Computers Users Group, the ten members all had computers and used them to access the Internet through CompuServe, a service provider, using long distance phone lines.

Members of the group discussed the toll charges and long distance fees needed to access the internet via CompuServe and realized they were each spending up to \$400 to \$500 a month in access fees. There seemed to be no alternative to paying monthly access fees until a member of Churchill's Town Council introduced the group to a representative of the Blue Sky Community Network.

The Blue Sky Community Network was a Manitoba based volunteer organization with a mission of facilitating locally based Internet access solutions to allow Manitobans open access to the information highway. While not a program of Industry Canada, the federal government department encouraged Blue Sky Community Network to help build locally based internet solutions by informing communities about the Community Access Program and helping local groups fill out application forms.

In discussions with Blue Sky Community Network, the members of the Churchill Computer Users Group realized they could meet their own individual needs by accessing cheaper Internet access while benefiting members of the greater Churchill community.

With guidance from the Blue Sky Community Network, the Churchill Computer Users Group submitted an application to Industry Canada in October 1995. The Churchill Computer Users Group received approval for a grant from Industry Canada in January 1996 and held a founding meeting for 45 members later that same month.

At that founding meeting, the members formed an organization to manage the locally based Internet access called the Churchill Community Network (CCNet). The mission of the newly formed organization was defined as “to provide the community of Churchill with free public access to the Churchill Community Network and to bring the Information Highway to Churchill at a low cost.” The members of CCNet elected a president, secretary, a treasurer, two community representatives and two members at large.

Starting in January 1996, the executive of CCNet met at least once a week for the next year to discuss progress. They divided themselves into working committees to accomplish the activities necessary to start up the Internet business. This included incorporating as a not for profit, writing a charter and by-laws, opening a bank account, conducting market research by surveying Churchill businesses and government departments and agencies, writing a business and a financial plan. The Internet was a relatively new concept and the group needed to compare the prices of appropriate hardware, research types of Internet access, telephone lines, and examine the pros and cons of purchasing versus leasing a satellite dish.

The CCNet executive held community meetings to explain how people in Churchill could use this technology to their benefit. As Churchill does not have a daily newspaper, CCNet held community meetings to promote anticipated benefits of Internet access. The Internet would provide quick and easy exchange of information and for the arts council, service organizations, aboriginal groups, the hospital board, the library, religious organizations, the town council and the schools and ordinary citizens. It would also reduce Churchill’s physical isolation by giving its citizens a low cost link to Canadian and global organizations, and make large amounts of research and information readily available. Internet and email access would facilitate self-learning and would make taking a long distance education course possible.

Churchill businesses planned to use Internet connection to promote their products and services, to market tourism opportunities globally and to increase the potential for the

export of goods. The federal, provincial, local government and social services agencies would be able to make their services available to Churchill's citizens. CCNet also expected that exposure to the internet would enable Churchill residents to learn more about computer and information technologies and therefore make them more attractive on the job market.

In the mid 1990s, as elsewhere in Canada, there were many people in Churchill who did not know how to browse the World Wide Web or use email applications. CCNet organized volunteer trainers to help the public get online through training sessions held at the community college and the high school. CCNet also started the process of setting up a public access terminal that would be available to the community free of charge.

CCNet's executive realized that they would not be able to cover costs of Internet access through Industry Canada's grant. Working together with the Town of Churchill and other organizations, CCNet identified their financing needs and applied for loans. In addition to the grant from Industry Canada's Community Access Program, CCNet received a donation from the Churchill Northern Studies Centre, a no interest loan from the Town of Churchill and a loan from the Churchill Community Development Corporation to purchase equipment and start up the business.

By April 1996, the hardware; the server, the modem bank, the Ethernet hub, the router and the public access terminal had been ordered. A Community Access centre was set up at the Duke of Marlborough high school with computers and printers. By June over 100 people had participated in eight training sessions covering basic Internet usage and community networks.

After an extensive process of examining options, CCNet chose to develop their network through a satellite link with CanCom Satellite Networks, a southern Ontario ISP. CanCom offered Churchill an Internet backbone with email, web space hosting and domain name control with one limitation: these services would be administered through CanCom taking away some of CCNet's control over its own services. CCNet did own the satellite and equipment in Churchill. Telephone services for the dial up service came through MTS so users could connect to CanCom's satellite in southern Ontario. The server was housed in the high school.

In November 1997, CCNet started operating with a dial up Internet service with 15 access lines and a simple modem pool offering three different rates to members for three levels of service ranging from \$35.00 to \$60.00 per month. Members paid a one-time membership fee of \$25.00. The goal set out in the business plan was to operate a viable business and repay debt by signing up 35 to 50 dial up service members.

Four CCNet volunteers went out and put in connections and system cards when residents or businesses signed on for Internet with CCNet. By March 1998, CCNet had easily surpassed the goals set out in its business plan as it had attracted over 130 members who signed up for Internet services. The business was generating sufficient revenue to cover the operating expenses such as the satellite transmissions and making loan payments. The treasurer ensured the books were up to date and worked with other Board members

to develop payment methods and followed up with collections if members were not paying their monthly bills on time.

By continuing to operate a financially viable community based business, CCNet managed to pay off their debt well ahead of schedule making their final payments in November 1999.

Throughout 2000 and into 2001, the CCNet offered a dial up service to about 145 members. CCNet held regular meetings for its membership although often only a handful of members would attend. People interviewed for this report indicated that members perceived themselves to be “customers” receiving Internet service from CCNet rather than as active members of a not for profit community based organization. However, CCNet was not operated like a “for profit” business as it had no staff, no fixed administrative office and no dedicated equipment like filing cabinets, computers, printers or accounting software. The organization was operated by board members working on a volunteer basis in the evenings and on weekends after finishing their paid jobs. Despite a taxing volunteer workload, the members of CCNet’s Board of Directors remained in place with only a few replacements being made when few board members moved away from Churchill and had to be replaced.

One of the major challenges CCNet faced and continues to deal with by operating in a rural and remote community is a lack of local computer technicians. CCNet members would call upon volunteer board members to fix their computer problems and tackle computer viruses, whether they were related to CCNet’s Internet service or not.

As the years passed and volunteers grew wearier, CCNet’s technology became outdated. However, CCNet continued to operate profitably with its dial-up services. Overall CCNet’s board emerged from the first six years of operation proud of their accomplishments but increasingly fatigued by working countless volunteer hours operating the community-based business.

### **The Quest for Broadband**

As time went on and information community technology changing rapidly, pressure came from within CCNet’s board, membership and from local businesses to keep pace with innovations in the rest of Canada. People wanted faster Internet service so they could download and upload music, games, movies, and large files, view Websites and access the Internet more quickly.

CCNet’s board of directors started looking into options to increase bandwidth. Initially, the board explored entering into a partnership with a local cable television provider. However, this solution was deemed too expensive requiring extensive upgrading of Churchill’s cable network infrastructure.

At the same time CCNet was researching options, the Churchill Regional Health Authority was negotiating a contract with a company called Global Wireless Satellite Networks/Vancouver Teleport to provide it with broadband service. Unfortunately,

CCNet could not act as an Internet provider to the Regional Health Authority due to strict patient privacy and security issues imposed on the RHA by the province of Manitoba. Global Wireless Satellite Networks (GWSN) received the contract with the Regional Health Authority to provide its network service and subsequently approached CCNet about assisting the community based Internet company to offer broadband to its members.

In the summer of 2001, Global Wireless Satellite Networks and CCNet prepared a business plan that would allow CCNet to offer broadband as well as dial-up Internet service. Given Churchill's small population and isolated location, CCNet has a limited number of potential users for any one service. Therefore, GWSN recommended CCNet use broadband to diversify its services to include video conferencing and/or cell phones to generate the increased revenues needed to offset the expenses of offering broadband.

The business plan required CCNet to modernize its facilities. CCNet needed to negotiate further financing in order to meet the upfront capital costs of upgrading its equipment and the existing network.

In 2002, a deal was struck between Global Wireless Satellite Network and CCNet. The town of Churchill would receive broadband Internet through a new wireless technology. This technology would be made available to CCNet for below market cost because Churchill would be a test site for the technology in a live environment. This new technology would make it possible for Churchill to expand into Voice Over IP telephony and video conferencing, something the board of CCNet anticipated would have useful applications for businesses, government and social services in Churchill in the future. The Voice Over IP based system combines communication mediums into a digital signal and transmits the signal via satellite dynamically using the bandwidth.

CCNet's project proposal describes how Churchill receives broadband.

“The services are landed in Churchill via a satellite signal. The signal is then converted to allow for the utilization of the local cable infrastructure, which in turn takes the services to the residential user. The business user will be serviced by a wireless solution deployed from the same receiver/ transmitter as the cable solution. The signals generated and transmitted from Churchill are terminated in Langley, British Columbia and tied into the Telus network via Vancouver Teleports earth station. GWSN provides T1 access to the Internet at 2kbs. Global transmits a 2mb pipe received by Churchill and is directed to each individual IP address. The signal back to Langley is a 356k pipe giving us the advantage of downloading from 2 Meg while we only pay for the 512k pipe.”  
(Directions Management Inc, 9)

CCNet financed the new equipment and upgrades from revenue generated in the first five years of CCNet's operations, a loan from the Community Economic Development Fund, a loan from the North Central Community Futures and a loan from the Hydro Mitigation Trust Fund. GWSN contributed satellite equipment and the earth station.



By September 2002, everything was in place to launch a satellite/wireless solution to provide members with a 2Mbps high speed Internet service. The existing CCNet network using satellite and wireless technology was upgraded resulting in increased speed service.

The goals set out in the business plan were to secure a minimum of 50 commercial users, 150 residential users, and to create three full-time CCNet jobs in the short term to sell and to install Internet services. The plan outlined one and a half full time jobs in the long term to meet CCNet's staffing needs.

Everyone interviewed for this case study named benefits Churchill has reaped as a result of the broadband service. For example, businesses operating in the tourism sector use internet sites to attract people from all over the world to visit Churchill, book transportation and tours to see wildlife and experience Canada's north. Hotels in Churchill offer guests Internet connection to stay in touch with their friends and families. The Churchill Northern Studies Centre offers researchers, students and eco-tourists email access and Internet research stations.

However, while the switch to broadband led to increased speed and capacity, it also proved more difficult to maintain than the dial-up service. Members experienced periods when the server was down and they could not access the service. The CCNet volunteer board struggled to keep on top of maintaining and repairing the new network when it was too expensive to fly in computer and network technicians.

Then competition to CCNet arrived when MTS, Canada's third largest communications provider, began offering a cheaper competing dial up Internet service. Whenever CCNet had a problem with their broadband service, they would lose a few members to MTS.

CCNet's membership continued to view themselves as users of the service rather than as members of an organization providing Internet service to the community. As a result of low member turn out at meetings and continued exhaustion at the board level, community meetings and were held less and less frequently during this time period.

Due to competition from MTS and interruptions in service, in 2003, CCNet did not meet its goal of increasing number of members signing up for service. As a result the Board of CCNet did not feel revenues were sufficient to hire staff.

CCNet faced a conundrum. It was not generating sufficient revenue to hire staff to drive marketing campaigns, provide customer service, manage and repair the network, and develop new services that would increase revenues. Yet with fixed monthly costs and no increase in revenues, CCNet would never be in a position to be able to hire staff. Meanwhile, the core people had been volunteering to run a business for eight years were burned out.

CCnet's challenges were exacerbated on April 10, 2004, when the Up/Down converter crashed on its satellite communication equipment. The equipment provided a satellite connection to the Internet for both the Province of Manitoba (RHA and the MHA) and the CCNet. This resulted in CCNet's members being without service for several weeks.

As a result of the crash, the province of Manitoba, which was responsible for ensuring the operation of the RHA, sped up the process of converting over to MTS fibre optic network. The supplier of the satellite equipment, the Global Wireless Satellite Network did not repair the system, as it was too expensive. In light of this, CCNet made the decision to change their Internet connection from the slower satellite connection over to MTS' land based fibre optic link. The fibre optic link resulted in a faster broadband connection.

At the same time, CCNet's executive made the decision to eliminate its dial up service by the end of May 2004 and switch over completely to a wireless service rather than maintaining a dial up service that has to compete with MTS' dial up service.

CCNet held a public meeting in April 2004 to let members know about the move to wireless. New rates have been developed and members can choose between three packages costing between \$34.99 and \$99.99 a month.

### **Churchill – choosing the way forward**

CCNet is at a fork in the road. Under its current mode of operation, the monthly payments CCNet needs to make include digital bandwidth, MTS phone line charges, and loan payments to cover capital outlay. These expenses are barely covered by current revenues. CCNet cannot continue to operate in this mode. Under its current structure, even if a marketing campaign were launched and new members were attracted, CCNet's board does not have time on a volunteer basis to manage the technical and administrative side of servicing new users.

The CCNet Board of Directors Everyone interviewed for this case study identified exciting Internet communications technology applications that would create new services, economic and cultural opportunities in Churchill. The Rural Health Authority just upgraded their equipment so they can use video conferencing to enhance medical services. The same could be done for Churchill's court house and other social service agencies or educational institutions in Churchill. More businesses based in Churchill could take advantage of e-commerce applications. Churchill could have its own cell phone service for tourists and local residents. However, communications technologies are advancing rapidly and the costs and technical knowledge associated with continuously upgrading a telecommunications organization like CCNet are overwhelming for a volunteer, community-based organization.

CCNet has several options it could pursue: 1) CCNet could continue to be a community owned company but be significantly restructured; 2) it could be taken over by Churchill's town council and operated municipally, 3) it could be bought by a private company, or 4) it could cease operations.

CCNet is at a cross-roads and its Board of Directors are still deciding which road to take. The Board of CCNet is pursuing funding to allow the organization to continue to provide

broad-band services to Churchill but the exact shape the community based organization will take is still unknown.

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