cce | The Centre for Civic Engagement

Why Canada Doesn't Need Another Broadband Provider

Robert D. Atkinson

This study was commissioned by the Centre for Civic Engagement. The CCE is a non-partisan Canadian charity dedicated to conducting original research on public policy issues related to Canadian prosperity, productivity, and national flourishing. The CCE's research informs an active program of policy seminars, events, conferences, and lectures all aimed at providing the policy making community with actionable insights that encourage informed decision making on issues that matter to Canadians.

cce | The Centre for Civic Engagement

Introduction

Your Internet connection is good enough to read this article. But you probably ask it to do a lot more, like streaming high-definition movies and TV shows and making video calls. The pandemic drove home the importance of having people connected and therefore the need to make the right policy decisions for broadband. We all benefit when more people have Internet connections, but ensuring that Canadians can realize the benefits of being connected is a difficult and dynamic question.

There's been much discussion of whether the Canadian broadband marketplace needs a so-called "fourth option"[1] alongside the country's three leading Internet service provider (ISPs), Bell, Rogers, and Telus. But calls for establishing a new ISP that is created or favoured by the government are unmoored from the facts on the ground. Canadian broadband access is already trending in the right direction, being on track to meet the federal government's broadband access[2] goal of 96% of the population by 2026. Moreover, as will be discussed in more detail below, the net profit margins of the three largest ISPs' are between 3.7 percent[3] and 7.7 pecent[4], which is not indicative of a lack of competition.

While Canada faces unique broadband challenges, none of them can be solved by government fiat. Instead, lawmakers and regulators should tailor broadband policy to the fundamental challenges of reaching far-flung populations over extreme terrain by leaning into technological solutions that will ensure Canadians are properly equipped to thrive in a digital economy.

Specifically, this paper concludes that improved competition in Canadian broadband networks will not come from the number of firms in the market but rather through competition derived from investments in network quality and technology adoption. It also recommends that to address the remaining challenges in connecting all Canadians to high-speed internet, the government take steps to 1) embrace technological developments that can reach remote communities more economically, 2) ensure that regulations don't block the construction of wireless infrastructure and allocate sufficient spectrum for ISPs to offer high-capacity fixed-wireless Internet access, and 3) support low-income Canadians in accessing high-speed internet.

1 "Rogers, Bell and Telus Are Trying to Keep Verizon Out of Canada," *iClarified.com*, July 28, 2013, https://www.iclarified.com/32297/rogers-bell-and-telus-are-trying-to-keep-verizon-out-of-canada.

2 "High-speed Internet for all Canadians," *Government of Canada*, June 28, 2024, https://ised-isde.canada.ca/site/high-speed-internet-canada/en.

3 "TELUS Profit Margin 2010-2024," *macrotrends.net*, https://www.macrotrends.net/stocks/charts/TU/telus/profit-margins.

4 "Rogers Profit Margin 2010-2024," *macrotrends.net*, https://www.macrotrends.net/stocks/charts/ROG/rogers/profit-margins.

Does Canada Have a Broadband Problem?

First, a definition: The Canadian Radio-television and Telecommunications Commission (CRTC) defines high-speed broadband[5] as an Internet connection with a download speed of at least 50 megabits per second (Mbps) and at least 10 Mbps upload. This is a reasonable definition given the network requirements of common services. Netflix, for example, recommends only 15 Mbps for 4K streaming.[6] Zoom requires less than 4 Mbps for HD video calls.[7] Even doing a few of these things simultaneously in a household is viable with a 50/10 broadband connection. For the sake of analytic consistency, however, I will consider the United States' broadband definition, which sets the target at 100 Mbps download speeds.

To see how Canada can really improve its broadband ecosystem, let's start by comparing the availability, speed, and price of broadband in Canada to its neighbour to the south and to another large, rich Commonwealth country with dense population centers and lots of open space: Australia.

Broadband with download speeds of at least 100 megabits per second (Mbps) is available to over 90 percent of Canadians.[8] In the United States, that number is just under 95 percent[9] and in Australia it's just 66 percent.[10]

To assess broadband network performance, Ookla, maker of the Speedtest app,[11] considers the download speeds that consumers experience in the real world instead of just the speeds that ISPs advertise. By that standard, Canada ranks 18th in the world, the United States ranks 6th, and Australia ranks 86th.

Price is another essential factor in assessing the state of broadband; it does little good to have service available if consumers cannot afford to subscribe to it. But here, too, Canada does relatively well. According to data from the United Nations' International Telecommunication Union,[12] Canadians spend 1.05 percent of their per capita income on broadband, whereas Americans spend 0.84 percent and Australians spend 1.12 percent.

5 "Access to high-speed Internet," *Statistics Canada*, November 27, 2023, https://www160.statcan.gc.ca/prosperity-prosperite/internet-eng.htm.

6 "Internet connection speed recommendations," *Netflix Help Center*, https://help.netflix.com/en/node/306.

7 "Zoom system requirements: Windows, macOS, Linux," Zoom Support, August 19, 2024, https://support.zoom.com/hc/en/article?id=zm_kb&sysparm_article=KB0060748.

8 "Current trends - High-speed broadband," *Canadian Radio-television and Telecommunications Commission* online, May 24, 2024, https://crtc.gc.ca/eng/publications/reports/PolicyMonitoring/ban.htm.

9 "Compare Broadband Availability in Different Areas," *Federal Communications Commission* online, June 2021, https://broadband477map.fcc.gov/#/area-comparison?version=jun2021&tech=acfosw&speed=25_3&searchtype=county.

10 "International comparison of fixed broadband performance," A*ustralian Government - Bureau of Communications, Arts, and Regional Research*, November (2020): 1-2.

11 "Median Country Speeds Updated September 2024," *Speedtest.net*, September 2024, https://www.speedtest.net/global-index.

12 "Policy brief - The affordability of ICT services 2023," *International Telecommunication Union (ITU)*, March 2024, https://www.itu.int/en/ITU-D/Statistics/Pages/ICTprices/default.aspx.

If a large number of providers were necessary for increased broadband performance, we should expect a country with better broadband performance, such as the United States, to average many ISPs per market. But that is not the case. In fact, the United States has achieved the aforementioned coverage, speed, and price metrics despite less than 20 percent[13] of Americans having more than 2 choices for broadband of at least 100 Mbps download speeds.

So, while some claim Canada needs an extreme intervention, such as launching a government-backed ISP,[14] these numbers show that Canada is far from a broadband backwater. It's on track with the federal government's stated broadband access goals of 98 percent access by 2026.[15] It stacks up well against other rich countries and is closer to the level of the United States than to Australia, which also puts it on par with[16] the best European and Asian countries for broadband performance. Radically different regulatory regimes are more of a cautionary tale than a model for Canada to emulate; this is particularly the case with Europe. Today, Canada has a broadband lead even over many European countries,[17] and it would be foolish to surrender that leadership to adopt the government micromanagement of lagging EU countries. Indeed, Europe itself is poised to back away from top-down, ex ante regulation that has characterized European broadband markets. A recent European Commission (EC) whitepaper found "it is right time to explore the possibility of not recommending at the EU level any market for ex-ante regulation." And the recent Draghi report from the EC[18] recommends "country-level ex ante regulation should be reduced in favour of ex post competition enforcement" and "facilitating consolidation in the telecoms sector." Europe is in the process of learning its lesson from trying to engineer the "right" type of broadband competition and regulation; Canada should avoid that mistake in the first place and avoid the painful lesson.

From this strong starting point, Canada should consider how to double down on its success. Canada need not settle for the broadband status quo, but new policies will only work if they address Canada's unique challenges. Populist regulatory adventurism won't help.

[13] "Number of Fixed Residential Broadband Providers," *Federal Communications Commission*, June 2021, https://broadband477map.fcc.gov/#/area-summary?version=jun2021&type=nation&geoid=0&tech=acfw&speed=25_3&vlat=37.916631737597825&vlon=-119.81404735651654&vzoom=0.5025266251064101.

[14] Clement Nocos, "Time to launch a government run telco to force Rogers, Bell and Telus to lower prices? There's already a precedent," *Broadbent Institute*, January 26, 2023, https://www.broadbentinstitute.ca/time-for-public-telco.

[15] "High-speed Internet for all Canadians."

[16] Jessica Dine and Joe Kane, "The State of US Broadband in 2022: Reassessing the Whole Picture," *Information Technology & Innovation Foundation*, December 5, 2022, https://itif.org/publications/2022/12/05/state-of-us-broadband-in-2022-reassessing-the-whole-picture/.

[17] "International Broadband Scorecard 2021: interactive data," *Ofcom.org.uk*, July 4, 2023, https://www.ofcom.org.uk/phones-and-broadband/coverage-and-speeds/international-broadband-scorecard-2021-interactive-data.

[18] "Part A | A competitiveness strategy for Europe." *The future of European competitiveness*. September (2024): 1-66. https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf.

The Nature of Broadband Competition

The claim that Canada needs a government-owned or subsidized broadband provider also misunderstands the state and nature of broadband competition. Competition is not just a matter[19] of counting up the number of competitors in a market and assuming that adding more will always resound to consumers' benefit. Broadband is a capital-intensive business.[20] ISPs spend a lot of money upfront building network infrastructure in the hopes that they eventually will be able to recoup their investments by convincing enough people to subscribe to their service. The investments needed to build a state-of-the-art network are so large that ISPs need to serve a substantial portion of the market to make it worthwhile. For example, suppose an expensive network will pay off if it serves 40 percent of the market. If that is the case, then there can only be two such networks in a market—a third would be able to serve 20 percent of the market, at most, and therefore would go out of business, wasting its assets and leaving its customers stranded. Or, if it did reach 40 percent, the result would be losses and eventually one of the original two networks would close, wasting the upfront capital.

This dynamic doesn't imply a lack of competition, however. Even with two or three providers, when they compete in the same areas, customers will generally pick the cheapest price for service that meets their needs. A market in which a few firms try to undercut each other's prices will result in the same price[21] as one in which many firms try to do the same. **The key difference is that a smaller number of larger competitors that have greater economies of scale will allow them to make more investments in their network quality while still offering lower prices.**

A good proxy for the competitiveness of a market is the average profit margin of the leading firms in that sector. Profit-seeking companies will try to make more money if they can, so if profit rates are relatively low, we can infer it is because competition is restraining them. Importantly, one must not analyze profit margins in an absolute sense, but rather compared to the next-best option for investors. For example, right now an investor could buy Government of Canada bonds or shares of an index fund and be fairly confident of making a 5 percent return[22] after a year. Investing in a broadband network is far riskier, because investments have to be turned into network infrastructure, which may or may not turn a profit. To be worth that risk, therefore, an ISP's profits must substantially exceed those other options.

[19] Kalvin Bahia, Pau Castells, "The Dynamic Effects of Competition on Investment: The Case of the European Mobile Communications Industry," *Journal of Information Policy* 13 (2023): 249-309.

[20] Patrick Brogan, "Broadband Capital Expenditures Once Again on Upward Trajectory," *Ustelecom - The Broadband Association*, October 18, 2018, https://www.ustelecom.org/ustelecom-broadband-capital-expenditures-once-again-on-upward-trajectory/.

[21] "Bertrand competition," *Wikipedia.org*, https://en.wikipedia.org/wiki/Bertrand_competition.

[22] "U.S. 1 Year Treasury Bill," *Wall Street Journal*, https://www.wsj.com/market-data/quotes/bond/BX/TMUBMUSD01Y.

In Canada, the so-called "big three" ISPs' net profit margins are between 3.7 percent[23] and 7.7 percent[24], hardly evidence of a lack of competition. In fact, those thin margins indicate substantial competitive pressure. The numbers also demonstrate that adding competitors is unlikely to lower consumers' prices very much: No company can sustainably earn less than zero profit,25 so even if ISPs' profits were completely eliminated, prices would only fall by single-digit percentages, while total Canadian resources devoted to building broadband infrastructure—resources that could instead go to something more useful—would grow.

Since an absence of competition is not a barrier to Canada reaching universal broadband coverage, policymakers should look to the real sources of difficulty.

[23] "TELUS Profit Margin 2010-2024."

[24] "Rogers Profit Margin 2010-2024."

[25] Despite this economic reality, in its arbitration decision between Rogers and Quebecor regarding mobile virtual network operator access, citing a 2009 Supreme Court decision, the CRTC does assert that government-determined network access rates "can (i) include rates that may not provide an immediate-term return on investment, or (ii) require an otherwise profitable enterprise to incur a modest or temporary loss in one line of business while other lines remain profitable." This raises serious questions about the incentive for firms to expand their investments that result in consumer benefits if the government can grant their competitors access to their networks at rates that do not offer a return on investment.

Canada's Fundamental Demographic and Topographic Challenges

Canada is the world's second-largest country by area. It has a diverse topography that includes many remote and rugged areas. Grappling with these fundamental realities should be at the top of the list for long-term broadband deployment.

Canada's absolute population density is quite low, but for a low-density country, it has a high "urbanicity"—the percentage of the population living in urban areas multiplied by the density of those urban areas. For example, while Canada has a lower population density than the United States, its population is more concentrated in cities. At low levels of broadband connectivity, urbanicity is an advantage: It's easier and quicker to connect a population that is densely clustered, and the cost of broadband infrastructure can be spread over more customers, allowing prices to be lower. Once the urban areas are connected, however, the absolute population's density begins to be a bigger challenge.

More than 82 percent of Canadians live in urban areas, but more than 90 percent have access to broadband service options. These figures suggest that the easy parts of broadband deployment are finished. Reaching far-flung populations over extreme terrain is a fundamental challenge that cannot be fixed by cramming in more providers or imposing heavier regulations on existing ones. Rather, Canada should be looking to embrace technological developments that can reach remote communities more economically.

Canada Should Enable Economical Technologies

Fibreoptic cables have great capacity, but stringing fibre to every last village is impractical and unnecessary. Fibre costs between $24,600–67,900 CAD[26] per kilometre, and the price is likely to rise as providers get to the last few connections. Canada also faces unique challenges in remote northern areas since the traditional method of tunneling underground to lay fibre is especially difficult in areas with permafrost. A broadband policy that seeks to close the digital divide by adding another ISP wouldn't address the fundamental impracticability of fibre. The solution must lie in other technologies that make universal connectivity viable without the extreme expense of fibre. For example, instead of laying fibre all the way to houses that are kilometers apart, extending fibre to a tower can facilitate high-speed wireless access to the Internet for a much wider area. The government can play a role in ensuring that regulations don't block the construction of wireless infrastructure and in allocating sufficient spectrum for ISPs to offer high-capacity fixed-wireless Internet access.

Perhaps even better for very remote areas, new low-earth-orbit (LEO) satellites can now provide high-speed broadband. Unlike previous generations of broadband satellites, which orbited over 35,000 kilometres above Earth, LEO satellites orbit at just a few hundred kilometres. This lower altitude plus the rapid expansion of LEO constellations has made it possible to provide greater than 100 Mbps download speeds in areas across the globe with very low latency. This level of service is available everywhere in Canada right now.[27] Rather than devoting exorbitant government subsidies to extend the same old technologies to the most remote residents, Canada should take advantage of technological advances floating overhead.

These new technologies are not just for rural areas, either. They are also currently providing new competition to traditional ISPs throughout the country. Indeed, the broadband market may need to reshuffle, with some traditional ISPs merging with new technology companies. But however it shakes out, consumers will benefit. Regulators' role must be to broaden their view of broadband competition and recognize that multi-modal competition is here to stay.

[26] Sally Aman, "Dig Once: A Solution for Rural Broadband," *Ustelecom - The Broadband Association*, April 12, 2017, https://www.ustelecom.org/dig-once-a-solution-for-rural-broadband/.

[27] "Availability in Canada - Map," *Starlink.com*, https://www.starlink.com/map/.

Don’t Forget Adoption

Universal broadband *deployment* isn’t the same thing as universal *connectivity*. Even after broadband service is available for every Canadian to subscribe if they want to, they might decide not to, which is often a trickier problem than lack of deployment. Governments can always build more broadband infrastructure by throwing money at the problem. But if people choose not to adopt broadband because they don’t see its relevance or don’t know how to use it, then there’s not an obvious policy solution.

Recognizing that adoption is a separate issue that requires separate policy approaches is a good start. Adding a fourth major ISP won’t help increase digital literacy or make Internet-skeptical people more likely to use online resources. Broadband policy should, therefore, shift to efforts that target these fundamental barriers. It should start with understanding the reasons for non-adoption[28] by gathering granular data that covers populations who haven’t adopted available broadband. It should also define digital literacy[29] and identify areas in which Canadians are lacking the tools to make the most of an Internet connection. Next, federal, provincial, and local governments should craft programs to address the concerns or deficiencies that result in both these problems. These programs must necessarily be localized and responsive to the needs of individual communities. Top-down national mandates are unlikely to make a difference, although federal funding and information can help.

For low-income individuals, the price of a broadband subscription[30] may be the central barrier to adoption. The best way to address this problem is to provide targeted vouchers to low-income households so they can afford broadband, including satellite broadband, without having to sacrifice other necessities.

[28] Jessica Dine, “The Digital Inclusion Outlook: What It Looks Like and Where It’s Lacking,” *Information Technology & Innovation Foundation,* May 1, 2023, https://itif.org/publications/2023/05/01/the-digital-inclusion-outlook-what-it-looks-like-and-where-its-lacking/.

[29] Jessica Dine, “Measuring Digital Literacy Gaps Is the First Step to Closing Them,” *Information Technology & Innovation Foundation*, April 26, 2024, https://itif.org/publications/2024/04/26/measuring-digital-literacy-gaps-is-the-first-step-to-closing-them/.

[30] Ian Scott, “Conquering the Next Frontier in Bridging the Digital Divide,” *IRPP Insight* 54 (2024): 3-25, https://irpp.org/wp-content/uploads/2024/06/Conquering-the-Next-Frontier-in-Bridging-the-Digital-Divide.pdf..

Key Takeaways

Canada's broadband ecosystem today is in relatively good shape. But it could be better. To reach the next level, policymakers should focus on what works, not just what sounds good. Policies that worked to get the broadband started or to serve dense cities won't work to connect the last remaining far-flung areas on the wrong side of the digital divide. Canada should welcome technological advancements that will break through the fundamental economic and topographical barriers to achieve truly universal broadband connectivity. Giving into populist calls for a "fourth option" would be fundamentally misunderstanding the problem and ignoring real solutions. Innovative technologies and localized digital inclusion efforts are the best way to push Canadian connectivity forward.

Bibliography

"Access to high-speed Internet." *Statistics Canada*. November 27. 2023. https://www160.statcan.gc.ca/prosperity-prosperite/internet-eng.htm.

Aman, Sally. "Dig Once: A Solution for Rural Broadband." *Ustelecom - The Broadband Association* online. April 12, 2017. https://www.ustelecom.org/dig-once-a-solution-for-rural-broadband/.

"Availability in Canada - Map." *Starlink.com*. https://www.starlink.com/map/.

Bahia, Kalvin and Pau Castells. "The Dynamic Effects of Competition on Investment: The Case of the European Mobile Communications Industry." *Journal of Information Policy* 13 (2023): 249-309. https://scholarlypublishingcollective.org/psup/information-policy/article/doi/10.5325/jinfopoli.13.2023.0012/384588.

"Bertrand competition." *Wikipedia.org*. https://en.wikipedia.org/wiki/Bertrand_competition.

Brogan, Patrick. "Broadband Capital Expenditures Once Again on Upward Trajectory." *Ustelecom - The Broadband Association*. October 18, 2018. https://www.ustelecom.org/ustelecom-broadband-capital-expenditures-once-again-on-upward-trajectory/.

"Compare Broadband Availability in Different Areas." *Federal Communications Commission*. June 2021. https://broadband477map.fcc.gov/#/area-comparison?version=jun2021&tech=acfosw&speed=25_3&searchtype=county.

"Current trends - High-speed broadband." *Canadian Radio-television and Telecommunications Commission*. May 24, 2024. https://crtc.gc.ca/eng/publications/reports/PolicyMonitoring/ban.htm.

Dine, Jessica. "The Digital Inclusion Outlook: What It Looks Like and Where It's Lacking." *Information Technology & Innovation Foundation*. May 1, 2023. https://itif.org/publications/2023/05/01/the-digital-inclusion-outlook-what-it-looks-like-and-where-its-lacking/.

Dine, Jessica. "Measuring Digital Literacy Gaps Is the First Step to Closing Them." *Information Technology & Innovation Foundation*. April 26, 2024. https://itif.org/publications/2024/04/26/measuring-digital-literacy-gaps-is-the-first-step-to-closing-them/.

Dine, Jessica and Joe Kane. "The State of US Broadband in 2022: Reassessing the Whole Picture." *Information Technology & Innovation Foundation*. December 5, 2022. https://itif.org/publications/2022/12/05/state-of-us-broadband-in-2022-reassessing-the-whole-picture/.

"High-speed Internet for all Canadians." *Government of Canada*. June 28, 2024. https://ised-isde.canada.ca/site/high-speed-internet-canada/en.

"International Broadband Scorecard 2021: interactive data." *Ofcom.org.uk*. July 4, 2023. https://www.ofcom.org.uk/phones-and-broadband/coverage-and-speeds/international-broadband-scorecard-2021-interactive-data.

"International comparison of fixed broadband performance." *Australian Government - Bureau of Communications. Arts, and Regional Research*. November (2020): 1-2. https://www.infrastructure.gov.au/sites/default/files/documents/bcarr-international-comparison-of-fixed-broadband-performance_0.pdf.

"Internet connection speed recommendations." *Netflix*. https://help.netflix.com/en/node/306.

"Median Country Speeds Updated September 2024." *Speedtest.net*. September 2024. https://www.speedtest.net/global-index.

Nocos, Clement. "Time to launch a government run telco to force Rogers, Bell and Telus to lower prices? There's already a precedent." *Broadbent Institute*. January 26, 2023. https://www.broadbentinstitute.ca/time-for-public-telco.

"Number of Fixed Residential Broadband Providers." *Federal Communications Commission* online. June 2021. https://broadband477map.fcc.gov/#/area-summary?version=jun2021&type=nation&geoid=0&tech=acfw&speed=25_3&vlat=37.916631737597825&vlon=-119.81404735651654&vzoom=0.5025266251064101.

"Part A | A competitiveness strategy for Europe." T*he future of European competitiveness* September (2024): 1-66. https://commission.europa.eu/document/download/97e481fd-2dc3-412d-be4c-f152a8232961_en?filename=The%20future%20of%20European%20competitiveness%20_%20A%20competitiveness%20strategy%20for%20Europe.pdf.

"Policy brief - The affordability of ICT services 2023." *International Telecommunication Union (ITU)*. March 2024. https://www.itu.int/en/ITU-D/Statistics/Pages/ICTprices/default.aspx.

"Rogers, Bell and Telus Are Trying to Keep Verizon Out of Canada." *iClarified.com*. July 28, 2013. https://www.iclarified.com/32297/rogers-bell-and-telus-are-trying-to-keep-verizon-out-of-canada.

"Rogers Profit Margin 2010-2024." *macrotrends.net*. https://www.macrotrends.net/stocks/charts/ROG/rogers/profit-margins.

Scott, Ian. "Conquering the Next Frontier in Bridging the Digital Divide." I*RPP Insight* 54 (2024): 3-25. https://irpp.org/wp-content/uploads/2024/06/Conquering-the-Next-Frontier-in-Bridging-the-Digital-Divide.pdf.

"Telecom Decision CRTC 2023-217." *Canadian Radio-television and Telecommunications Commission*. July 24, 2023. https://crtc.gc.ca/eng/archive/2023/2023-217.htm.

"TELUS Profit Margin 2010-2024." *macrotrends.net*. https://www.macrotrends.net/stocks/charts/TU/telus/profit-margins.

"U.S. 1 Year Treasury Bill." *Wall Street Journal*. https://www.wsj.com/market-data/quotes/bond/BX/TMUBMUSD01Y.

"Zoom system requirements: Windows, macOS, Linux." *Zoom Support*. August 19, 2024. https://support.zoom.com/hc/en/article?id=zm_kb&sysparm_article=KB0060748.

Robert D. Atkinson is president and founder of the Information Technology and Innovation Foundation and the Centre for Canadian Innovation and Competitiveness (innovationpolicy.ca).

cce | The Centre for Civic Engagement

centrecivicengagement.ca