

Comments
to
Canadian Radio-television and Telecommunications
Commission

by
Vaxination Informatique
regarding

Telecom Notice of Consultation CRTC 2020-187

**Appropriate network configuration for disaggregated
wholesale high-speed access services**

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Introduction

1. Pursuant to the Commission's 2020-187 Notice of Consultation, Vaxination Informatique submits its comments as part of the first round due October 5th and wishes to be considered an intervener in the proceeding.
2. Please note that this document was written mostly between December 2016/January 2017 as a Part 1 seeking a new policy on access to FTT. Upon realising the futility of participating in CRTC proceedings, the work was not completed. While the document may contain sections structured with Part 1 arguments and numbers/facts that have since changed, it may still be of use.
3. Much of the evidence is obtained from a speech made by BCE CFO Glen Leblanc with audio links and relevant transcript in Appendix 1. The most relevant portions of this 45 minutes speech are between 13:00 and 20:00 minutes. The arguments in this submission are supported by the text in Appendix 1 and thus text from Appendix 1 not repeated throughout the submission.

Executive summary

4. An administrative tribunal's policies should be grounded in reality, not political ideology. Policy decisions must result in consumers seeing a positive outcome, lower prices, more competitive choices, more reliable service. To this day, no consumer has seen a positive outcome of 2015-326.
5. The CRTC's overall objectives, as outlined in its 2016-2019 three year plan:

Guided by its legislative mandate, "the CRTC seeks to ensure that Canadians have access to a world-class communications system." The Commission's Connect pillar "focuses on ensuring that Canadians can connect to a choice of accessible, innovative and quality communication services at affordable prices.
6. While disaggregation may confer some advantages to certain individual ISPs where it is deployed, it has become clear that it will never cover the full telco territories across Canada, leaving large areas where ISPs will be limited to serving customers on copper.
7. Copper has become obsolete. The carriers have quickened the pace of FTTP deployment because it costs less to maintain than copper and want to retire copper as soon as possible. Even the Commission's 2016-496 decision has set speed targets that are beyond realistic copper capabilities as currently deployed.
8. Policy Objective 7(b):

(b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;
9. As the primary tool to achieve the "affordable" aspect is via increased market forces, the achievement of 7(b) requires competition in both urban and rural areas of all regions of Canada. The 2015-326 decision grants effective monopoly to the telcos in rural areas where ISPs cannot cost justify disaggregated access and where the telcos are rapidly deploying FTTP, preventing ISPs from meaningful competition.
10. Where an ISP cannot compete, an ISP cannot grow its customer base to justify deploying disaggregated. In essence, the 2015-326 policy guarantees a limited footprint where there will be sufficient competition. .
11. ***Where ISPs do not have access to the telco FTTP, the telco regains its monopoly for retail.***

12. The Commission is faced with a choice:
 - By following the 2015-326 policy, the Commission will be faced with the prospect of market failure where disaggregation has not been deployed as ISPs will not be able to compete on legacy copper. Market failure entails regulation of the incumbent's retail service.
 - Or, allow aggregated wholesale access to FTTP, and make disaggregated links optional and let market forces decide where such links are deployed and whether an ISP deploying links gains competitive advantage or not.
 - Forbearance should only happen after market forces have demonstrated that regulation is no longer necessary. The current framework will forbear with 1 ISP deploying at a central office. This leaves a trio-poly with the Commission having made regulatory intervention that interferes with market forces to the largest extent possible and specifically to help one class of ISPs (CLECs) and hurt others.
13. The Commission must offer aggregated and disaggregated on equal regulatory footing with no threat of forbearance and let the market decide over the years which model works best and then decide whether to forbear one of the other.
14. With 2015-326, the Commission interfered with market forces to such an extent that not only does it deter economically efficient entry into the market, but will force existing players to scale back or exit the market once another ISP deploys a disaggregated link to a neighbourhood. It is not possible to spin this as increasing market forces.
15. The implementation of 2015-326 showed the extent of the Commission's undue interference in the market by dictating that Vidéotron restructure its network to create points of interconnect not possible in Vidéotron's optimized network architecture. Imposing a network function which reduces efficiency and reliability of an incumbent's infrastructure goes against policy objectives 7(b) and (c).
16. There is nothing wrong in adding disaggregated access in a way that makes technical sense for both incumbent and ISP, as long as such access does not hinder the incumbent's ability to innovate and make their networks more efficient.
17. However, this must not come at the expense of competitive access to reliable and modern last mile service which is necessary for ISPs to remain competitive.
18. The policy should not tie transport method to last mile method. Let the market decide which is best. Any last mile should be accessible from any transport where feasible.

Introduction (cont)

19. Requiring disaggregation and souring the aggregated milk with a philosophically conservative goal of building more facilities based competition will fail (and has failed) because there is just no business case to duplicate links to St-Profonds-des-Creux QC or to Middle-of-Nowhere ON, especially when you consider the number of localities where such links would need to be deployed.
20. It is now 2020, and the incumbents have had the 5 years headstart they requested during the proceeding that lead to the terrible 2015-325 decision which has deprived consumers of competitive non-cable access. It is time to change it.

Relief Sought

21. The relief sought is to ensure consumers do not lose access to competitive ISP services in all areas of Canada.
22. Because copper is now obsolete, aggregated wholesale high speed service needs to include access to FTTP last mile. For the same reasons that 2010-632 confirmed the need for aggregated and matching speeds to prevent a duopoly, the matching speeds principle must also apply to aggregated access to FTTP.
23. To reduce incumbent resistance, the ISPs could be prevented from acquiring retail customers from the telco incumbent within 6 to 12 months of FTTP being lit up in a neighbourhood.

Alternate relief

24. Should competitive ISPs be relegated to copper infrastructure where FTTP has been deployed, the Commission's "Obligation to Serve" (35(1) and/or 42(1) is needed to force the incumbent to upgrade, at its own expense, the copper infrastructure to deliver a sync speed capable of at least the 2016-496 speed of 50/10¹ to all wholesale end users anywhere in that FTTP footprint.
25. The reason the incumbents must bear these costs is simple: they are the ones refusing to move wholesale business to the more cost effective and reliable FTTP infrastructure. Their refusal to onboard wholesale onto FTTP is costing them money but they judge their competitive advantage is worth more. In essence undue preference. Bell Canada offers not only higher speeds, but also reliability which cannot be given on copper, especially as most wholesale is stuck on 2005 era Stinger DSLAMs that lack full VDSL2 implementation and lack the more current VDSL version that provides service to a greater proportion of the DSLAM, footprint (whose cable plant was designed in the days of 5-7mbps service).
26. Refusal to allow aggregated access to FTTP should be accompanied by a moratorium on shutting down copper anywhere on the telco's territory.

1 This should also include standards on how many times per day the sync is lost.

Review and Variance?

Is this a Review and Variance?

27. Some may accuse this Part 7 filing to be a Review and Variance of 2015-326. In such a case, Vaxination points to paragraph 10 of 2011-214²:

... Where an application raises substantial doubt as to the correctness of the original decision at the time it was made, the Commission will generally consider the application to be a review and vary application. However, where the application essentially relates to the continuing correctness of a decision rather than its original correctness, the application will generally be treated as a new application.

28. The 2015-326 decision was premised on many aspects which have since changed:

- The 5/1 speed expectation of 2015, generally achievable on copper has evolved into a 50/10 speed target which is not reliably achievable on copper.
- Telcos are deploying FTTP at a quickening pace not only because it is needed to meet consumers' needs, but also because of the compelling business case due to significant cost reductions in both urban and rural settings.
- Incumbents now tell shareholders that shutting down the copper will represent euphoric cost savings and definitely part of the plan.
- It has become clear that disaggregation will never reach large areas of the Bell Canada footprint let alone any part of Canada outside of QC/ON, leaving consumers without competitive access to the new standard for broadband infrastructure.

29. A policy which had relied on copper remaining competitive outside of disaggregated areas needs to be reviewed once copper ceases to allow ISPs to compete against incumbents' FTTP in those areas.

30. The history of wholesale high speed access regulations is replete with 180° changes. An early decision to not regulate wholesale DSL/TPIA was changed once it was realised that dialup was no longer a viable platform for competition.

31. Then came 2008-17 which set GAS/TPIA on a path to forbearance, followed by the 2010-632 decision which reversed that course by declaring that GAS and TPIA, with matching speeds and aggregation were necessary to avoid formation of a duopoly.

32. Changing 2015-326 to ensure ISPs remain competitive in both urban and rural areas via aggregated is nowhere near as big a change as the 180° for the UBB decisions which caused enough dust and skid marks to make the Dukes of Hazzard proud.

2 2011-214 Revised guidelines for review and vary applications
<http://www.crtc.gc.ca/eng/archive/2011/2011-214.htm>

Number of central offices

33. Since the 2015-326 decision, much information has been released to provide better grasp on possible scope of disaggregation deployment and how much of the territory will remain without any. The original pre-decision estimate was "over 400" given by Bell Canada became over 890 COs after the decision was released.
34. In the December 9th version of its R&V for 2016-379, Bell Canada released further numbers: 426 COs have co-location capabilities (47% of total) and of those, 146 have competitive carrier services (16% of total COs). Bell Canada's filing does not confirm how many of the 426 "co-lo capable" COs have tenants.
35. Such information is not publicly available from Telus, Sasktel and MTS.
36. While ideologically, the Commission may wish to provide incentives for ISPs to ween themselves from the incumbent's aggregation this must not come at the expense of losing market forces for the sake of a facilities-based political fetish. The Commission does not have the power to make competitive services materialize out of thin air to instantly serve all 980 Bell Canada Central offices.
37. Consumers do not know whether they are served by a CO where disaggregation has been made, do not know which ISPs have disaggregated links and which will be forced to stop service when the 3 year timer runs out. A policy should be transparent to them. 2015-326 is not.
38. This becomes significant as the prospects for widespread disaggregation diminish with costs becoming clearer.
39. Paragraph 200 of TRP 2016-496³: (in referring to 2015-326 and 2015-177)
200 These wholesale and retail policies have facilitated, and will further facilitate, sustainable competition, resulting in innovative service offerings and more competitive prices for consumers.
40. The problem is that the 2015-326 is designed to explicitly prevent competitive access to FTTP except in the limited cases where disaggregation has been deployed. So the current policy conflicts with the desired objectives set by 2016-496.
41. In short, with all that has come out since 2015-326, disaggregation will only serve a very limited footprint, and to fulfil Policy Objectives, the Commission must ensure its policies foster competition in all regions of the country.

3 TRP 2016-496 Modern telecommunications services – The path forward for Canada’s digital economy
<http://www.crtc.gc.ca/eng/archive/2016/2016-496.htm>

A changing reality (cont)

Rapid conversion to FTTP

42. The 2015-326 policy underestimated the rapid pace of FTTP deployment in Canada, as well as the rapid pace at which copper is losing its ability to provide acceptable services just as happened with dial-up.
43. With incumbents having ramped up and fine tuned their FTTP deployments, the costs have gone down significantly. Bell Canada now claims to its shareholders that costs are at or below \$1000 per home passed. It also now has a scheduled to cover 9 million homes within a few years within its existing capital spending envelope. And that is a lot more than the 1.1 being discussed by Toronto-centric media who only saw the one press release about FTTP deployment for GTA.
44. Bell Canada has been aggressively deploying FTTP in Québec since 2010 with the launch of the Québec City project 7 10 years ago. The Commission also ignores the accelerated pace of FTTP deployment in other provinces as well. All telcos know that deploying FTTP brings rapid and significant cost savings, and eventual shutdown of copper will bring huge savings.

Competitively neutral policies

45. The creation of disaggregated access should provide an OPTION to decrease reliance on incumbent facilities. (the innovation by ISPs was killed by mandating Layer 3 connections). This application does not challenge this and welcomes disaggregated access as an option. The issue is limiting competition to ISPs and locations where disaggregated access has been deployed.

46. However, paragraph 130 of TRP 2015-326 states:

Based on the above, the Commission finds that there would be a substantial lessening or prevention of competition in the downstream retail Internet services market, in all incumbent carrier serving regions, by denying access to wholesale HSA services, including those over FTTP access facilities.

47. With copper now deprecated, a policy which limits FTTP access to a small subset of the geography results in substantial lessening and prevention of competition wherever disaggregated has not been deployed, and where it has been deployed, lessens competition by limiting access only to those ISPs who have deployed disaggregated.

48. Because a small number of ISPs are CLECS or owned by a CLEC, the 2015-326 decision results in the granting of a significant advantage to them since they already have a presence in some COs whereas all the other ISPs start from scratch with unknown economics of connection costs versus revenues from few customers at each CO.

49. An example, Primus, stated in its CCAA filings that it has co-location⁴ in 74 Bell Canada central offices and states in paragraph 43 of Exhibit B⁵:

However, Primus Canada believes that it would enjoy a competitive advantage over other secondary carriers under the DBS regulatory structure because Primus Canada's co-location infrastructure is significantly more developed than other secondary carriers.

50. Granting CLECs a headstart for disaggregated is not, in and by itself, an unfair advantage. However, it becomes unfair when it is combined with depriving other ISPs the ability to continue to compete in market where copper is no longer viable. It is also unfair because the CLECs will be in a position to trigger the 3 year timer in those COs where they already have a connection, putting all other ISPs at a serious disadvantage.

4 Paragraph 28, Exhibit B (see below for link).

5 Motion Record - Approval of Sale Transaction and Assignment of Agreements (Feb 2 2016). Exhibit "B" Affidavit of Michael Nowlan starting page numbered 69 (page 77 of .PDF file) [http://cfcanda.fticonsulting.com/Primus/docs/Motion%20Record%20\(Returnable%20February%2017%202016\)%20Re%20Approval%20of%20Sale%20Transaction%20and%20Assignment%20of%20Agreements%20et%20al.pdf](http://cfcanda.fticonsulting.com/Primus/docs/Motion%20Record%20(Returnable%20February%2017%202016)%20Re%20Approval%20of%20Sale%20Transaction%20and%20Assignment%20of%20Agreements%20et%20al.pdf)

Competitively neutral policies (cont)

51. The Policy Direction states:

(a) (ii) when relying on regulation, use measures that are efficient and proportionate to their purpose and that interfere with the operation of competitive market forces to the minimum extent necessary to meet the policy objectives;

(b) (iii) if they are not of an economic nature, to the greatest extent possible, are implemented in a symmetrical and competitively neutral manner, and

52. The evolution of the market beyond what copper can provide has transformed the 2015-326 policy into a significant interference with market forces where the incumbents are granted a monopoly outside of disaggregation deployment, and within those areas, CLECs given an opportunity to force competitors out of business within 3 years unless they have sufficient number of customers to deploy their own disaggregated links.
53. Furthermore, because ISPs will not have access to FTTP outside of a few disaggregated areas, they will quickly lose market share against the incumbent's FTTP. Since deployment of disaggregated links to POIs depends on having sufficient number or customers at that POI, a policy which causes reduction of customers will defeat the purpose of motivating ISPs to build (or cause to be built) competitive transport infrastructure.
54. Therefore, to increase incentives for investment in and construction of competing telecommunications network facilities, the Commission must set its policy to grow ISP's market share where such facilities do not yet exist because sufficient market share is a prerequisite to justify such investments.
55. Where incumbent telcos have deployed FTTP, ISPs limited to copper are condemned to losing market share, the very opposite of what is needed to foster investment.
56. Meanwhile, it is the consumers who bear the pain from a Commission policy that hopes to create more facilities-based competition when it will in fact not only prevent consumers access to modern competitive broadband but also weaken ISPs while won't be able to compete against incumbent's FTTP. (Note that the original decision also limited cable to 100mbps retail service unless disaggregated implemented by an ISP).

Availability of commercial transport

57. In its December 1 2016 Review and Variance of 2016-379⁶, Bell Canada disclosed that 421 central offices have co-location capabilities and that 146 COs had alternative fibre backhaul. Earlier, Bell Canada had disclosed it had roughly 890 central offices in Québec and Ontario. A number not part of the public record that lead to the 2015-326 decision.
58. In its January 10th 2016 TN 7522 tariff (for disaggregated access) Bell Canada states:
- (f)The Company determines those COs which will support DBS, and the available speeds and technology platforms available in each CO. DBS, including individual DBS Accesses, is provided subject to the availability of suitable equipment and facilities. (emphasis added)*
59. While the fate of this tariff is yet to be decided, it leaves the door open for Bell Canada to further limit the number of Central Offices eligible to support DBS.
60. While Bell Canada has stated that 146 COs have alternative transport, the public record does not show whether the alternative transport options would be available to any/all ISPs or whether CLECs who consider this a competitive advantage would balk at offering this to competing ISPs. Even if transport is available to all of those 146 COs, that leaves over 744 COs without alternative transport usable by ISPs, and 100% of COs outside of QC and ON where disaggregation is not available.
61. The public record did not show how many of the cable POIs would have alternative carriers present at/near the meet-me point.
62. The original Australian NBN, for all its flaws, based the location of POIs on availability of existing competitive transport. Where such transport does not exist, aggregation extends to a location/town that has competitive transport.
63. In contrast, the Commission's 2015-326 ideology is based on hope that competitive transport will magically materialize as a result of the decision. Until this happens everywhere in Canada:
- Consumers are hurt because they do not have competitive access to current broadband technology except in a few areas (if/when disaggregated tariffs are approved).
 - ISPs are hurt because the lack of access to FTTP causes a decrease in market share in the very areas where they need to increase the number of customers to cost justify the investment in disaggregation.

⁶ The numbers were disclosed on December 9th 2016 following requests for disclosure.

FTTP is more than speed

64. While FTTP is (rightly) portrayed as being future-proof and capable of gigabit and higher speeds, there are other advantages which are significant to an ISP's ability to compete and significant to consumers.
65. Mr LeBlanc from Bell Canada mentioned a higher satisfaction level⁷, lower truck rolls (aka: calls due to problems). Wholesale copper is less reliable and carries the risk of DMC charges which incites wholesale consumers to live with inferior service to avoid that bill.
66. The other significant advantage of FTTP is its ability to deliver the subscribed sync speeds. A Sam Knows survey may show a customer getting "near" 15/1 speeds subscribed to, but it won't know the customer actually wanted 25/10 but had to downgrade after the 25/10 service proved to be too unreliable with multiple loss of signal events per day, each taking over 10 minutes to reestablish sync between the custom modems and the antique discontinued Stinger DSLAMs.
67. One of the reasons that ARPU rises where FTTP has been deployed is that consumers can get the speeds they want, not the speed that the old copper is able to give them. In the current wholesale environment, that pent up demand cannot be met by competitive ISPs as long as they are limited to copper.
68. **So even within speed ranges advertised for copper, FTTP proves to have substantial advantages for customer satisfaction and ability of ISP to reliably deliver the advertised speeds to the consumer.**
69. Therefore, in any area where the incumbent has deployed FTTP and disaggregated doesn't make financial sense, the ISPs are at a significant competitive disadvantage especially in rural areas where FTTP's reach of 10km⁸ can serve everyone with great service quality whereas copper's distance sensitive limitations can only serve a few homes near the DSLAM at half decent speeds, and even fewer at the current 50/10 speed target.
70. Even for speeds of 50/10 and below, FTTP still provides the incumbent with an unfair advantage compared to ISPs who advertise the same speeds. In essence, to use a 27(2) vernacular, **by preventing wholesale aggregated FTTP access, the incumbent is conferring an undue preference onto itself.**

7 At time marks 15:45 and 17:52 of Glen Leblanc's speech in Appendix 1

8 Some systems are deployed with 20km range between the OLT and furthest home passed.

Render reliable and affordable 7(b)

71. ~~Seven~~ Ten years after Bell Canada began FTTP deployments⁹, 0% of consumers have access to competitive FTTP services on incumbent infrastructure. . And if/when disaggregated is deployed, only a small subset of Québec and Ontario will see competitive services on FTTP, and 0% outside of QC/ON.

7(b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;

Reliable: In areas where FTTP has been deployed, DSL/FTTN is either not present, or has a footprint too large for serve all residents reliably at current broadband speeds. A policy which forces consumers to stay on unreliable infrastructure does not meet the objectives.

Affordable: By forbearing retail Internet services, the Commission has chosen to reach the objective of affordability by ensuring there is competition. Yet, with the 2015-326 policy, it has allowed large parts of the country to revert to a monopoly or duopoly because competitors will not have access to modern last mile that allows them to compete. This lack of access has already allowed Bell Canada to recently announce a rate increase, citing its superior technology showing it isn't afraid of ISPs lowering their rates as they are stuck with inferior, less reliable copper service.

All regions: As FTTP is progressively deployed, especially in areas with no cable service, a progressively larger number of consumers will be deprived of competitive access to the only infrastructure capable of providing current broadband service. And while some limited areas of Québec and Ontario may see disaggregated access, there are no plans afoot to provide a solution which fulfils the goals of 7(b) to competitively serve all regions.

72. With the needs of the digital economy having evolved beyond what copper can realistically provide, the 2015-326 policy is creating a monopoly where the incumbent telco has deployed FTTP and there is no cable and/or disaggregated access to wholesale.

73. **As a result, logic dictates that the Commission regulate incumbent's retail internet rates except where sufficient competition exists, emulating the framework used for local telephone service forbearance.**

9 Bell Aliant began aggressive FTTP deployment earlier than 2010.

74. The Commission has a number of options.

Continue with 2015-326

75. If the Commission insists on following the 2015-326 policy, market failure will happen outside of the few areas where disaggregation will be deployed happened and will require retail rate regulation of incumbents. And it will create a far greater urban/rural divide with broadband choices very limited in rural areas.

Allow aggregated wholesale access to FTTP.

76. Allowing aggregated wholesale access to FTTP is the "lightest touch" regulation as it simply continues the existing wholesale framework which has been evolving since ~2005 with huge debates already settled on the best approaches, in particular the need for ISPs to have access to aggregation settled by 2010-632 which also settles once and for all the matching speeds issue (broken by 2015-326).

Partial disaggregation

77. Since this new consultation looks at the extent of disaggregation, one could argue that for the telcos, the POIs could be regional. The original NBN in Australia set POIs to towns where competitive transport was already available. This transport has to be commercial and available to any ISP. So unless a CLEC makes its service commercial available, it wouldn't count.

78. However politically attractive this seems in terms of "climbing the investment ladder" and "fostering facilities based competition", the Commission must ask whether the effort is worth it. What if the tariffed partial-CBB is not sufficiently lower from the aggregated CBB and it makes this regional disaggregation unpalatable? There are economies of scale once you are already on the network where additional distance costs very little.

79. Paying for a single access point in Toronto or Montréal to get access to the whole network may be more efficient and less costly than having to buy access points in Toronto, Thunder Bay, London, Sudbury Montréal, Kingston, Québec City, Trois-Rivières, Chicoutimi, Val d'Or etc ? Note that Bell Canada in the Nexxia days used to separate Ontario and Québec and an ISP could purchase one province only, however the price difference was such that most of the nascent ISPs purchased both, except some who did not wish to serve Québec due to the need to server customers in french.

Options (cont)

80. Either the full or partial disaggregation re-introduce the problem the ISPs begged be solved with aggregation with 2010-632: capacity planning and load balancing.
81. Prior to 201-632, the Rogers network was split into some 37 POIs if I remember correctly. Some of the growing ISPs would often have to put stop sales for certain regions because their link to that POI was saturated and they were receiving too many performance complaints from customers and had to wait for additional capacity to be added before allowing more customers. Meanwhile, the link to another POI would have had plenty of spare capacity.
82. During the hearing which lead to 2015-326, the Commission asked CNOC why the reversal of its demands. The answer was not forthcoming. There is however a tell: there were requests from some of the ISPs who presented independently to help them save their investment as CLECs now that landlines were no longer a thing. PRIMUS was about to go under CCAA. And the then chair of CNOC did not divulge to the Commission (at least publicly) that he had sold his ISP to a CLEC who stood to benefit from the a system that favoured CLECS and hurt other ISPs.
83. The disaggregated concept has an interesting dilemma: the commercial transport link to a CO may allow affordable 10gbps service, but the incumbent will still nickel and dime the access port and CBB, which is likely why CNOC asked for a ridiculously small amount of incremental capacity in disaggregated when it should really be counted in 1 gbps increments in 2020. (or use 95 percentile billing).

End result of any disaggregation:

84. The end result of tying access to a modern, reliable and efficient last mile service to any type of disaggregation scheme is that consumers are hurt because they continue to lack access to competitive modern reliable and efficient last mile service.
85. It should be noted that consumers stopped getting "matching speeds" at 5mbps circa 2005, and didn't get them until February 2012 (7 years) when both the attempt to forbear (dictated by 2006 policy direction , supported by 2008-17 decision) and the matching speed decisions of 2008/2009 were finalized by 2010-632 and UBB overturned and CBB implemented in fall of 2011 by 2011-703/704 with last minute fine tuning at end of January 2012.
86. It had been 10 years since FTTP deployment has begun, 5 years since the Commission pretended to give wholesale access to FTTP, and unless the Commission reverses its decision to tie FTTP access to disaggregation, consumers will be with access to competitive broadband for many more years.

The end of copper

87. Throughout the process which lead to 2015-326 decision, Bell Canada stated on multiple occasions that it had no plans to turn off copper service. This was convenient for the Commission who was intent on keeping wholesale on copper and give Bell Canada what it wanted: monopoly on fibre.
88. It was well known by all that any telco deploying FTTP did so with a plan to eventually turn off copper and they all have such plans. Once a certain percentage of customers in a region have moved to FTTP, the remaining are forced moved so the copper can be shut down.
89. In the Appendix 1, I quote Glen C Leblanc who confirms such plans with euphoric savings promised to shareholders. (At the time Bell Canada had more than just that one in Germany :-)
90. The danger is that Bell and Telus will leave only wholesale on copper and then show extraordinary cost of maintaining this legacy infrastructure only for a few customers.
91. Where FTTP has been deployed, from a national policy point of view, it does not make sense to continue to maintain the copper any longer than necessary. The faster the copper can be put out of its misery, the better. The savings to incumbents will be very significant, not only because FTTP costs a lot less to maintain (no active equipment on the field, and far more reliable service, fewer truck rolls etc) and more importantly, removes unnecessary duplication of networks in terms of costs to the incumbent.
92. The only reason to continue to use copper when FTTP is available is to hurt wholesale, and the Commission must not tolerate this.
93. Logic dictates that all users be moved to FTTP as fast as possible where FTTP is deployed. The Commission must understand this and act to make FTTP access available to wholesale tomorrow. (ok, next week). And this means FTTP access via current aggregated.
94. Furthermore, the Commission needs to send a clear message to the incumbents that it is open to allowing copper shutdown as long as all customers, retail and wholesale have a path to getting service on FTTP in a region.

Conclusion

95. Copper, like dialup, is no longer competitive. Unless Bell Canada promises to upgrade all its abandoned Stinger DSLAMs to current models and to reconfigure the copper plant to ensure every residence can achieve 50/10 (not "up/to") and not lose sync multiple times per day, copper must not be considered a viable last mile in 2020 as it cannot reliably provide 50/10.
96. As an example, I am about to participate in a Zoom conference. I am unable to provide a video feed of myself because, as a wholesale customer, Bell puts me on the Stinger DSLAM which could not give me reliable VDSL-2 service so I had to drop to ADSL2, where it cannot give me 1mbps upload as promised (only get 0.8mbps). Bell Canada customers are put on the 7330 which is right next to the old Stinger. As the Commission's speed measurement projects measure incumbent retail customers, these stories do not appear in its statistics. They are real.
97. While Bell Canada will claim at the regulatory level that it has no such policy, all tech workers I have met over the years have confirmed that wholesale go on the Stinger when both are available even if they can't get the synch they are purchasing (where they could with the 7330 which support modern VDSL2 versions that reach further from DSLAM). Bell Canada placed the order for Stingers not long before the product line was abandoned circa 2006 and continued to install these abandoned DSLAM until 2012.
98. This is important because from the consumer point of view, the service quality on wholesale is greatly inferior to that of Bell Customers even when ordering the same speeds. The Bell Canada customers get reliable FTTP access at any speed while wholesale customers are stuck on ancient abandoned DSLAMs that perform on only part of the footprint they serve. (roughly 400m) and require special modems because they never got full VDSL2 implementation (product line abandoned prior to full specs being finalised).
99. Why spend so much time in these Stingers? Because from a consumer point of view, 2015-326 has a real impact because we get below par service that is far less reliable (my synch drops whenever there is thunder - it never dropped prior to moving to FTTN when I was on a Lucent 7330 at the central office a few hundred metres further). Since Bell Canada is not , and should not, improving its copper plant, as consumers we suffer.

Conclusion of conclusion:

100. The Commission has in recent years acted very very very slowly. While the 2015-325 may have been designed to give Bell Canada the 5 years of FTTP monopoly it requested, it is time to act to have wholesale access. The Commission needs to move ASAP, consumers have waited long enough.

Relevant transcript

1. The text below contains transcript of relevant portions of a speech made by Glen Leblanc, Executive Vice President and Chief Financial Officer, BCE at: TD Securities Telecom and Media Forum, June 16 2016.

2. Link to the stream: (note: no longer valid)

<http://bell.media-server.com/m/p/vk4wp845>

3. Link to an .mp3 copy: (still valid).

<http://www.vaxination.ca/CRTC/2017/FTTP/TD-Securities-BCE-Glen-Leblanc.mp3>

(note: time indexes listed below are based on the full .mp3 file).

13:44 ...No bigger part of our strategic imperative is that of fibre and advancing our fibre footprint. We have about 2.5 million premises covered with fibre today. We see ourselves at about 3 million premises by the end of calendar 2016. The focus right now is Toronto, we made an announcement that we'll build fibre to about 1.1 million homes here in Toronto. That will be virtually complete by the end of '17, early '18. And that's about a third of the premises we ultimately would like to cover with fibre. Out of the 10 or 11 million homes we serve, we think we could bring fibre to about 9 million of that, now, frankly, that's gonna take 8 to 10 years to get there and do that...

14:39 ...Albeit it is a costly investment, it is about \$1000 per home passed on average, and that's a blend of where you have aerial plant and where you have buried plant, but on average, \$1000. And we've got about 6 million (homes) to go, call that \$6 billion over the next decade. We spend about \$3.7, 3.8 billion dollars a year in a capital program at 17% intensity so that can fit into our capital envelope...

15:45 ... and now the benefits that we are seeing 6, 7 years down the road, lower customer churn, higher ARPU per household, we're seeing *significant* cost reductions on the network, lower truck rolls, lower calls to the contact centre, and ultimately, when you fast forward through the next decade, we're going to end up with a very different cost structure telco in the future.

16:09 There's no electronics in the field, and that's one thing I can't overstate of how important that is. Whether that be a copper network that quite frankly over time in Canada doesn't behave well in humidity and rain and our Canadian weather, or even a Fibre to the Node or networks that have substantive electronics on the field, DSLAMs or Nodes, those nodes ultimately lead to troubles which lead to service troubles with customers, truck rolls and calls to the contact centre.

Appendix 1 (cont)

- 16:39 Fibre is all about elimination of all of that. It's a glass strand from our central office to your home. There are no active electronics in the field. It's a passive network and the cost savings for that in the long term are *very* substantial. Payback, yeah, 7 to 10 years we would say on average we would say is the payback for an investment like this.
- 17:02 This is about re-inventing who we are, this is about, 135 year old company that has lived off of copper networks for most of that, having another 135 years on a network of tomorrow...
- 17:24 [Interviewer] ...I think Verizon in the past talked about 30 percent OPEX reduction once they had a city all fibre . Is there a figure , maybe from your Bell Aliant experience that you guys can quote now ?
- 17:40 [Mr Leblanc] Yeah, I think the numbers that we're seeing from Verizon are absolutely achievable, and we've seen that, but I want to separate cost savings you see today from cost savings you ultimately see in the long run.
- 17:52 The first cost savings I have already alluded to, and that's the lower truck rolls, better customer experience, the network performance savings and lower calls for the context and we're absolutely enjoying that right out of the gate. We see about 40 to 50% lower truck rolls on a fibre network than on our historic Fibre to the Node network, so , material.
- 18:12 **The great savings, or the ultimate euphoria is when you can shut down your copper network. And that's when I think you see the telco of tomorrow.¹**
- 18:23 I don't want to overstate where we're at along that continuum, because it is a ways out then, but ultimately you need to get penetration levels of probably north of 75% before you're going to be so bold as to force migrate customers...
- 19:02 ...So you have to get to a point I think of high penetration in the community before you force migrate. But when you do that, it means shutting down the (copper) network, and the costs savings are sizeable, i think , Verizon are playing around with a couple hundred thousand homes in communities that they are doing that with now, and the early findings are exceptional. And I think we'll ultimately get there, albeit, lets not overstate the pace, we're a way away from that...

(end of transcript portions)

*** END OF DOCUMENT ***

¹ emphasis added