The Competition Bureau
Market Study Notice: Competition in Broadband Services

REDACTED VERSION

31 AUGUST 2018

TABLE OF CONTENTS

I. INTRODUCTION

1. Shaw Communications Inc. ("**Shaw**"**)** is pleased to provide this initial submission in the Competition Bureau's (the "**Bureau**") Market Study Notice: Competition in Broadband Services (the "**Market Study**" or "**Study"**).

2. The Bureau's stated purpose of the Study is to better understand "market outcomes and the competitive dynamics of Canadian broadband markets more generally." In particular, the Bureau has asked if resellers are fulfilling their role in placing increased competitive discipline on traditional telephone and cable companies. The Study alternatively asks whether the current penetration rates of resellers is "a symptom of a marketplace that could function better?"

3. Shaw is pleased to provide its comments in this process and we look forward to the ensuing discussion on the Canadian broadband market. We also attach the expert report of The Brattle Group,[1] which addresses the Bureau's question on the impact of regulation on the economic behavior of broadband suppliers, and the expert report of Giganomics Consulting Inc.[2], which provides an overview of the networks in Canada and mandated wholesale regulation in other countries.

4. In describing the purpose of the Market Study, the Bureau 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." Shaw is concerned that this description is unduly narrow. Limiting the scope of the inquiry to an examination of the competitive impact of resellers on the broadband services provided on the networks of traditional phone and cable companies risks an incomplete assessment of the competitive dynamics governing the provision of broadband services to Canadians.

5. The era of dial-up Internet provided over monopoly-controlled copper facilities ended over twenty years ago. In today's dynamic Canadian broadband market consumers have increasing choice for broadband services over wireline, fixed and mobile wireless networks and satellite platforms.[3] The broadband market is characterized by a variety of mature and disruptive competing platforms seeking to win customers through investment,

---

[1] *An Analysis of Broadband Services in Canada; Competition, Regulation, and Investment*, prepared for Shaw Communications Inc., August 30, 2018 (the "**Brattle Report"**).

[2] *Report on Regulation of Fixed Wireline Wholesale Access to High-Speed Networks in Canada and Other Countries:* A report prepared for Cogeco Communications Inc., Québecor Média Inc., on behalf of its affiliate, Vidétron Ltd., Rogers Communications Canada Inc., and Shaw Communications Inc., August 30, 2018 (the "**Blackwell Report**").

[3] In its most recent Communications Monitoring Report ("**CMR**"), the Canadian Radio-television and Telecommunications Commission ("**CRTC**") acknowledged that Canadians can access broadband Internet services using either wireline or wireless facilities and that these facilities support evolving services such that consumers can engage with the digital world using their wireless devices at the time and place of their choice: see table "Retail lines and subscribers, by sector" in "CRTC Q4 – 2017 Results for Broadcasting Distribution and the Retail Telecommunications Sectors," online: <https://crtc.gc.ca/eng/publications/data/17q4.htm>.

innovation, value and ongoing evolution of broadband speeds to ensure consumer participation in the digital economy. Inferences about the state of competition in the provision of wireline broadband must take into account emerging technologies and the increasing substitution between wireline broadband networks and mobile high-speed broadband.[4]

6. The range of choice for consumers has been amplified by existing and emerging broadband platforms offering high-speed access with increasing speeds and low levels of latency, including low- and medium-Earth-orbit broadband satellites.[5] Companies such as OneWeb, SpaceX and Telesat, to name a few, promise high speeds, low latency and global coverage, and have been endorsed by the federal government through funding initiatives and the Strategic Innovation Fund.[6]

7. The Canadian wireline broadband market, which benefits from the existence of fierce competition between multi-platform facilities-based competitors, continues to outperform the Canadian wireless market on metrics of penetration.[7] Canada lags behind other developed countries in international rankings on wireless penetration[8] with a wireless market dominated by three incumbent providers who jointly account for 92% of Canadian wireless revenues[9]. This would suggest that regulation on wireline broadband should be falling away as regulatory efforts refocus on removing barriers for facilities-based competition in the wireless market.

8. Even with low penetration rates, Canadians are increasingly accessing broadband services over their mobile devices, as the boundaries between wireless data and wireline broadband continue to blur.[10] This has led to strong gains in the number of wireless subscribers, reaching over 25 million in 2016.[11] In 2016, Canadian wireless service subscribers used on average 1,225 MB of wireless data per month, a 25% increase in

---

[4] CRTC, *CMR 2017*, Ottawa, p 272.

[5] Telesat recently launched its first low-orbit satellite with plans to deploy low-earth-orbit satellites promising "economical fiber quality broadband anywhere" targeted for 2022 and "hundreds of gigabits and terabits of connectivity, not just in the North, but globally by 2022": see "Telesat LEO - Why LEO?" (2018), online: <https://www.telesat.com/services/leo/why-leo>.

[6] "Government investing in space and satellite communications technologies to improve access to broadband in rural and remote areas" (last modified April 11, 2018), online: *Innovation, Science and Economic Development Canada* <www.canada.ca/en/innovation-science-economic-development/news/2018/04/government-investing-in-space-and-satellite-communications-technologies-to-improve-access-to-broadband-in-rural-and-remote-areas.html>; Emily Jackson, "Ottawa's bet on low earth orbit satellites a 'positive step' for rural internet: industry" (March 2, 2018), online: *Financial Post* <business.financialpost.com/telecom/ottawas-bet-on-low-earth-orbit-satellites-a-positive-step-for-rural-internet-industry>.

[7] Emily Jackson, "Bell enters the fast lane as back-to-school internet competition heats up" (August 20, 2018), online: *Financial Post* https://tinyurl.com/y7c8zad7.

[8] Brattle Report, para 61.

[9] CRTC, *CMR 2017*, Ottawa, p 302.

[10] CRTC, *CMR 2017*, Figure 5.5.12 and Figure 5.5.13.

[11] CRTC, *CMR 2017,* p 32.

mobile data usage from the previous year. Further, approximately 48% of Canadian subscribers now have a plan that includes at least 1 GB of data.[12]

9. The entry of new facilities-based wireless carriers, including Shaw, Videotron and Eastlink, in direct competition with incumbent wireless carriers in several regions in Canada has also had an impact on competition in the mobile data market in Canada. For example, when Freedom Mobile launched its *Big Gig* marketing campaign, the incumbent wireless providers responded with similar wireless high data offers. Lower cost mobile data options, combined with the proliferation of public WiFi, such as Shaw Go WiFi, supported by over 100,000 WiFi hotspots, have turned Internet connectivity into a seamless experience for Canadians. In recognition of this shift toward reliance on wireless networks for broadband, Shaw has been investing billions of dollars to enhance and expand our network to support differentiated, innovative, competitive wireless services.

10. The emergence of 5G wireless data networks is imminent with commercial launch in the United States slotted for early 2019.[13] 5G promises to accelerate the ongoing paradigm shift away from reliance on wireline broadband networks. 5G is not just about faster speeds for broadband: it has the potential to fundamentally change how Canadian communities, businesses and governments manage and deliver services, infrastructure and resources. The impact of 5G is expected to be even more significant than the move from 3G to LTE,[14] propelling innovation across industries, improving Canadians' standard of living and stimulating economic growth.[15]

11. The emergence of 5G wireless will have significant implications for the retail broadband market. 5G is expected to integrate broadband platform competition between wireline and wireless services at the retail level. For example, 5G may represent a less expensive means of providing broadband connectivity to the 'last mile' in rural areas relative to fibre-to-the-premises. [16]

---

[12] CRTC, *CMR 2017*, p 32.

[13] "Forget 4G, brace for superfast 5G data network this year; find out when it'll be launched in India" (last modified June 15, 2018), online: *Business Today* <www.businesstoday.in/sectors/telecom/forget-4g-reliance-jio-brace-for-superfast-5g-data-network-this-year-5g-launch-in-india/story/279214.html>

[14] A recent report by Accenture Strategy notes that 5G twinned characteristics of increased speed and decreased end-to-end latency "will unlock entirely new ways that Canadians interact with their devices, businesses, and the world around them." Accenture forecasts an impact of $40B on GDP by 2026 and the creation of 250,000 permanent jobs: see Accenture Strategy, "Fuel For Innovation: Canada's Path in the Race to 5G," (June 9, 2018), online: <www.5gcc.ca/wp-content/uploads/2018/06/CWTA-Accenture-Whitepaper-5G-Economic-Impact_Updates_WEB_06-19-2018.pdf> ["Accenture Report"], at slide 1 (as cited in Shaw's submission with respect to the *Consultation on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Consultation on Changes to the 3800 MHz Band*, Notice No. SLPB-004-18 Canada Gazette – Part 1, July 12, 2018).

[15] An increase of $40B GDP has been forecast by 2026 as well as the creation of 250,000 permanent jobs: see Accenture Strategy, "Fuel for Innovation: Canada's Path in the Race to 5G", (June 9, 2018), online: <newsroom.accenture.com/news/5g-wireless-could-add-40-billion-in-annual-gdp-and-250000-permanent-new-jobs-to-canadian-economy-by-2026-accenture-report-finds.htm>, slide 2.

[16] Bell has publicly stated that "5G technology will enable significantly faster data speeds, lower latency, and increased capacity to meet demands for mobile video, virtual reality, and Internet of Things (IoT) applications… and that

12. To help further guide the discussion on the state of the wireline broadband market we address the four broad questions set out in the Market Study.

II. THE FOUR BROAD QUESTIONS

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?*

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

13. The Canadian market for high-speed internet services is characterized by widespread multi-platform coverage and service adoption. The Blackwell Report provides a detailed statistical survey of the broadband retail market. Key findings of the Blackwell Report include:

- Virtually all Canadians have access to high-speed broadband internet, including 92% with access to at least 5 Mbps using wired (telco or cable carrier facilities) and 99% using all technology platforms.[17] 83.9% of Canadian households subscribe to some form of high-speed internet service.[18]

- Eighty-four percent of households have access to a fixed broadband internet service capable of delivering 50 Mbps download and 10 Mbps upload, the specific criteria established by the CRTC for the successful achievement of the universal service objective.[19] Up to 96% of all households in urban areas have access to internet service at these download/upload speeds.[20]

---

innovation in WTTH complements Bell's extensive broadband fibre build, and our ongoing 5G trials and impending deployment of WTTH in rural and urban locations underscore our focus on full utilization of our assigned wireless spectrum resources": see "Huawei Enables Bell Canada's Wireless to the Home (WTTH) Trials that put Canadian Rural customers on the path to 5G", Huawei Canada press release, February 27, 2018, https://www.newswire.ca/news-releases/huawei-enables-bell-canadas-wireless-to-the-home-wtth-trials-that-put-canadian-rural-customers-on-the-path-to-5g-675262803.html and https://www.iphoneincanada.ca/carriers/bell/bell-huawei-wireless-to-the-home-5g/

[17] CRTC, *CMR 2017,* Figure 5.3.15.

[18] CRTC, *CMR 2017*, Table 5.3.12, p 271.

[19] CRTC, *CMR 2017*, p 254.

[20] CRTC, *CMR 2017*, p 254. The CRTC established 50 Mbps downstream and 10 Mbps upstream as the universal service objective in Telecom Regulatory Policy 2016-496.

- As of 2015, approximately 40% of Canadian households had access to four or more separate technology platforms delivering at least 5 Mbps broadband services, excluding satellite technologies.[21]

14. Further, the number of providers and platforms have flourished. The Blackwell Report provides a survey of the current landscape:

- Over 550 companies provide an alternative to traditional telephone and cable companies in the provision of Internet broadband services.[22]

- Between 2015 and 2016, alternative service providers grew their residential revenues and subscriber bases by 17.8% and 7%, respectively, more than twice the gains of the combined cable carriers and incumbent telco.

- At the end of 2016, alternative service providers accounted for 13% of residential Internet subscribers, up from 9% in 2012. Wholesale Internet service subscriptions also grew by 6.4% from 2015 to 2016 with a growth rate of 14% since 2012.[23] The share of access related revenues captured by resellers rose from 11% in 2012 to 14% in 2016.[24]

- Mobile network operators provide a further means of achieving internet connectivity, with at least three independently-owned operators providing high-speed internet service to more than 98% of Canadians.[25] Three-quarters of Canadians have access to three or more mobile networks,[26] which will likely rise as newer entrants expand their network coverage.

- Facilities-based services including fixed wireless and satellite technology are capable of providing broadband speeds of more than 5 Mbps.[27]

15. Recent reseller market share and revenue growth has been significant considering the maturity of the market. Consumer response to resellers of wireline broadband has also varied considerably on a regional basis. In Ontario and Quebec, the introduction of usage-

---

[21] CRTC, *CMR 2015*, Table 5.3.12. We note that the CRTC ceased reporting this metric following the publication of the 2015 Communications Monitoring Report. It is therefore difficult to ascertain the current percentage of Canadians able to receive broadband services over four or more network platforms.

[22] Competition Bureau Canada, May 2018, "Market Study Notice: Competition in Broadband Services."

[23] CRTC, *CMR 2017,* Table 5.6.7

[24] Resellers have been able to increase their monthly retail rates by approximately $5.00 or a 12% rate increase on many service tiers, representing a rate increase higher than incumbents: see the report prepared by Nordicity Group Limited for Innovation, Science and Economic Development Canada, "2017 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions" (October 5, 2017), p 48.

[25] CRTC, *CMR 2017*, Figure 5.3.15 and Table 5.5.15, as of 2016.

[26] CRTC, *CMR 2017*, Table 5.5.16, as of 2016.

[27] However, it is noted that the achieved speeds do not reach the threshold of 30 Mbps. Thus, these services are not considered in the analysis in view of such slower speeds and other limitations in service quality.

based billing by facilities-based carriers in central and eastern Canada provided resellers with a market differentiator that enabled them to successfully attract customers[28] through unlimited bandwidth packages.[29]

16. Consumer response to resellers in Western Canada provides a stark contrast, due to two factors: first, incumbent telco and cable billing practices in this region did not incorporate stringent caps or overage fees, eliminating a significant market differentiator. Second, there is intense competitive rivalry between competing facilities-based carriers in Western Canada, as evidenced most recently in the rapid response and rollout of Internet 300 speeds by Shaw and Telus. In the month of July 2018 alone, high-speed customers enjoyed significantly increased choice of affordable, high-speed broadband services following the rollout by Shaw and Telus of new competitive broadband product offerings.[30]

17. In view of the more intense level of competition among facilities-based providers in Western Canada, which has led to higher service speeds, competitive rates and unlimited data offerings, resellers have taken a relatively smaller share of the market in this territory. Nevertheless, even in this highly competitive market among facilities-based broadband providers, resellers have established a presence in certain market segments. Shaw's most successful reseller customers have targeted particular market segments to gain market share. For example, some have specialized in marketing and providing service to minority language communities and small businesses, while others have wholesaled Shaw's mandated resale service to smaller ISPs.

18. Shaw must take into account the presence of resellers in formulating its pricing and packaging decisions for broadband services. Ultimately, however, facilities-based competition has a more significant influence on the products and services Shaw offers.

19. While price is a consideration for most consumers, it is not always the primary driver: some consumers place greater weight on other considerations. There are many factors that may drive a consumer to choose one service provider over another, such as customer service, availability of technical support, service quality, network coverage, speed, data inclusion, in-premise equipment, local presence and charitable contributions. The fact that consumers have the option to weight the service attributes that are most important to them when selecting a service provider is evidence of a well-functioning broadband market.

---

[28] Approximately 93% of all reseller high-speed Internet subscriptions in Canada are in the provinces of Ontario and Quebec: CRTC, *CMR 2017,* Figure 5.6.3.

[29] Approximately 55% of all subscribers to resale-based independent ISPs sub subscribe to unlimited bandwidth packages, while approximately 75% of subscribers have plans that include 300GB per month or more: CRTC, *CMR 2017*, s 5.3 at p 259.

[30] Shaw, Press release, "Shaw makes streaming, surfing and gaming better than ever with the launch of Internet 300" (July 10, 2018) online: <http://newsroom.shaw.ca/materialDetail.aspx?MaterialID=6442452133> and Rose Behar, "Telus responds to new Shaw internet tier with PureFibre 300/300 promo and 150/150 price increase [Update]" (July 12, 2018), online: *MobileSyrup* <https://mobilesyrup.com/2018/07/12/telus-responds-to-new-shaw-internet-tier-with-fibre-300-300-promo/>.

b. ***How have consumers reacted to new competitive alternatives?***

i *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?*

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?*

iii *How do industry contractual practices affect consumer behaviour? How are contract lengths and bundling discounts structured? How aware are consumers of their contractual obligations and rights?*

20. As discussed in section a., above, resellers have experienced significant market growth. While residential wireline broadband subscriptions increased at a compound annual growth rate of 2.9% over the five-year period ending in 2016, substantially all of such growth was realized by resellers, with an average annual residential subscriber growth of 13.1% between 2012 and 2016. In comparison, cable carriers' subscriber growth was essentially flat over the same period. This is a strong indicator that Canadians are becoming increasingly aware of the multitude of competitive options in the market.

21. In the most recent 12-month period, Shaw's reseller customers have increased end user subscriptions by over #

.# The growth in reseller end user subscriptions during this period is significant in comparison to Shaw's own retail growth rate of less than # # during the same period. This is strong evidence of consumer awareness of reseller options and further belies suggestions of excessive consumer inertia.

22. The Study Notice further states that resellers do not typically provide other telecommunications services (e.g., television or phone service) and then asks whether this has affected the competitive attractiveness of resellers.[31] In response, Shaw notes that resellers do in fact offer a range of services in addition to broadband access. Among the products and services offered on a competitive basis by resellers include:

- bundles that include VoIP phone, long distance, IPTV broadcasting options and home security services;
- many larger resellers provide wholesale access services and support services to smaller ISPs;

[31] Competition Bureau Canada, May 2018, "Market Study Notice: Competition in Broadband Services," para 8.b.ii.

- at least one of Shaw's wholesale access customers also provides portable WiFi hotspot devices using 4G/LTE mobile data that includes 1 GB of mobile data to complement its suite of VoIP, long distance, IPTV and wireline broadband services;[32] and

- resellers often provide customers with bundled discounts and contracted or month-to-month terms.

23. Many services offered in the market today - both by traditional wireline carriers and by resellers – provide for discounts under minimum contract terms. To ensure consumers better understand their contracted terms, the CRTC has established several codes of conduct that apply to the industry. The CRTC further established the Commissioner for Complaints for Telecommunications Services ("**CCTS**"), an independent telecommunications consumer body that assists Canadians with unresolved disputes with their service providers. Since 2011, the CRTC has required all telecommunications service providers that provide services within the scope of the CCTS' mandate (including local and long distance service providers, wireless service providers, and Internet service providers) to participate in the CCTS.

24. The CCTS' mandate extends to overseeing compliance with contract terms and commitments, billing disputes and errors and service delivery complaints. The existence of the CCTS to oversee the service provider-customer relationship with respect to the provision of broadband services, including providing customers with access to a body which can mediate disputes, provides a significant incentive for ISPs to ensure that contracts for broadband services are clear and that consumers are well informed.

25. In a 2014 policy ruling, the CRTC established a prohibition on 30-day notice requirements for consumers to cancel contracts for telecom and broadcasting services. The Commission expressly determined that such prohibition would "ease friction to seamlessly switch service providers" and result in a "more dynamic marketplace and remove unnecessary barriers to consumer choice."[33] Thus, under the 30-day cancellation policy, broadband customers have the ability to switch suppliers at any time. Moreover, under industry practice, service providers often offer incentives to cover the cost of any early cancellation fee.

26. Finally, the Commission recently introduced a Quality of Service ("**QoS**") regime intended to monitor the timeliness of installation and service appointment for consumers who subscribe to mandated reseller services. Under this new regime, telcos and cable carriers will be required to report monthly statistics that can be used by the Commission and industry to identify any delays that could impact the services consumers receive from

---

[32] Cikitel, online: <https://www.ciktel.com/Promotion/WiFi>.

[33] *Prohibition of 30-day cancellation policies*, Broadcasting and Telecom Regulatory Policy CRTC 2014-576, 6 November, 2014.

resellers. The public reporting will also provide increased transparency for consumers into the timelines for installation and service that they may receive from resellers.

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

i *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?*

ii *What investments must resellers make in order to provide services to consumers? Are there features of the marketplace that impede the expansion of resellers?*

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

27. The oft-stated goal of Canadian telecommunications regulation is to promote strong, sustainable facilities-based competition,[34] rather than regulating prices or access through intrusive or distortive regulation. In some circumstances, in particular where there is market failure or other impediments to full competition, measures such as access regulation are viewed as necessary to encourage a competitive environment. However, once there is sufficient competition among existing providers, the market may resolve this access issue without regulatory intervention.[35]

28. As Shaw has noted in previous proceedings before the CRTC, "regulation that promotes competition and thereby harnesses market forces rather than supersedes them is generally recognized as a better way of resolving problems caused by market power than more comprehensive government intervention."[36] Regulatory intervention should only occur where necessary to promote the public interest through targeted measures that maximize reliance on market forces to deliver the benefits of choice, innovation and affordability over the long term. The foregoing approach is consistent with the statutory policy objectives set out in section 7 of the *Telecommunications Act*[37] and the Policy

[34] See, for example, Telecom Regulatory Policy CRTC 2015-326, para 14; Telecom Decision CRTC 2018-97 (Introduction).

[35] See, for example, the initial comments by Shaw re: Telecom Notice of Consultation CRTC 2017-259, Appendix B.

[36] As noted in Dr. Eric Emch (Bates White Economic Consulting), "An assessment of wholesale roaming policy in Canada: The relationship between competition, regulation, investment and access," 8 September 2017 (the Emch White Paper"), prepared for Shaw Communications Inc. in the proceeding initiated by Telecom Notice of Consultation CRTC 2017- 259 ("WiFi First") (Phase 1), Section II para. 4 (as cited in Shaw WiFi First comments, Phase 1, September 8, 2017, para 33).

[37] See in particular, paragraph 7(f) of the *Telecommunications Act*, S.C. 1993, c.38, which reminds the Commission that it is to oversee and regulate the telecommunications industry with a view to fostering "increased reliance on market forces for the provision of telecommunications services and to ensure that regulation, when required, is efficient and effective."

Direction made under the Act, which provide a framework and scope for CRTC regulation.[38]

29. As the existing resale regime has been in place since the inception of broadband in Canada, it is difficult, if not impossible, to investigate changes in the level of investment in wireline broadband networks prior to the establishment of the resale regime. There is little dispute that the existence of the mandated resale regime has throughout had a distortive impact on investment in the wireline broadband market in Canada.

30. Canada's wholesale wireless market illustrates how mandated resale regulation can discourage investment. When the CRTC was examining the impact of the introduction of a low-risk, resale-based model on wireless network investment, Shaw, as a new entrant, was able to do a complete market analysis of the impact that mandated resale-regulation would have on new facilities-based entrants. Shaw provided evidence on the record of the proceeding before the CRTC that resale-based entry into the wireless market would cause the rate of return on Shaw's projects to decline, rendering otherwise attractive investment prospects unattractive and decreasing the resources available to Shaw to undertake costly network investments, particularly outside of dense urban areas.[39] This is direct evidence of the impact of resale focused regulation on facilities-based network investment.

31. In stark contrast to mandated wireless roaming, which allows new entrant facilities-based carriers to access incumbent facilities for incidental use, mandated wireline resale does not provide the necessary incentives to induce new entrants to make their own facilities-based investments.

32. The continued focus on resale-based competition in the mature wireline broadband market has resulted in a significant regulatory burden and ongoing regulatory uncertainty in the market. Despite the policy objectives of the Act and the Policy Direction, there have been 74 CRTC proceedings related to the mandated resale regime since 2000. Many of these proceedings involve tariffed rate setting, invariably resulting in a confusing and indeterminate cycle of interim wholesale rates. This has made it difficult for facilities-based providers to recover their costs of providing wholesale services and hampered the ability of resellers to set retail broadband rates.

33. This constant state of regulatory uncertainty has had the distortive effect of increasing the risks associated with, and discouraging, facilities-based network investments and technological innovation, while propping up resale-based solutions, where there is no risk and nominal or no investment. Shaw submits that regulation must refocus on emphasizing the emergence of strong, sustainable facilities-based networks and creating targeted

---

[38] Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives, SOR/2006-355, ss. 1(a) and (b) (the "Policy Direction").

[39] See Emch White Paper, paragraph 42, as noted in Shaw's WiFi First comments, Phase 1, September 8, 2017, paragraph 48.

regulation to remove remaining barriers—such as support structures, municipal access and wireless spectrum—that are impeding the growth of competitive networks in Canada. Continuing to focus on resale-based models to the detriment of facilities-based networks will ultimately undermine investment and erode the foundation of Canada's digital economy.

34. The Bureau has recognized the linkage between strong, sustainable facilities-based competition and more dynamic pricing and services in the wireless sector. In its comments to the CRTC in the lower-cost data only (LCDO) proceeding, the Bureau noted that LCDO plans are not a substitute for true competition in the industry and should only be imposed on a temporary basis until such time that the CRTC can establish longer-term more robust solutions to competition problems and other public policy issues that may exist in this marketplace.[40] Shaw agrees that the Bureau's proposed approach will "allow the CRTC to enact a more appropriate and less rigid longer term remedy to address market power concerns."[41]

35. In the case of wireless competition, the logic of intervention is clear: there is a sound theoretical and empirical justification for targeted regulatory supervision of wholesale access for facilities-based wireless competitors that supports facilities-based investment. For example, in the case of roaming, this narrow tool is designed to overcome particular hurdles that a new facilities-based competitor or a small player initially faces in building or expanding its infrastructure. A new facilities-based competitor cannot offer a viable service to consumers in any part of the country without providing network access in all parts of the country. This is a key component of retail mobile wireless services.

36. Without access to existing wireless infrastructure outside of its home area, a new entrant cannot provide service without building an entire nationwide network upon entry. In the absence of sufficient competition such that incumbents are incentivized to sell access to their networks, it is not clear how a new wireless entrant could overcome this hurdle. Roaming rules therefore promote network build-out and are a key precondition to ensuring that new facilities-based competitors will have the incentive to make the necessary investments in network facilities.

37. This effect is often referred to the "ladder theory of investment": mandated wholesale access to incumbent infrastructure permits a foothold in the market initially by relying almost entirely on components of the incumbent's facilities at "the lowest rung", which will necessarily lead to the migration to less dependency and further investment at "higher rungs". The key challenge of the ladder theory of investment is to create a regime that incents entrants to progress to higher rungs and a fully facilities-based model.[42] This premise underpins measures taken by the government and the CRTC in the wireless

[40] Competition Bureau submission in response to TNC CRTC 2018-98, June 13, 2018, paragraph 5.

[41] See Competition Bureau submission in response to Telecom Notice of Consultation CRTC 2018–98, para 37.

[42] As summarized in the Blackwell Report, paragraphs 10-18.

sector, consistent with the policy objectives of the *Telecommunications Act* and the Policy Direction to remove barriers to investment and to promote competition from new facilities-based carriers.

38. This outcome has been realized in the wireless market, where targeted regulation has reduced barriers to facilities-based competition in support of ongoing network investment and innovation. New facilities-based competitors continue to invest in their networks to provide strong, sustainable competition in the market. Shaw has invested billions of dollars to enhance and expand our network to support differentiated, innovative, competitive wireless services that challenge the dominance of the market by Bell, Rogers and Telus. Shaw only completed its acquisition of Wind Mobile in 2016 and, in the short period of time since then, we have deployed an LTE-Advanced network, acquired more spectrum to better serve our customers, and launched transformative offers, such as our Big Gig plans, low-cost data-only offerings and our current Apple iPhone offers.

39. Conversely, had the CRTC proceeded with the introduction of a resale-based model in the wireless market, effectively promoting entry that bypassed the cost and risk of facilities deployment, it would have significantly increased the risks and decreased the returns of smaller facilities-based new competitors, such as Shaw, that are attempting to overcome the dominance of the incumbents.

40. In the case of wireline Internet high-speed access (HSA) services, where facilities-based competitors are mandated to provide tariffed access to resellers,[43] the latter have no incentive to invest in transmission facilities, in view of the low barriers to entry to offer a viable competitive service. Unlike the case of mobile wireless, a home Internet consumer would presumably be indifferent if its service provider does not offer a service that is national or regional in scope. Thus, in the case of wireline Internet service, the ability to build local infrastructure to serve a small region and expand over time is a viable entry strategy. Scale is not required to be offered immediately.

41. Therefore, there are significant regulatory costs associated with the “margin” resale model with respect to wireline resale: economics literature underscores that imposing mandated cost-based access pricing can negatively impact dynamic efficiency in two ways. First, it can discourage the adoption of new technologies by preventing incumbents from fully recovering the sunk costs of upgrading their infrastructure.[44] Second, it can change the calculus for facilities-based entry among resellers by making it comparatively cheaper to

[43] The Blackwell Report explains in detail that among the key elements of the CRTC’s wholesale wireless access regime is the requirement that service rates receive prior approval by the CRTC. Rates are supported by cost studies based on long-run incremental costs (referred to as Phase II costing in Canada). The CRTC has conducted numerous proceedings with respect to the costs and supporting inputs (e.g., working average cost of capital, working fill factors, allocation of costs for network elements shared among multiple services), and the level of mark-up permitted to recover common costs or additional costs to invest in new fibre-rich facilities.

[44] The support in economics literature for this conclusion is set out in the Brattle Report attached to Shaw’s comments: see paragraph 82-89.

continue leasing infrastructure instead of building their own. Regulatory models that support service-based competition have been shown to reduce the incentive, and financial ability, of facilities-based competitors to build alternative network infrastructure." [45]

42. Further, as discussed in the Brattle Report, in view of the increasing substitution between wireline and wireless networks, ongoing resale regulation in the wireline broadband market will also have a distortive impact on the *wireless* broadband market.

> Strong platform competition between wireline and wireless broadband networks necessarily means that wireless broadband markets will be impacted and affected by wireline broadband resale regulations. Specifically, if wireline broadband resale regulations cause market distortions, then they could also distort the network convergence of wireline and wireless broadband. By contrast, to the extent it is deemed that some market imperfection still exists, given the observed competitive improvement in the sector (as discussed above) and the anticipated rollout of 5G, changes to wireline broadband resale obligations to scale those obligations to be more proportionate to whatever market imperfection may remain would ensure that society's scarce economic resources are efficiently put to use in the deployment of 5G broadband networks.[46]

43. This economic theory is firmly supported by the data: while resellers have enjoyed growth in the overall share of access-related revenues in the last few years, there has not been a commensurate growth in the level of investment in facilities by resellers. The Brattle Report notes that facilities-based providers together accounted for 99.6% of telecommunications investments made in wireline plant and equipment during the period 2012 through 2016, while resellers accounted for only 0.4% ($30 million) of investments made in plant and equipment. In fact, annual average investment by resellers has been declining between 2012 and 2016. [47]

44. The Brattle Report summarizes the significance of these disparate trends:

> Given the increase in the number of residential subscribers that rely on Other Service Providers for internet access, the decrease in the rate of investment by Resellers may already have had negative implications for the optimal implementation of innovative technology. From an incentives perspective Resellers are likely to become even more dependent on the networks of traditional telephone

---

[45] Shaw submission to the CRTC in the matter of Telecom Notice of Consultation CRTC 2017-259, Call for comments – Reconsideration of Telecom Decision 2017-56 regarding final terms and conditions for wholesale mobile wireless roaming service, paragraph 9.

[46] The Brattle Report: see paragraph 72.

[47] CRTC, *CMR 2017*, Table 5.05. Reseller investment in plant and equipment has in fact declined 8.5% over a five year period (2012-2016). The Brattle Report also notes that compound annual growth rate in telecommunications investment during this period was 4.1% for Incumbent TSPs, 12.1% for Cable-Based Carriers and Other Facilities-Based Service Providers, and -8.5% for resellers: Brattle Report, Figure 7 (para. 21).

> service providers and cable providers, and thus provide less technological competition at the margin.[48]

45. In 2016, facilities-based wireline service providers spent over $9 billion in capital expenditures in annual investments in plant and equipment. Capital expenditures made by facilities-based wireline providers such as Shaw increased 19.8% over the previous year with a total CAGR of 12% since 2012. This amounts to roughly 40 cents on every dollar of revenue being reinvested by facilities-based providers into wireline networks over the past three years.[49]

46. At the same time and notwithstanding CRTC-mandated continued downward pressure on tariffed wholesale high speed access rates, wireline broadband service speeds have continued to increase as a result of ongoing investments made by the facilities-based carriers. However, the average revenue per wholesale subscription has increased only nominally (1.3%) since 2012 and has in fact decreased by 5.3% in the most recent year (2015-2016). Costs for facilities-based providers are generally increasing due to increases in labour costs and capital investment; at the same time, resellers' costs have decreased substantially.

47. The increasing potential for wireline and wireless broadband platform competition described in Section b. of this submission further underscores the need for appropriately calibrated regulation on the wireline platform. Interventionist regulation that privileges resale models will distort the relative costs between the two platforms, reward uneconomic market entry and potentially undercut next-generation network investment and expansion across the entire telecommunications sector, including on the wireless platform. As outlined in the Brattle Report, such an outcome would negatively affect economic efficiency and misallocate scarce economic resources and in turn limit the choices available to Canadians:

> For these reasons, a review of existing resale regulations becomes ever-more important and consequential. Imposing unnecessary regulations on any given technology (either existing wireline broadband or emerging wireless broadband technologies) would inevitably distort market outcomes that would otherwise have been observed in the wireline and wireless broadband markets, thereby reducing overall economic efficiency. [50]

---

[48] Brattle Report, para. 24.

[49] CRTC, *CMR 2017*, Figure 5.0.5

[50] Brattle Report, para 73.

48. The Brattle Report notes the broad consensus in economics literature that over-broad price regulation can diminish incentives for long-term investment.[51] In the context of intrusive regulation targeting a single platform (wireline), there is a significant potential for a misallocation of economic resources among existing and newly emerging platforms for the delivery of broadband services. The Brattle Report summarizes the issue:

> The end result of imposing unnecessary regulations on some technologies and not others will put the regulated technologies at a competitive disadvantage, distorting outcomes that would otherwise have been observed, and thereby further reduce overall economic efficiency.
>
> Resale in Canada is currently facilitated by a cost-based, resale regime imposed upon both the incumbent telephone and cable operators. Our review of the economics literature on the role of resale and the effects of different resale regulatory regimes on investment finds that stringent regulation on facilities-based suppliers intended to aid resellers can have significant distortions on investment incentives. The diminished investment incentives for both traditional facilities-based service and resellers under such regimes may lead to "first-order" social welfare losses if new technology is not be introduced to consumers optimally.[52]

49. As a facilities-based competitor, Shaw is subject to significant "opportunity cost" in terms of the timing of investment decisions, which are a function of network architecture and consumer need. In order to minimize this ongoing uncertainty, a key principle of economic theory must be respected: as new facilities-based competitors enter the market and substitutable technologies develop, regulation should be supplanted by competition.[53]

50. Given these economic realities, Shaw submits that it is appropriate to consider whether the existing mandated wholesale regime continues to strike an appropriate balance, or if the market has evolved to the point where mandated resale regulations can be phased-out. This is supported by the findings of the Brattle Report:

> As the CRTC has previously concluded, facilities-based competition "is typically regarded as the ideal and most sustainable form of competition."[54] Our economic analysis supports this view, and we demonstrate the important role that facilities-based investment and competition plays in achieving economic efficiency in broadband markets in Canada. In particular, our analysis highlights the technological evolution and convergence of wireline and wireless broadband markets in Canada and the benefits of "technology competition" between fiber and coaxial broadband on the one hand and wireless LTE and nascent 5G on the other

---

[51] Brattle Report, paras 73 and 82–87.

[52] Brattle Report, paras 122 - 123.

[53] The Brattle Report notes the support in economic literature for the principle that competition should supplant regulation: see para 80, note 86.

[54] CRTC, Telecom Regulatory Policy 2015-326, July 22, 2015 at para 5.

hand. We believe that unnecessary cost-based resale obligations on wireline and wireless facilities-based broadband providers will distort and bias this technology competition, delay facilities-based broadband investment, and lower overall economic efficiency in Canadian broadband markets.[55]

51. Where strong facilities-based competition exists, resale-based entry on commercially negotiated terms will evolve naturally. #

Given the competitive state of the wholesale market, with multiple facilities-based providers, there is little risk that resellers will be prevented from continuing in the market following the phase-out period.

52. With respect to opportunities to engage in the use of mandated wholesale access to expand the reach of its network outside our traditional territory, Shaw continues to believe strongly in the benefits of strong, sustainable facilities-based competition. This is why Shaw took the bold step of acquiring spectrum and wireless network infrastructure outside our traditional network footprint, rather than pursuing regulatory intervention to create a wireless resale (MVNO) model. Even though our investment in wireless was risky, we believe that investing in and operating facilities (i.e., spectrum) gives us greater control over the quality of the service and enables us to innovate to meet consumer demands in ways that resale-based models cannot inherently support.

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?*

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

53. Unlike in Canada where there are numerous competing platforms, many of which are privately held entities, international wholesale regulation, where it exists, is focused on the unbundling of network elements controlled by a single monopoly state-owned provider.

54. Moreover, international data supports the hypothesis that there is an evolution towards increasing “mobile data substitution”. Austria’s mobile data-only penetration level of 27.3% as of December 2017 represents a growth of almost 4% over a 6- month period. Finland also has a high data-only penetration rate of 20.3%, while Australia, Latvia, Denmark and Poland have data-only rates of 14% or higher.[56] Clearly, where competition in the wireless

[55] Brattle Report, para 124.

[56] TEfficient, “Unlimited moves the needle – but it’s when mobile addresses slow fixed internet that something happens” (July 18, 2018) at 10, online (pdf): *TEfficient Industry Analysis #1* <tefficient.com/unlimited-moves-the-needle-but-its-when-mobile-addresses-slow-fixed-internet-that-something-happens/>

market has resulted in quality networks and reasonably priced data options, consumers are increasingly adopting mobile data networks as a substitute for wireline broadband.

55. The Blackwell Report provides an overview of the regulation of wholesale access to high-speed internet facilities of incumbent network operators in each of eleven "comparator countries", grouped according to one of three basic models of regulation.[57] The Report found that countries with which Canada shares the mixed service-based and facilities-based competition regulatory model typically have more regulated wholesale access services, including several available "rungs" on the ladder and suggests, if regulation is to be pursued, the Canadian regulator must "commit to weakening the lower rungs and strengthening the higher rungs if it is hoping to influence the market towards greater facilities-based competition and investment in NGA networks".[58]

56. The Report concludes that the lesson to be drawn from the regulatory framework in these countries is that where entrants have more regulated options to purchase access to existing networks under mandated regulation, there is less likelihood that the entrants will migrate from regulated options to their own facilities. Thus, regulation can impede progress towards more intensely facilities-based competitive market outcomes.

57. The Blackwell Report goes on to note that a prudent approach for regulators is to refine regulatory remedies to reduce incentives for entrants to rely on regulated wholesale access and increase incentives to invest in their own facilities. The remedies can be broken into two tactical groups – those that strengthen incentives to use services at higher rungs and those that weaken incentives to use services at lower rungs of the "Ladder of Investment".[59]

III. CONCLUSION

58. With the advent of 5G technology, Canadians are on the cusp of an era of significant dynamic technological change which will be characterized primarily by the convergence of wireline and wireless delivery for broadband services. Shaw therefore submits that the appropriate focus must expand beyond the delivery of broadband wireline internet services. In order to usher in the era of 5G networks, and all of the economic and social potential that it will facilities, billions of dollars of further investment is needed, as well as the elimination of barriers to investment in wireless infrastructure including spectrum concentration and access to facilities such as wholesale wireless roaming.

59. There is no evidence of existing barriers to continued growth of resellers or their ability to compete. Further, more resale-based competition will not provide the appropriate incentives for increased innovation and facilities-based network investment that is required

[57] Australia, Belgium, France, Germany, Italy, Japan, the Netherlands, Portugal, Switzerland, the United Kingdom and the United States.

[58] Blackwell Report, E20.

[59] Blackwell Report, s 1 and s 5.

if Canada is to realize its full potential through upcoming technological transitions. In fact, in view of the nominal level of investment in facilities made by resellers, Shaw submits that there would be little utility in continuing to focus additional regulatory resources toward further reducing the already extremely low barriers to entry for resellers in the wireline market.

60. Any further measures to bolster the market share of resellers will have a significant negative impact on the objective of ensuring continued investment by strong, sustainable facilities-based providers in wireline and wireless facilities. We must be mindful to avoid forcing a particular market outcome through a cycle of resale-based regulation while disregarding the fundamental role of strong, facilities-based players and emerging technologies. Doing so runs the risk of producing a static, unresponsive broadband environment that fails to meet the needs of Canadians and the Canadian economy, while incentivizing dependence on regulation. This will lead us further away from the healthy market forces that can empower consumers and drive innovation.

61. The answer to increasing competition in broadband services lies with reducing barriers for facilities-based new competitors in the wireless market. Impediments to competition continue to govern in the wireless sector, including such as dramatic imbalances between new entrant spectrum holdings and those of the incumbents, as well as obstacles to accessing towers and sites for radio antennae on reasonable terms and conditions. Working to remove these barriers will help realize a truly competitive broadband market and help usher in the new era of 5G “ultra-connectivity” that Canadians demand.

62. Ultimately, market forces and the ability of network providers to respond to changing consumer preferences and to efficiently incorporate continued wireline and wireless broadband technological advances will determine the “optimal” mix of Canadian wireline and wireless broadband consumers. On the other hand, further resale regulation would be distortive and result in significant misallocation of economic resources resulting in less competition to wireless broadband services and further distorting the deployment, timing and adoption of 5G.[60]

63. Consistent with the policy objectives set out at section 7 of the *Telecommunications Act* and the Policy Direction, the role of the regulator under a facilities-based competition strategy is to avoid intrusive retail measures or distortive wholesale measures that negatively affect the incentives and ability of facilities-based competitors to invest. The regulator should only intervene where necessary to promote the public interest through targeted measures that maximize reliance on market forces to deliver the benefits of choice, innovation and affordability over the long term.

64. Shaw and other new facilities-based wireless competitors are contributing to the Government’s and the Commission’s overarching policy objectives by continuing to risk

[60] Brattle Report, paras. 71-73.

billions of dollars of investments in network facilities to enhance and expand our suite of differentiated, innovative, competitive broadband services. Therefore, further disruption of facilities-based competition in favour of resale models, or by mandating reseller access to advanced broadband networks or services, will have a disproportionate negative impact on Canada's facilities-based providers and ultimately on their ability to provide effective and sustainable competition.

*** END OF DOCUMENT***