

Intervention

Regarding Telecom Notice of Consultation CRTC 2015-134 and
CRTC 2015-134-1: Review of basic telecommunications services

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Intervenor:

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By submitting this intervention I indicate my intent to become a party to this proceeding. I request to appear at the public hearing in Gatineau in 2016. The ideas put forth in this intervention challenge assumptions about what constitutes basic telecommunications services in Canada and I would welcome the opportunity to explore these ideas through a dialogue with the Commissioners.

Summary of Key Points

1. In this intervention I argue that i) to render reliable and affordable telecommunications services of high quality the Commission's focus should be on encouraging the development of *future proof* infrastructure that will enable the delivery of services to Canadians by their choice of service providers; ii) the concept of *basic* service is insufficient to ensure universal access to a world-class communications system; and iii) a strong national vision articulating the ways in which a digital economy can benefit Canadians is needed to inform a forward-looking discussion of the characteristics of telecommunication services that will enable participation in our digital economy in the future.
2. At this stage in what will be a lengthy consultation process with multiple opportunities for debate and discussion, my objective is to pose questions about how we define basic telecommunications services in Canada, and to call for an ambitious definition of a world-class communication system.
3. It is noted that there are challenges in responding fully to questions posed in this consultation while other reviews and decisions are still pending (e.g. the 2013-551 review of wholesale services and the ongoing Let's Talk TV activities). Although this intervention focuses on provision of network infrastructure, there is a need to integrate supply and demand side issues as presented by other intervenors. Policy recommendations should evolve following a review of information presented throughout the consultation process.

Responses to questions for discussion in this proceeding

Context

4. Paragraph 3 of Telecom Notice of Consultation CRTC 2015-134 notes some objectives of telecommunication policy in Canada, as outlined in the Telecommunications Act. Among these is article 7 (b) which calls for policy to “render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada.” In Paragraph 5 of Telecom Notice of Consultation CRTC 2015-134 it is noted that “As the regulator of Canada’s communications system, the Commission seeks to ensure that all Canadians have access to a world-class communications system and that they are able to participate in the digital economy.”

Canadians’ evolving needs for telecommunication services

Question 1

5. Question 1 states that “Canadians are using telecommunications services to fulfill many social, economic, and cultural needs in today’s digital economy” and asks for an explanation of how telecommunications services are used to meet these needs. As Statistics Canada’s Canadian Internet Use Survey has not been administered since 2012¹ there is no recent nationwide public data that can provide specific answers to this question or allow for an analysis of trends. Policy making should be informed by reliable national statistics, and the lack of current data on internet and mobile telecommunications usage in Canada is problematic.² As part of this consultation process to understand how telecommunications services are used in Canada, it is recommended that the CRTC facilitate the systematic collection of nationally representative data on telecommunications services usage,³ and make these data publicly available.
6. Question 1a asks “Which of these uses of telecommunications services are the most important to ensure that Canadians meaningfully participate in the digital economy?” Ranking the relative importance of individual services is not likely to produce useful outcomes, because relative importance is influenced by individual need, specific use contexts, evolving trends in the ways that we use

¹ Statistics Canada, The Canadian Internet Use Survey:

<http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=4432>

² See Appendix 2 in Landry, K. M., & Lacroix, A. (2014). The Evolution of the Digital Divides in Canada. *Telecommunications Policy Research Conference*. Arlington, VA.

<http://ssrn.com/abstract=2418462> for data on Canadian internet usage in 2010 and 2012.

³ This requires a survey (or surveys) of a representative sample of the Canadian population. Encouraging individuals to submit their personal experiences and opinions to the consultation will provide some insights, but is insufficient to provide statistically valid data.

telecommunications services and shifting societal priorities. Instead, it is important to ensure that our telecommunications infrastructure enables affordable delivery of as wide a range of services as possible over high quality networks. Two implications accompany these observations. The first is that it is necessary to understand that in the future telecommunications services will be delivered by transferring digital data over fixed or mobile broadband networks (this point is explored in paragraph 7). The second is that discussions regarding public investment in the development of world-class fixed and mobile broadband network infrastructure should be guided by a national vision for a digital economy, one that articulates the value of such investment by examining the potential for, and impact of, digital delivery of services across the economy (this point is explored beginning at paragraph 21).

7. Question 1b calls for discussion of the technical characteristics necessary to support the delivery of telecommunications services that meet the needs of users in Canada. An internet delivery model allows any service provider to deliver data-based services to any internet subscriber, separating the provision of a service from the provision of the physical network infrastructure. Telecommunications services enabled by transferring data over broadband networks include IPTV (internet protocol television) and VoIP (voice over internet protocol phone calls). In Canada these services are still often bought from incumbent fixed line providers (e.g. as part of bundles that offer voice, TV and internet services⁴) but are delivered over their broadband networks rather than their legacy infrastructure.⁵ Additionally, many Canadian consumers⁶ are now using communication and entertainment services offered by other internet-enabled providers (today's dominant providers are Google, Facebook, Amazon and Apple). Given that telecommunications services are increasingly delivered by transferring bits (data) over a broadband network, the essential enabler of telecommunications services delivery is a high quality broadband network.
8. Question 1b ask "What characteristics (e.g. capacity, mobility, high speed, and low latency) should these telecommunications services have?" This question should be understood as a question about network infrastructure. As is explored in more detail below, the idea that there is a *basic* service level for network quality is contradictory to the objective of ensuring "that all Canadians have access to a *world-class* communications system." All actions to regulate the operation and further rollout of telecommunications networks in Canada should encourage the development of the highest quality networks that will provide users with affordable access to data services when they are in fixed locations or on the move.

⁴ e.g. In 2013, 10.4 million Canadian households subscribed to a bundle of two or more services. Communications Monitoring Report 2014, Table 2.0.4.

⁵ Cablecos use VoIP to offer home phone services, and telcos use IPTV to deliver television services.

⁶ In this intervention, all discussions of 'Canadian consumers' and 'Canadians' refer to individuals accessing telecommunications services in Canada, regardless of their citizenship.

9. In the context of fixed network developments, regulation should focus on enabling the extension of fixed broadband infrastructure to all premises (households and businesses) across the country, and supporting business models that ensure competitive service provision over this infrastructure. The outcome of the Commission's review of wholesale services and associated policies⁷ will impact the ways in which fixed network infrastructure is developed in future and must be taken into account as this review of basic telecommunications services progresses.
10. The effectiveness of the CRTC's new Regulatory Framework for Wholesale Mobile Wireless Services⁸ should also be taken into account as part of this review.
11. Capacity, speed and latency requirements for fixed and mobile networks are determined by the demands of specific applications and are moving targets.⁹ In keeping with the focus on developing a world-class communications system, the regulatory environment should encourage investment in *future proofing* Canada's fixed and mobile network infrastructures, allowing for increases in capacity and speed, and decreases in latency as demand evolves and the costs for making such improvements to network quality decreases.

Question 2

12. Question 2 states that "The Commission's current target speeds for broadband Internet access service are a minimum of 5 Mbps download and 1 Mbps upload, based on uses that consumers should reasonably expect to make of the Internet." It asks whether "these target speeds sufficient to meet the minimum needs of Canadians today? If not, what should the new targets be and what time frame would be reasonable to achieve these new targets?"
13. This question suggests that there is something called *reasonable use* of the internet, and it implies that what constitutes reasonable use might be determined by someone other than the individual user. It also sets the expectation that targets should be set to meet minimum needs, while recognizing that minimum needs and accompanying targets will change over time. In seeking to develop a world-class

⁷ Canadian Radio-Television and Telecommunications Commission (2013). Telecom Notice of Consultation CRTC 2013-551: Review of Wholesale Services and Associated Policies. <http://www.crtc.gc.ca/eng/archive/2013/2013-551.htm>.

⁸ Canadian Radio-Television and Telecommunications Commission (2015). Telecom Regulatory Policy CRTC 2015-177: Regulatory Framework for Wholesale Mobile Wireless Services. <http://www.crtc.gc.ca/eng/archive/2015/2015-177.htm>.

⁹ Akamai's State of the Internet reports (<https://www.akamai.com/us/en/our-thinking/state-of-the-internet-report/index.jsp>) and Cisco's Visual Networking Index (VNI) forecasts (<http://www.cisco.com/c/en/us/solutions/service-provider/visual-networking-index-vni/index.html>) illustrate how demands on network capacity have increased. Cisco's VNI predictions of future demand are widely cited and have proven to be reasonably accurate.

communications system and encourage participation in the digital economy, these framings of internet use are problematic.

14. The Commission's annual Communication Monitoring Reports document the upward pressure on network capacity/performance. As such, services that are minimally acceptable today will be at best surpassed and at worst obsolete in future. Given the lengthy time period for this consultation, it is unwise to recommend specific targets at this point. More importantly, as explained below, it is suggested that a focus on minimum targets will not serve Canadians well in the future.
15. The idea of minimum or basic service levels, and of a concept of reasonable use are about imposing limits. These are artifacts of previous telecommunications service delivery technologies that were not originally designed to provide internet services. Even as technological advances allowed increased capacity for data traffic on these legacy networks, the business models that imposed limits have not evolved to encourage unconstrained use.
16. As has been reinforced by the recent outcry over a move by Eastlink to impose a 15 gigabyte monthly download cap on its Rural Connect internet service customers in Nova Scotia as of August 2015,¹⁰ Canadians strongly resist the notion that their internet access providers or other entities should decide what *reasonable* uses of the internet are.
17. In the Nova Scotia case, Eastlink's marketing material clearly states that the Rural Connect service offers download speeds up to 1.5 Mbps and is "not designed to be used for video streaming such as Netflix." The company provides advice for customers as to how to "avoid unwanted additional usage" for instance by disabling automatic loading of video content,¹¹ but in an era where demand for online video continues to grow¹² the suggestion that watching video is somehow an unacceptable use of the internet is not well-received by paying customers.
18. In recent speeches, CRTC Chairman Jean-Pierre Blais has invoked the idea of "The Age of Abundance," observing that "Audiovisual content—and television content in particular —is available to us at any time of the day or night, on any of the devices

¹⁰ See coverage of this issue by the CBC, e.g. "Eastlink internet cap causes worries for rural customers." <http://www.cbc.ca/news/canada/nova-scotia/eastlink-internet-cap-causes-worries-for-rural-customers-1.3140795>

¹¹ See <http://www.eastlink.ca/ruralconnect.aspx>.

¹² For instance, the Media Technology Monitor reports that 63% of adult Canadians watched a 'how to' video on YouTube in Spring 2015 (<https://www.mtm-otm.ca/Download.ashx?file=Files/Reports/SneakPeek/Top%205%20Sneak%20Peek%20-%20MTM%20Spring%20-%20External%20Visitor.pdf>).

we choose.”¹³ This observation is accurate, but doesn’t reflect the reality that for many Canadian consumers, access to this abundance of content is constrained by service provider business models that discourage unlimited access to this content.

19. Broadband networks can be, and are being, purpose built to provide users with the fastest speeds possible given the network architecture, and to allow symmetrical access to these networks (equal upload and download speeds).¹⁴ Additionally, many providers are developing business models that allow them to offer their customers unrestricted access to data on these networks, enabling them to use any and all services on offer to them without any constraints and at very affordable prices.¹⁵ In my view, it is the combination of the fastest possible network, symmetrical access speeds, and a business model that allows unconstrained use that defines a world-class communication service. With a decision on the CRTC’s 2013-551 review of wholesale services and associated policies still pending, it is unclear how the market for faster networks will develop in Canada.

20. Canada’s Telecommunications Act calls for policy to “render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada.”¹⁶ As we participate in this review of basic telecommunications services, Canadians must advise the CRTC on how we define reliable and affordable services of high quality. In an age where world-class service means the only speed constraints are imposed by the limits of network technologies and access to services is unconstrained, what will we define as a basic or minimum service? Is the idea of a reasonable use level acceptable, and if so, how should it be determined?

21. The questions posed in the previous paragraph are not technical ones, they are questions of national priorities. In my view, the articulation of a strong vision of a

¹³ Blais, J.-P. (2015). Speech to the Annual Conference of the Western Association of Broadcasters. <http://news.gc.ca/web/article-en.do?nid=983689>.

¹⁴ Typically such networks deploy optical fibre direct to the home and are referred to as fibre-to-the-home networks (FTTH). There are many different approaches for developing FTTH networks, including national initiatives (New Zealand’s Ultra-Fibre Broadband project, <http://www.med.govt.nz/sectors-industries/technology-communication/fast-broadband>; Singapore’s Next Generational Nationwide Broadband Network, <http://www.ida.gov.sg/Tech-Scene-News/Infrastructure/Wired/Next-Gen-NBN>), community-centric approaches (<http://toolkit.ftthcouncil.org/>; <http://muninetworks.org>; <http://www.b4rn.org.uk>) and private sector initiatives by non-incumbent service providers (<https://fiber.google.com/about/>; <http://www.hkbn.net/new/en/#>; <https://ting.com/internet>).

¹⁵ For example Singaporeans have a choice of several providers offering unlimited gigabit services with no download limits for less than \$60 Singapore/month (\$60SGD ~ \$56.36 CAD as of July 14, 2015), <https://www.ida.gov.sg/applications/rbs/chart.html> (June 05, 2015 Snapshot of prices).

¹⁶ Canada (1993). *Telecommunications Act, S.C., 1993, C. 38*. from <http://laws.justice.gc.ca/PDF/Statute/T/T-3.4.pdf>. Section 7 (b).

digital Canada, a country in which everyone has access to, and benefits from the use of world-class telecommunications services requires discussion beyond the confines of this CRTC consultation. It also requires coordination across federal government departments, and between federal, provincial and local governments.

22. The Broadband Commission for Digital Development (an International Telecommunication Union and UNESCO agency) recommends a ‘trans-sectoral’ approach to identifying and realizing the benefits of a digital economy. This lengthy quote from its 2011 report, *Broadband: A Platform for Progress*, clearly articulates the need for a holistic approach to developing the broadband infrastructure that underpins and advances a country’s digital vision.

To achieve the expansion of broadband requires top-level political leadership and joint efforts by the private sector and by governments. Most important of all, these efforts should be coordinated across all sectors of industry, administration and the economy. Developing isolated projects or piecemeal, duplicated networks, is not only inefficient; it also delays provision of infrastructure that is becoming as crucial in the modern world as roads or electricity supplies.

When a trans-sectoral approach is taken — that shares infrastructure and builds synergies among the applications that use it — investments can yield major multiplier effects that benefit healthcare, education, energy efficiency, environmental protection, public safety, civic participation and economic growth. Such a trans-sectoral approach should lead to the development of smart interconnected and sustainable communities, homes and businesses.

A trans-sectoral way of thinking can also be applied across infrastructure projects. The construction of smart grids for electricity supplies, for example, should prompt the installation of communication networks at the same time.¹⁷

23. As suggested by the Broadband Commission, investment in broadband infrastructure can have broad and positive societal impacts. Delivery of a wide variety of services can be improved by the use of broadband infrastructure and it is likely that savings in the costs of service delivery can be used to subsidize investment in broadband infrastructure in areas where the market will not build world-class networks on its own.
24. While this consultation focuses on narrow questions of providing a basic level of telecommunications services to Canadians, it is recommended that this consultation be used as an opportunity to investigate much more ambitious approaches to advancing the telecommunications services that will underpin Canada’s digital economy. Opportunities to adopt a trans-sectoral approach to improve service delivery across the country should be investigated. This investigation should be

¹⁷ Broadband Commission for Digital Development (2011). *Broadband: A Platform for Progress*. Geneva: ITU/UNESCO. http://www.broadbandcommission.org/Documents/publications/Report_2.pdf. p. 2.

coupled with a review of the networking needs of underserved communities, with a view to developing a business case and concrete action plan to bring the highest possible quality fixed and mobile services to all Canadians.

25. It should be recognized that providing access to network infrastructure is not something that should be done through a competitive funding allocation process, in which there are winners and losers. Network infrastructure is essential to a digital economy and plans must be made to serve *all* communities. The question as to what constitutes a minimum acceptable level of network quality should be informed by the study of service delivery opportunities, with a view to all investment being made to advance the future proofing of network infrastructure.

The Commission's role regarding access to basic telecommunications services

Question 3

a) Explain whether the underlying technology (e.g. cable, digital subscriber line, fibre, fixed wireless, mobile wireless, and satellite technology) should be a factor in defining whether a telecommunications service should be considered a basic service.

26. As noted above, our objective should be to encourage development of future proof services. For fixed infrastructure, this implies that our end goal should be to facilitate the rollout of fibre services to as many premises as is economic.¹⁸ The questions of what is economic must be determined by discussions of national priorities, as discussed above starting at paragraph 21.

Regulatory measures for basic telecommunications services

Question 9

27. Question 9 asks “Should broadband Internet service be defined as a basic telecommunications service? What other services, if any, should be defined as basic telecommunications services?” It has been noted above (paragraph 7) that the model for delivering telecommunications services is shifting to transmission of data over broadband networks. In this context, all telecommunication services become applications on broadband networks. From this perspective, the only type of service that should be defined as a basic telecommunications service is a high quality broadband network. With appropriate measures in place to ensure all providers have access to deliver services over networks, all telecommunications services that

¹⁸ For a discussion of the future proof nature of FTTH deployments, see OECD Directorate for Science Technology and Industry (2008). *Developments in Fibre Technologies and Investment*. Paris: OECD Working Party on Communication Infrastructures and Services Policy. <http://www.oecd.org/sti/broadband/40390735.pdf>

were delivered on a mix of technologies in the past (voice using copper phone lines, television using coaxial cable) can be delivered over a broadband network.

28. As this consultation plays out over time, there is an opportunity to explore the implications of retiring old network infrastructure (copper, coaxial cable) and shifting these services onto broadband networks. This suggests that regulations for access to these old networks should be retired along with the networks,¹⁹ while retaining the underlying principles of access to the telecommunications services they provided.

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¹⁹ See for example arguments by Clarke, R. N. (2012). *The Case for Reforming Regulation of PSTN Voice Services*. *Journal Of Information Policy*, 2, 287-313.