

DIGITAL READINESS: AN EVALUATION OF
RURAL BROADBAND MODELS IN BRITISH COLUMBIA -
2021 APPLIED RESEARCH PROJECT

City West



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EXECUTIVE SUMMARY

Connectivity is now considered to be a critical service, a foundational need to actively participate in the economy and society. Rural communities, including local government, community groups, and individuals are increasingly playing active roles in improving rural connectivity. The overarching goal of the *Digital Readiness* project is to better understand the different models of community involvement in connectivity that exist and the related benefits and challenges in order to inform other communities. As part of the *Digital Readiness* project, the project team conducted two evaluations of existing examples of community-led connectivity initiatives in rural BC.

The purpose of this report is to present the results of an evaluation of City West. The report seeks to examine the key variables that were influential in City West's strategy and operations, as well as the impact that City West has had on communities along with the different challenges associated in the connectivity landscape.

Key findings include:

- Connectivity is essential for rural communities. In the north west of British Columbia, City West continues to work to address this need.
- Connectivity is critical for supporting individuals, businesses, community organizations, and local governments to participate in the digital economy through accessing educational opportunities, conducting business operations, socialization and leisure activities, and both accessing and delivering important community services.
- City West has introduced greater competition in the local telecommunications landscape, helping to lower internet prices in communities served by multiple Internet Service Providers (ISPs).
- City West continues to work to serve communities that are otherwise unserved by other ISPs. Without City West, some communities would remain un- or under-served.
- One of the challenges is that the cost of broadband initiatives is expensive, particularly fiber. The lack of funds available make it difficult to install fiber in rural communities.
- Access to funding can also be challenging as communities need to meet certain potentially problematic criteria to qualify for some of the major funding sources. For example, needing to be classified as under-served in order to access funding can be problematic as the data reported by major telecommunications companies has been noted as inaccurate within many communities.
- The small and dispersed population numbers in rural communities make it difficult and expensive to serve internet in these communities.

Impact of City West:

- City West has provided high speed and stable internet to the rural communities it serves at comparable rates.
- City West provides excellent customer service to the communities it serves.
- City West has revenue sharing agreements with the communities it serves.
- Employment opportunities are provided by City West in the communities they serve.
- Donations and sponsorships of community events.
- City West also has scholarships and bursaries for students.

Factors that made City West successful include:

- City West has had over 100 years of experience. They are well versed in the connectivity landscape and have been providing connectivity solutions to several communities over the past few years and continue doing so.
- City West also possesses the technical expertise required to manage broadband solutions as well as to design and implement infrastructure essential for connectivity.
- Government funding has enabled City West to carry out their operations in the communities they serve.
- The long-term relationships that City West built with its customers and communities, along with its mandate to serve the public has helped them be successful in the connectivity space.

1. INTRODUCTION

Connectivity is now considered to be a critical service, a foundational need to actively participate in the economy and society. However, rural communities in British Columbia (BC) continue to face challenges with connectivity. Rural communities, including local government, community groups, and individuals are increasingly playing active roles in improving rural connectivity. The overarching goal of the Digital Readiness project is to better understand the different models of community involvement in connectivity that exist and the related benefits and challenges in order to inform other communities. As part of the *Digital Readiness* project, the project team conducted two evaluations of existing examples of community-led connectivity initiatives in rural BC.

This report presents the results of the evaluation of City West. City West is a private telecommunications company with the city of Prince Rupert as the sole shareholder. City West has a mandate to serve the public. It operates like a social enterprise and has been in operation since 1910.¹ At the time, it was known as CityTel. In 2005, the City of Prince Rupert reorganized CityTel into a new, separate company known as City West. The City of Prince Rupert is the sole shareholder of City West, but it operates as an independent business.¹ City West provides telephone, internet and cable TV services. City West serves several communities in BC including Prince Rupert, Port Edward, Smithers, Terrace, Houston, Hazelton and Metlakatla.^{1,11}

This report provides a short overview of the evaluation approach, followed by a presentation and discussion of findings.

This report and evaluation have been used to support the creation of an early-stage policy model for supporting communities pursuing connectivity initiatives.²⁰

2. EVALUATION APPROACH

The evaluation of City West piloted an evaluation approach developed as part of the Digital Readiness project. The details of the evaluation approach are documented and available as a separate Evaluation Process report.¹⁷ The overarching evaluation approach identified 20 specific metrics relating to the technological, social, political, economic, and physical aspects of connectivity.

Metric data was collected from two types of sources. First, secondary data sources were reviewed. Community profiles and census figures were looked at to understand the demographics and economic trends of communities within the City West service area.^{2,4} The BC Community Information Tool was also used for the purpose of gathering relevant information for analysis.² The National Broadband Internet Service Availability Map was used to determine reported service availability and what internet speeds for the City West service area.³

Next, primary data was collected through confidential key informant interviews¹. Interviewees were selected based on their role in City West, their position in the communities served by City West or on their understanding of the connectivity landscape in general. Nine interviews were conducted with three types of interviewees – Internal, Local External, and Big Picture. Internal interviewees included individuals from City West who were able to provide a strong understanding of how City West operates and the impact it has had on the communities it serves. Local external interviewees were key individuals from select communities in the City West service area including mayors and economic development officers to give us an understanding of the relationship that City West has with the local governments as well as the overall impact that City West has had on their communities. Big Picture interviewees were from upper level government, industry, and academia, and provided us with information on rural connectivity as a whole in BC and in Canada and the underlying problems associated with it and what kind of means or approaches can be taken to look into solving connectivity problems in rural areas.

In terms of analysis, each interview was transcribed and analyzed against a list of pre-determined metrics identified by the broader project.¹⁷ After that, the information from interviews that was matched to each metric was compiled and

¹ Selkirk College Ethics Approval REB 2021-016.

summarized. A similar process was followed for the secondary data, where a desktop analysis was conducted for each of the communities served and information was categorized under the appropriate metric for each community. Following that, all information for each metric was compiled and summarized.

As with any research, there are limitations to this evaluation, primarily as a result of the short duration of the project and that it occurred over the summer when many people were on vacation. For example, there were a limited number of interviewees that we were able to get in touch with and interview. As a result, some perspectives may have been missed as we were unable to systematically talk to representatives from all communities within the service area. Additionally, while interview data was triangulated against secondary sources, we acknowledge that there is limited information available related to some metrics.

3. FINDINGS

For the City West evaluation, while data was identified for all 20 pre-determined metrics, 19 of these metrics were a critical influence on the workings of City West. Table 1 below provides an overview of the metrics, a short summary of the data, and if it was a critical factor.

Table 1: Metrics Overview and Summary of Findingsⁱⁱ

Metric	Summary of Findings	Critical Influence
Demographics <i>Determine potential client base and user population. Speaks to market size.</i>	<ul style="list-style-type: none"> The total population of service areas is estimated to be 33,125.^{2,4} Population of communities in the City West service area ranges from approximately 3,000 to 12,300 with two outliers (Hazelton, 313 and Metlakatla, 88).^{2,4} There is a mix of increases and decreases in population in the different communities, and an overall service area trend of population decline.⁴ The typical median age range for the service area is 39-44.^{2,4} 	Yes
Population Density <i>Determine potential client base and user population. Speaks to market size.</i>	<ul style="list-style-type: none"> Primarily ranges between approximately 108 and 722 people per square km⁴ Outliers: Prince Rupert is at 1492.3 people per square km and Port Edward is at 2.8 people per square km⁴ 	Yes
Terrain and Landscape <i>Determine constraints on infrastructure options and physical challenges.</i>	<ul style="list-style-type: none"> A mixture of terrain types, including islands, coastal lowlands, mountains, and plateaus.⁵ The terrain in communities makes it difficult to install infrastructure 	Yes
Consumer Income Levels <i>Indication of the purchasing power of clients/users. Speaks to equity and accessibility.</i>	<ul style="list-style-type: none"> Median household income typically ranges between \$66,000 and \$80,500.² 	Yes
Number and Types of Businesses <i>Determines potential business clients and user base. Speaks to market size and need.</i>	<ul style="list-style-type: none"> Wide variety of industries including transportation, trading, hospitals, etc. all utilize the internet to conduct their operations.⁴ 	Yes

ⁱⁱ Communities involved – Prince Rupert, Port Edward, Smithers, Terrace, Houston, Hazelton and Metlakatla.^{1,11}

Metric	Summary of Findings	Critical Influence
Organization Capacity <i>Determine current level of human capacity within organizations.</i>	<ul style="list-style-type: none"> Approximately 95 employees live and work in Prince Rupert for City West.⁷ Partnering and acquiring other ISPs to expand and increase connectivity access in communities.⁹ 	Yes
Community Needs <i>Understand community connectivity needs.</i>	<ul style="list-style-type: none"> Key identified current needs include social interaction, streaming, conducting business, online banking and commerce, large file transfers, telehealth, education^{7,8,9,10} 	Yes
Community Impact <i>Determine who benefits and impact factors. Contribute to understanding of challenges, barriers, cons.</i>	<ul style="list-style-type: none"> City West has had positive impacts on the communities it serves including high speed internet,¹¹ excellent customer service,^{7,8,9,10} revenue sharing agreements,^{7,9} employment opportunities,^{7,8,9} community events like cancer walks⁷ as well as bursaries and scholarships for students⁹ 	Yes
Competition <i>Understand existing competitive landscape and determine role and level of autonomy of the case study service provider.</i>	<ul style="list-style-type: none"> Majority of interviewees discussed differences and challenges related to competition, including larger industry having better access to capital, as well as control over critical pole infrastructure.^{7,9} 	Yes
Existing Government Activity <i>Determine the involvement or role of all levels of government.</i>	<ul style="list-style-type: none"> Lack of understanding of the connectivity situation in rural communities by provincial and federal governments⁷ Regulatory and policy challenges - Responsibilities over access to hydro poles and highway rights-of-way are shared across multiple bodies and levels of government. This presents challenges for efficient and effective network deployment.¹⁸ 	Yes
Funding <i>Determine sources and amount of funding. Speaks to financial capital.</i>	<ul style="list-style-type: none"> To qualify for government funding, a community has to be under the 50 MBPS/10 MBPS CRTC standard.^{9,19} Sometimes reported speeds are not accurate and do not necessarily reflect ground access.⁹ New funding through the universal broadband fund and the provincial governments ERI (Economic Recovery Intake) program through NDIIT (Northern Development Initiative Trust) Provincially, the BC government committed \$50 million in its 2019 budget for projects that will expand broadband access in rural and Indigenous communities.¹⁸ Funding through the MFA - allows to overbuild 	Yes
Model Profit <i>Determine profitability and return on investment for the model.</i>	<ul style="list-style-type: none"> City West reported a net income of \$4,898,000 in 2020.^{6,iii} Increase in net income by \$2,117,000 since 2019.^{6,iii} 	Yes
Community Investment <i>Determine amount invested into community and what it is spent on.</i>	<ul style="list-style-type: none"> City West has revenue sharing agreements with communities where a portion of the revenues earned in communities is given back to communities for reinvestment.^{7,9} Loan partnerships with communities.⁹ Helps fund –scholarships for local students.⁹ Starts to invest its own cash into communities to start operations instead of waiting for govt. funding applications to be approved.⁹ 	Yes

ⁱⁱⁱ Only Prince Rupert financial statements were available. City West company financials were not available.

Metric	Summary of Findings	Critical Influence
Existing Technology and Type <i>Determine type of technology used and reason behind its use.</i>	<ul style="list-style-type: none"> Half the City West network is fiber to home and the other half is Hybrid Fiber Coax (HFC)⁸ The network is split since fiber to the home is more expensive. 	Yes
Existing Service Quality and Type <i>Identify services offered and the quality of services in the service area.</i>	<ul style="list-style-type: none"> Internet plans range from 20 MBPS to 1 gigabit per second.¹¹ High bandwidth and dedicated bandwidth for businesses^{8,11} Multiprotocol Label Switching (MPLS) and ethernet plans are available.¹¹ Symmetrical download and upload available.^{8,11} CRTC standards are met- There are plans below 50 Mbps as well for people who do not have enough money to spend or simply wish to continue with slower speeds⁸. 	Yes
Infrastructure <i>Determine infrastructure needed to support broadband operations and expansion, and associated expenses.</i>	<ul style="list-style-type: none"> Cost of infrastructure and updating technology is expensive.¹⁰ The cost of fiber is about 3 times more expensive than other options.⁹ 	Yes
Price of All Available Internet Services <i>Information on case study and competitor pricing. Will help determine competitive advantage and probability of success.</i>	<ul style="list-style-type: none"> Internet prices for residential purposes start at \$52.45 for 20 megabits and goes up to \$140 for a gigabit of internet. ¹¹ No overcharge rates for internet. ^{8,11} 	Yes
Customer Satisfaction <i>Determine how customers feel about their current internet services. Relates to customer retention factors and areas for improvement.</i>	<ul style="list-style-type: none"> Emphasis on customer service^{7,8,9,10,11} Building long term relationships with customers^{7,9} Always someone on the phone to answer customer inquiries^{7,9,10} On site within a few hours or the next day to handle major issues.¹⁰ 	Yes
Company Structure and Performance <i>Gain an understanding of the case study ISP and the environment it operates in.</i>	<ul style="list-style-type: none"> City of Prince Rupert is the sole shareholder.⁸ Has its own board of directors with a CEO^{7,8} Mandate to serve the public; operates like a social enterprise^{1,9} Partnering and acquiring other ISPs to expand and increase connectivity access in communities. 	Yes
Community Digital Capacity <i>Identify existing communal digital literacy. Speaks to market need.</i>	<ul style="list-style-type: none"> Community members read about technical outages or problems related to the internet over social media¹⁰ City West will help fund children from the communities to go to university to get technology certificates and then come back into the Community and will hire them as the local technicians for those First Nations communities.⁹ 	No

4. DISCUSSION OF FINDINGS

This section provides a detailed description of our findings. It talks about the importance of connectivity and what the connectivity landscape would like if City West did not serve these communities. Furthermore, this section provides an overview of the risks and challenges faced by City West, as well as the impact that City West has had on the communities it serves.

Need for Connectivity

Connectivity is now considered to be a critical service just like electricity⁹ and connectivity need has been increasing in rural communities across BC. Communities require the internet for a wide variety of purposes. For example, there is an inability to diversify the rural economies without connectivity.⁹ A strong majority of interviewees stated that connectivity is also essential for businesses to conduct their operations. The use of applications like Zoom and Microsoft teams has increased, especially since the pandemic.^{8,9,10} Prince Rupert, for example is the 3rd largest port in Canada and requires the internet to carry out its trading business.⁹

Another common response from interviewees was that connectivity is required for streaming services.^{7,8,9,10} Online streaming services are used by everyone in community and such streaming services are not possible to use without the internet. Connectivity is also required for remote learning. Since the pandemic, the need for connectivity for online learning has increased tremendously.⁹ The internet is also needed for the purpose of social interaction. This is achieved through social media and use of internet calling applications such as WhatsApp, Skype, Facebook, Instagram and other such applications.^{7,10}

The uses for the internet continue to grow including Telehealth⁷, application in AI⁷ and other such functions.

Connectivity Without City West

City West is essentially filling the need of providing connectivity to rural communities in their service area through their broadband solutions such as the installation of fiber and providing customers with high speed internet at comparable rates. Without City West, there would be a lack of competition in many areas. The main aim of private sector ISPs is to earn a profit and without the competition from City West present, it could enable them to charge a higher price for their services. Some communities would continue not having access to internet and be unserved.

Additionally, without the presence of City West in the market, a lot of rural communities, especially ones with a small population, may not get access to internet¹⁰ either as such communities are usually not profitable for ISPs to enter into and provide internet. Communities could be left without fiber. An interviewee mentioned that the lack of internet in rural communities will cause further out migration out of young people and professionals because they would not be able to function or exist without connectivity in the 21st century.⁸ Another interviewee also noted that property values would be less in areas without connectivity, fewer construction permits will be taken out, and overall fewer businesses would enter or operate in those communities without access to connectivity.

Risk and Challenges

As a small company, there are several problems encountered by City West that are associated with providing internet to rural communities. These risks and challenges should be considered carefully by communities who are considering creating a community owned and operated telecommunications company.

The first problem being that the amount of funding provided by the upper levels of governments is not enough to match the need. Everyone wants fiber and fiber is a lot more expensive than the other options.⁹ Interviewees noted that there is a lack of understanding in the provincial and federal governments about the connectivity situation in rural communities⁷ where they do not view connectivity as central service infrastructure. As a result, fewer funds are available and not every community can get access to fiber and connectivity.

Additionally, access to funding is also challenged as communities need to be classified as under-served to qualify for some of the major funding sources. When a community is considered as “served” they are meeting the CRTC

requirements and as a result will not be able to access most public funding. However, the data reported by major telecommunications companies has been noted as inaccurate within many communities, resulting in communities having to prove that they are not in fact served.⁹

Interviewees mentioned that another challenge is finding people with the necessary skills and expertise. Few people have the technical expertise in rural communities, and thus they need to be attracted or trained. People with technical expertise are needed to conduct such operations and a competitive wage needs to be paid to them to serve as an incentive for them to work in rural communities.⁸

Another key challenge is the geographic and demographic factors. The population in rural communities is dispersed, making it difficult and expensive to serve.¹ Geographic factors such as mountainous or coastal terrain also makes it difficult to install infrastructure.

The Impact of City West

City West has had a positive impact on the communities it serves.

City West has provided high speed and stable internet to all the different rural communities it serves at comparable rates. As described in Table 1, City West has a range of services and plans.¹¹ There are no differences in prices of services offered within any of the communities served by City West⁹, nor is there any overcharge rates for using internet⁸.

City West places an emphasis on customer service. Interviewees noted that City West has excellent customer service. City West ensures that there is someone to always answer the phone to handle customer inquiries.^{7,9} If there is a major issue, City West will be on site within a few hours or the next day.¹⁰

The majority of interviewees have mentioned how City West creates employment opportunities within the region, as City West tries to hire people from within the communities it serves to conduct their operations. As it expands into more communities, more employment opportunities become available. One interviewee also mentioned that City West also has bursaries and scholarships for students. City West sponsors students from within communities it serves to go to college. Once they graduate and receive their technical certificate or diploma, they hire them to work with them in conducting their operations in the different communities they serve.⁹

Interviewees stated that City West also has revenue sharing agreements with the communities it serves and partners with.^{7,9} Under these agreements, City West distributes a certain percentage or proportion of the revenues it generates to these communities, providing funds to invest into their communities. Beyond revenue sharing, City West also sponsors and makes donations to community events such as Cancer Walks to support and raise awareness on social causes and issues.⁷

5. CONCLUSIONS

This section concludes the evaluation of City West and describes the factors that have made City West successful as well as some key takeaways and transferrable lessons.

Key Success Factors

Based on the analyzed data, we identified four key success factors: experience, expertise, funding, and relationships.

Experience: Since its inception in 1910¹, City West has had over 100 years of experience. They are well versed in the connectivity landscape and have been providing connectivity solutions to several communities over the past few years and continue doing so. The majority of the interviewees explained that this large amount of experience has helped City West clearly identify the best broadband solutions for the different communities they serve based on community needs and other variables. The company's performance and working as discussed in our metric findings demonstrates how City West has been in this field for so many years.

Expertise: City West also possess the technical expertise required to manage broadband solutions as well as to design and implement infrastructure essential for connectivity. Personnel possess the necessary skills and knowledge required to conduct operations in the connectivity landscape. Interviewees mentioned that City West hires qualified people from

within the communities it serves. This demonstrates the need for strong organizational capacity as discussed in our metric findings.

Funding: The majority of interviewees emphasized that the telecommunications industry is a largely capital-intensive industry. Interviewees, as well as secondary data, confirm that substantial capital is required to set up infrastructure and conduct operations. This is especially evident when everyone wants fiber and fiber is much more expensive than the other options available.⁹ Funding through grants issued by Provincial and Federal governments play an important role in providing City West with the necessary funds to conduct its operations in the communities it serves.

Relationships: Building long term relationships with their customers has enabled City West to become successful. City West's mandate is to serve the public. They are focused on solving community needs and people's problems rather than solely on making profits. The majority of the interviewees have noted that City West has excellent customer service and aims to do what is right. City West partners with communities and helps them diversify their economy, not just through connectivity, but they actually politically work together.

Key Takeaways and Transferable Lessons

There are several takeaways that other rural communities can learn from City West and its operations.

Access to Capital: As described above, setting up broadband solutions is a capital-intensive activity. This can be achieved by applying for government grants which would enable communities to receive the necessary funds to conduct their operations.

Expertise and Human Capacity: Another key takeaway is the need the necessary expertise and human capacity to pursue operations in the connectivity space. Key personnel possessing the necessary technical expertise and knowledge is essential. They require land administrators, WAN (Wide Area Network) administrators, as well as wireless experts. It is imperative for communities to have a customer service backbone, storage servers and cooling centers.^{8,9}

It is important to keep in mind that it is not easy to start an initiative like City West for every community out there. Besides some of the means mentioned earlier, it requires a lot of effort and energy.

Future Research

This evaluation identified a range of opportunities for future research. A split in opinion was evident amongst the interviewees regarding the whether or not the current CRTC standards of 50/10 are sufficient. Interviewees responses included both being satisfied as well as not being satisfied with the current standard. With growth in technology and expansion of economies, the need for connectivity continues to increase. Thus, it would prove essential to conduct further research to determine whether CRTC standards need to change.

A better understanding of the connectivity situation in rural communities on the parts of provincial and federal governments would greatly improve the sphere in connectivity for rural areas. With a better understanding and more awareness of the current situation, governments can increase the funding for connectivity initiatives in rural communities.

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