

COMPETITION BUREAU CANADA



TELUS COMMUNICATIONS INC.

Market Study Notice: Competition in Broadband Services

Initial Submission of TELUS Communications Inc.

August 31, 2018

Table of Contents

1.0	Introduction and Executive Summary	4
1.1	Answers to the Competition Bureau’s Questions	6
2.0	The Relevant Market Includes Wireless and Other Broadband Services	11
2.1	Current State of Wireless Competition	12
2.1.1	Accessibility and Speed of Wireless Networks	13
2.1.2	Growth of Wireless Services and Shift from Wireline Broadband.....	13
2.1.3	Uses of Wireless Networks.....	15
2.1.4	Competition among Wireless Service Providers	15
2.2	Emerging Wireless Technologies.....	16
2.2.1	Fifth Generation Wireless Networks	16
2.2.2	Other Wireless Technologies.....	18
3.0	Answer to Question (a): Resellers Have Been Able to Deploy Competitively Effective Service Offers	19
3.1	There Are Fewer Resellers than Appear on the CRTC’s Registration List	19
3.2	Subscription Share Numbers Cited by Bureau Do Not Provide Evidence of Non-Competitive Conditions	21
3.3	Resellers Compete for Subscribers They Choose to Serve	24
3.4	Resellers Target Specific Subscriber Groups and Geographic Areas	25
4.0	Answer to Question (b): Canadians Are Served by a Competitive Market.....	25
4.1	Choice in Broadband Services	26
4.2	Canadians Are Aware of Their Options.....	27
4.3	Resellers Make Strategic Choices for Service Offers	30
4.4	Contracting Practices Affect All Providers Equally	31
5.0	Answer to Question (c): Platform Competition Leads to Good Consumer Outcomes.....	32
5.1	Canada’s Focus on Facilities-based Competition Has Led to Healthy Investment in Telecommunications Facilities	33
5.2	Platform Competition Leads to More Investment in Telecommunications Infrastructure	35
5.3	TELUS Investments in Broadband Networks.....	39
5.4	No New Regulations Needed to Assist Resellers.....	40

6.0 Answer to Question (d): Regulatory Regimes Focusing on Service Competition Result in
Worse Outcomes for Consumers 40

7.0 Conclusion 44

1.0 Introduction and Executive Summary

1. TELUS is pleased to provide its initial submission on competition in broadband services in accordance with the procedures set out in the Market Study Notice (“Notice”).
2. TELUS is a telecommunications services provider that offers national wireless voice and data services that reach more than 99% of the Canadian population. TELUS also provides wireline services such as telephone, high-speed internet access and television services in Alberta, British Columbia, and Eastern Quebec.
3. In the last several years, TELUS has been committed to making substantial investments in all parts of its network, including building fibre-to-the-premises in most of its traditional incumbent wireline service territory, extending its existing LTE footprint, and preparing to launch its fifth generation wireless network. Fibre deployments have now been completed in more than half of TELUS’ operating area, and 5G technology is in the testing phase. TELUS expects to launch its 5G network in less than two years. To make these technologies available to Canadians, TELUS has been increasing its infrastructure spending from approximately \$1.7 billion per year in 2010 to over \$3 billion per year on in 2017. This level of capital expenditure is expected to continue for the next several years.
4. In order to come to correct conclusions about the market for broadband internet access, that market must be properly defined. As explained further below, it would be an error to focus on wireline access to the exclusion of wireless access and other technologies. To ensure that the Competition Bureau has the correct information about the market, TELUS retained Dr. Robert W. Crandall, an economist specializing in industrial organization, regulation, and competition policy. He was a Senior Fellow in Economic Studies at the Brookings Institution for thirty-nine years. He has previously taught at four universities in the United States and is currently Non-Resident Senior Fellow at the Technology Policy Institute. Dr. Crandall holds a Ph.D. in Economics from Northwestern University and has concentrated on regulatory policy and competition policy in the communications sector. Among other engagements, Dr. Crandall has consulted for the Department of Justice, the Federal Trade Commission, the Federal Communications Commission and Canadian Competition Bureau. Dr. Crandall opines on what the relevant market should be for the

- purposes of the Competition Bureau's Notice and to respond to questions (c) and (d) in the Notice. His report is attached as Appendix A to this document.
5. TELUS has also engaged Dr. Christian Dippon, Managing Director at NERA Economic Consulting, who chairs NERA's Global Energy, Environment, Communications, and Infrastructure Practice. Dr. Dippon has many years of experience on assessing competitive impacts of regulatory intervention and reform on the telecommunications industry. Dr. Dippon holds a Ph.D. in Economics from Curtin University (Perth, Australia). Dr. Dippon has testified before the Federal Communications Commission, the International Trade Commission, state courts, federal courts and regulatory authorities in the United States, as well as the Ontario Superior Court of Justice, the Quebec Superior Court, the Supreme Court of British Columbia, the Canadian Radio-television and Telecommunications Commission, and Innovation, Science and Economic Development. In 2012, Dr. Dippon was retained by the Competition Bureau to provide expert testimony in a false advertising investigation against Chatr Wireless. Dr. Dippon's report contains his conclusion regarding questions (a) and (b). Dr. Dippon's evidence is attached as Appendix B to this document.
 6. In answering the questions set out in the Notice, TELUS makes three main points in this submission.
 7. First, the Competition Bureau has defined the market too narrowly by focusing exclusively on fixed wireline broadband. The relevant market includes the provision of broadband services by other technologies, in addition to fixed wireline, including mobile wireless, fixed wireless, satellite and the emerging technologies described further below. Only once the market has been correctly defined can the Competition Bureau seek to draw conclusions about its competitive state.
 8. Second, the Canadian broadband market, whether defined as suggested in the Notice or as suggested by TELUS, is competitive. Competition among facilities-based providers has resulted in competition for broadband services. Outcomes of platform competition – including high speeds networks to which most Canadians have access – have been good for Canadian consumers, and Canadian broadband prices – once compared using a valid

methodology used by Dr. Crandall – compare favourably to prices in other jurisdictions when all relevant factors are considered. There is no need for further regulatory intervention to make this market competitive because it is already competitive.

9. Third, there is no need to make policy recommendations that include further measures to assist or promote resellers of wireline broadband services. Resellers are already successful where they have chosen to compete. As seen in other jurisdictions, intrusive regulatory measures predicated upon service-based competition, rather than platform-based competition, have led to negative outcomes. Canadians, on the other hand, have enjoyed world-class broadband networks that were made possible by the fact that facilities-based providers have had the proper incentives to invest in developing and maintaining them.
10. The remainder of this document is divided as follows. Section 2 covers the relevant market. Section 3 addresses question (a) in the Notice and discusses the role of resellers. Section 4 addresses the competitive state of the market and reaction of consumers, and answers question (b) in the Notice. Section 5 answers the Competition Bureau’s question (c) by looking at the impact of current regulation on consumer outcomes. Section 6 answers question (d) in the Notice and compares the outcomes in Canada with the outcomes in jurisdictions that have chosen not to pursue platform competition. Section 7 provides TELUS’ conclusion.
11. In the remainder of this section, TELUS summarizes its answer to the Competition Bureau’s Questions.

1.1 Answers to the Competition Bureau’s Questions

12. Based upon the expert evidence of Dr. Dippon and Dr. Crandall, TELUS’ answers to the questions posed in the Notice are as follows:

What is the appropriate definition of the market?

Based on the evidence of Dr. Crandall, “[t]he Canadian broadband market is much broader than that suggested by the Bureau’s Notice. Wireless broadband services are rapidly replacing fixed wireline services among Canadian consumers, reflecting their

view that wireless and wireline broadband services are substitutes. The relevant market for consumer broadband services includes wireline, satellite, and wireless services.”

a. **Have resellers been able to deploy competitively effective service offers?**

(i) What competitive influence have resellers had, to date, on traditional phone and cable network owners? How could this competitive influence change in the future?

Dr. Dippon concludes that “[a]lthough the commercial success of a market participant should not be of concern to the Bureau, resellers compete for subscribers they elect to serve. This provides Canadian consumers with additional service choices and potentially different price options. In market segments not addressed by resellers, the providers offer the threat of their entry due to the absence of entry barriers (i.e., full contestability).”

(ii) Are there differences between the services offered by traditional phone and cable network owners and those provided by resellers that could explain the observed consumption patterns?

Dr. Dippon concludes in the affirmative, finding that “resellers elect to serve limited geographic regions and selected customer groups. Resellers generally do not offer video services, which prevents them from offering triple-play bundles. Further, with generally lower download speeds, they target consumers with relatively modest data consumption needs. The resellers’ plan structures are also different and typically require the purchase or rental of a modem. Finally, although facilities-based providers generally use brick-and-mortar stores in addition to online distribution channels, resellers typically sell their services online only.”

What are the value points that matter the most to consumers?

Dr. Dippon notes that the answer will depend on the type of customer, but that “download speeds, price, service quality, and the ability to bundle services are all elements of the consumer purchase decision.”

b. How have consumers reacted to new competitive alternatives?

i. *How aware are Canadian consumers of their options for broadband services?*

Dr. Dippon states that resellers “have been able to acquire a substantial market share and are the fastest growing type of provider, which is strong evidence that Canadian consumers are fully aware of resellers.” Dr. Dippon further notes that Canadian consumers are generally aware of resellers. Some resellers have been active in the telecommunications field for decades, and most resellers engage in marketing campaigns targeted either at consumers in general or at specific groups of consumers they choose to target.

Are there factors that may drive consumer inertia in this industry and if so are there ways to overcome those factors?

Dr. Dippon reports that “[t]here is no evidence of consumer inertia for resellers and incumbents being different. Moreover, with consumers switching relatively freely, consumer inertia appears low. For residential high-speed Internet access service subscriptions, the industry churn rates (a measure of subscriber turnover) was 1.80 percent of subscriptions per month in 2015 and 1.74 percent of subscriptions per month in 2016 for the larger ISPs. Thus, in 2016, these ISPs had to replace almost 21 percent of their subscriptions to remain at the size they were starting the year.”

ii. *How does the fact that resellers do not typically provide other telecommunications services (e.g. television or phone service) affect the competitive attractiveness of resellers?*

Some resellers such as Distributel and VMedia have been offering television services for a number of years. Many resellers also offer home telephone services. For those

resellers that choose to only offer broadband internet access, Dr. Dippon finds that it “reduces the potential subscriber base resellers elect to serve and renders market shares misleading.” Dr. Dippon’s analysis shows that these providers have been successful among the subset of subscribers they choose to serve.

iii. *How do industry contractual practices affect consumer behaviour?*

Dr. Dippon concludes that there is no evidence that industry contractual practices affect resellers any differently from facilities-based providers. Facilities-based providers as well as resellers offer a mix of no-term and term plans, depending on the price and inducements offered to consumers.

How are contract lengths and bundling discounts structured?

Dr. Dippon concludes that by electing to enter into a term contract, subscribers reveal their preference to remain with a particular provider for the duration of the term contract in exchange for a lower monthly recurring charge or other inducement. These practices benefit consumers and allow consumers to demonstrate the value they place on the offers made available in the competitive market.

How aware are consumers of their contractual obligations and rights?

After considering relevant industry practices and the practices in the wireless industry, Dr. Dippon concludes that “consumers should be fully aware of their contractual rights and obligations.” Additionally, the CRTC maintains regulatory requirements regarding information that must be provided to customers, as well as a framework and associated consumer information to facilitate switching between providers.

c. *How does regulation in this industry affect the economic behaviour of broadband suppliers?*

How does the Canadian reseller regime affect the incentives that network owners have to expand or upgrade their networks? Have network investment levels changed following the establishment of resellers? What investments must resellers make in order to provide services to consumers? Are there features of the marketplace that

impede the expansion of resellers? Have network owners used the reseller regime to expand their reach outside of their incumbency area? Why or why not?

Dr. Crandall concludes that “Canadian regulators’ reliance on platform competition, rather than service competition, has spurred much greater broadband investment than that which results from service competition in other developed countries, particularly in the European Union. This greater investment has resulted in the deployment of very high-speed services throughout Canada, including rural areas, eclipsing the average speeds found in European countries that are more reliant on service competition in regulating broadband.”

Dr. Crandall further notes that this greater investment has allowed Canadian carriers to deploy high-speed broadband services throughout Canada, not just in large urban areas, despite the country’s very low population density. In comparison with European Union jurisdictions, more Canadians have access to high-speed connections, achievable speeds are faster and carriers are now investing in next generation networks. However, the CRTC’s 2015 decision to require facilities-based providers to offer emerging fibre networks to resellers is an exception from the policy of facilities-based competition and may lead to the kind of negative outcomes that are seen in European jurisdictions.

d. How do other countries manage and regulate broadband competition?

i. Do Canadian regulations diverge in any meaningful way from those employed by other countries? Are there significant differences between Canada and other jurisdictions that explain any divergence?

Dr. Crandall writes that “Canada and the United States stand out as countries that rely heavily on platform competition. The European Union, by contrast, has relied on service competition as its approach to broadband regulation, which suppresses network investment to the detriment of European consumers.”

ii. Are there any lessons to be learned from how other jurisdictions regulate broadband?

The most important lesson to be learned is that platform competition is superior to service competition in promoting investment in the deployment of broadband networks.

Countries that relied on platform competition have higher investment in advanced broadband networks, more rural coverage, and faster broadband speeds.

2.0 The Relevant Market Includes Wireless and Other Broadband Services

13. Before studying the competitive dynamics of a market, the market needs to be correctly identified and defined. There is a risk of coming to an incorrect conclusion if the market is defined too broadly or too narrowly. The Notice appears to be focused on wireline internet access into homes, stating that “most Canadian homes are served by two networks capable of providing broadband internet services: one owned by the local telephone company and the other owned by the local cable company.” The notice goes on to refer to this as a “limited choice.”¹
14. The assumption that residential customers have two choices when it comes to internet access is incorrect and should be re-examined.² As explained further below and in the report of Dr. Crandall, there is significant and increasing substitution of wireline internet access for wireless internet access, meaning that some households are disconnecting home internet in favour of mobile networks. As a result, mobile networks have become “a third rail into the home,” the first two being telephone and cable wireline facilities. This trend is expected to accelerate as fifth-generation (“5G”) wireless networks and other technologies are deployed in the coming years. Additionally, Canadians already have access to satellite networks, and emerging technologies expected to give Canadians more ways to receive broadband access to the internet are expected to be deployed in the near future.
15. As a result of this substitution, Dr. Crandall concluded in his report that “[t]he Canadian broadband market is much broader than that suggested by the Bureau’s Notice. Wireless broadband services are rapidly replacing fixed wireline services among Canadian consumers, reflecting their view that wireless and wireline broadband services are

¹ Competition Bureau Market Study Notice: Competition in Broadband Services (the “Notice”), para. 4.

² Report of Dr. Robert W. Crandall, pp. 1-2.

substitutes. The most appropriate relevant market for consumer access to the Internet includes wireless, wireline, and satellite broadband services.”³

16. The sections below contain a description of the current and future state of wireless networks. Overall, the decision to focus on wireline access to the exclusion of wireless broadband and other technologies is backward-looking and does not take into account the current and future reality of how Canadians access broadband internet. It is not possible to undertake a comprehensive study of the broadband market if wireline broadband is considered to the exclusion of other means of internet access.

2.1 Current State of Wireless Competition

17. The vast majority of Canadians have access to fast and reliable wireless networks which they use for browsing, banking, shopping and social media. As explained further below, these networks are capable of delivering speeds that are comparable to or faster than wireline DSL and cable networks. This has led to a shift away from wireline internet access toward wireless broadband, with some Canadians disconnecting their home internet connection.
18. The CRTC has recognized this and stated in its 2017 Communications Monitoring Report that

Canada’s wireless networks enable Canadians to access services that are comparable to wireline services. Wireless service providers (WSPs) provide voice, data, *Internet*, and video services. The differentiating factors for these services tend to be mobility and price. Based on MTM’s [Media Technology Monitor’s] 2016 statistics, the three most popular activities by Canadian smartphone owners were text messages, *Internet access*, and email.⁴

³ Report of Dr. Robert W. Crandall, p. 6.

⁴ CRTC, *Communications Monitoring Report 2017*, p. 294, online: <https://crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2017/cmr2017.pdf>.

2.1.1 Accessibility and Speed of Wireless Networks

19. Canadians enjoy nearly ubiquitous access to high-speed and high-quality mobile wireless networks. As indicated in the CRTC's 2017 Communications Monitoring Report, access to fourth generation LTE networks is available to 98.5% of Canadians. An upgraded, faster fourth generation network known as LTE-A is available to 83% of Canadians.⁵ More recent TELUS data shows that penetration for TELUS' network is even higher, with LTE accessible to 99% and LTE-A available to 88.2% of Canadians.⁶ LTE is capable of delivering download speeds of up to 300 megabits per second (Mbps), while LTE-A delivers up to 1 gigabit download speeds.⁷
20. These speeds are faster than what copper telephone networks are capable of offering. For example, the speeds available on wireline DSL connections offered by TELUS top out at 100Mbps, which is only 10 percent of the top speed of LTE-A. #

#.

2.1.2 Growth of Wireless Services and Shift from Wireline Broadband

21. As a result of high speed and near-ubiquitous access, the market for mobile wireless broadband services continues to grow. As of 2016, there were more than 30.75 million subscriptions to mobile networks.⁸ With the speed of LTE and LTE-A wireless networks being faster than some wired networks, and given other benefits of wireless networks, it is not surprising that an increasing number of Canadian households are relying on exclusively on mobile wireless for broadband internet access.
22. The trend away from wireline internet and toward mobile wireless broadband is unmistakable. The CRTC Communications Monitoring Report 2018 states:

⁵ Communications Monitoring Report 2017, p. 32, footnote 1.

⁶ TELUS 2017 Annual Report, p. 53.

⁷ Communications Monitoring Report 2017, p. 32.

⁸ CRTC Communications Monitoring Report 2017, p. 294.

Over the last decade, the percentage of households with landlines has decreased, while the percentage with mobile phones has increased (Figure 1.2). Fewer households are subscribing to both services – in 2016, almost a third (32.5%) of Canadian households were mobile-only households, and 11.4% were landline-only.⁹

23. Detailed data provided by the CRTC in the 2018 Communications Monitoring Report¹⁰ shows this trend very clearly:¹¹

Canadian Landline and Mobile Service Subscribers per 100 Households

Year	Landline	Mobile	Landline and/or mobile	Landline only	Mobile only
2004	96.2	58.9	98.9	40.0	2.7
2005	94.0	62.9	98.8	36.0	4.8
2006	93.6	66.8	98.6	31.8	5.0
2007	92.5	71.9	98.8	26.9	6.3
2008	91.1	74.3	99.1	24.8	8.0
2009	89.3	77.2	99.3	22.1	10.0
2010	89.3	78.1	99.4	21.3	10.1
2011	86.6	79.1	99.3	20.2	12.7
2012	83.8	81.3	99.2	17.9	15.4
2013	79.1	84.7	99.3	14.6	20.2
2014	75.5	85.6	99.2	13.6	23.7
2015	71.9	86.1	99.3	13.2	27.5
2016	66.8	87.9	99.3	11.4	32.5

24. Some of these data – likely in the earlier years – may reflect a shift from wireline voice services to wireless voice services. However, Dr. Crandall concludes that the more recent data can be attributed to a shift from wireline broadband to mobile wireless broadband.¹²
25. In this regard, Dr. Crandall refers to a study recently published by Deloitte which found that 25 percent of Canadian homes relied solely on cellular wireless for access to data over

⁹ CRTC Communications Monitoring Report 2018, p. 6.

¹⁰ CRTC Communications Monitoring Report 2018, Communications Services in Canadian Households: Subscriptions and Expenditures 2012-2016, Table 1.1.

¹¹ Table reproduced from Report of Dr. Robert W. Crandall, pp. 4-5.

¹² Report of Dr. Robert W. Crandall, pp. 4-5.

the Internet in 2017.¹³ In its study, Deloitte predicts that by 2022, 30 to 40 percent of all households in seven countries it studied (including Canada) will rely solely on wireless services for broadband access. As the study notes, “[t]hese people will have no active wired data connection to their home – no coaxial cable, fiber-optic connection or copper DSL line. Instead, they rely on radio technology for their entire home internet usage.”¹⁴ CRTC data also show that wireless internet usage has been growing quickly and substantially; for example, wireless data consumption grew by 25 percent in only one year between 2015 and 2016.¹⁵

2.1.3 Uses of Wireless Networks

26. For most uses of the internet, wireless broadband as it stands is as good as wireline internet access. According to the CRTC, the top three smartphone (mobile internet) uses are internet access, email and text messaging.¹⁶ The CRTC also states that popular activities that Canadians do on their smartphones include social networking, reading online news, making online purchases and accessing online banking.¹⁷
27. None of these activities requires a wireline connection. Consumers who use the internet for these and other such purposes and who do not regularly stream high-quality video can, and often do, have their needs met with only a mobile wireless data subscription.

2.1.4 Competition among Wireless Service Providers

28. Canadian consumers have many options when choosing a wireless provider as wireless carriers aggressively compete for customers. There are three national wireless networks (Bell, Rogers and TELUS), along with regional networks including Shaw/Freedom Mobile, SaskTel, Eastlink and Videotron. The three national networks also have multiple value brands competing for customers in most price points and offering differentiated

¹³ Report of Dr. Robert W. Crandall, pp. 4-5; Deloitte, “TMT Predictions 2018: The future is here,” p.56. Online: <https://www2.deloitte.com/ca/en/pages/technology-media-and-telecommunications/articles/tmt-predictions-2018.html>.

¹⁴ *Ibid.*

¹⁵ *Ibid.*, p. 32.

¹⁶ CRTC Communications Monitoring Report, p. 294.

¹⁷ *Ibid.*, p. 311.

services aimed at various segments of the population. In addition, Xplornet recently announced that it will be launching an LTE wireless network in Manitoba,¹⁸ adding another competitor to vie for customers. Unlike a new entrant, Xplornet received a head-start by acquiring certain assets as a condition of Bell's acquisition of MTS.

29. The competition in wireless services has been vigorous in 2018, and there have been aggressive data promotions in 23 of the first 26 weeks of the year, with bonus data being added to many in-market plans.¹⁹

2.2 *Emerging Wireless Technologies*

30. There is reason to believe that the shift from wireline to wireless broadband will continue to accelerate. There are several wireless technologies in various stages of development that will lead to speeds that are faster than LTE, also with nearly ubiquitous access. Those technologies include 5G mobile wireless networks and emerging technologies such as low earth orbit ("LEO") satellites and hot air balloon-based broadband internet (Loon). These developments are described in further detail below.

2.2.1 *Fifth Generation Wireless Networks*

31. National wireless carriers, including TELUS have spent the last number of years planning and testing a next-generation wireless network known as 5G. Once deployed, 5G networks are expected to be significantly faster than current LTE-A wireless networks and have far lower latency, in some cases, as little as one millisecond. For contrast, latency – the measure of how long data takes to reach its destination – on current generation LTE networks is several times higher.
32. Next generation wireline technology (fibre) and next generation wireless technology (5G) are expected to both converge and complement each other. In the TELUS 2017 Annual Report, it was noted that

¹⁸ <https://www.xplornet.com/about/news/xplornet-launch-new-mobile-wireless-service-manitoba/>

¹⁹ <https://ottawacitizen.com/telecom/tv-internet-outshine-wireless-for-telus/wcm/66f8efa3-e87f-4d99-8a1a-2a16da66a031>.

[a]s the industry moves to 5G wireless in the coming years, we expect to be operating on, and providing services over, a more converged network. The lines between wireline and wireless will continue to blur based on how we deliver services to customers and how customers use those services. As our broadband network continues to expand and 5G begins to be commercialized in the coming years, we expect to benefit from the flexibility of determining the most efficient way to deliver services across our footprint. We do not expect to have to build fibre to every home, but rather we believe that there will be options to support parts of our broadband footprint wirelessly with 5G.²⁰ (emphasis added)

33. Worldwide, the first commercial 5G networks are expected to launch in 2019, with consumer devices supporting 5G launching in late 2019 or 2020.²¹ The timing of commercial launch of 5G wireless networks in Canada depends on the timing and conditions of spectrum being made available. Barring unforeseen circumstances, commercial 5G networks are expected to launch in Canada sometime in the next two years. As with previous generation networks, they will grow over time and will eventually serve most of Canada's population.

34. As Dr. Crandall notes:

One of the major reasons for the continuing shift from wireline to wireless broadband will be the deployment of 5G millimeter wave technology, using much higher frequencies than those currently used in cellular networks. These new 5G technologies will permit carriers to deploy small digital antennas on the outside of homes, which will allow the homes to connect by line of sight to small microcell transmitters a few hundred meters away. These technologies are now beginning to be deployed and are likely to constitute a major new source of home Internet access within a few years. At this juncture, it is very difficult to predict how the new 5G technologies will affect the manner in which consumers connect to the internet. It is likely that the proliferation of access points – currently described as “hot spots” – will dramatically change consumer options and, consequently, the prices available to

²⁰ TELUS 2017 Annual Report, p. 85. [Emphasis added.]

²¹ TELUS 2017 Annual Report, p. 94.

consumers. As 5G is deployed, the distinction between wireless and wireline services may begin to disappear.²²

35. TELUS, as well as industry experts such as Dr. Crandall and Deloitte, expect 5G to significantly accelerate the trend of Canadians switching their broadband use from wireline to wireless networks. It therefore makes little sense to consider regulation based on the current technological environment. 5G will soon be commercially deployed and Canadians will be using wireless networks for even more applications than they do today, including to completely replace wireline internet connections.

2.2.2 Other Wireless Technologies

36. In addition to wireline, LTE and upcoming 5G networks, Canadians currently have access to satellite internet offerings from companies such as Xplornet. In the near future, other wireless technologies will become available that will compete with wireline broadband and give Canadians even more choice.
37. A promising new way to deliver broadband is LEO satellite technology, which is expected to provide seamless broadband speed and performance and be available worldwide. Telesat LEO satellites will deliver fibre-quality gigabit networks with low latency and, according to Telesat, the start of global service is targeted for 2022.²³ Telesat passed a major milestone when it received a worldwide licence for 4 GHz of spectrum and received permission to access the US market late last year.²⁴ SpaceX is similarly working on a LEO satellite constellation that it plans to put into commercial operation by 2022.²⁵
38. Another example of an emerging technology is broadband internet provided via hot air balloons. Loon, originally a Google X project, overcame many technical challenges and recently became its own corporate entity within the Alphabet group.²⁶ It is now seeking customers for its services. It was successfully used in Puerto Rico²⁷ and has launched

²² Report of Dr. Robert W. Crandall, pp. 5-6.

²³ <https://www.telesat.com/services/leo/why-leo>

²⁴ <https://www.telesat.com/news-events/fcc-grants-us-market-access-telesat-its-global-low-earth-orbit-leo-satellite>

²⁵ <https://www.zdnet.com/article/spacex-to-launch-internet-from-the-sky/>

²⁶ <https://blog.x.company/graduation-day-loon-and-wing-take-flight-e23a42620131>

²⁷ <https://medium.com/loon-for-all/turning-on-project-loon-in-puerto-rico-f3aa41ad2d7f>

commercially in Kenya.²⁸ Given that it has the backing of Alphabet (Google's parent company), the technology is likely to continue developing, and Loon will be seen in commercial operation in the coming years.

39. With gigabit performance that is comparable to fibre networks that are being built throughout Canada by numerous carriers, LEO satellites may become a direct competitor to wireline broadband internet access in a very short time. The impact of Loon remains to be seen, but early deployments have been promising and the technology has been proven to work. Given that these technologies are on the horizon, it does not make sense to exclude them from the Notice given that this market study may inform regulation of these services in the future.

3.0 Answer to Question (a): Resellers Have Been Able to Deploy Competitively Effective Service Offers

40. In its first question, the Competition Bureau asks whether resellers have been able to develop competitively effective service offers. However, before assessing the nature of reseller service offers and the degree of success enjoyed by resellers, it is first necessary to correct the Competition Bureau's mistaken conclusion about the number of resellers actually operating in Canada. As will be demonstrated, the number is much smaller than set out in the Notice.

3.1 There Are Fewer Resellers than Appear on the CRTC's Registration List

41. The Competition Bureau claims that "more than 550 companies have been established to act as a competitive alternative to traditional telephone and cable companies".²⁹ This statement is incorrect.
42. The likelihood that the number is inflated becomes obvious when assessing the source on which the Competition Bureau bases its claim, the CRTC's list of registered providers. The list of registered resellers of high-speed internet service upon which the Competition Bureau bases the number of resellers should not be viewed as an accurate or current list of

²⁸ <https://www.wired.com/story/loon-internet-balloons-kenya-google-alphabet-x/>

²⁹ Market Study Notice: Competition in Broadband Services, para. 5.

providers actually offering retail internet service. Indeed, the list does not even purport to be this.

43. The CRTC's registration requirements are very broad, so much so that the CRTC recently held a public proceeding to consider whether the framework ought to be amended.³⁰ The CRTC does not, at present, maintain any rules or guidelines that would serve to limit registrations. It is not even clear, in the present framework, whether entities such as a coffee shops with open Wi-Fi networks are required to register as ISPs.³¹ While this type of entity has not traditionally registered, it illustrates a problem: the relevant definitions are so broad that they capture a surprising range of entities.
44. As a consequence, businesses that include some form of connectivity relying on IP traffic, bundled with their primary service offering, end up registered as a reseller of high-speed internet services, even though they do not provide retail broadband services in any commonly understood way.³² Such a provider would not be acting as an alternative to a facilities-based provider for retail internet services but may be registered as such with the CRTC.
45. The current registration requirements promote registration in the case of any ambiguity. Registration is an obligation placed on service providers by the CRTC. Accordingly, there is a strong impetus for companies to register. However, there is very little to discourage a company from registering. The primary practical implication flowing from CRTC registration for an ISP is participating in the CRTC's periodic information filings. This is a very light regulatory obligation.
46. Accordingly, the strong incentive to register has little to no countervailing negative implication. It is a recipe for companies to register out of caution: better safe than sorry. It should come as no surprise that the list is overpopulated. The Competition Bureau must

³⁰ See Telecom Notice of Consultation CRTC 2017-450, *Call for comments: review of the reseller registration obligation* ("TNC 2017-450").

³¹ TNC 2017-450, para. 6.

³² For example, the CRTC is considering, among other things, whether machine-to-machine providers ought to be subject to registration requirements. See TNC 2017-450, para. 8.

not base any conclusions about the number of providers actually competing for retail internet subscribers on the CRTC's registration list.

47. The number of resellers is in reality much lower. Dr. Dippon notes that CNOOC, alternative service providers' trade association, lists only 34 members, and that the CRTC's Communications Monitoring Report references only "four resellers, three of which remain in business and serve residential broadband customers."³³ After conducting further analysis, Dr. Dippon concludes "there are a limited number of major resellers that are actively competing for Canadian broadband subscribers."³⁴ In his report, Dr. Dippon concludes that there are five major resellers operating in Canada.³⁵

3.2 *Subscription Share Numbers Cited by Bureau Do Not Provide Evidence of Non-Competitive Conditions*

48. The focus of the Competition Bureau's present inquiry appear to be on residential retail fixed wireline internet access. The Notice states that "most Canadian homes are served by two networks capable of providing broadband internet services: one owned by the local telephone company and the other owned by the local cable company." The Notice goes on to describe this situation an instance of "limited choice."³⁶
49. In its first question, the Competition Bureau asks whether resellers have been able to develop competitively effective service offers. The answer is a clear "yes". The evidence shows that resellers have developed competitive offers. And while a regulator should not be focused on the commercial success of specific types of players, the evidence also shows that resellers have in fact been successful. Their share of retail fixed wireline internet subscriptions is strong, and growing. Their share of the particular areas on which resellers focus is even stronger.
50. The Competition Bureau, in its Notice, states that "questions arise as to the impacts that ... [resellers] ... have had on competition", noting that 87% of subscriptions were purchased

³³ Report of Dr. Christian Dippon, para. 14.

³⁴ Report of Dr. Christian Dippon, para. 14.

³⁵ Report of Dr. Christian Dippon, para. 52.

³⁶ Market Study Notice: Competition in Broadband Services, para. 4.

from a “traditional telephone or cable company.”³⁷ The Competition Bureau appears to believe that the share of subscriptions served by resellers somehow implies insufficient competition. This belief is incorrect, for a number of reasons.

51. First, the relevant market is much broader than fixed wireline service connections, as discussed in detail in Section 2.0. Dr. Crandall concludes that “[t]he relevant market for consumer broadband services includes wireline, satellite, and wireless services.”³⁸ The competitiveness of a market can only be assessed based on the market as a whole. The subscription percentages cited by the Competition Bureau in its Notice pertain only to a portion of a market: namely, fixed wireline broadband internet connections. It would be erroneous for the Competition Bureau to draw any conclusions about competition from these numbers, as the evidence pertains to only a part of the market.
52. Second, as set out by Dr. Dippon in his report, “market share numbers do not indicate whether resellers have been able to deploy competitive effective service offerings.”³⁹ Effective competition for telecommunications services can occur where the share of incumbent providers has been similar to or higher than the concentrations cited in the Competition Bureau’s Notice. Dr. Dippon summarizes the experience in the United States regarding performance of local fixed telephone service markets.⁴⁰ He notes that the FCC “specifically refrained from using only a market share test in examining whether the wholesale market worked optimally.”⁴¹ He notes that resellers “achieved similar, if not lower, market shares as Canadian broadband resellers, thus demonstrating that the latter have been able to deploy competitively effective service offerings.”⁴² Finally, “the FCC concluded that incumbent market shares (which were far above those observed in Canada) were sufficient to declare the market as working optimally as part of a three-prong test.”⁴³ Thus, even if the Competition Bureau conducted its assessment on the basis of an

³⁷ Market Study Notice: Competition in Broadband Services, para. 6.

³⁸ Report of Dr. Robert W. Crandall, p. 23.

³⁹ Report of Dr. Christian Dippon, para. 71.

⁴⁰ Report of Dr. Christian Dippon, para. 77.

⁴¹ Report of Dr. Christian Dippon, para. 77.

⁴² Report of Dr. Christian Dippon, para. 77.

⁴³ Report of Dr. Christian Dippon, para. 77.

incorrectly defined market consisting solely of fixed wireline broadband connections, “[t]his international precedent confirms that reseller market shares are not sufficient to assess the competitive impact of resellers on incumbent providers, and relatively low reseller market shares do not imply that the market is not working optimally.”⁴⁴

53. Third, not only do resellers hold a competitively significant percentage of wireline internet service subscriptions, the evidence shows that their share is *growing*. As a consequence, the 13% referred to by the Competition Bureau, based on 2016 statistics, likely no longer reflects actual conditions.⁴⁵ According to the CRTC statistics cited by the Competition Bureau, “other service providers” (the category which includes resellers), hold 13% of retail wireline internet subscriptions today. Over the 2012-2016 period, the other service provider category outpaced incumbent facilities-based providers in growth rate of both subscribers and revenues based on a compound annual growth rate (“CAGR”) of 13.1% and 23.5% respectively for resellers compared to just 1.7% and 9.3% respectively for incumbent facilities-based providers over that same period.⁴⁶ Other service providers are forecast by Dr. Dippon to increase their current share of 13% to 18.4% by 2020.⁴⁷ In short, the evidence clearly shows that resellers have been able to deploy competitive services and have been able to take an ever greater share of subscribers.
54. Fourth, resellers generally do not provide like-for-like services at pricing beneath incumbent pricing to the degree suggested in the Competition Bureau’s Notice. The Competition Bureau questions the 13% share “against the backdrop of resellers offering seemingly comparable services at prices that can be as much as 30% lower than those offered by telephone and cable companies”.⁴⁸ However, for reasons provided by Dr. Dippon, this 30% figure is based on studies⁴⁹ that are unscientific and unreliable for purposes of drawing conclusions about market performance.⁵⁰ As Dr. Dippon notes, the

⁴⁴ Report of Dr. Christian Dippon, para. 17.

⁴⁵ Report of Dr. Christian Dippon, para. 63.

⁴⁶ Report of Dr. Christian Dippon, para. 63.

⁴⁷ Report of Dr. Christian Dippon, para. 70.

⁴⁸ Market Study Notice: Competition in Broadband Services, para. 6.

⁴⁹ Dr. Dippon’s report comments on both the Wall Report, on which the Bureau relies in its Notice, as well as a similarly flawed report by the Nordicity. This document accordingly refers to “reports” in the plural.

⁵⁰ Report of Dr. Christian Dippon, para. 57.

studies provide only an “apples to oranges comparison” which is “meaningless because it attributes all price differences to higher price levels ... rather than different (e.g., richer) service plans.”⁵¹ Moreover, the studies cannot be relied on to provide conclusions about overall price offerings by the resellers.⁵²

55. Fifth, resellers have traditionally chosen to limit themselves to only a portion of subscribers, and their success there is even more striking. While certain resellers do generally offer triple-play bundles, many resellers often seek to serve only those customers who do not want such bundles: subscribers of stand-alone internet access services or double-play bundles that do not include video. In his report, Dr. Dippon estimates that resellers have had success in serving subscribers who do not wish to purchase a triple-play bundle and even more success serving those who wish to purchase broadband on a stand-alone basis.⁵³ An assessment of the competitive impact of resellers would be incomplete if it did not factor in the high degree of success resellers have had in the areas in which they have chosen to focus their offers.

3.3 Resellers Compete for Subscribers They Choose to Serve

56. In the first sub-part to the Competition Bureau’s question (a), it asks “What competitive influence have resellers had, to date, on traditional phone and cable network owners? How could this competitive influence change in the future?”
57. Dr. Dippon’s report answers this question as follows:

Although the commercial success of a market participant should not be of concern to the Bureau, resellers compete for subscribers they elect to serve. This provides Canadian consumers with additional service choices and potentially different price options. In market segments not addressed by resellers, the providers offer the threat of their entry due to the absence of entry barriers (i.e., full contestability).⁵⁴

⁵¹ Report of Dr. Christian Dippon, para. 58.

⁵² Report of Dr. Christian Dippon, para. 56.

⁵³ Report of Dr. Christian Dippon, para. 66.

⁵⁴ Report of Dr. Christian Dippon, para. 99.

3.4 Resellers Target Specific Subscriber Groups and Geographic Areas

58. The Competition Bureau asks in its Notice: “[a]re there differences between the services offered by traditional phone and cable network owners and those provided by resellers that could explain the observed consumption patterns? What are the value points that matter the most to consumers?”

59. Dr. Dippon responds to this question as follows:

Yes, resellers elect to serve limited geographic regions and selected customer groups. Resellers generally do not offer video services, which prevents them from offering triple-play bundles. Further, with generally lower download speeds, they target consumers with relatively modest data consumption needs. The resellers’ plan structures are also different and typically require the purchase or rental of a modem. Finally, although facilities-based providers generally use brick-and-mortar stores in addition to online distribution channels, resellers typically sell their services online only.⁵⁵

60. In terms of the value points that matter to consumers, Dr. Dippon opines that “download speeds, price, service quality, and the ability to bundle services are all elements of the consumer purchase decision.”⁵⁶

4.0 Answer to Question (b): Canadians Are Served by a Competitive Market

61. Question (b) in the Notice asks about how consumers have reacted to new competitive offerings. Canadians are served by a competitive retail broadband market and have embraced all available options for broadband providers. Most Canadians have a choice among several types of providers, including telephone companies, cable companies, national wireless carriers, regional wireless carriers, regional facilities-based providers and resellers. Canadians are generally aware of the options they have due to mass and targeted marketing campaigns.

⁵⁵ Report of Dr. Christian Dippon at para 99.

⁵⁶ Report of Dr. Christian Dippon at para. 99.

62. Even if an individual user's location or needs are such that only a wireline internet connection can meet them, that user is still served by a competitive broadband market. The nature of competition in network industries such as telecommunications means that even if there are only two facilities-based firms competing, they can deliver competitive outcomes by using their spare capacity to target each other's customers as well as new business.⁵⁷ These firms have a strong incentive to attract new customers and fill existing capacity as additional business can be accommodated at little or no additional cost. This competition leads to innovations in technology, improvements to the networks and lower consumer prices. As it currently stands, that user can also access existing resellers, providing even more choice and ensuring that competitive prices are charged for broadband access.

4.1 Choice in Broadband Services

63. Depending on an individual's needs and location, they currently have the following categories of broadband providers available to them:
- a. Local telephone companies – examples include Bell, TELUS, SaskTel or smaller incumbent local exchange carrier depending on location. Some telephone companies also have value brands⁵⁸ that offer wireline broadband internet access;
 - b. Local cable companies – examples include Rogers, Shaw, Videotron, Eastlink or smaller facilities-based coaxial cable provider depending on location. Some cable companies also have value brands⁵⁹ that offer wireline broadband internet access;
 - c. National wireless carriers – Bell, Rogers, TELUS and their value brands are available to approximately 99% of Canadians;
 - d. Regional wireless carriers – at least one of Shaw/Freedom Mobile, SaskTel, Videotron and Eastlink Wireless are available in many urban and some rural

⁵⁷ Report of Dr. Robert W. Crandall, pp. 19-20; see also Martin Peitz and Tommaso Valletti, "Reassessing Competition Concerns in Electronic Communications Markets," *Telecommunications Policy*, Vol. 39, (2015), pp. 896-912. These authors note that "Those who have invested in infrastructure have strong incentives to attract customers and fill existing capacity as additional business can be accommodated at little or no additional cost... [Regulators] may also have to be wary about capacity expansion that discourages investment by competing infrastructure providers, but at the same time acknowledge that in geographic areas or market segments where facilities-based competition exists, concerns about market power should be greatly reduced." (p. 910)

⁵⁸ For example, Bell's value brand Virgin offers wireline internet access:

<https://www.virginmobile.ca/en/internet/index.html?province=ON&geoResult=ON>

⁵⁹ For example, Rogers' value brand Fido offers wireline internet access: <https://www.fido.ca/html-fido/#/internet>

locations in Canada. Xplornet will be launching an LTE network in Manitoba in the fall of 2018, which will result in further competition in that province;

- e. Satellite providers – including Xplornet;
 - f. Regional or local fibre facilities-based carriers – operators including Novus, Beanfield Metroconnect and others provide fibre facilities to many Canadians, primarily (but not exclusively) in urban areas;⁶⁰ and
 - g. Resellers – examples include TekSavvy, Primus and Distributel.
64. The number of these options available to any given Canadian depends on his or her location within Canada. For example, an individual living in a condominium in downtown Toronto may well have access to all seven categories of providers: Bell (phone), Rogers (cable), Bell/Rogers/TELUS (national wireless), Freedom Mobile (regional wireless), Beanfield Metroconnect (local fibre) and TekSavvy/Primus/Distributel/etc. (resellers). Canadians living in rural areas may have access to three or four categories of providers. Many Canadians have embraced these choices by selecting services and price points that fit their needs and budget. Many Canadians are also subscribing to multiple broadband access networks, one for use at home and one for use out of home.

4.2 Canadians Are Aware of Their Options

65. The first sub-part to the Bureau’s question (b) asks “how aware are Canadian consumers of their options for broadband services? Are there factors that may drive consumer inertia in this industry and, if so, are there ways to overcome these factors”?
66. As Dr. Dippon points out in his report, Canadian consumers are generally aware of resellers. Some resellers have been active in the telecommunications field for decades, including Distributel (in business for almost 30 years⁶¹) and TekSavvy (in business for 20

⁶⁰ TELUS submitted a list of fibre-to-the-premises providers as Appendix “C” to its submission in Telecom Notice of Consultation 2013-551.

⁶¹ About Distributel, accessed August 13, 2018, <https://www.distributel.ca/about-distributel/who-we-are/>.

years⁶²).⁶³ Companies will not stay in business this long if they cannot attract customers: their success is a function of the value they provide to consumers.

67. Resellers have received coverage in widely read publications in the last several years. For example, Speedtest – a company specializing in user-initiated internet speed testing – ranked TekSavvy as one of the fastest providers in Canada.⁶⁴ The 2016 version of this ranking was covered by *Forbes* magazine, giving TekSavvy press as a quality ISP in a reputable and widely read publication.⁶⁵ *PC Magazine*, another reputable magazine covering computer products and services, also ranks Canada’s fastest ISPs. Its 2017 edition named TekSavvy and CIK Telecom among Canada’s fastest ISPs.^{66 67}
68. Many major resellers have run traditional marketing campaigns. For example, Distributel partnered with Montreal’s Société de transport de Montréal (STM) to roll out Wi-Fi equipped busses.⁶⁸ To make the partnership very clear to the public and to promote Distributel, a number of STM busses on Montreal’s streets looked like this:

⁶² TekSavvy Solutions, “TekSavvy makes PROFIT 200 Fastest-Growing Companies ranking for third year in a row,” June 1, 2011.

⁶³ Report of Dr. Christian Dippon, paras. 81-82.

⁶⁴ See Speedtest, “Reports>Canada Fixed,” November 15, 2017, <http://www.speedtest.net/reports/canada/#fixed>.

⁶⁵ See Kevin Murnane, “Speedtest Ranks The Fastest Fixed Broadband And Mobile Internet Service Providers In Canada”, *Forbes*, August 25, 2016, <https://www.forbes.com/sites/kevinmurnane/2016/08/25/speedtest-ranks-the-fastest-fixed-broadband-and-mobile-internet-service-providers-in-canada/#720694fa7fb2>.

⁶⁶ See Eric Griffith, “The Fastest ISPs of 2017: Canada,” *PC Magazine*, June 9, 2017, <https://www.pcmag.com/article/353971/the-fastest-isps-of-2017-canada>.

⁶⁷ Report of Dr. Christian Dippon, para. 92.

⁶⁸ Report of Dr. Christian Dippon, para. 92; Amanda Kelly, “Montreal Rolls Out its First Wi-Fi-Equipped City Bus,” *Global News*, May 9, 2014, <https://globalnews.ca/news/1322207/montreal-rolls-out-its-first-wifi-equipped-city-bus/>.



Resellers VMedia and TekSavvy have also prominently advertised on public transit.

69. Other resellers take different approaches. For example, Uniserve runs advertisements on the Business News Network,⁶⁹ and Primus has an agreement with Costco Wholesale Canada through which they sell services to Costco members.⁷⁰
70. Dr. Dippon concludes, based on the resellers' often long-term presence and marketing activities, that Canadian consumers must be fully aware of their options for broadband services. Dr. Dippon also concludes that resellers "have been able to acquire a substantial market share and are the fastest growing type of provider, which is strong evidence that Canadian consumers are fully aware of resellers."⁷¹
71. Dr. Dippon also concludes that consumer inertia is not a concern. Dr. Dippon states:

[t]here is no reason to believe that consumer inertia harms or benefits resellers any more than it does facilities-based providers. In

⁶⁹ Report of Dr. Christian Dippon, para. 93; Uniserve Begins Investor Awareness Campaign, Campaign to begin on BNN with BTV," Uniserve Press Release, March 12, 2018, Online: <https://smallbusiness.uniserve.com/news/press-releases/uniserve-begins-investor-awareness-campaign/>.

⁷⁰ Primus renews agreement with Costco Wholesale Canada and introduces 250 Mbps Internet speeds in select Ontario markets, 19 April 2017, online: <https://www.newswire.ca/news-releases/primus-renews-agreement-with-costco-wholesale-canada-and-introduces-250-mbps-internet-speeds-in-select-ontario-markets-619807493.html>

⁷¹ Report of Dr. Christian Dippon, para. 92.

fact, with consumers switching relatively freely, consumer inertia appears low. For residential high-speed Internet access service subscriptions, the industry churn rates (a measure of subscriber turnover) was 1.80 percent of subscriptions per month in 2015 and 1.74 percent of subscriptions per month in 2016 for the larger ISPs.⁷² Thus, in 2016, these ISPs had to replace almost 21 percent of their subscriptions to remain at the size they were starting the year.⁷³

4.3 Resellers Make Strategic Choices for Service Offers

72. In the second sub-part to the Competition Bureau’s question (b), it asks “how does the fact that resellers do not typically provide other telecommunications services affect the competitive attractiveness of resellers”?
73. Most facilities-based broadband providers offer bundles of services, including television, home telephone, wireless and internet access. Some providers have also begun to offer home security and other solutions. Dr. Dippon opines that the choice by many resellers not to offer bundled offerings reduces the number of people interested in their services by approximately 40 percent.⁷⁴
74. However, resellers such as Distributel and VMedia have begun offering television and other services in recent years. Other resellers offer specific cultural programming that does not come from Canadian producers, broadcasters or broadcast distributors. For example, Xinflix offers internet access using the reseller regime⁷⁵ as well as Chinese television programming that it appears to have sourced from abroad.⁷⁶
75. Resellers have made choices about the types of services they provide and customers they wish to target. Their success must be measured in light of those choices.

⁷² According to the CRTC, the larger ISPs “make up approximately 90% of total residential high-speed subscriptions.” (CMR 2017, p. 254.)

⁷³ Report of Dr. Christian Dippon, para. 94.

⁷⁴ Report of Dr. Christian Dippon, para. 95.

⁷⁵ <http://xinflix.com/plans.php?category=68>

⁷⁶ <http://xinflix.com/iptv.php>

4.4 Contracting Practices Affect All Providers Equally

76. In the third sub-part to the Competition Bureau’s question (b), it asks “how do industry contractual practices affect consumer behaviour? How are contract lengths and bundling discounts structured? How aware are customers of their contractual rights?”
77. Dr. Dippon concludes that “there is no evidence that industry contractual practices impact resellers any differently from facilities-based providers.”⁷⁷ Facilities-based providers as well as resellers offer a mix of no-term and term plans, depending on the price and inducements offered to consumers. Term contracts usually materialize where customers are given an inducement to enter into them. Those inducements can include one or more of lower monthly payments, discounted (or free) hardware, free installation, gift cards and free service.⁷⁸ Dr. Dippon concludes that “consumers should be fully aware of their contractual obligations and rights. More generally, consumers would be aware of having rights in a similar industry, with a number of the same participants, namely mobile wireless, following the widely publicized introduction of the Wireless Code.”⁷⁹
78. Where there is a term contract, subscribers are prevented from switching without incurring an early termination fee. However, Dr. Dippon concludes that those fees may be easily avoided by consumers because there are many no-term options available in the market that are broadly advertised and made available.⁸⁰
79. Term contracts are a sign of competition: there would be no need for term contracts if service providers did not feel that they had a risk of losing customers. Term contracts also lower the price of services paid by the consumer, which is a key consumer benefit and the reason that many customers choose term contracts instead of no contract options available to them. Regulatory limitations on term contracts can lead to negative consumer outcomes; for example, when the CRTC Wireless Code limited wireless term contracts to two years, it had the effect of increasing up-front hardware prices for consumers.

⁷⁷ Report of Dr. Christian Dippon, para. 97.

⁷⁸ Report of Dr. Christian Dippon, para. 97.

⁷⁹ Report of Dr. Christian Dippon, para. 99.

⁸⁰ Report of Dr. Christian Dippon, para. 97.

80. Dr. Dippon ultimately concludes that by electing a term contract, subscribers reveal their preference to remain with a particular provider for the duration of the term contract in exchange for a lower monthly recurring charge or other inducement.⁸¹

5.0 Answer to Question (c): Platform Competition Leads to Good Consumer Outcomes

81. In question (c) of the Notice, the Competition Bureau asks how regulation in this industry affects the economic behaviour of broadband suppliers. As explained below, regulation focusing primarily on platform competition has led providers to invest in their networks to the benefit of consumers.

82. Canadians now enjoy some of the fastest and ubiquitously accessible networks in the world. In contrast to other jurisdictions which have more expansive mandatory reseller regimes, Canadians benefit from higher investment in telecommunications facilities, more rural access and higher achievable speeds. For context, 83 percent of Canadians have access to wireline speeds of 100 Mbps or more, while only 34 percent of French households, 19 percent of Italian households, and 24 percent of UK households have access to such speeds. Platform competition and these consumer outcomes arose as a result of a regulatory focus on network development and in spite of regulation mandating some price-controlled wholesale access.

83. Additionally, Canadians benefit from relatively low prices for broadband services. Dr. Crandall notes that a valid international price comparison would “focus on countries with demographics that are similar to those in Canada, namely those in Western Europe and North America”, and provides data showing the average price per actual Mbps in Canada, United States and a weighted average of EU-15 countries.⁸² Dr. Crandall opines that “the best data available allow one to conclude that Canadian consumers face wireline broadband prices that are slightly lower than those in similar countries throughout the world despite Canada's obvious topographical disadvantages.”⁸³

⁸¹ Report of Dr. Christian Dippon, para. 97.

⁸² Report of Dr. Robert W. Crandall, pp. 12-13.

⁸³ Report of Dr. Robert W. Crandall, pp. 13-14.

5.1 Canada's Focus on Facilities-based Competition Has Led to Healthy Investment in Telecommunications Facilities

84. In the first sub-part to the Competition Bureau's question (c), it asks "how does the Canadian reseller regime affect the incentives that network owners have to expand or upgrade their networks? Have investment levels changed following the establishment of resellers?" Dr. Crandall's report shows, as explained below, that the international experience demonstrates that when resellers are given access to telecommunications networks at regulated rates, investment in those networks goes down, resulting in worse outcomes for consumers.
85. In Canada, regulators have primarily promoted platform competition among incumbent telecommunications companies, cable systems, satellite companies, and wireless carriers. Wireless services have never been subject to mandated resale in Canada, and mandated roaming at regulated rates has only been in place since 2015. This is in contrast to other parts of the world where regulators and policymakers have chosen to promote primarily service competition, by which service providers do not need to invest in building and maintaining facilities.
86. As Dr. Crandall concludes, "Canadian regulators' reliance on platform competition, rather than service competition, has spurred much greater broadband investment than that which results from service competition in other developed countries, particularly in the European Union. This greater investment has resulted in the deployment of very high-speed services throughout Canada, including rural areas, eclipsing the average speeds found in European countries that are more reliant on service competition in regulating broadband."⁸⁴
87. The 2006 Telecommunications Policy Review Panel Final Report supported a regulatory focus on platform competition. Among many other recommendations arising out of that review, the panel recommended
- phasing out the current requirement that telecommunications service providers must make their 'non-essential' facilities and services

⁸⁴ Report of Dr. Robert W. Crandall, p. 23.

available to competitors on an ‘unbundled basis’ at regulated rates, and replacing it with a system that creates better incentives to invest in the construction of new competitive telecommunications networks, with future wholesale arrangements for “non-essential” facilities and services based on negotiations between service providers rather than on regulatory prescription [and]

continuing the requirement that telecommunications service providers must make ‘essential’ facilities and services available to competitors.⁸⁵

Panel members also noted that

A central objective of the telecommunications regulatory framework should be to maximize incentives for network efficiency, innovation and investment. A fundamental determinant of these incentives is the scope of ‘mandated wholesale access’.⁸⁶

The Telecommunications Policy Review concluded that the scope of wholesale access that was required in 2006 was too high, that it “undermines incentives for competitive entry, investment and innovation” and that it should be narrowed.⁸⁷

88. Regulators have generally allowed platform competitors to develop their networks. For example, in 2015, the CRTC heard arguments for mandating reseller access to wireless networks in order to allow for mobile virtual network operators (“MVNOs”) in Canada. MVNOs get access to existing mobile networks at regulated wholesale prices and market their services to consumers.
89. The CRTC determined that it would be inappropriate to mandate MVNO access. In deciding that MVNOs will not further policy objectives, the CRTC noted:

With respect to wholesale MVNO access, the Commission considers that MVNOs can play a role in increasing consumer choice and value in the retail market. However, it is not appropriate

⁸⁵ Telecommunications Review Panel, Final Report, 2006, p. 13. Online: [https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/tprp-final-report-2006.pdf/\\$FILE/tprp-final-report-2006.pdf](https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/tprp-final-report-2006.pdf/$FILE/tprp-final-report-2006.pdf).

⁸⁶ *Ibid.*, p. 3-31.

⁸⁷ *Ibid.*

to mandate wholesale MVNO access at this time for the reasons described below.

Investment in wireless network infrastructure by wireless carriers is important to ensure that Canadians have access to mobile wireless networks and services of high quality in all regions of Canada. The new entrants have made and are planning to make significant investments in spectrum and their wireless networks. The Commission considers that mandating wholesale MVNO access at this time would significantly undermine these investments, particularly outside urban core areas.

Accordingly, if the Commission were to mandate GSM-based wholesale MVNO access provided by the national wireless carriers, this permanent network access would likely discourage continued investment by wireless carriers, because they could rely on this access rather than investing in their own mobile wireless network infrastructure.⁸⁸

90. Despite a general focus on platform competition, some elements of service competition exist in Canada, including wholesale wireline unbundling obligations. Most notably, in *Review of wholesale wireline services and associated policies*, Telecom Regulatory Policy CRTC 2015-326, the major facilities-based providers were mandated to provide access to their emerging fibre networks to resellers, which is an exception to the general policy of promoting platform competition. If fully implemented, this decision may bring the negative impacts associated with service competition and lower investment into facilities, including slower speeds and fewer people being reached by the network.

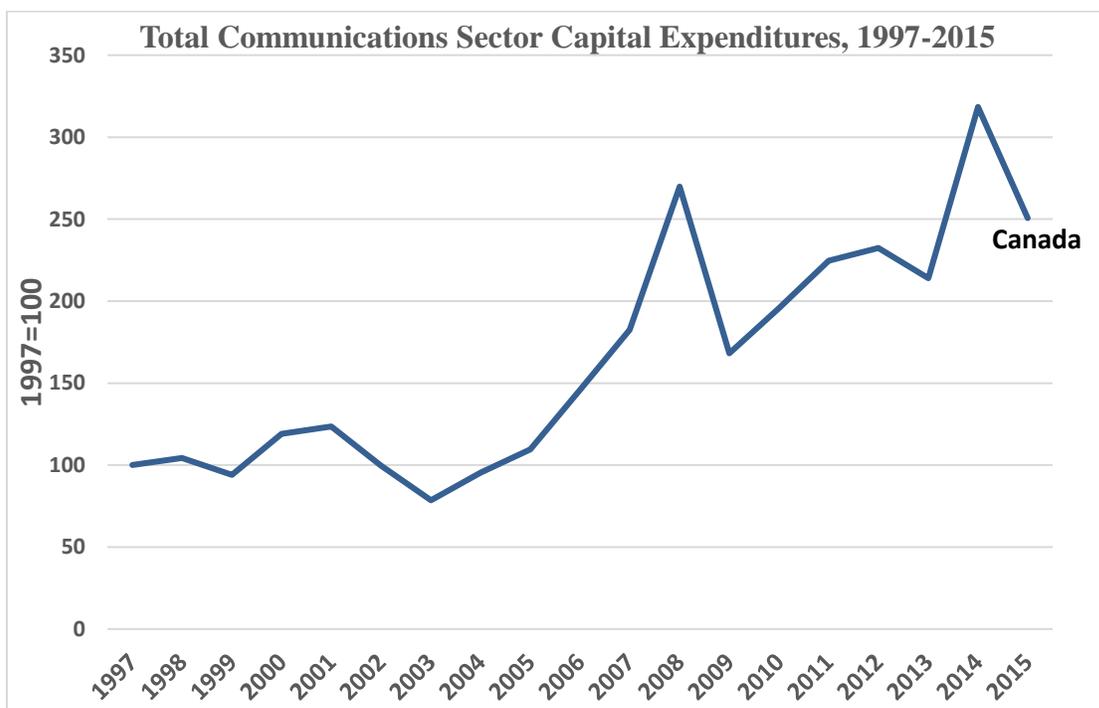
5.2 *Platform Competition Leads to More Investment in Telecommunications Infrastructure*

91. The second sub-part of question (c) asks “what investments must resellers make in order to provide services to consumers? Are there features of the marketplace that impede the expansion of resellers?” In answer to this, resellers need to focus on developing their own communication facilities in order to expand their business. If mandatory access to

⁸⁸ *Regulatory framework for wholesale mobile wireless services*, Telecom Regulatory Policy CRTC 2015-177 at paras. 119-122.

incumbent network is expanded, there is a real risk of under-investment in the maintenance and expansion of those networks.

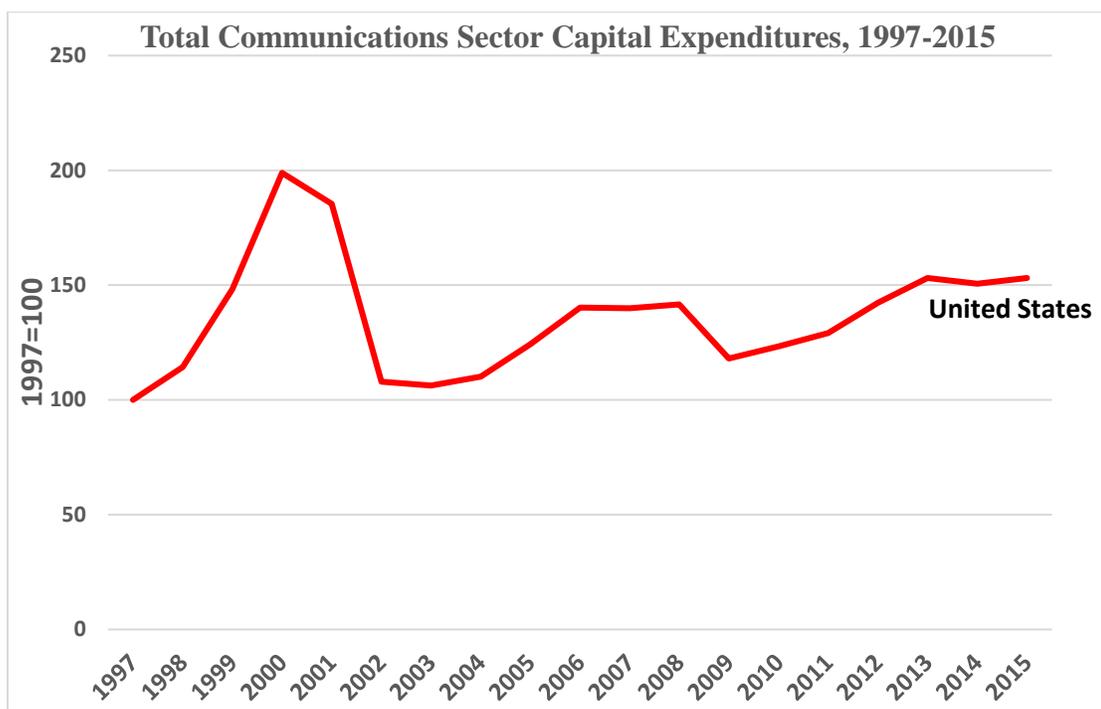
92. As it stands and with the latest available figures, Dr. Crandall concludes that capital spending in the Canadian telecommunications sector, which is shown in the chart below, is very strong for the period covering 1997 to 2015:⁸⁹



The decrease in investment in 2008 followed the largest financial crisis in decades and a recession. It is therefore not surprising that that investment levels came down from their pre-recession high. However, the chart shows that investment recovered by 2013 and reached a new peak two years later. It is worth noting that this chart does not show the impact on investment of the decision to mandate reselling of fibre. The impacts of that decision will not be seen until some years after it is fully implemented.

⁸⁹ Report of Dr. Robert W. Crandall, pp. 16-17.

93. There is evidence showing that network investments increase when regulators promote platform competition. For example, after the United States rolled back certain mandatory access requirements in 2005, the pace of investment in its networks increased.⁹⁰

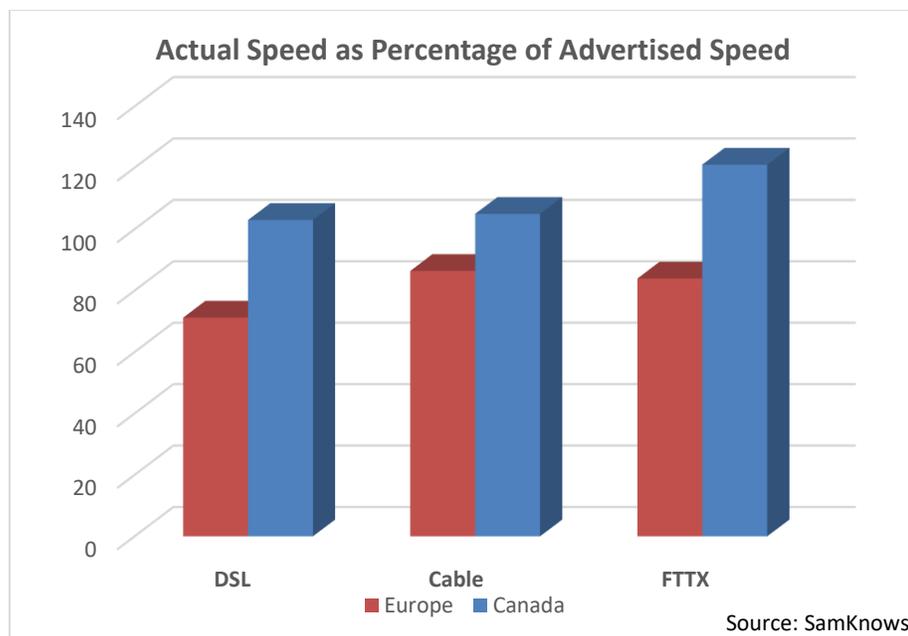


94. As a result of the focus on platform competition, Canadians enjoy some of the fastest broadband speeds in the world. Dr. Crandall concludes that “Canada has relied principally on competition between telecommunications platforms, as has the United States. The EU, on the other hand, has relied on service competition. The result of these very different policies has been quite predictable – greater access to higher and higher speeds for Canadian consumers.”⁹¹
95. Dr. Crandall notes that outcomes can be measured not just by advertised speeds, but by speeds actually achieved by consumers. The effect of investment in Canadian networks can

⁹⁰ Report of Dr. Robert W. Crandall, p. 16.

⁹¹ Report of Dr. Robert W. Crandall, p. 16.

be seen when actual achieved speeds in Canada are compared to those achieved in Europe:⁹²



96. Dr. Crandall concludes, using data from the broadband tracking company SamKnows, that actual speeds throughout Europe are generally below, and often far below advertised speeds. In contrast, actual speeds in Canada are much closer to their advertised levels.⁹³
97. In addition, Dr. Crandall concludes that platform competition leads to better outcomes and is more conducive to price competition than is service competition:

[w]ith large investments in built-out platforms – both wireline and wireless – carriers have relatively low marginal costs of serving adding additional subscribers. Thus, they are more likely to compete aggressively for subscribers because the profitability of serving these incremental subscribers is substantial given that a large share of their costs is sunk – that is, they do not vary with the number of subscribers served.⁹⁴

⁹² Report of Dr. Robert W. Crandall, p. 11.

⁹³ Report of Dr. Robert W. Crandall, pp. 9-10; SamKnows, *Quality of Broadband Services in the EU*, October 2014; SamKnows, *Quality of Broadband Performance in Canada*, March and April, 2016.

⁹⁴ Report of Dr. Robert W. Crandall, pp. 19-20.

5.3 TELUS Investments in Broadband Networks

98. TELUS has been increasing its infrastructure spending from approximately \$1.7 billion per year in 2010 to over \$3 billion per year on in 2017. The increase in capital expenditure can be attributed to generational investments being made in its wireline and wireless networks.
99. On the wireline side, TELUS has invested in fibre to the premises in its operating areas (locations where TELUS is the incumbent local exchange carrier) in British Columbia, Alberta and Quebec. As of today, TELUS has rolled out fibre to more than 100 communities across Alberta, British Columbia and Quebec, with more than #
are now served by fibre-optic wiring going directly into customers' homes in TELUS' serving territories. The fibre lines carry broadband internet, television services and telephone services. TELUS has completed approximately 50% of its fibre build this year and expects to have two thirds done by the end of 2019.
100. On the wireless side, as noted above, TELUS is investing in the testing and deployment of 5G wireless networks. These will require many more antennas than today's LTE technology. Smaller antennas will serve less customers, which will require many more antennas to be deployed. 5G deployment is another significant and generational investment for TELUS.
101. Next generation wireline technology (fibre) and next generation wireless technology (5G) are expected to both converge and complement each other. The fibre that is currently being built will be used to connect wireless antennas and carry data from those antennas to the core of the TELUS network. As noted above, in cases where pulling fibre right to the premises is not viable, wireless technology will be used to provide last mile connectivity.⁹⁵ TELUS is increasingly viewing its wireline and wireless network as one network. As explained above, it is important to consider this when determining the definition of the relevant market, especially for prospective regulation.

⁹⁵ TELUS 2017 Annual Report, p. 85.

5.4 No New Regulations Needed to Assist Resellers

102. Any new regulation aimed at assisting resellers is not necessary and has the potential to undermine TELUS' generational investment plans. As shown above, investment increases to the benefit of all Canadians when companies like TELUS are permitted to fully exploit their facilities. The best way to maximize investment and ensure that as many Canadians have access to world-class broadband internet as possible, is to continue with the platform competition policies promoted by the CRTC and Industry Canada.

6.0 Answer to Question (d): Regulatory Regimes Focusing on Service Competition Result in Worse Outcomes for Consumers

103. The Competition Bureau's question (d) focuses on how other countries manage and regulate broadband competition and the Market Study Notice asks two questions: "Do Canadian regulations diverge in any meaningful way from those employed by other countries?" and "Are there lessons to be learned from how other jurisdictions regulate broadband?". In answer to the first question, as explained by Dr. Crandall, Canada is similar to the United States in focusing primarily on platform competition, while diverging significantly from European Union member countries that open their networks to resellers and focus on service competition. The most important lesson to be learned is that platform competition results in far better outcomes for consumers than service competition.
104. Canada and the United States pursued a policy of platform competition with limited mandated wholesale access. In contrast, most European countries have pursued service competition policies by choosing to rely heavily on providing entrants with low-cost regulated wholesale access to incumbents' wireline and wireless networks.⁹⁶ The result has been major underinvestment in European countries' networks, with poorer outcomes for consumers.

⁹⁶ Report of Dr. Robert W. Crandall, p. 20.

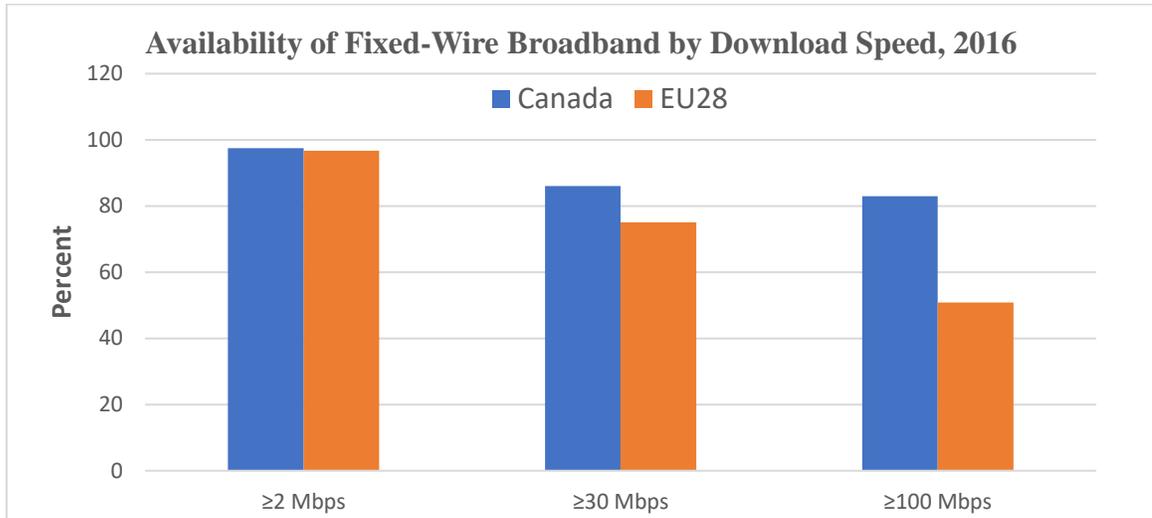
105. The large amounts that Canadian carriers have invested in their platforms have allowed them to deploy high-speed broadband services throughout Canada, not just in large urban areas, despite the country's very low population density. Dr. Crandall notes that

The large amounts that Canadian carriers have invested in their platforms have allowed them to deploy high-speed broadband services throughout Canada, not just in large urban areas, despite the country's very low population density. As a result, as Figure 11 shows, Canadian households have far wider access to broadband services with download speeds of 30 Mbps or 100 Mbps than most European countries. For example, while 83 percent of Canadians have access to speeds of 100 Mbps or more, only 34 percent of French households, 19 percent of Italian households, and 24 percent of UK households have access to such speeds. Even Sweden, with its municipally-subsidized fiber networks, has extended 100 Mbps coverage to just 69 percent of its households. Moreover, the CRTC recently concluded that the Canadian wireline broadband network infrastructure is now capable of supporting download and upload speeds of up to 1 Gbps without requiring significant additional investment.⁹⁷

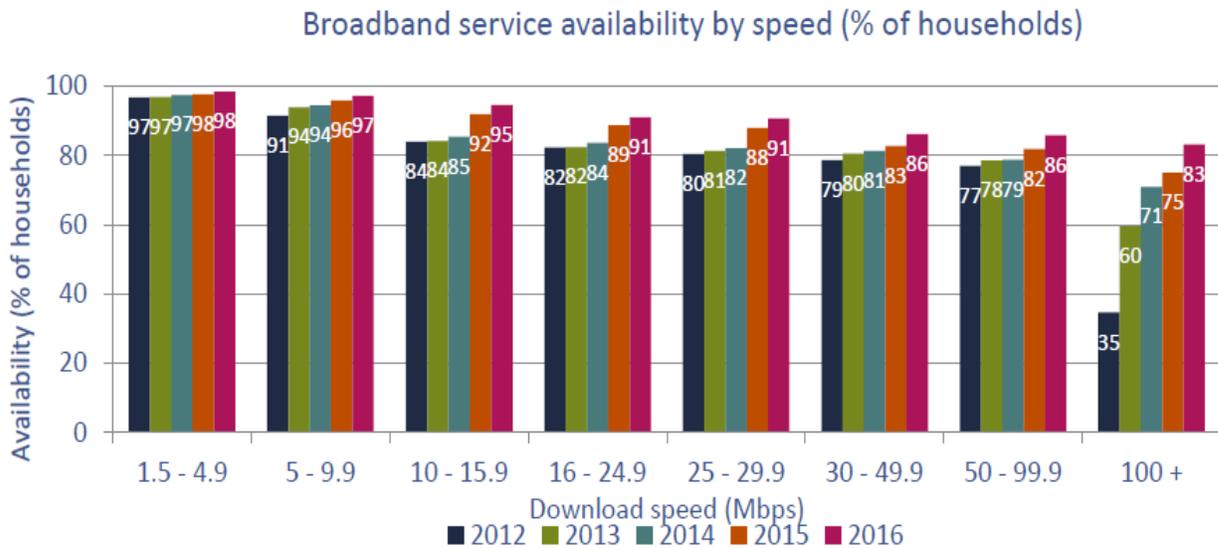
106. The chart below shows that while Canada and the EU have similar access to speeds at or below 2 Mbps, there are major gaps between the jurisdictions in access at speeds over 30 and 100 Mbps:⁹⁸

⁹⁷ Report of Dr. Robert W. Crandall, p. 21 and citations therein.

⁹⁸ Report of Dr. Robert W. Crandall, p. 21.



107. Further evidence of the continuing deployment of high-speed infrastructure by Canadian wireline carriers is the steady increase in the speed of service available to most Canadians. The 2017 CRTC Monitoring Report states that – in 2016 – 86 percent of households had access to a wireline broadband service with at least a 50 Mbps download speed and 83 percent had access to at least 100 Mbps. The availability of such speeds has been increasing steadily over the past few years and is likely even higher today than it was in 2016. This is further evidence of the benefits of platform competition over service competition.⁹⁹



⁹⁹ Report of Dr. Robert W. Crandall, p. 22 and citations therein.

108. Dr. Crandall concludes that unlike Canada and the United States, the European Union is unable to stimulate sufficient private investment to obtain its goal of universal access to 30 Mbps across the continent by 2020. It now envisions filling the gap through government expenditures of 21 billion euros (\$30 billion Cdn.) of the total 34 billion euros required through 2020.¹⁰⁰ This is effectively a use of public funds to subsidize the true cost of private broadband internet access. This subsidy is needed because European regulatory policies of network sharing have failed to generate sufficient private investment in broadband platforms, particularly in rural areas.¹⁰¹
109. Academic literature cited in Dr. Crandall’s report also backs up the notion that service competition diverts investment that would otherwise be spent on building and maintaining networks. For example, a literature review by Cambini and Jiang (2009) concludes that network unbundling generally discourages network investment by broadband incumbents and entrants.¹⁰² More recent research strongly confirms this conclusion. A paper by Briglauer, Gugler and Haximusa (2016) find that platform competition encourages network investment, but service competition (through resale or network unbundling) has negative effects on investment in the later stages of liberalization in the European Union.¹⁰³ A 2015 study commissioned by the United Kingdom’s regulator, Ofcom, concludes that platform competition is the most important driver of investment in new super-fast broadband networks. This study concludes that countries with limited platform competition which are therefore induced into relying on service competition have lower investment in such networks.¹⁰⁴ The European experience with service competition provides empirical support for these findings.¹⁰⁵

¹⁰⁰ European Commission, *Commission Staff Document: A Digital Single Market Strategy for Europe - Analysis and Evidence*, June 5, 2015, p. 85.

¹⁰¹ Report of Dr. Robert W. Crandall, p. 18.

¹⁰² Carlo Cambini and Yanyan Jiang, “Broadband regulation and investment: A literature review,” *Telecommunications Policy*, Vol. 33 (2009), pp. 559–574.

¹⁰³ Wolfgang Briglauer, Klaus Gugler, and Adhurim Haxhimusa, “Facility- and Service-based Competition and Investment in Fixed Broadband Networks: Lessons from a Decade of Access Regulations in the European Union Member States,” *Telecommunications Policy*, Vol. 40 (2016), pp. 729–42.

¹⁰⁴ Ilsa Godlovitch, Iris Henseler-Unger, and Ulrich Stumpf, *Competition and Investment: An Analysis of the Drivers of Superfast Broadband*. WIK study prepared for Ofcom, July 2015.

¹⁰⁵ See Report of Dr. Robert W. Crandall, pp. 18-19.

110. As Dr. Crandall concludes, platform competition as seen in Canada leads to better access, faster networks and lower prices than service competition seen in Europe. Given these lessons, Canadian regulation should continue to focus on creating the right incentives for industry players to invest in building, maintaining and improving telecommunications facilities.

7.0 Conclusion

111. In doing this study, the Bureau should be focused not on resellers, but on proper functioning of the market. In order to evaluate the competitive state of the market for broadband internet access, that market must first be properly defined. It is not correct to focus solely on wireline internet access when existing and rapidly emerging wireless and other technologies have the effect of providing an alternative means of broadband internet access after telephone and cable wires.
112. The broadband internet access market is competitive. There are many participants competing to provide internet access to Canadians, including telephone companies, cable companies, alternative local wireline providers, national wireless carriers, regional wireless carriers, satellite providers, and resellers. As a result of the competitive state of the market, no new regulatory intervention is needed, and any such intervention in the market risks slowing the investments that TELUS and other facilities-based providers have been making in their networks.
113. Regardless of how the market is defined, Canadians have enjoyed good outcomes, including fast speeds that are accessible to most Canadians. Resellers' subscriber base and revenues have been growing, and they have provided yet another way for many Canadians to gain broadband access to the internet. Given the resellers' success, they do not need any additional regulatory support.
114. Platform competition among providers has resulted in high quality networks on which Canadians can rely. Canadians currently enjoy some of the fastest speeds in the world because carriers like TELUS have made and continue to make multi-billion dollar investments in state of the art technologies such as fibre and 5G. In contrast, jurisdictions

that have relied on service competition, including many in the European Union, have lower levels of access to service at speeds enjoyed by most Canadians.

115. Resellers are one of the types of providers in a competitive market that delivers customer choice. The success of resellers in this competitive market reflects the value that customers have placed on the services offered by resellers to the portion of customers that resellers have chosen to target. It is unnecessary and would have negative outcomes for customers if additional benefits were bestowed on resellers.

*** End of Document ***