

Broadband is the New Basic

Implications for CRTC Subsidy Framework

***Submitted to SSI as part of a Further Intervention
in response to Telecom Notice of Consultation
CRTC 2015-134***

February 1, 2016





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1. Introduction

1.1 Context for this Report

1. This Report has been developed independently on behalf of SSI Micro Ltd. by Lemay-Yates Associates Inc. (LYA) in the context of Telecom Notice of Consultation CRTC 2015-134 “*Review of basic telecommunications services (the ‘Notice’)*”.
2. The Notice is focused on assessing the current needs for basic telecommunications services for Canadian consumers, wherever they reside.
3. This Report is a follow up to the two LYA Reports developed for the first intervention as part of CRTC 2015-134, submitted in July 2015.
4. The first July 2015 LYA Report entitled “ A discussion of Subsidies and Investment in Rural and Remote Areas” included a comparative discussion of the subsidy framework between the US and Canada as well as discussed the level of success of various broadband funding initiatives in Canada.
5. The second Report entitled “Evolving the Subsidy System in Northwestel’s Operating Territory” proposed a transition plan to evolve the subsidies available ***from a telephone only to a broadband only focus.***
6. The current Report filed as a second intervention builds on the July 2015 Reports and discusses the implications from the key theme of this hearing which we refer to as “Broadband is the new Basic”.
7. Both LYA July 2015 Reports discussed broadband services in rural and remote areas with a focus on northern Canadian regions.
8. In addition, LYA also answered an interrogatory from CRTC that focused on how its recommendation that requirements for enhanced broadband services need not necessarily be identical across the country would fulfill Paragraph 7(b) of the Telecommunications Act, namely “*to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada.*”

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9. LYA responded that it believes its recommendations are entirely consistent with Paragraph 7(b) of the Telecommunications Act. LYA believes that its recommendations would enable the CRTC to set the maximum broadband objectives suitable for consumers and businesses, wherever they reside in Canada. We noted that paragraph 7(b) does not imply that a single service quality requirement be applicable to all areas across the country nor that affordable and high quality telecommunications services made accessible to all Canadians must be identical.
10. LYA believes that the CRTC needs to significantly increase the minimum broadband objective for Canadians, both for consumers as well as businesses, as stated at Paragraph 62 of its Report:

62. Canada's broadband objectives need to be significantly upgraded to reflect the higher speeds, both in uploads and downloads, that all residents and businesses need in 2015 and going forward. This is not a luxury but a necessity.

11. LYA believes that a single nationwide objective is not the preferred approach as, in our opinion, this essentially results in setting much lower broadband objectives to serve very many to accommodate the particular characteristics of very few. We believe that the criteria when only satellite backbone connectivity is available is also good to identify those areas where, for technology and affordability reasons, the broadband objective would be different and likely set at a lower target than in the rest of the country. We also noted that broadband service requirements for communities served by satellite should be enhanced as soon as high-throughput satellite services become available.
12. A tiered approach to setting broadband service quality objectives or requirements is the best approach to ensure all Canadians, wherever they reside, receive access as quickly as feasible to the best broadband service quality possible, as expressed in paragraph 7(b) of the Act.

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13. This further LYA intervention Report focuses on three key elements that derive from defining that Broadband is the New Basic. These are:

- a. Provide on-going funding for broadband services and do not fund telephone-only services. Voice service is still an important service for a number of Canadians and should be treated as an application on broadband access funded via the broadband subsidies, where needed. Subsidies for broadband services should be provided in high cost areas only.
 - b. Subsidies need to be awarded on a competitively and technology neutral basis. Broadband funding should be technology neutral, i.e. wireline as well as wireless, to reflect the evolving nature of telecommunications usage by consumers. This would also fulfill the needs of consumers, as mobile services are a critical part of the mix of essential services. All funding mechanism should be competitively neutral from day 1. Thereby, anyone can access the subsidies, as no type of enterprise or organisation has a monopoly on broadband services, and
 - c. Lastly, there are still areas of the countries that should be qualified as high - costs and require ongoing subsidies to ensure adequate service. We provide herein a brief comparison of pricing of broadband services to highlight the disparity in broadband services offered now in early 2016 between northern and southern areas of Canada.
14. We note with interest the suggestion that a portion of the proceeds of spectrum auctions be directed towards subsidizing broadband in unserved or underserved communities.¹ While not opposed to this suggestion, we highlight that these are not decisions that can be made by CRTC and thus, these suggestions do fall outside of the scope of the current consultation and of CRTC's mandate. We also note that there have been many spectrum auctions conducted from 2008 to 2015 inclusively, while, at the moment, only one auction for 600 MHz spectrum is planned and that no information on the scheduling of this auction is currently available.

¹ For example, at para. 7 of the Intervention of Bell Canada and its Affiliates, July 14 2015, in Telecom Notice of Consultation CRTC 2015-134.



2. Broadband is the New Basic and only Broadband Services should be Subsidized

2.1 *On the essential nature of broadband (and wireless) services*

15. We provide below comments on recent press articles discussing the essentiality of certain telecommunications services, namely broadband and mobile services in rural areas of Quebec. These articles highlight, among other things, that even rural areas, sometimes not too far from major cities, appear to be underserved for the essential services that broadband and mobile are in 2016.
16. Much has been written on the public record of this proceeding regarding the essentiality of broadband services, whether discussing the needs of Canadian consumers and business or those in other countries.
17. Although statistical data indicates that Canadians, overall, and across most large geographies such as provinces have access to quality broadband services, there are still a number of remote and rural areas where this is not the case.
18. Recent articles in La Presse+ discuss both Internet and cellular/mobile services in Quebec focused on these rural and/or (not always) remote areas.
19. **On December 28th 2015**, La Presse+ published a number of articles under the heading “Vivre sans Internet au Québec” or Living without Internet in Quebec. The articles mentioned localities not even 100 Kms from Montreal such as Saint Norbert (actually 93 Kms from Montreal on the north shore of the Saint-Lawrence) where in some cases only mobile broadband services are available at a high cost for usage, thereby limiting access to streaming and other high bandwidth services for residents.
20. **On January 21, 2016**, La Presse + addressed the lack of availability of mobile services with a suite of articles under the heading “Le cellulaire, service essentiel?” or is cellular an essential service. As in the December articles on broadband services, those from January on cellular services describe spotty coverage in rural and remote areas (Abitibi, Haute-Mauricie, Saguenay, Bas-Saint-Laurent and Cote-Nord) with supporting maps. As reported by La Presse+, a third of the 20 municipalities and 4

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Amerindian communities of the regional municipality of Temiscamingue are without cellular service in 2016. This situation is qualified as “terrible and inadmissible” by an official from Temiscamingue. There are also numerous other examples of lack of or no coverage along secondary routes in other areas of Quebec creating significant security and economic difficulties.

21. The CRTC issued its 2015 Public Notice on Basic Telecommunications Service from the perspective of its ongoing subsidy for plain old telephone service, of the obligation to serve imposed on incumbent telephone companies and of questions surrounding broadband quality of service. However, the above public reports indicate that not only high quality broadband but also mobile/cellular services are considered as essential by consumers.
22. We noted with interest the CRTC Press Release of January 19, 2016, which states that 15,000 Canadians participated in the online survey on Let’s Talk Broadband, By comparison, the CRTC online survey Choicebook on television services garnered 6,300 respondents in addition to 1200 additional participants via a select panel in 2014². Without presuming of the opinions expressed by the respondents to Lets Talk Broadband, we believe that the higher rate of response to the Let’s Talk Broadband consultation should be seen as an indicator of the “essentiality” of broadband services as perceived by Canadian consumers.
23. The CRTC has not issued a consultation with Canadians consumers on mobile services and their “essentiality”, although for many consumers and businesses, in 2016, mobile would appear to be considered a necessity from a number of perspectives including economic, social and security.

²CRTC Press release “The CRTC releases the results of the Let’s Talk TV: Choicebook” available at <http://news.gc.ca/web/article-en.do?nid=844399>

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2.2 Consumers growing usage of the broadband phone app

24. A number of interveners including Bell Canada go to great lengths to show how well Canada is doing overall with broadband penetration and usage of Internet-based services and applications.
25. Even though phone service is an important Internet “app”, Bell Canada still returns to the argument that traditional wireline phone service needs to be subsidized in high cost areas, namely Bands G and H1.³
26. However, broadband is not only increasingly used by Canadians to supplant or replace traditional phone service, but using broadband for phone service is a better overall use of technology and investment as the costs to support a voice service over a broadband connection are lower than the costs of supporting or providing Plain Old Telephone Service (POTS, as it used to be referred to) using obsolete technologies.
27. In its July 2015 intervention, Bell Canada cites Statistic Canada Canadian Internet Use Survey (Bell at Table 1, page 39), reproduced below for reference.
28. Bell arbitrarily groups applications other than Email into “Web-browsing” and “Other” applications. This grouping is misleading and not technically correct.

³ Intervention of Bell Canada and its Affiliates, July 14 2015, in Telecom Notice of Consultation CRTC 2015-134, Recommendation 10.3 on p. 19



Figure 1 – Bell Figure 1 – Reproduction of Statistic Canada Internet Use Survey

Internet activity	Percentage of Surveyed Canadians that engaged in Activity 2012
1) EMAIL	
E-mail	93.0
2) Web-Browsing	
Visit or interact with government websites	62.7
Search for medical or health-related information	66.8
Formal education, training or school work	36.6
Travel information or making travel arrangements	66.4
Search for employment	35.6
Electronic banking (paying bills, viewing statements, transferring funds between accounts)	72.0
Research investments	26.5
Read or watch the news	70.6
Research community events	57.8
Window shop or browse for information on goods or services	76.6
Sell goods or services (through auction sites)	23.3
Use social networking sites	67.0
Contribute content or participate in discussion groups (blogging, message boards, posting images)	24.0
3) Other Internet Applications	
Use instant messenger	39.6
Play online games	34.9
Obtain or save music (free or paid downloads)	50.5
Obtain or save software (free or paid downloads)	38.2
Listen to the radio online	38.2
Download or watch television online	39.0
Download or watch movies or video clips online	54.2
Make telephone calls online	43.3

29. Many of the applications Bell identifies as being “browsing” are in fact interactive applications such as for education/training, shopping and interacting with government web sites.

30. Bell indicates that in its view (Key Finding 1A at Para. 63 of its intervention) “*Email and web-browsing (and the plethora of activities and socio-economic contributions that can be achieved through web browsing and email) are the services most necessary to meaningfully participate in the digital economy*”. By stating this view,

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Bell essentially dismisses the “other” category (which also includes playing games and listening to music, downloading or streaming TV or movies, in addition to telephone calls, etc.) as being less important for participation in the digital economy.

31. Rather than being at the bottom of the list of popular Internet activities, the activity “Make telephone calls on line” is actually 12th out of 22 Internet activities in the survey, being more popular than many including education/training, watching television on-line, searching for employment and others.
32. We note that this Statistic Canada survey is from 2012. We are now in 2016. We would highlight that telephone calls over the Internet, for example for mobile phone applications, are now very common. Facetime, Skype and other applications support voice and video calls over the Internet. WiFi calling is also very prevalent and supported by major telecommunications carriers, fixed and mobile. These are all voice applications over the Internet, at a fraction of the cost of conventional POTS technologies.
33. As examples, we note services promoted by Rogers such as “Voice with Skype for Business Online “ as described at <http://enterprise.rogers.com/on/en/solutions-services/flexible-work/enterprise-voice-collaboration/voice-with-skype-for-business-online>.
34. Bell Canada promotes its WiFi Calling services, including text messages, as can be seen at <http://www.bell.ca/Mobility/Promotions/Wi-Fi-Calling>.
35. In the actual Statistics Canada survey (Statistic Canada Table 358-0153, shown below), “Make telephone calls on line” was identified by 43% of respondents in 2012, an 80% increase from the same survey done in 2010 when the response rate was 23.8%.



Figure 2 – Actual Internet Use Survey – Statistics Canada Table 358-0153

Internet activity	2010	2012
E-mail	93.5	93.0
Use instant messenger	47.2	39.6
Visit or interact with government websites	64.5	62.7
Search for medical or health-related information	64.1	66.8
Formal education, training or school work	36.7	36.6
Travel information or making travel arrangements	65.1	66.4
Search for employment	37.3	35.6
Electronic banking (paying bills, viewing statements, transferring funds between accounts)	68.3	72.0
Research investments	27.3	26.5
Read or watch the news	68.0	70.6
Research community events	53.9	57.8
Window shop or browse for information on goods or services	74.3	76.6
Sell goods or services (through auction sites)	19.3	23.3
Use social networking sites	58.1	67.0
Contribute content or participate in discussion groups (blogging, message boards, posting images)	19.2	24.0
Play online games	32.8	34.9
Obtain or save music (free or paid downloads)	45.6	50.5
Obtain or save software (free or paid downloads)	35.1	38.2
Listen to the radio online	36.6	38.2
Download or watch television online	32.6	39.0
Download or watch movies or video clips online	47.1	54.2
Make telephone calls online	23.8	43.3

36. This growth is unique to the “Make telephone calls on line” activity.

37. Most of the others show essentially no change from 2010 to 2012 (e.g. Email use was 93.5% and 93% in the two surveys, respectively, Interacting with government was 64.5% and declined to 62.7%, etc.).

38. CRTC statistics also show significant increases in phone service as a broadband app. While total local lines and “Managed” local lines (i.e. traditional POTS service) continue to decline at a rate of 3-4% per year, VoIP services grew by 172% from

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2010 to 2014⁴, consistent with the trend seen in the Statistic Can Internet Use survey.

39. And as cited by the CRTC in the CMR, this is consistent as well with the Statistic Survey of Household Spending where households subscribing to “wireline” phone service declined from 89% in 2010 to 80% in 2013.

⁴ CRTC 2015 Communications Monitoring Report (CMR) , Table 5.2.5

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2.3 Broadband is a better technology and should receive the subsidy

40. The CRTC attributes the growth in VoIP services to the fact that they are “lower-cost, IP-based services”⁵.
41. The fact that VoIP is IP-based is why it is lower cost. The phone app runs on the Internet connection and does not need dedicated facilities. Thus the underlying cost to support VoIP is shared with all the other broadband applications consumers are using.
42. In fact, expert evidence submitted by Bell Canada (Mr. Gillan) points out the benefits of using new broadband technology, which supports “Internet access in addition to voice telephony”.⁶
43. In the same vein, in its intervention in the CRTC consultation, Bell stated at para. 115 that it foresees “a time when voice will become just one of a myriad of applications accessed over broadband – eventually making a voice-centric BSO obsolete.”
44. We also note that Bell Canada, at para. 120, proposes the elimination of Equal Access and dial-up Internet from the BSO. This is quite consistent with making the BSO broadband rather than continuing with POTS in any rate band.
45. Clearly, the ability to use the Internet to make phone calls as being an important application. Phoning has become an “app”, **be it for voice or video calls.**
46. The wireline voice-centric, POTS based, Basic Service Objective is obsolete and should not be subsidized any further in any area of the country.

⁵ CRTC 2015 Communications Monitoring report, 2015, note to Table 5.2.5

⁶ “Transitioning Universal Service Support to Broadband in the United States: providing Incumbents a Rights of First refusal or Competitive Bidding”, Joseph Gillan, Gillan Associates, submitted as Appendix 3 of Bell Canada July 14, 2015 Intervention.



3. Subsidies for Broadband on a Technology and Competitive Neutral Basis

47. The July 14, 2015 LYA report entitled “ A discussion of Subsidies and Investment in Rural and Remote Areas” presented a discussion of different approaches used for broadband subsidies in Canada as well as a discussion of the evolution of subsidies for voice and broadband in the US.
48. Based on the experience in Canada (from CRTC as well as Government of Canada broadband initiatives) and in the US by the FCC, our recommendations were that broadband subsidies should always be open to all service providers/ organisations and that they should be technology neutral – wireline or wireless.
49. We do not reiterate herein the analyses and conclusions in detail but would like to highlight that these conclusions are generally shared by Bell Canada and its expert Mr. Joseph Gillan.
50. As an example, we note Key Finding 13A in Bell Canada’s July 2015 intervention which states that:

“Relying on an obligation to serve or a similar mechanism that relies on cost models for creating broadband subsidies is costly, time consuming and inefficient. Experiments conducted by the FCC have demonstrated that a competitive RFP process resulted in a significant number of bids, some of which were less than 50% of what would have been the FCC cost model's result, and with commitments to deliver higher speeds than required by the FCC.”

51. This key finding from Bell Canada is based on the evidence of Mr. Gillan which states that:

“ a limited experience with competitive bidding indicated that many non-traditional providers were willing to build faster networks at costs much lower than the FCC’s complex right-of-first refusal regime and its associated cost model assumed were needed. Specifically, some providers bid to build 100 Mbps

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networks (download) for less than half the support the model assumed was necessary for 10 mbps networks.”⁷

52. While Gillan uses this point to suggest that competitive bidding is the most efficient way to award broadband subsidy for unserved areas, he also quoted observations from the FCC on the same issue and on technologies proposed to deploy broadband at lower costs:

*“There are many reasons why a bidder may be willing to serve an area for less than model-based support, such as access to other sources of funding, a different cost structure, and access to other assets that can be leveraged to provide broadband service. **We note that many of the bidders in category one proposed to use wireless technology**” (Bold added).⁸*

53. Subsidizing broadband only deployment, while eliminating traditional POTS subsidy, would support greater investment in a superior technology, while addressing the needs for broadband as well as phone services in remote and northern regions of Canada.
54. There is substantial evidence on the public record of this proceeding from both the Canadian and American experiences to date that broadband subsidies awarded on a competitive and technology neutral basis yield the best results for consumers and businesses.

⁷ “Transitioning Universal Service Support to Broadband in the United States: providing Incumbents a Rights of First refusal or Competitive Bidding”, Joseph Gillan, Gillan Associates, submitted as Appendix 3 of Bell Canada July 14, 2015 Intervention, page 2.

⁸ “Transitioning Universal Service Support to Broadband in the United States: providing Incumbents a Rights of First refusal or Competitive Bidding”, Joseph Gillan, Gillan Associates, submitted as Appendix 3 of Bell Canada July 14, 2015 Intervention, page 13.

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4. High Cost Service Areas Require Subsidies for Broadband

55. Xplornet argues that the BSO should not be extended to broadband Internet at all, affirming (at para. 21) that: “100% access to broadband service is now a reality”. If that were the case, which it is not, there would indeed be no need for the CRTC’s proceeding at all.
56. We would argue that this is not the case. The performance and cost of broadband services varies significantly between northern and remote areas of Canada with what is available in most areas of Southern Canada.
57. Our conclusion is based on analyses conducted by LYA comparing both consumer monthly costs and wholesale backhaul costs, a key entrant to provide broadband services.
58. On the consumer monthly costs, as shown in the following Table, LYA has compared the monthly cost for a household with average broadband usage in late 2015 across Canada. The total monthly usage was estimated by extrapolating the 2014 average household usage from CRTC data as published in the 2015 CMR. This yields an average usage estimated in 2015 of close of 100GB (97.7 GB in our analysis, combining download and upload usage).
59. Table 1 demonstrates that cost for a similar usage between a household served via Xplornet satellite service is significantly more expensive than the cost for a similar or even better service with faster download speed and much higher allowance for download data. This difference can range from of the order of 70% to more than double, depending on which other Internet service provider is used as a point of comparison with Xplornet.⁹
60. We also note the impact of terms of service that are part of the offer of different service providers, which is not included in the analysis presented in table 1. For example, the terms of service of Xplornet include the note that Traffic

⁹ Table 1 does not include pricing from SSI satellite services. SSI offers plans with 50 GB for \$74.95 monthly fee and 100 GB for \$139.95 monthly fee. These plans all offer 2.5 Mbps download speeds. We note that SSI does not argue that there is no need for subsidies for broadband services across Canada nor that the services offered in the North are equivalent to those offered elsewhere in Canada.



Management Policies will not cause speed to fall below 100 Kbps. Starting in February 23, 2016, Xplornet will implement new traffic management policies that will ensure that a “ a good experience is maintained for Internet phone calls, web browsing and social networking”, but not necessarily for streaming, app downloads, etc. at peak hours when there is congestion. In another example, TELUS indicates that download speeds for its 15 Mbps service can range from 3 to 15 Mbps, which implies that the quality of service received may vary substantially.

Table 1 – Comparison of monthly cost of broadband service including usage costs¹⁰

	Average monthly cost per subscriber including close to 100 GB monthly usage		Download speed and monthly data included
Xplornet (across Canada)	\$124.99	Includes four 20GB extra usage packages at \$10 each	10 Mbps/ 20GB
Videotron (QC)	\$48.70	No excess usage charge	30 Mbps/130 GB
Rogers (Ontario)	\$64.99		30 Mbps/125GB
Telus (BC)	\$68.00		15 Mbps/150 GB
Shaw (AB)	\$73.00		15 Mbps/150GB

61. The data requirements of many key web applications including video streaming are rapidly increasing on both fixed and mobile networks and show no sign of abating. Thus, usage is an integral part of the broadband service, of its cost and of the participation of Canadians in the broadband economy. We note that, of the plans above, only the Xplornet 10 Mbps plan offered a total monthly usage allowance well below the average usage of a Canadian household.

62. A second key component driving up service costs in remote and northern regions is the cost of wholesale Internet transit.

63. While in central Canada these costs can be of the order of a few dollars per Mbps, in remote and northern regions, the wholesale transit cost can be of the order of \$100 per Mbps or even more¹¹ corresponding to more than 20 times higher.

¹⁰ Only monthly fee and usage fee included in the comparison, included where applicable.

¹¹ Derived from LYA analysis presented in Table 2 of Application by SSI Group of Companies under Part 1 of the CRTC Rules of Practice and Procedure concerning Northwestel’s Wholesale Connect Rates, Submitted to CRTC on November 18,2014.



64. Considering that monthly data usage by Canadian households is at close to 100 GB, growing in the range of 40% per annum, without signs of decrease at the moment, the very significant difference in Internet transit costs between southern regions of Canada and the remote and northern regions indicates that it is not economically feasible to offer the same quality and performance of broadband service to consumers in northern and very remote regions, compared to services offered in southern Canada. This is in effect reflected in the cost comparison that we presented in Table 1 above.

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