

Broadband Connectivity in Rural Canada
Standing Committee on Industry, Science and Technology

TELUS Communications Inc.



Johanne Senécal
Senior Vice President, Government and Regulatory Affairs
johanne.senecal@TELUS.com

February 9, 2018



TELUS Communications Inc. (TELUS) is pleased to offer the following submission to the House of Commons Standing Committee on Industry, Science and Technology regarding broadband connectivity in rural Canada.

1. Introduction

1. Whether it is connecting Canadians through our wireless and wireline businesses, or through leveraging the power of data to enhance healthcare across the country – TELUS is committed to positioning Canada for success in the 4th Industrial Revolution and driving better economic, social and health outcomes for all Canadians. To make these outcomes a reality, we have invested heavily in the digital technology infrastructure that will be needed. We have invested \$147 billion in total expenditures (OPEX + CAPEX) since 2000 – investments in both rural and urban areas with a strong focus on bridging the digital divide, including investments that have supported connecting 113 Indigenous communities to date.
2. We are also advancing initiatives like *TELUS Internet for Good*¹ and *Mobility for Good*², programmes that empower vulnerable, underserved and at-risk members of our society with access to the tools and training that enable them to stay connected to the people, resources and opportunities that matter most in our digital world.
3. TELUS has a strong track record in deploying state of the art Internet to rural and remote areas across our serving territory in British Columbia, Alberta, and eastern Quebec. For example, since 2000, TELUS has invested \$34 billion specifically in high speed Internet access facilities which includes our robust and rapidly expanding fibre-to-the-premises (“FTTP”) network.
4. We are proud to be connecting Canadians with a team across Canada, that is over 27,000 employees strong – a team that lives by the philosophy to ‘give where we live’, who have donated \$525 million to charitable causes since 2000 and who, last year, by surpassed 8.7 million in volunteered hours since 2000³.
5. While the TELUS team is proud of what we have done to date to connect Canadians and help bridge the digital divide, including in remote communities, we know there is more to do. We must continuously evolve our thinking about what we need to do next in terms of making sure setting up all Canadians for success in leveraging the benefits of the next wave of technological innovation. So much of this answer lies in the opportunity which is 5G – the next generation of broadband technology that will provide faster speeds, greater coverage and enable the machine-to-machine learning and virtual and augmented reality technologies that will be foundational to a modern Canadian society and economy.

¹ <https://community.telus.com/how-we-give/cause-campaigns/internet-for-good/>

² <https://community.telus.com/how-we-give/cause-campaigns/mobility-for-good/>

³ <https://www.telus.com/en/about/news-and-events/media-releases/telus-reports-strong-results-for-fourth-quarter-2017>

6. A robust 5G digital technology ecosystem will be essential to Canada becoming an innovation leader and creating the ‘Smart Cities’, ‘Smart Healthcare’, ‘Smart Agriculture’, and ‘Smart Resource Development’ applications that will allow both urban and rural Canadian communities to thrive. Ultimately, 5G will enable the technology-driven solutions that will address some of the world’s greatest productivity, sustainability and health challenges facing the world today – all while growing the economy, creating well-paying jobs and generating opportunities for Canada’s Indigenous Peoples.
7. We know we have a role to play in ensuring we set Canada up for success in a 5G world. That is why we are investing in the digital technology infrastructure that is required. That is why we are a founding member of the proposed Canada Digital Technology Supercluster⁴ – which is now over 250 partner-organization strong. It is also why we have applied to be a key partner in the delivery of the government’s Connect to Innovate program⁵ – government initiatives that will position Canada for global technology leadership, bridge divides at home and drive real and meaningful human outcomes across the country.
8. However, there is no doubt the economic and technological context in which we operate is rapidly evolving and having an impact on Canadian service providers’ investment outlook. Global demand for data and speed is rising exponentially. Canadians’ wireless data usage is amongst the highest in the world – rising 39% between 2015 and 2016⁶. All the while, we continue to ensure that we are providing affordable package options to consumers. For instance, prices are falling with data-only plans from our Public Mobile value brand starting for as low as \$20/month⁷ and unlimited province-wide talk, unlimited text and data plans starting at \$30/month⁸.
9. However, to meet these realities and needs, significant investments in new and upgraded infrastructure are required. Our outlook is to spend over \$45B in the next 4 years alone to keep up with the pace of change. But these realities make for an investment climate that is highly capital-intensive – in a country where our sector is already at a competitive disadvantage due to Canada’s geography and land mass. Significant tax reforms south of the border will also put the Canadian telecom sector at a further disadvantage as our US counterparts’ capital expenditure bandwidth rises. Canada risks falling behind with regards to global technology leadership.
10. While we cannot control many of these external forces that will continue to put demands on an already capably intensive investment climate, the Government of Canada can use the tools at its disposal to ensure Canada is able to leverage the opportunity that we have in front

⁴ <http://digitalsupercluster.ca/>

⁵ <https://www.canada.ca/en/innovation-science-economic-development/programs/computer-internet-access/connect-to-innovate.html>

⁶ “VNI Mobile Forecast Highlights, 2016-2021,” Cisco (available at http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/#~Country).

⁷ <https://www.publicmobile.ca/en/bc/plans>

⁸ <https://www.publicmobile.ca/en/bc/promotions/30for500MB-3Gspeed>

of us to position Canada as a technology and innovation leader and ensure all Canadians benefit – including in rural parts of the country.

11. It is imperative that the government use efficient and effective public policy and regulation that maintains incentives for private sector companies to invest. In particular, the government should wherever possible remove wholesale obligations and minimize the use of set asides in spectrum auctions, because of the adverse effect these policies have on network deployment.
12. In many cases the government may determine that efficient regulation alone is insufficient to create the necessary environment to bring broadband to Canada's most remote areas. In these circumstances, TELUS believes it should continue to offer targeted financial support like it has done under ISED's Connecting Canadians and Connect to Innovate programs, both of which have played important roles in bridging the rural digital divide. These programs have been effective because they have leveraged ISED's unique expertise in administering broadband funding programs, because they have largely taken a technologically and competitively neutral approach to funding, and because they have emphasized the importance of strong industry experience and proven track records. The government should ensure that any such future funding programs continue to stress these important features, combined with Internet Service Providers (ISPs) like TELUS that are actively expanding our rural footprint.
13. Smart public policy and regulation coupled with targeted government funding will ensure that Canadians are able to obtain high speed Internet access wherever they live.

2. **TELUS has invested billions of dollars in rural broadband and will continue to do so**

(a) TELUS is investing for rural Canadians, providing state of the art high-speed Internet access

14. TELUS provides high speed Internet access to Canadian consumers and businesses across British Columbia, Alberta, and eastern Quebec (approximately three million premises). Many of these customers live and work in cities, however TELUS also serves a vast rural population, due in part to the fact that the demographics in our serving areas are less concentrated in urban centres than is the case in some other areas of Canada, especially Ontario and metropolitan Quebec.
15. To help connect rural Canada, TELUS has invested and will continue to invest heavily in providing fast and reliable Internet to rural and remote communities. TELUS spent \$3.1 billion in capital expenditures in the first nine months of 2017 and \$34 billion since 2000 in high

speed internet access facilities.⁹ Here are some of the ways that TELUS is making these investments:

- a. TELUS PureFibre Internet access: “PureFibre” is TELUS’ brand name for FTTP Internet access. To provide FTTP, an ISP must connect strands of fibre optic cable to each premises served. This is a very capital intensive method of providing Internet access because ditches need to be dug, poles need to be built, and each house or place of business needs to be connected individually. The benefits however of a PureFibre connection are enormous and already include download speeds of up to 1 gigabit per second. TELUS has already deployed PureFibre infrastructure in over 99 communities across Alberta, British Columbia and Eastern Quebec, with 1.44 million homes and businesses ready to connect to its world-leading gigabit-capable fibre-optic network.¹⁰ TELUS understands the power of PureFibre and we do not restrict our FTTP builds to high density urban areas only. TELUS has already extended PureFibre to dozens of rural communities and will continue to do so for years to come. By early 2018, TELUS will surpass the halfway point of premises in our current footprint.¹¹ This means not only that TELUS has helped bring lightning fast Internet to thousands of rural Canadians, but that there is much more to come. And indeed, the rapid rate of network deployment enables consumer, government and business participation in the digital economy, including smart home technology and future-friendly health centres, schools and cities. Looking forward, these PureFibre investments will also be the backbone for realizing 5G technologies.
- b. TELUS Mobility LTE Network: TELUS’ LTE network now covers 99% of Canada’s population and we continue to invest in the rollout of our LTE advanced network, which enables theoretical peak speeds reaching 750 Mbps and expected average download speeds of 12 to 200 Mbps.¹² TELUS’ LTE advanced network now covers 88.2% of Canada’s population, up from 61%, in 2016¹³. Last year, TELUS also completed a successful live-environment mobile broadband pilot test using 3.5 GHz spectrum and achieved 2Gbps download speeds. This pilot demonstrates that speeds up to three times faster than current LTE networks are achievable and can become mainstream over the next three years, enabling technologies like driverless cars, home health devices and Internet of Things.¹⁴ This however is only possible if carriers like TELUS have access to valuable 600 MHz¹⁵ spectrum in rural areas. If carriers do not have access to this spectrum it will hurt rural Canadians in fully realizing the revolutionary impacts of 5G.
- c. TELUS Smarthub fixed wireless service: Finally, where geographic constraints make FTTP service impractical, TELUS has begun to deploy fixed wireless service. This

⁹ TELUS Quarterly Report, 2017 Q4, page 6.

¹⁰ TELUS 2017 Q4 Investor Presentation, page 13

¹¹ TELUS 2017 Q3 Investor Conference Call transcript, page 7.

¹² <https://business.telus.com/en/enterprise/support/global/faq/coverage-canada-3g-4g>.

¹³ TELUS 2017 Q4, Investor Presentation, page 13.

¹⁴ <https://www.telus.com/en/about/news-and-events/media-releases/scorching-fast-5g-performance-achieved-in-live-environment-as-telus-successfully-tests-ghz-spectrum>

¹⁵ Low-band spectrum like 600 MHz is highly valuable for rural connectivity and will be essential for bringing 5G technologies to rural Canadians.

service is offered predominantly in remote areas that would otherwise be unserved or underserved. In a fixed wireless model, customers connect to TELUS' nationwide fibre transport and backhaul network through a wireless device called a "Smarthub," using 4G LTE technology. This model allows TELUS to make use of underutilized spectrum to offer speeds that exceed those available on legacy copper wire infrastructure. TELUS currently serves 32,000 customers, largely in British Columbia, Alberta and eastern Quebec, through fixed wireless service. TELUS intends to continue to grow this offering in 2018.

(b) These results are significant given the geographical challenges of Canada, and TELUS' serving territory in particular

16. TELUS is deploying state of the art Internet access facilities across rural Canada and we are doing so in a challenging geographical environment, and in areas with significantly lower population density than most other jurisdictions. Canada's average population density is far below those in United States, Europe and Japan. Even in urban areas, Canada is less densely populated than other developed countries. An "urbanicity" index calculated by Information Technology and Innovation Foundation, shows Canada placed 13th among 34 OECD countries.¹⁶ This low population density means that it costs more to serve broadband subscribers in Canada compared to other developed countries.¹⁷ And even *within* Canada, TELUS operates in some of the most inhospitable and remote territory. While TELUS' territory includes the urban centres of Vancouver, Calgary, and Edmonton, much of TELUS' territory in rural British Columbia, Alberta, and eastern Quebec is mountainous, remote, and sparsely populated—all factors that increase the time and cost of deploying broadband facilities.

17. Despite these physical challenges Canada has achieved very high levels of broadband availability. It has more than 90 subscribers per 100 households according to the most recent OECD data.¹⁸ In British Columbia, a fixed broadband connection is available to 98 percent of households, and in Alberta a fixed broadband connection is available to 99.7 percent of households.¹⁹ This is in large part to TELUS' commitment to connecting rural Canadians and our continued investments in high speed Internet access facilities. As TELUS sets out in section 2 below, this continued investment requires a strong relationship with government, and effective and efficient regulation.

(c) The government should encourage very high speeds but should not mandate them

18. In *Modern telecommunications services – The path forward for Canada's digital economy*, Telecom Regulatory Policy CRTC 2016-496 ("The MTS Decision"), the CRTC established a new universal service objective, including access to download speeds of at least 50 megabits

¹⁶ .Dr. Robert Crandall Report, 2017, "The Remarkable Growth of Affordable Broadband Access in Canada"

¹⁷ .Dr. Robert Crandall Report, 2017, "The Remarkable Growth of Affordable Broadband Access in Canada"

¹⁸ .Dr. Robert Crandall Report, 2017, "The Remarkable Growth of Affordable Broadband Access in Canada"

¹⁹ CRTC, Communications Monitoring Report 2017 at p.279.

per second (“Mbps”) download and upload speeds of at least 10 Mbps. TELUS’ PureFibre network greatly exceeds these speeds, and as more and more Canadians gain access to TELUS’ network, they will be able to leverage these high speeds as well.

19. These speeds should not become a regulated floor however. First, as noted above, providing FTTP access to all Canadians, regardless of how remote or isolated their location, is not practical or necessary. As TELUS explained in the proceeding leading to the MTS Decision, the fact is that Canadians can meaningfully participate in the digital economy at download speeds as low as 5 Mbps. The CRTC itself has found that this speed is sufficient to engage in activities like watching a streaming video service or using videoconferencing applications.²⁰ In fact, the evidence is that at present, most customers are not choosing the highest speed services available. As of December 31 2016, 84% of Canadian households had access to an Internet service meeting the new CRTC universal service objective of a download speed of at least 50 Mbps, an upload speed of at least 10 Mbps and unlimited data transfer option, however, only 11% of those households subscribed to such a service in 2016.²¹
20. To be clear, all stakeholders, including ISPs, the government, and the CRTC should be striving to provide all Canadians with the highest possible speeds—including speeds well in excess of the 50 Mbps universal service objective. But *mandating* it is not necessary and will lead to an inefficient use of resources. The cost to serve every Canadian residence with a *wired* high speed link at 50 Mbps would be prohibitively high.
21. Canada has achieved very high broadband penetration, 90 subscribers per 100 households, which is the result of platform competition among private firms (incumbent, cable, satellite, and wireless carriers) and private investment.²² The government should encourage the growth of high speed Internet access, especially in rural areas and try to preserve this dynamic of platform competition by mitigating wholesale obligations not by encouraging the entry of non-investing resellers.

3. Efficient regulation and targeted financial support are the most effective ways to improve rural broadband access

(a) Regulation should encourage ISPs to build high speed facilities

22. Canadian public policy should encourage ISPs to build high speed facilities by allowing them to assume both the risks and rewards of these capital intensive investments. The two most critical areas of regulation and policy that can affect this risk-reward balance are mandatory wholesale access to ISP facilities and wireless spectrum auction frameworks that encourage rural deployment.

²⁰ CRTC Exhibit 1, *Review of basic telecommunications services*, Telecom Notice of Consultation CRTC 2015-134.

²¹ Communications Monitoring Report 2017, page 254.

²² .Dr. Robert Crandall Report, 2017, “The Remarkable Growth of Affordable Broadband Access in Canada”

23. TELUS and other facilities-based ISPs²³ are currently subject to mandatory wholesale obligations. In particular, the Governor in Council recently affirmed a CRTC decision stipulating that ISPs must provide their competitors with access to new FTTP facilities at tariffed wholesale rates.²⁴ TELUS is also required to allow its competitors to roam on its wireless network at tariffed wholesale rates.²⁵ Mandated wholesale access hurts the business case for ISPs to build expensive facilities. TELUS can only continue its own investment program if the business risk is reasonable. There is no ability to continue building infrastructure if the business case disappears—particularly in remote and rural areas where geography and population density make the business case challenging even in the absence of regulatory risk. In some of the communities where TELUS is building its PureFibre facilities, TELUS' return on investment is well over a decade. With investments measured in decades, not years, mandated access can tip the scales against expansion of a FTTP project in many communities. This includes both present plans for FTTP investment, and any other improved infrastructure and technology that is developed going forward.
24. TELUS and other wireless service providers (WSPs) also need access to wireless spectrum in order to serve their customers. Wireless spectrum allows TELUS to provide not only *mobile* wireless coverage (i.e., over a mobile phone or tablet), but also *fixed* wireless coverage to some of Canada's most remote communities through the use of Smarthubs.
25. The Government should ensure that all WSPs are on an equal footing when vying to access that spectrum. Simply put, in rural Canada only WSPs with the intention of deploying in rural areas should bid on rural spectrum. The current proposed 600 MHz auction format will provide subsidised spectrum to wireless providers with little to no track record of rural deployment and will disadvantage operators like TELUS that have worked for decades to grow their networks and deploy all available spectrum in rural Canada to cover over 99% of Canadians. Rural Canadians will be left behind if the existing proposal is adopted.
26. This position has been clearly demonstrated in Canada before. In 2014, the government held its 700 MHz spectrum auction, where set-aside spectrum was purchased by very large regional cable operators. Three years later, all of the 700 MHz spectrum held by one such regional cable operator is yet to be deployed at all, let alone in rural Canada. In contrast, TELUS has broadly deployed its 700 MHz spectrum band to cover 94.5% of the population.
- (b) *The Government should leverage ISED's existing expertise to administer funding programs*
27. Among the most important initiatives driving broadband expansion to rural areas are funding programs administered by ISED. TELUS has participated in a number of such programs, with excellent results for customers in rural areas. For example:

²³ Facilities Based ISPs are providers that are responsible for building and using their own infrastructure

²⁴ Order Declining to vary Telecom Regulatory Policy CRTC 2015-326, P.C. 2016-0332, 10 May 2016.

²⁵ Telecom Regulatory Policy CRTC 2015-177, *Regulatory framework for wholesale mobile wireless services*, 5 May 2017.

- a. Pursuant to ISED's 2015 **Connecting Canadians** program, TELUS is investing over \$139 million in addition to \$23.3 million in ISED subsidies to bring high-speed Internet access to over 17,000 homes and businesses in 50 communities in British Columbia and Quebec.
 - b. Pursuant to the ongoing ISED **Connect to Innovate**²⁶ program, TELUS has proposed an investment of over \$243 million to bring high-speed Internet access to approximately 61,000 homes and businesses across 284 communities in BC, Alberta and Quebec.
28. TELUS is also participating in smaller, more targeted government funding initiatives. For example, a partnership with the Regional District of Nanaimo and the federal government to deliver improved Internet connectivity in the Spider Lake area of British Columbia. Federal funding is from the federal Gas Tax Fund.
29. TELUS additionally participated actively in the CRTC proceeding initiated by Telecom Notice of Consultation CRTC 2017-112, *Development of the Commission's broadband funding regime*. In that proceeding, the CRTC sought comments on how to establish and administer the \$750 million broadband fund it announced in the MTS Decision. TELUS argued, among other things, that ISED has the unique skill set among Canadian public institutions that allows it to effectively and efficiently administer broadband funding programs. ISED has accrued this expertise through its years of administering broadband programs such as Connecting Canadians and Connect to Innovate.
30. In designing any future broadband funding programs, the Government should look to some of the most effective elements in ISED's implementation of these programs. For example, in both of these programs, ISED resorted to a comparative selection (or "beauty contest") process, rather than an auction. This process ensures the broadest possible array of applications, because it does not presuppose the configuration or location of any given project that might be put to tender. ISED has also traditionally emphasized technological and competitive neutrality—that is, that the provider and the means used to provide the service are irrelevant, so long as the winning applicant provides the best possible results. The Government should keep the success of these programs in mind when considering future steps to ensure excellent rural service.
31. Finally, the Government should ensure that in any future programs, it encourages applicants with a strong track record of effectively building rural broadband. Past performance provides a greater assurance of future results. Faced with competing applications from an ISP with a strong track record of rural deployment and an ISP that has traditionally emphasized only urban deployments and has ignored rural customers, then all things being equal, the Government should favour the ISP with a strong track record.

²⁶ As of this date, TELUS has partnered with the Government of Quebec and Government of Canada to connect parts of rural Quebec and we currently have several other proposals under the Connect to Innovate program that are being reviewed by ISED.

4. **Conclusion**

32. TELUS' major investments show its commitment and track record of deploying high speed broadband Internet access across Canada and in particular to rural and remote areas. Where TELUS does so, we leverage our best in class team of over 27,000 team members across Canada and our strong track record of broadband deployment, combined with targeted government subsidies where necessary. TELUS also expands infrastructure cognizant of the regulatory environment in which we operate. In order to ensure that Canadians in the country's most remote and highest cost areas benefit from state of the art Internet access, the government should continue its program of targeted subsidies where the private sector cannot commercially build facilities. It should do so using ISED's experience administering comparative selection programs, and should do so on a technologically neutral basis, keeping in mind the need for applicants to demonstrate a strong record of success in rural builds.
33. TELUS firmly believes that we can continue to connect rural Canadians if the government continues to ensure that regulation is efficient, including by restricting wholesale access obligations and ensuring access to wireless spectrum in rural Canada. By combining these tools in the right way, ISPs—including TELUS—and the government can bridge the digital divide, ensure Canada is at the forefront of the next wave of technological innovation that will be enabled by a 5G world, and ensure that Canadians, no matter where they live, will be able to realize the benefits of high speed Internet access.

About TELUS

TELUS (TSX: T, NYSE: TU) is Canada's fastest-growing national telecommunications company, with \$13.3 billion of annual revenue and 13 million subscriber connections, including 8.9 million wireless subscribers, 1.7 million high-speed Internet subscribers, 1.3 million residential network access lines and 1.1 million TELUS TV customers. TELUS provides a wide range of communications products and services, including wireless, data, Internet protocol (IP), voice, television, entertainment and video. TELUS is also Canada's largest healthcare IT provider, and TELUS International delivers business process solutions around the globe.

In support of our philosophy to give where we live, TELUS, our team members and retirees have contributed over \$525 million to charitable and not-for-profit organizations and volunteered more than 8.7 million hours of service to local communities since 2000. Created in 2005 by President and CEO Darren Entwistle, TELUS' 13 Canadian community boards and 5 International boards have led the Company's support of grassroots charities and have contributed more than \$67 million in support of 6,283 local charitable projects, enriching the lives of more than 2 million children and youth, annually. TELUS was honoured to be named the most outstanding philanthropic corporation globally for 2010 by the Association of Fundraising Professionals, becoming the first Canadian company to receive this prestigious international recognition.

For more information about TELUS, please visit telus.com.