CONNECT THE DOTS
INTERNET INFRASTRUCTURE IN SASKATCHEWAN

BY BROOK THALGOTT

Many lessons have been learned as we have navigated life during a once-in-a-century pandemic. Beyond our need for toilet paper and hand sanitizer, we also learned how much we depend on the internet. As people moved en masse into working and studying from home, we became more dependent than ever on a reliable and fast internet connection. If you're living in one of Saskatchewan's urban centres, likely your greatest internet issue was upgrading your service in order to handle the demand of multiple devices connecting to your Wi-Fi. If you're in many parts of rural and remote Saskatchewan...well, your experience is likely very different, and it was long before COVID-19's arrival.

The Target
The Canadian Radio-television and Telecommunications Commission (CRTC) has set a minimum target where they want 90 per cent of Canadian households to have access to broadband speeds of at least 50 Mbps download and 10 Mbps upload by the end of 2021, with 100 per cent achieved by 2030.[1]

However, this target was set in 2018 as a minimum standard and has been surpassed in many jurisdictions years ago. According to the NCTA (Internet & Television Association) in the United States, 95 per cent of Americans have access to a 10 Mbps connection, and 1 gigabit speed is available to 80 per cent of Americans—in 2017.[2] This statistic indicates how quickly the demand for internet speed is increasing. While any internet is better than no internet, and reaching a minimum standard for everyone is good, it may not be enough given how rapidly the need is changing.

The CRTC expects the 50 Mbps/10 Mbps goal will be met by using the CRTC funding mechanism, funding from various levels of government, private investment, and public-private partnerships. Saskatchewan is 14 months away from the 2021 target date...so, how are we doing, what stands in the way, and what will we lose if we don't get the connectivity needed to keep up with the rest of the country and the world?

SASKTEL MACRO CELLULAR SITE FOR WIRELESS BROADBAND. PHOTO PROVIDED BY SASKTEL

The Economics
According to Innovation, Science and Economic Development Canada (ISED) and CRTC data from 2018, 54.7 per cent of Saskatchewan has access to broadband internet that meets the CRTC target.[3] That is the lowest in the country, outside of Yukon, Nunavut and the Northwest Territories. PEI is next at 60.5 per cent, and our neighbours, Alberta and Manitoba, are at 84.9 per cent and 71.6 per cent respectively.[4]

Today, SaskTel has expanded its fixed wireline internet service—providing speeds that meet the CRTC's target—to 330 communities in the province, now reaching over 81 per cent of the province's total population, and 58 per cent of rural Saskatchewan.

So, how does this translate into economic terms?

The impact on GDP cannot be overstated. The 2016 study, *Exploring the Relationship Between Broadband and Economic Growth* by Michael Minges, showed that GDP increases one to two percent for every 10 per cent increase in broadband penetration.

The math: In 2019, Saskatchewan's GDP was $81.54 billion. Increasing broadband access by just 10 per cent could lead to another $1.63 billion annually in GDP. That is a lot of money.

The Past meets The Future
Verona Thibault is the CEO at the Saskatchewan Economic Development Alliance (SEDA), and she is a passionate advocate for the increased development of the internet infrastructure in Saskatchewan. "We have seen incremental upgrades to internet infrastructure over the years, which is good," says Thibault. "However, it's not enough. On a larger scale, overall internet speed is doubling every two to three years where there is modern internet service. Comparing the province to that, we are already way behind. There are too many places in our province that still do not have access to broadband at any speed." She points out that the issue is far greater than just not being able to stream Netflix or scroll through social media. "Internet access is not just for fun. It's vital to our daily lives and our economy."

Thibault sees the solution as bigger than just a business case decision. "I see the internet connectivity problem the same way people saw rural electrification just 60 years ago," says Thibault. The comparison is apt. Rural electrification started slowly with a pilot project in 1949, as costs were large.[5] By 1956, the rural electrification project was at its peak, and the Royal Commission on Agriculture and Rural Life noted the impact electrification was having on rural life.[6] Among its findings, the report found that farm families were "not content with the disparity in material levels of living and the quality of public and commercial services between rural and urban life," and that 12 per cent of respondents were leaving farms for towns because of "no conveniences on farm, no power or water, hard life on the farm."[7] They also found that there

was "a deep anxiety in farm people" about young people leaving Saskatchewan farms and that there was hope that electricity on the farm offer young farmers the same comforts and advantages of the city.[8]

Fast forward to 2020, and a recent study from the Canadian Internet Registration Authority (CIRA) found that seven in 10 Canadian internet users say that they would be unlikely to purchase a home in an area that didn't have high-speed internet.[9] More than half (52 per cent) say they would be 'very' unlikely to buy a home in such areas.[10] With less than 60 per cent of the rural Saskatchewan with broadband access, these statistics feel very familiar to a problem rural areas experienced 60 years ago that was addressed with the technology needed at the time to advance our lives both socially and economically.

Thibault also points out the changing nature of work that has been sped up by the COVID-19 pandemic. "Remote working has become the norm in many places around the world, and is something SEDA has been advocating for years," says Thibault. "The working-from-home that started here with the pandemic has shown many companies and organizations its value. However, in order to capitalize on it, internet connectivity needs to be dramatically improved, and fast." She also points to the growing interest in small town life as an economic opportunity. "We are witnessing the emergence of 'small town' as a very appealing brand worldwide. Working from home will invite more people to explore rural life with the potential creation of new business development opportunities for rural and remote areas. I would like to see Saskatchewan capitalize on it."

Rural and Remote

Ray Orb is the president of the Saskatchewan Association of Rural Municipalities (SARM), and SARM has a lot to say about broadband internet in rural Saskatchewan. The organization has highlighted unequal rural broadband access as the central issue for its 2021 convention. "The lack of quality internet access is a major issue in rural Saskatchewan," says Orb. "It affects so many aspects of rural life—farming, business, education and health care." SARM has been pounding on the doors of the provincial and federal governments for years, determined to make headway in improving service. Now, SARM is waiting for details on federal funding announced in the 2019 Federal Budget. "We have discussed rural challenges and need for funding with Minister Monsef, Minister of Rural Economic Development on multiple occasions and continue to keep the communication channels open."

SARM has had some success raising the issue with provincial cabinet ministers and service providers, but there is still much more to be done. "Rural internet access in its current form is holding us back. It is a major impediment to economic growth in rural Saskatchewan. While there are some solutions such as satellite or wireless available outside of fibre access, they are either expensive, unreliable, or both. Not only does it impact our ability to do business, it also restricts our students from online learning and patients from accessing remote health care services," says Orb. Like Thibault, Orb sees the issue as more than just money. "It's about quality of life. There is no reason that anyone should have to drive into town to download something as simple as a document."

Orb is also the Chair of the Rural Forum of FCM (Federation of Canadian Municipalities) who have examined rural broadband at length. "The time is right to now leverage the research and analysis that has been studied, the funding pools that have been coordinated, and the rural-urban divide that COVID-19 has again brought to national attention," says Orb. "This is the impetus for initiating a strategic conversation with key players to look at all sides of the issue and think creatively about the art of the possible in serving rural

VERONA THIBAULT, SEDA

RAY ORB, SARM

DOUG BURNETT, SASKTEL

areas. SARM will be initiating this critical conversation to build commitment from decision makers to build a plan of action that will serve rural Saskatchewan."

Agricultural Producers Association of Saskatchewan (APAS) is on the same page as SARM. The organization recently announced the creation of its APAS Rural Connectivity Task Force, which is studying the internet issues plaguing rural Saskatchewan. Jeremy Welter is chair of the Task Force, and APAS vice-president Ian Boxall is a member. Like Thibault and Orb, they are passionate about the subject. "The task force is taking a look at the problem from all sides. We're engaging experts, academics, service providers and officials," says Welter. "Our goal is a report available to stakeholders and government in February 2021." However, Welter and Boxall already have a few ideas on where the issues lie.

"Obviously, our small population over a large area is a major factor that is holding us back," says Welter. "We understand how urban areas get service first. However, rural areas need good broadband access. Period." Boxall points to the many business problems created by the lack of reliable, fast internet. "Farmers cannot participate in online auctions or get real-time grain market information," says Boxall. "AgTech is a becoming a major force in agriculture, but users need internet access to use the technology. We're literally in one of the major agriculture centres of the world facing these tech advances, but what's the point if we can't use it?"

APAS has also seen how the internet divide is impacting potential moves to rural Saskatchewan for people and business. "Anecdotally, we know of tech businesses wanting to make a rural move that can't because of poor internet, and families buying or keeping residences specifically because they need internet access," says Boxall.

Both Boxall and Welter point to another historical infrastructure project similar to the internet issue today. "SaskTel got its start more than 100 years ago to connect our province by phone," says Boxall. "Here we are now, needing the next phase of connection for everyone's benefit."

First Nations

Thomas Benjoe, president and CEO at FHQ Developments, also has much to say about the state of internet in Saskatchewan. "Broadband is a major issue. We're in the middle of a major shift in our economy—the digital transformation—and we're not utilizing technology nearly enough. Plus, we're held back by reliability. Not long ago, we had an outage that

lasted six hours. Imagine how much productivity was lost because people couldn't work," says Benjoe. "Reliable, fast broadband internet is an absolute necessity in business today."

First Nations are also poorly connected to the internet. Often, internet has made its way to the public buildings on First Nations, but not to homes. Benjoe notes the high costs of bringing fibre 'the last mile' to connect the residents to the internet. "The costs can be prohibitive, and that holds us back. Students can't access the internet for learning, there is no way to use remote health care, or work from home."

FHQ Developments also owns PLATO Sask Testing, the only dedicated software testing company in the province. PLATO is developing a network of Indigenous software testers across Canada to provide testing services that had been previously sent offshore. "We're training Indigenous people to become testers, with a goal to have them work remotely in their home communities," says Benjoe. "In order to do this, we need internet on First Nations. The economic opportunity that this sector presents is massive, and we need reliable, high speed internet to get the work, create the jobs, and then get all the other benefits that come with it."

The Providers

Doug Burnett is president and CEO of SaskTel. SaskTel owns and operates the largest wireless and wireline networks in Saskatchewan. "SaskTel offers wired broadband services that meets the CRTC target level to 58 per cent of all rural households and 81.5 per cent of Saskatchewan," says Burnett. While Alberta and Manitoba have higher overall broadband penetration rates, Saskatchewan is doing better in rural areas. "Less than 30 per cent of Manitoba residents have access to download speeds of 16 to 25 Mbps, and in Alberta only 105 communities had access to download speeds up to 50 Mbps. In Saskatchewan, 330 communities have speeds at 50 Mbps or higher." While those numbers are hopeful, Burnett acknowledges there is more work to be done to improve connectivity in the province.

Burnett, like Welter and Boxall, points to our small population spread across a huge area as a hinderance to improvements. "Economies of scale is a major issue," says Burnett. "The cost to expand services to rural areas is a major challenge for any internet service provider." For example, SaskTel data shows that to bring wired broadband to rural areas can cost anywhere from $450,000 to $2.6 million and the 'last mile' of access is often an issue, too. "That being said, we have invested $3 billion into expanding our network since 2010, and we're spending another $1.6 billion in the next five years."

In the 2020/21 fiscal year alone, SaskTel spent one third of its capital budget on advancements in nine centres. The Crown Corporation has also sought out federal funding to expediate rural connectivity. In 2018, SaskTel received $6.6 million for rural infrastructure, and in 2020 has submitted 10 applications. The company has also launched a pilot program with Wood River Controls to bring rural broadband to Last Mountain Lake, with hopes to start a broader program in 2021. "We believe that our rural broadband penetration is better than most other rural areas in Canada, but we are committed to working on solutions to improve both wired and wireless services in more rural areas," says Burnett. "We have done a lot so far, with more planned for the future. The commitment is evident."

Jim Deane is CEO at Regina-based Access Communications Co-operative Limited. The company serves more than 235 Saskatchewan communities and over 170,000 square kilometres of rural Saskatchewan. He too notes the unique challenges of providing internet to the entire province. "Manitoba has roughly the same population as Saskatchewan, but
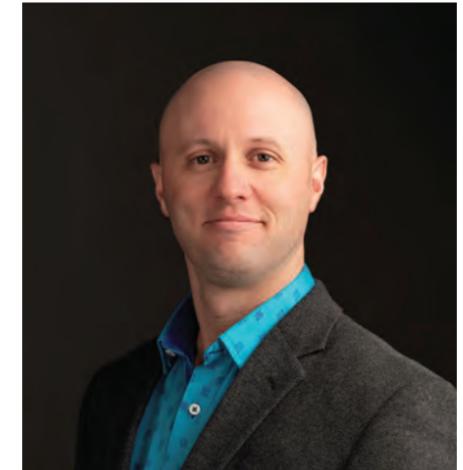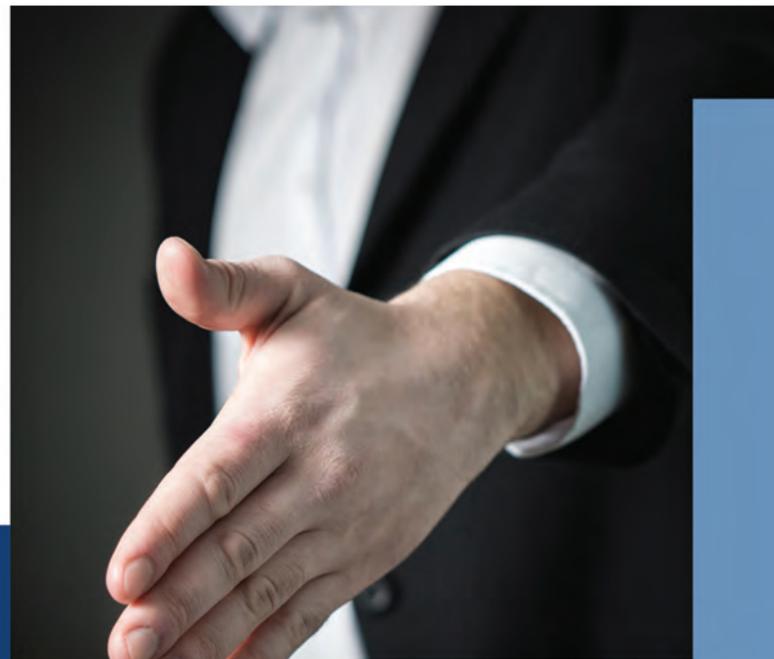

JEREMY WELTER, APAS

IAN BOXALL, APAS

JIM DEANE, ACCESS COMMUNICATIONS CO-OPERATIVE

80 per cent is concentrated in the Winnipeg area," says Deane. "Compare that to us, where just half of our population is in the two largest urban centres. Our geography is a major challenge."

Access Communications, like SaskTel, is doing what they can to improve internet quality and rural access. This year the co-operative announced plans to bring enhanced broadband to over 70 communities in the next eight to 12 months. They have also begun partnerships that will advance broadband access and make it more reliable and stable. "COVID-19 taught us that broadband is a necessity for business, health care and education," says Deane. "Canadians want to be digitally enabled and they want online services. That demand is never going to go away. It's only going to increase."

Deane also sees that providing quality access to more places needs to be more than just a decision based on numbers. "There is a need for public policy and public investment to address the issues in Saskatchewan. Internet is an essential service. It's not a luxury anymore. Government and the private sector both have a role to play in making quality broadband access to everyone a reality. It's not just about economics. It's about the social good."

FlexNetworks, owned by Birch Hill Equity Partners, is a relatively new player in Saskatchewan's internet landscape. The company, established in 2012 in Ottawa, arrived in the province in 2016 and currently provides broadband services in Ontario, Manitoba and Saskatchewan. "FlexNetworks started working in Saskatchewan's major centres with fibre networks and is expanding across the province into under-served areas," says Neil McClughan, advisor to FlexNetworks.

While FlexNetworks acknowledges the issues with our land vs. population, George Barnhart, an advisor to FlexNetworks points to Vancouver Island as a place that dealt with large pockets of population spread and geographic challenges that addressed its internet access problems. "BC's Connect Coast project is bringing broadband to the entire island," says Barnhart. "They approached the problem as a community, and collaborated with stakeholders, government and the private sector to deal with it, and they will have the abundant access they need. Saskatchewan needs to apply a similar idea to the broadband problem."

FlexNetworks also takes an abundance perspective to broadband delivery through an ultra high-speed fibre optic network, and in their partnership with last mile providers. Barnhart points out that 50 Mbps/10 Mbps limits our thinking, and abundance is the way forward. "We need to think well beyond the minimum. When people experience abundant internet at work, at home and at school, we increase our productivity, our ability to compete, to innovate and to learn," he says.

Solving the Problem

Thibault, Orb, Welter, Boxall, Benjoe, Burnett, Deane, McClughan and Barnhart all point to the same idea for a solution for broadband: identify the problems together and find a solution through partnership.

"We can't wait anymore. We're already behind, and it will only get worse the longer we wait," says Thibault. "The need to come together as a province on this issue has never been greater. All we have to do is look back in history to see that we did it before. Broadband internet, like electricity was, is the key to our quality of life, our safety, our economy and our resilience." She sees coming together as the solution, the way Medicare came to be. "We have to take this into our own hands and push forward together."

Orb echoes Thibault's sentiments. "This has to be a priority for the province. The lack of quality broadband internet access is hindering our rural economy. It's an issue for health, education and safety. Other places in Canada have built partnerships to get broadband internet, and it's time we do the same," says Orb.

Welter wants to find the disconnect and fix it. "We have a rough idea of where the issues are. Now it's time to find them and then create a cohesive plan to deal with them with everyone involved," says Welter. "Internet is a utility and it's time it was treated like phones and electricity were treated decades ago. Boxall agrees. "Internet access, and providing it, is more than a business issue. This is about the public good and ensuring everyone can get the service they need."

Benjoe also sees that silos need to be broken to make headway. "We need the data to determine what we need, determine the issues, and find the solution—together. We're all running around in the dark, and it's time for that to end. We're going to lose so much if we don't do something soon."

"The economic and social benefits are apparent. There is no doubt that faster internet improves our business opportunities, education and health care," says Burnett. "It's about quality of life as well as economics."

"This is more than a business decision. It's about public policy coming together with economics for the greater good," says Deane. "All levels of government, service providers, communities and private investment coming together can make huge strides. Internet is a critical, essential service, and it needs to be treated as such."

Barnhart and McClughan see the push coming at the community level to make internet access a provincial issue, with a provincial solution. "The solution will come when we think differently. What we're doing now isn't enough. It's time to comprehend the urgency because it won't be easy to catch up," says McClughan. Barnhart also believes in looking far ahead to meet the challenge now. "We need to think bigger," he says. "The internet is in the very centre of a modern economy." They are both adamant that we need to solve this so rural Saskatchewan is on par with their urban counterparts. "We need to look to the future, to collaborate, to take action so they're not left behind," says Barnhart.

The digital divide is growing, and the massive impact technology is having on every economic sector cannot be ignored. The internet is a utility and needs to be addressed as such to close the gap. Saskatchewan's residents, businesses, organizations, stakeholders, and providers are ready to face the challenge and reap the benefits. The question now is: when do we get started before it's too late? iw

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[2]The Path to Gigabit Internet, The Internet & Television Association, https://www.ncta.com/positions/the-future-of-super-fast-internet

[3,4]Communications Monitoring Report 2019, Canadian Radio-television and Telecommunications Commission, https://crtc.gc.ca/eng/publications/reports/policymonitoring/2019/cmr9.htm

[5,6,7,8]Rural Electrification in Saskatchewan, Western Development Museum, https://wdm.ca/wp-content/uploads/2018/06/WDM-RuralElectrification.pdf

[9,10]2019 Canada's Internet Factbook, CIRA, https://www.cira.ca/resources/corporate/factbook/canadas-internet-factbook-2019