

21 December 2015

Comments of Cybera Inc.

on

Notice Number: DGTP-002-2015

Bell Canada

**Petition to the Governor in Council to Vary Telecom
Regulatory Policy CRTC 2015-326, Review of
wholesale wireline services and associated policies
(20 October 2015)**

Introduction

1. We are commenting on behalf of Cybera Inc. to express our concern with Bell Canada's Petition to the Governor in Council concerning Telecom Regulatory Policy CRTC 2015-326. Cybera is a not-for-profit, technology-neutral organization based in Alberta. Our core role is to oversee and develop the province's cyberinfrastructure, which includes managing and operating the high-speed research and education network, CyberaNet. This is the dedicated network for unmetered, not-for-profit traffic in Alberta.
2. Cybera has been an integral part of the Alberta technology landscape for over 20 years, providing key shared services and innovation support to post-secondary institutions, municipalities, the provincial government, K-12 school divisions, and local business incubators. Cybera currently serves over 510,000 people, including 93% of all post-secondary students and 54% of all K-12 students in Alberta.
3. In its petition, Bell asks the Cabinet to revise the July 2015 CRTC ruling, which allows third party Internet Service Providers to offer services to customers over fibre-to-the-home/premises (FTTH/FTTP) infrastructure. After careful deliberation and a lengthy public process, the Commission found "that it is not practical or feasible for competitors to duplicate the access component of wholesale HSA services, including those over FTTP access facilities"¹ in TRP 2015-326.
4. Specifically, Bell Canada asks the Cabinet to vary the CRTC's decision so that wholesale regulation does *not* extend to fibre-to-the-home or to next-generation DOCSIS 3.1 cable networks. If the Cabinet were to indulge Bell Canada's request, this would effectively void the CRTC's decision.
5. Fibre that is capable of carrying speeds of 1,000 Mbps+ is fast becoming the backbone on which Canada's digital economy grows and thrives. Fibre-to-the-home technology and infrastructure will deliver fast Internet to Canadian homes and businesses, providing the foundation to advance our digital workforce, research, and creative activities.
6. In our submission to the CRTC 2013-551 consultation and hearing, Cybera argued that current FTTP competition is severely restricted, and consumers have limited or no choice of Internet Service Providers. Cybera believes that regulating the FTTP wholesale services provided by incumbent carriers is essential for creating a competitive digital environment. This will provide maximum benefit for Canadians, while still ensuring a fair rate of return to the builders of the fibre networks (and recognizing the capital investment they have made).
7. The CRTC's direct mandate is to take action to ensure all Canadians have fair and equal access to telecommunications services, including broadband Internet, which it has attempted to do under the policy Bell is now requesting to revise. In the unregulated FTTP landscape, the few large incumbent carriers (i.e. large telecommunications and cable

¹ CRTC. Telecom Regulatory Policy 2015-326, s. 136.

companies) that can provide this service are set to become the sole providers of fibre to Canadians.

8. Without FTTP wholesale service regulation, there is no incentive for these companies to allow competitors to gain access to their customers' premises (e.g. home or business), which would give Canadians the freedom to choose their Internet Service Provider and broadband Internet rates. Lack of regulation around FTTP may also create serious consequences for net neutrality, as a sole provider may be tempted to restrict access to certain content providers, thereby limiting a consumer's right to choose.
9. Given Canada's low population density and optical fibre's ability to support the transport of voice, broadcast, and data services (Internet), services-based competition is preferable to facilities-based competition. Cybera believes that Canada's history of promoting facilities based competition policies was applicable in the era of incentivizing innovation in competing wireline network technologies (DSL vs. cable), but is no longer suitable given that optical fibre is capable of transporting high quality voice, broadcast, and data (Internet) over the same infrastructure.
10. Moreover, as optical communications equipment moves towards higher speeds (native 100+ Gigabit Internet) and optical transmission technologies increase the data carrying capacity of individual fibres, the argument for promotion of facilities based competition on the access component of telecommunications infrastructure becomes less compelling. Five years ago 1 Gigabit fast ethernet was the norm. Today 10 Gigabit is the norm, with the possibility of 40 or 100 Gigabit, which did not exist five years ago.

Effect on Capital Investment

11. Cybera is in agreement with Bell that without access to fibre-to-the-premise, Canadians will not benefit from next-generation distance learning, telehealth, business applications, and other online tools needed to fully participate in Canada's digital economy.² We also agree with Bell Canada's premise that building fibre-to-the-premise networks is capital intensive. However, we respectfully contest Bell's claim that such builds are risky³ and up-front costs may never be recovered.⁴
12. It is capital intensive to build any variety of last-mile telecommunications infrastructure. The main expenses are derived from breaking earth and constructing a new network, not necessarily from the supply of fibre optic cables. It is Cybera's position that building fibre-to-the-premise networks is not risky, but rather a calculated long-term investment with proven returns.

² Bell Canada, Petition to the Governor in Council to Vary Telecom Regulatory Policy CRTC 2015-326, *Review of wholesale wireline services and associated policies*, 20 October 2015, p. 16

³ *Ibid.* para. 3, p. 17

⁴ *Ibid.* para. 17, p. 23.

13. Telus recognized the value of long-term investment in next generation telecommunications infrastructure, even in the wake of TRP 2015-326 in an October interview with the Globe and Mail regarding Telus' \$1 billion commitment to FTTP in Vancouver. CEO Darren Entwistle said, "Something I look back on with some semblance of curiosity is all the great investments that have paid off for Telus didn't start out as popular ideas. Quite the antithesis of that and maybe there's significant tuition value to be garnered from it."
14. Regulated deployment of next generation fibre to the home infrastructure guarantees cost recovery or return on investment due to its necessity to consumers and is analogous to electricity distribution systems and telephony networks.
15. For example, in May 2015 Sowmyanarayan Sampath, SVP of transformation for Verizon Communications Inc. demonstrated the economic case for full scale deployment of next generation FTTP at the Genband Inc. annual conference.⁵ Sampath said switching to an all-fibre network has allowed Verizon to save 60-80% on real-estate and 60% on dispatches, 40-60% on maintenance, 10-15% on capital expenditures, and 40-60% on energy.⁶
16. On page 16 of its petition, Bell Canada notes it is not the only provider committed to investing in fibre-to-the-home infrastructure:

*"Bell and other broadband providers have announced plans to invest billions in fibre-to-the-home as part of their commitment to building Canada's 21st century infrastructure. This investment in Canada's future is in its very early stages(...) Broadband providers like Bell Aliant, Bell Canada, Telus, MTS, SaskTel, Videotron, Rogers, Eastlink, Shaw, and others are in the early stages of building brand new ultra highspeed all-fibre network infrastructure to Canadians across the country."*⁷

17. Bell is, however, the only broadband provider petitioning Cabinet to vary TRP 2015-326. In a parallel process, Bell Canada also submitted a Part 1 Application to the CRTC to review and revise provisions related to Telecom Regulatory Policy 2015-326.⁸ Shaw, Rogers, Allstream, the Canadian Network Operators Consortium, Primus, the British Columbia Broadband Association, Eastlink, OpenMedia, and Vaxination Informatique all submitted interventions requesting that the CRTC should deny Bell's application. Quebecor submitted an intervention to the effect that the CRTC should accept one of Bell's three requests for variance. The City of Calgary submitted that the CRTC should deny one element of Bell's

⁵ Sampath, Sowmyanarayan. "Verizon tackles copper-to-fiber transformation." Viewed December 15, 2015 at <https://www.youtube.com/watch?v=FZx5fNyQ6OY>

⁶ Sampath, Sowmyanarayan. "Verizon tackles copper-to-fiber transformation." Time marker 2:58. Viewed December 15, 2015 at <https://www.youtube.com/watch?v=FZx5fNyQ6OY>

⁷ [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/TRP-CRTC-2015-326-Bell-Canada-Petition-EN.pdf/\\$FILE/TRP-CRTC-2015-326-Bell-Canada-Petition-EN.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/TRP-CRTC-2015-326-Bell-Canada-Petition-EN.pdf/$FILE/TRP-CRTC-2015-326-Bell-Canada-Petition-EN.pdf)

⁸ Bell Canada, Application to Review and Vary Telecom Regulatory Policy CRTC 2015-326 8662-B2-201512161. Retrieved 18 December 2015: <https://services.crtc.gc.ca/pub/instances-proceedings/Default-Default.aspx?S=C&PA=T&PT=PT1&PST=A&lang=en>

request and took no position on the remaining elements. Telus is in favour of Bell's proposed amendments.⁹

18. Shaw wrote that they were "disappointed with some of the determinations made by the Commission in TRP 2015-326,"¹⁰ but were nevertheless "satisfied with several aspects of TRP 2015-326. The decision considered the views of the various parties, and attempted to strike a balance between a number of competing interests."¹¹ In its response, Shaw concludes that "there is no discernible consumer benefit associated with any of the Application's proposed conditions."¹²
19. In section 1.7 of its petition, Bell warns that infrastructure projects will be delayed, or never undertaken, as a result of the CRTC's decision. It further argues that the lack of network investment as a result of Telecom Regulatory Policy CRTC 2015-326 "will further increase the digital divide between rural and urban communities and hamper the development of Canada's digital and knowledge-based economy."¹³
20. Given the CRTC's history of opening network infrastructure technologies to third party providers via wholesale access, Cybera contends that it is difficult to accept Bell Canada's assertion that it is only committed to its fibre project in Toronto, and Bell Aliant's fibre investment in Atlantic Canada, if they fall under "previous rules that did not apply mandated access to fibre-to-the-home."¹⁴
21. Further, Bell states that the number of jobs it intends to create with last mile fibre construction is on par with "the jobs lost across the entire Ontario manufacturing sector over the last two years", and that the company is being discouraged from investing in the face of low oil prices and a recession in Alberta.¹⁵ It is Cybera's position that these assertions are rhetorical and alarmist.
22. Fibre optics is the preferred medium for new network infrastructure builds. If Bell chooses to abstain from new FTTP infrastructure investments, facilities based competitors will fill the vacuum to meet increasing (and inevitable) consumer and wholesale demand for next

⁹ All interventions available under File reference: 8662-B2-201512161 at <https://services.crtc.gc.ca/pub/ListeInterventionList/Default-Default.aspx?en=2015-1216-1&dt=i&lang=e&S=C&PA=T&PT=PT1&PST=A>

¹⁰ Shaw Cablesystems. Intervention of Shaw Cablesystems G.P. in the matter of an application by Bell Canada to review and vary Telecom Regulatory Policy CRTC 2015-326, "Review of wholesale wireline services and associated policies," File: 8662-B2-201512161, para. 3, p 1. Retrieved 18 December 2015: <https://services.crtc.gc.ca/Pub/ListeInterventionList/Documents.aspx?ID=226460&en=2015-1216-1&dt=i&lang=e&S=C&PA=T&PT=PT1&PST=A>

¹¹ *Ibid*, para. 14, p 4.

¹² *Ibid*, para. 31, p. 9.

¹³ *Op. cit.* Bell Canada, para. 7, p. 18.

¹⁴ *Ibid*, p. 19.

¹⁵ *Ibid*, para. 29, p 28.

generation networking technologies.

23. On June 19, 2015 Telus announced \$1 billion of investment in FTTP for Edmonton¹⁶ and an additional \$1 billion for Vancouver on October 2,¹⁷ 2015 (following TRP 2015-326.) While the first phase of TRP 2015-326 focuses on the Ontario and Quebec markets where fibre is already prevalent, the mechanism for expansion to the rest of Canada is built into the policy:

148. Further, the implementation of a disaggregated wholesale HSA service should be demand-based in order to minimize regulatory intervention and allow for the market to develop. There may initially be limited demand for such a service broadly across the country, given that the existing demand for wholesale HSA services is predominantly within Ontario and Quebec, and given the preference of some competitors to continue to use only aggregated, rather than disaggregated, wholesale HSA services in the near term. Consequently, incentives will be required to encourage migration to a disaggregated wholesale HSA service, which will result in minimizing regulation to just the essential access facilities, as discussed below.

160. The incumbent carriers operating in other territories will be expected to identify appropriate configurations and implementation plans for their respective disaggregated wholesale HSA services at a later date, depending on demand considerations.¹⁸

Effect on Rural Broadband

24. Bell repeatedly claims that the CRTC's decision will delay or prevent investments in small towns and rural areas.^{19 20 21 22} As a not-for-profit that connects rural K-12 schools through an Internet Buying Group program, Cybera is intimately familiar with the digital divide facing rural communities in Alberta. Many struggle because there is no compelling business case for large service providers to enter the market.
25. Telecom service providers (TSPs) will only build where they can make a profit. In Canada one of the major challenges of FTTP is the lack of incentive for carriers to install fibre networks in rural communities, as long distances and low population density limits their profitability.

¹⁶ Telus. New TELUS fibre optic network will help spur the next wave of social and economic opportunity for Edmonton, 19 June 2015, http://about.telus.com/community/english/news_centre/news_releases/blog/2015/06/19/

¹⁷ Telus, TELUS investing \$1 billion to make Vancouver the world's next gigabit-enabled city, 2 October 2015. https://about.telus.com/community/english/news_centre/news_releases/blog/2015/10/02/telus-investing-1-billion-to-make-vancouver-the-world-s-next

¹⁸ CRTC. Telecom Regulatory Policy 2015-326.

¹⁹ Op. cit. Bell Canada, para. E-23, p 12

²⁰ Ibid, para.18, p.23

²¹ Ibid, para. 7, p. 18

²² Ibid, para. 23, p.26

26. This has resulted in a digital divide between rural and urban regions, and the existence of service “donuts”, whereby a single TSP monopolizes (or hollows out) the profitable business centre of a town, then neglects to extend its services to less profitable (residential) areas on the edge of town.
27. It is highly unlikely that Bell would enter these markets under these circumstances, regardless of whether or not wholesale network access is mandated by the CRTC. For many rural communities, the best course of action to achieve fibre connectivity is to construct their own last-mile infrastructure through community broadband projects. Several rural communities in Alberta are already actively exploring this option.
28. As an example, the municipality of Olds, AB, constructed Canada’s first community-owned and operated Fibre-to-the-Premises network.²³ The Government of Canada can support similar community broadband projects through the creation of a community broadband infrastructure granting program.

Canada’s Global Broadband Ranking

29. In paragraph 3²⁴ of its petition, Bell invokes the 2008²⁵ and 2011²⁶ CRTC decisions wherein it abstained from regulating third party ISP access to fibre-to-the-premise infrastructure. Cybera believes these previous decisions did not signal the CRTC’s intention to never regulate FTTP in the future, but was a reflection of the immature competitive market for this technology at that time. Bell posits that it is only able to invest in FTTP under unregulated conditions in an already competitive market. It is Cybera’s position that the current FTTP landscape does not represent a competitive market, but operates under duopoly or monopoly conditions, depending on the region. This further emphasizes the need for regulation under TRP 2015-326.
30. Because of this lack of competition, Canadians pay some of the highest Internet bills in the world. The OECD’s 2013 Communications Outlook ranked Canada in the top ten most expensive countries in nearly every category measured.²⁷
31. In paragraph 36 of its petition, Bell claims that “Canadians enjoy some of the fastest broadband connection speeds available in developed countries,”²⁸ citing OECD data²⁹ based on advertised connection speeds. Cybera takes issue with Bell’s interpretation of the OECD’s Digital Economy Outlook 2015 report. It is inaccurate to claim Canadians enjoy some of the fastest connection speeds based on data representing *advertised* and not

²³ O-NET. “About Us” <http://o-net.ca/about-us/>

²⁴ Op. cit. Bell Canada, para. 3, p. 17.

²⁵ CRTC. Telecom Decision CRTC 2008-17.

²⁶ CRTC. Telecom Regulatory Policy 2011-703 and Telecom Regulatory Policy 2011-703.

²⁷ OECD. Communications Outlook 2013, Chapter 7: Main Trends in Pricing.

²⁸ Ibid, para. 36, p. 31.

²⁹ Advertised Connection Speeds (Source: OECD Digital Economy Outlook 2015, Table 2.39) p. 32.

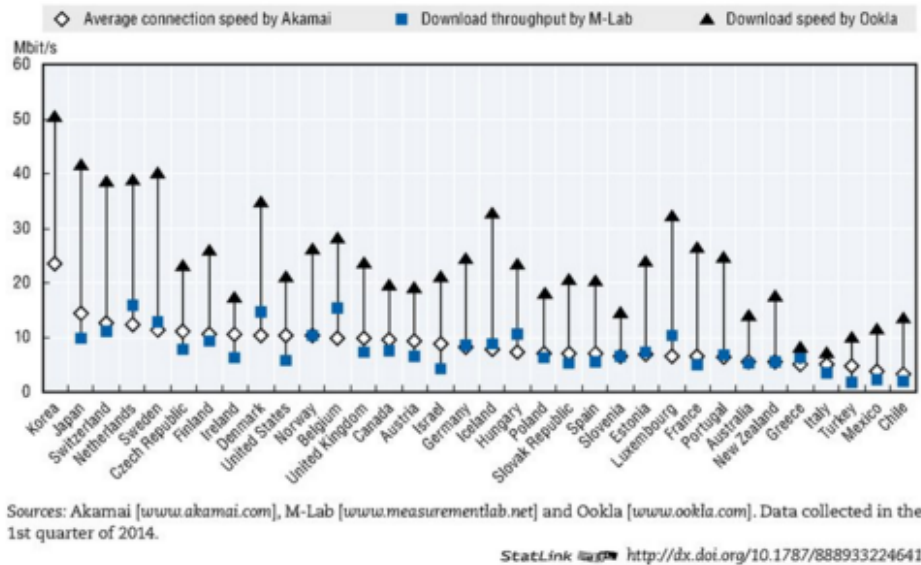
actual connection speeds.

32. The same OECD report cited by Bell concedes that “actual broadband speeds are typically lower than advertised speeds,”³⁰ and “policy makers and regulators have expressed increasing concern regarding the quality of service experienced by consumers, which can differ significantly from that inferred from advertised speeds.” Cybera also believes that broadband speed offerings should reflect the minimum attainable speeds, such as those obtained when traffic is flowing through congested interconnection points, rather than optimal performance that excludes these congested data points.

33. Indeed, Canada’s telecom policy makers have already expressed concern about the divide between advertised speeds and actual service speeds. The CRTC is currently undertaking an internet performance measurement project with testing firm, SamKnows, in order to “gather and report more accurate and reliable data, and to develop better broadband policies.”³¹ Volunteers who signed up for the program have received “whiteboxes” that connect to their home modems. The CRTC expects to report the initial results of this project in spring 2016.

34. In the meantime, it is possible to glean a more accurate picture of actual speeds based on tools developed by industry experts. In its *Digital Economy Outlook 2015*, the OECD gathered data from Akamai, M-Lab and Ookla (Figure 1.), which “are all initiatives that take different approaches to measuring and publishing actual broadband speed indicators for a wide range of countries.”

Figure 1: Actual download speeds, fixed or unspecified broadband, Akamai, M-Lab and Ookla, Mbit/s



Source: OECD Digital Economy Outlook 2015

³⁰ OECD Digital Economy Outlook 2015, p. 45.

³¹ CRTC. How Does Your Internet Service Measure Up? Retrieved 16 December 2015, http://www.crtc.gc.ca/eng/info_sht/i3.htm

35. Although the broadband connectivity speeds reported by these organizations appears to vary significantly, the trends remain similar with M-Lab consistently reporting lower download speeds compared with Ookla. According to Ookla data, Canada ranks behind the USA, Germany, and the United Kingdom in Q1 2014. This is corroborated by the most recent Akamai State of the Internet Q1 2015 Report, which ranks Canada 22nd in the world in terms of connection speeds, behind the USA and United Kingdom.³²
36. There is no definitive method for correctly measuring broadband speed, but “advertised speeds” is decidedly not an accurate measure of the end-user experience. Furthermore, “speed” is not the only measure of the technical quality of an Internet service, but rather, it is a useful reportable metric used to incite customer adoption and investment. Speed is positively correlated with other markers of service quality including latency, jitter, and packet-loss,³³ all of which are becoming increasingly important elements of users’ experiences with real-time communications applications, large file transfers, and high definition video streams.

Convergence and Vertical Integration

37. The OECD report cited by Bell states:

“To maximise the potential of the digital economy for productivity, innovation, inclusive growth, and jobs, governments need to work in multiple policy areas. They must, for example, engage in further and renewed efforts to protect competition, low entry barriers in communications and content markets,” and “strengthen regulatory coherence.”³⁴

38. By rejecting Bell Canada’s petition and upholding the CRTC’s decision to mandate wholesale access to next generation network technologies, the Governor in Council would help lower entry barriers in the communications market, and protect competition.
39. The OECD’s *Digital Economy Outlook 2015* also addresses the issue of convergence: “During recent years, trends in convergence have been observed mainly between fixed and mobile networks and between telecommunications and television service offers, with market players tending to offer triple-play services (voice, video and broadband).³⁵ Convergence “may lead to the exclusion of other operators unable to offer the full range of services. This situation calls for telecom regulators and competition authorities to advance regulatory

³² Akamai. State of the Internet Report Q1 2015.

³³ Steve Bauer, David Clark, William Lehr. Massachusetts Institute of Technology. Understanding broadband speed measurements. p. 37. Retrieved 15 December from http://groups.csail.mit.edu/ana/Publications/Understanding_broadband_speed_measurements_bauer_clark_lehr_TPRC_2010.pdf

³⁴ OECD Digital Economy Outlook 2015, p. 62.

³⁵ Ibid, p. 68.

reform, with a view to applying the same rules if similar services are being provided, thus providing a framework to guarantee technological neutrality.”³⁶

40. By mandating wholesale access to FTTP infrastructure and increasing competition among Internet Service Providers, the CRTC is taking steps to mitigate the influence that vertically integrated, converged telecommunications providers can have on the telecommunications market, and on consumers.

Impact on Canadians

41. In paragraph 6 of its petition, Bell Canada contends that: “The CRTC’s decision unfairly changes the rules, handing over to other companies (Reseller ISPs) the most expensive parts of the fibre-to-the-home infrastructure.”³⁷
42. On the contrary, the CRTC is well within its powers to regulate wholesale access and rates for third party Internet Service Providers to access incumbent carriers’ networks. It set similar regulations in the past for DSL and cable network technologies in the voice and Internet markets.^{38 39 40 41}
43. Bell and other fibre infrastructure owners will still benefit from having third party service providers as wholesale customers. Consumers will also benefit from increased service level competition.
44. Bell Canada calls for “the Governor in Council to take advantage of this opportunity”⁴² presented by its petition. It is Cybera’s position that the real opportunity lies in upholding the CRTC’s decision to grant third party Internet Service Providers wholesale access to next-generation networks, thereby increasing consumers’ choice of Internet Service Providers who can offer Gigabit speeds, and fostering services based competition.

Conclusion

45. For all of the above reasons, we ask the Governor in Council to dismiss Bell’s petition to vary the CRTC’s decision to implement wholesale regulation for fibre-to-the-premise. Such a move would demonstrate the government’s commitment to fostering competition in the telecommunications market and improving Canadians’ choice of ultra-high-speed Internet Service Providers.

³⁶ Ibid, p. 68.

³⁷ Op. cit. Bell Canada, para. 6, p. 17.

³⁸ CRTC, Telecom Decision 90-3.

³⁹ CRTC, Telecom Decision 92-12.

⁴⁰ CRTC, Telecom Decision 97-8.

⁴¹ CRTC, Telecom Regulatory Policy 2010-632.

⁴² Ibid, para. 9, p. 18.

All of which is respectfully submitted on this 21st day of December, 2015.