



Telecom Decision CRTC 2018-97

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Reference: Telecom Notice of Consultation 2017-259, as amended

Ottawa, 22 March 2018

Public record: 1011-NOC2017-0259

Reconsideration of Telecom Decision 2017-56 regarding final terms and conditions for wholesale mobile wireless roaming service

The Commission recognizes the need to address the lack of choice of innovative and affordable mobile wireless services, particularly for Canadians with low household incomes. The Commission considers that if more options for lower-cost data-only plans were available, consumers would be further empowered to use the voice and messaging applications of their choice when and where they want, using a combination of Wi-Fi connectivity and cellular networks. Accordingly, concurrent with the release of this decision, the Commission is initiating a public process with the goal of ensuring that such plans are more widely available to Canadians and providing more meaningful choices for Canadian consumers, especially those with low household incomes.

The Commission considers that the development of sustainable facilities-based competition is a long-standing strategy that requires nurturing and regulatory certainty. To that end, in its 2015 wholesale wireless framework, the Commission committed to monitoring the competitive conditions in the mobile wireless services market over a minimum five-year period. In the Commission's view, since that framework was put in place, the mobile wireless services market has seen limited resale competition and, with the upcoming deployment of 5G technology, a review of the Commission's framework is warranted. The Commission therefore plans to initiate a review of its wholesale wireless framework within the next year and to include in the review an examination of the Commission's wholesale mobile virtual network operator access policy.

The Commission considers that the measures taken in this decision will improve the affordability of retail mobile wireless services and maintain regulatory certainty, taking into account the significant investments wireless carriers are making in their networks and the need for these investments to continue. Accordingly, the Commission considers that no further changes to the framework established in Telecom Decision 2017-56 are required at this time.

Background

1. Wholesale mobile wireless roaming service (wholesale roaming) enables the subscribers (also referred to as “end-users”) of a wireless carrier (i.e. the home network carrier), and any end-users of a mobile virtual network operator (MVNO)¹ that has an arrangement with a wireless carrier, to automatically access voice, text messaging, and data services using a visited wireless carrier’s network (also referred to as “the host network”), including its radio access network (RAN), when they travel outside their home carrier’s network footprint.
2. In Telecom Regulatory Policy 2015-177 (the wholesale wireless framework), the Commission determined that it was necessary to regulate the domestic Global System for Mobile communications (GSM)-based wholesale roaming services that Bell Mobility Inc. (Bell Mobility), Rogers Communications Canada Inc. (RCCI),² and TELUS Communications Inc. (TCI)³ [collectively, the national wireless carriers] provide to other wireless carriers. The Commission directed the national wireless carriers to provide wholesale roaming subject to rates, terms, and conditions established by the Commission (mandated wholesale roaming), in light of its findings that (i) to refrain from such regulation would not be consistent with the policy objectives set out in section 7 of the *Telecommunications Act* (the Act), and (ii) wholesale roaming by the national wireless carriers is not subject to a sufficient level of competition to protect the interests of users. The Commission directed the national wireless carriers to file proposed wholesale roaming tariffs for approval. Given the potential to negatively impact facilities-based investment, however, the Commission determined that it would not be appropriate to mandate wholesale MVNO access.
3. In Telecom Decision 2017-56, the Commission directed the national wireless carriers to make changes to the terms and conditions they had proposed in their wholesale roaming tariffs, filed pursuant to the wholesale wireless framework, and to file the revised tariffs for final approval. The Commission also confirmed that mandated wholesale roaming was intended to provide the end-users of other wireless carriers with only incidental, not permanent, access to the national wireless carriers’ networks, and that it would be inconsistent with the wholesale wireless framework to permit mandated wholesale roaming to be used as a means to obtain permanent access. In addition, the Commission determined that allowing permanent network access via wholesale roaming would render meaningless the determination in the

¹ An MVNO is a wireless service provider that does not own spectrum or operate its own radio access network (RAN); instead, it relies on the spectrum and RAN of a wireless carrier and, in some cases, other facilities and/or services, to provide mobile wireless services to consumers.

² In that proceeding, submissions were received from Rogers Communications Partnership (RCP). However, RCP ceased to exist on 1 January 2016, and all of its business activities, including its assets and liabilities, are now held by RCCI. For ease of reference, “RCCI” is used in this decision.

³ In that proceeding, submissions were received from TELUS Communications Company (TCC). However, effective 1 October 2017, TCC’s assets were legally transferred to TCI and TCC ceased to exist. For ease of reference, “TCI” is used in this decision.

wholesale wireless framework not to mandate MVNO access, and would require the Commission to fundamentally redefine the meaning of wholesale roaming.

4. The Commission also clarified that public Wi-Fi access does not form part of a home network for the purpose of establishing what constitutes incidental use of the national wireless carriers' networks under the wholesale roaming tariffs. The Commission noted that public Wi-Fi is provided over facilities that are not owned or operated by wireless service providers, and that there are not necessarily any contractual or other arrangements between the owners and operators of Wi-Fi networks and the service providers that use them to deliver telecommunications services to retail end-users. Accordingly, the Commission considered that the availability, quality, and reliability of such facilities could not be assured in any meaningful way. Further, including public Wi-Fi access in the definition of "home network" would undermine the policy objectives of mandated wholesale roaming, since it would discourage wholesale roaming customers from investing in facilities.
5. The Commission made these determinations in light of a dispute between RCCI and Ice Wireless Inc. (Ice Wireless). The two companies had a roaming agreement under which Ice Wireless's end-users could roam on RCCI's network when travelling outside the operating territory of their home network carrier. RCCI argued that Sugar Mobile Inc. (Sugar Mobile), an MVNO affiliate of Ice Wireless and a Wi-Fi-first service provider,⁴ was allowing its end-users to access RCCI's network on a permanent basis, in violation of the roaming agreement.
6. As a direct consequence, the Commission determined, in Telecom Decision 2017-57, that Sugar Mobile was no longer allowed to access RCCI's network on a permanent basis using Ice Wireless's wholesale roaming agreement with RCCI.

The Order in Council

7. On 1 June 2017, in Order in Council P.C. 2017-0557 (the Order in Council),⁵ the Governor in Council referred Telecom Decision 2017-56 back to the Commission for reconsideration.
8. The Governor in Council stated that it is material to the reconsideration that the Commission consider whether
 - broadening the definition of "home network" to consider other forms of connectivity, such as Wi-Fi, would have a positive impact on the affordability of retail mobile wireless services to consumers in Canada;

⁴ Wi-Fi-first service providers offer applications that use a combination of Wi-Fi and cellular networks to offer wireless services including voice and text messaging services. The applications consume mobile data only when the end-users do not have Wi-Fi access.

⁵ The complete text of the Order in Council is reproduced in Appendix 1 to this decision.

- the evidence demonstrates in a sufficiently clear and significant manner that the potential negative impact on investment in wireless infrastructure from the inclusion of Wi-Fi connectivity in the definition of “home network” outweighs the potential positive impact on the affordability of retail mobile wireless services to consumers from that inclusion; and
 - impact on investment could be mitigated by imposing conditions on mandated wholesale roaming services, such as ensuring that roaming by customers of providers who offer service primarily over Wi-Fi would be incidental rather than permanent by, for example, limiting roaming in amount, subjecting roaming services to a different tariffed wholesale rate, or both.
9. The Commission issued Telecom Notice of Consultation 2017-259 on 20 July 2017. In that notice, the Commission requested comments on the issues raised in the Order in Council.
10. Approximately 40 parties participated in the proceeding, including all the major wireless carriers in Canada, several smaller wireless companies, certain consumer groups, and a number of individuals. A full list of interveners can be found in Appendix 2 to this decision.

Issues

11. The Commission has identified the following issues to be addressed in this decision:
- Should the Commission modify Telecom Decision 2017-56 to broaden the definition of “home network” to include other forms of connectivity, such as Wi-Fi, for the purpose of wholesale roaming? If so, what would be the potential impact on the affordability of and investments in mobile wireless services?
 - What can the Commission do to address concerns regarding the lack of choice of innovative and affordable mobile wireless services, particularly for Canadians with low household incomes?

Should the Commission modify Telecom Decision 2017-56 to broaden the definition of “home network” to include other forms of connectivity, such as Wi-Fi, for the purpose of wholesale roaming? If so, what would be the potential impact on the affordability of and investments in mobile wireless services?

12. This section will examine the matters the Governor in Council considered to be material to the Commission’s reconsideration of Telecom Decision 2017-56 to determine whether the Commission should broaden the definition of “home network” to include other forms of connectivity, including Wi-Fi, for the purpose of wholesale roaming.

Positions of parties

Broadening the definition of “home network”

13. Most wireless carriers argued that extending the definition of “home network” to include public Wi-Fi access would essentially mean that all global Internet Protocol (IP) connectivity would need to be treated as part of a telecommunications service provider’s (TSP) home network, irrespective of whether any of this connectivity was owned, operated, or controlled by the TSP.
14. They submitted that broadening the definition would be inconsistent with the nature of roaming – instead of providing incidental access, redefinition would transform a voice over Internet Protocol (VoIP) application into a ubiquitous connectivity service.
15. Bell Mobility submitted that Wi-Fi-first service providers do not provide any connectivity services to their customers at all, let alone any mobile connectivity, since every smartphone customer can already use Wi-Fi data, and Canadians already use Wi-Fi for between 76% and 84% of their mobile data usage.
16. Shaw Communications Inc. (Shaw) opposed extending mandated wholesale roaming to support Wi-Fi-first service delivery models and argued that Canada’s wireless policy framework should remain focused on facilities-based competition.
17. RCCI argued that the previous decision excluding public Wi-Fi from the definition of “home network” was correct since it promoted facilities-based competition and maintained incentives to invest in facilities, consistent with Canada’s successful and longstanding wireless policy. It argued that none of the facts have changed since the decision was issued and that there is no need to expand the wholesale roaming regime and mandate resale wireless services.
18. Quebecor Media Inc., on behalf of Videotron Ltd. (Videotron)⁶ submitted that broadening the definition of “home network” to include public Wi-Fi would effectively be requiring wireless carriers to provide wholesale access to their networks for the purpose of resale.
19. Conversely, Ice Wireless supported expanding the definition of “home network” to encompass other forms of connectivity, Wi-Fi in particular. It submitted that this would help introduce real and sustainable competition in Canada’s mobile wireless services market by enabling Wi-Fi-first service providers such as Sugar Mobile to proliferate.

⁶ In this proceeding, submissions were received from Videotron G.P. However, effective 29 December 2017, all of Videotron G.P.’s assets and operations were transferred to its affiliate, Videotron Ltd., and Videotron G.P. was subsequently dissolved. For ease of reference, “Videotron Ltd.” is used in this decision.

20. The Canadian Network Operators Consortium Inc. (CNOc) submitted that the definition of “home network” should be expanded to include any wireless network that (i) a wireless service provider can use as a (RAN to establish connectivity to a device that is capable of registering on the national wireless carriers’ wireless networks to access mandated wholesale roaming services, and (ii) is permitted to operate under the *Radiocommunication Act*.
21. CNOc submitted that Wi-Fi is a viable form of connectivity for a home network, as shown by its use by wireless service providers in both the United States and Canada. It noted other interveners’ submissions that the national wireless carriers use Wi-Fi connectivity to provide Wi-Fi calling functionality as part of their retail wireless service offerings.
22. The Public Interest Advocacy Centre (PIAC) supported broadening the definition of “home network” to increase competition and choice in the mobile wireless services market. PIAC argued that this would advance the policy objectives set out in paragraphs 7(a), (b), (c), (f), (g), and (h) of the Act.
23. Cogeco Communications inc. (Cogeco) submitted that all facilities-based access networks owned or operated by a Canadian carrier in the geographic market where the carrier provides retail services should be considered part of that carrier’s “home network” for roaming purposes. Cogeco argued that this approach would be technologically neutral and would take into account the increasing convergence of wireline and wireless networks, while continuing to promote facilities-based competition.

Impact of broadening the definition of “home network” on the affordability of mobile wireless services

24. Several interveners submitted that enabling Wi-Fi-first service providers to operate would have a positive impact on affordability in the retail mobile wireless services market.
25. Ice Wireless submitted that Canada has a serious issue with the affordability of retail mobile wireless services. Ice Wireless argued that low-income Canadians in particular struggle to access mobile wireless services and that Canada’s prices for retail mobile wireless services are among the highest in the industrialized world. Ice Wireless cited evidence from the Commission’s 2016 *Communications Monitoring Report* (CMR) showing that one third of low-income households do not subscribe to a mobile wireless service, compared to approximately 95% of Canada’s wealthiest households that do subscribe. Ice Wireless argued that Wi-Fi-first service providers represent a positive resolution to this situation in the Canadian retail mobile wireless services market, since they are able to offer service at a fraction of the cost of traditional telecommunications carriers.
26. Cogeco submitted that expanding the scope of carriers eligible to be wholesale roaming customers would create a more competitive environment and would ultimately result in improved affordability for mobile wireless services.

27. The Internet Society Canada Chapter (ISCC) submitted that expanding the definition of “home network” to allow Wi-Fi-based MVNOs to operate would enable these providers to target market niches, such as low-income households, that are currently left unserved by the larger national wireless carriers.
28. OpenMedia Engagement Network (OpenMedia) submitted that, year after year, statistics, news articles, and the Commission’s own reports indicate that Canada has some of the highest mobile wireless prices among Group of Seven (G7) and Organisation for Economic Cooperation and Development (OECD) countries. Examples included the 2016 International Price Comparison Study, which showed that prices for entry-level mobile wireless service packages were higher in Canada than in other G7 countries, and an OECD report from 2013 that found that Canada ranked among the ten most expensive countries in the OECD in virtually every category and among the three most expensive countries for several standard data-only plans.
29. PIAC submitted that Wi-Fi-first service offerings could meet the needs of some low-income users, but would not be a panacea for all low-income individuals’ affordability challenges regarding telecommunications services. PIAC argued that low-income households do not necessarily have low use, and that Wi-Fi-first service providers often offer fairly low data limits.
30. CNOC, Ice Wireless, and OpenMedia submitted that Wi-Fi-first service providers in the United States, such as Republic Wireless and Google Inc.’s Project Fi, offer plans at significantly lower rates than the lowest-priced plans of the Canadian national wireless carriers.
31. Wireless carriers and the Canadian Wireless Telecommunications Association (CWTA) generally submitted that enabling Wi-Fi-first service providers to operate would not have a positive impact on the affordability of wireless services.
32. The national wireless carriers and the CWTA generally argued that multiple facilities-based carriers have competing plans in the market today at price points equivalent to those proposed by Wi-Fi-first service providers.
33. Bragg Communications Incorporated, carrying on business as Eastlink (Eastlink), submitted that, according to the Commission’s own annual reports, prices for pay-per-use mobile wireless services (i.e. services that charge per minute or per text message) have been steadily decreasing in Canada since new entrants into the market purchased spectrum in 2008.
34. Saskatchewan Telecommunications (SaskTel) submitted that Saskatchewan has some of the most affordable mobile wireless service rates in Canada, and argued that affordability in other markets is not likely to be significantly impacted by artificially introducing resale-based competition.

35. Shaw submitted that there is no evidence that a particular competition problem exists in the low-cost segment of the market. It argued that this segment of the market has seen more competition, with entry and pressure from regional new competitors. Shaw highlighted offerings from Freedom Mobile Inc. (Freedom Mobile) that serve this segment of the market.
36. TCI argued that the economic and quantitative evidence filed in this proceeding does not support the statements in the Order in Council that (i) Canadians pay high rates for mobile wireless telecommunications services, (ii) Canada has among the lowest adoption rates for mobile wireless telecommunications services in the world, and (iii) Canadians with low household incomes face challenges related to the affordability of telecommunications services.
37. TCI's expert evidence, provided by Dr. Christian Dippon, claimed that the interveners supporting a redefinition of "home network" offer no credible basis as to why the Commission should overturn its decision. Dr. Dippon argued, among other things, that there would be no demonstrable consumer benefit, no promise of innovation, and no proof of affordability.
38. The national wireless carriers submitted that comparisons to American companies such as Republic Wireless are flawed since they do not include handset costs or the cost of a broadband Internet connection at the customer's home, which would be necessary for customers seeking to rely largely on Wi-Fi connectivity.

Impact of broadening the definition of "home network" on investments in mobile wireless services

39. Wireless carriers generally argued that mandating access to wireless networks at regulated rates would undermine investment in wireless network infrastructure. Specifically, it would eliminate the need to invest (instead allowing carriers to rely on mandated access), eliminate competitive advantage gained from investment, reduce the subscriber base over which investments can be amortized, and reduce cash flows available for investment.
40. Further, if the Commission were to mandate access for Wi-Fi-first service providers, this would undermine the business case for facilities-based regional players like Shaw and Videotron at a critical point in their development as sustainable competitors, and would reduce the ability and incentive of all facilities-based competitors to roll out next-generation technologies quickly or invest in rural areas. Videotron further argued that mandating resale competition would compromise the federal government's desire to have four facilities-based carriers competing in all regions of Canada.
41. Wireless carriers also generally argued that providing Wi-Fi-first service providers with mandated access to wireless carriers' networks would especially impact investment in rural areas. It would allow non-facilities-based service providers to offer a similar product without taking on the significant cost and risk of building networks in less densely populated areas, and would encourage all firms to choose

the resale model in those areas going forward to avoid sunk-cost risks. Under these conditions, wireless carriers' internal rate of return on network builds would decline, and in many areas would become negative. Further, the otherwise attractive investment prospects for non-urban areas would become unattractive and carriers would choose to focus on densely populated urban areas.

42. Similarly, Eastlink and Shaw both submitted that providing Wi-Fi-first service providers with mandated access to wireless carriers' networks would undermine the economics of building wireless networks to compete with the national wireless carriers. They submitted that the high cost of infrastructure deployment and, in many areas, smaller population bases to support a return on investment, pose a significant challenge.
43. In these circumstances, it would be difficult for wireless carriers to respond to competition from Wi-Fi-first service providers. They could not charge more to recover additional revenue because that would make them non-competitive, and they could not charge less than what a discount Wi-Fi-first service provider charges, because that would further reduce their revenue. In addition, Wi-Fi-first service providers would attract some of the wireless carrier's customer base, leaving fewer customers to help recover its network investment.
44. Bell Mobility submitted that its expert evidence, compiled by Margaret Sanderson, shows that in other jurisdictions, mandating access for MVNOs reduced investment by up to 17%. In Canada, this would translate into as much as \$350 million in lost wireless capital expenditure annually. This lost capital expenditure would threaten Canada's position as a world leader in terms of network speed, quality, and coverage – incumbent wireless carriers are poised to make large fifth-generation (5G) investments that may not materialize if access is mandated. Further, mandated MVNO access would represent a dramatic change to the federal government's nine-year-old pro-facilities-based competition policy, and the associated regulatory uncertainty would likely yield lower levels of investment and innovation.
45. Xplornet Communications Inc. (Xplornet) noted that it is making large-scale investments to establish new wireless infrastructure in Manitoba. It submitted that it made these investments following the Commission's decision to not mandate MVNOs, and that its investments would be jeopardized if this decision were reversed and network access were mandated.
46. The CWTA argued that there is sufficiently clear evidence demonstrating that redefining "home network" would have a significant negative impact on investment in wireless infrastructure, which would outweigh any theoretically positive effect on the affordability of retail mobile wireless services to consumers.
47. Distributel Communications Limited, Ice Wireless, and PIAC all argued that wireless carriers have not demonstrated that broadening the definition of "home network" would generate a significant negative impact on investments in wireless network infrastructure. Further, PIAC argued that even if there were an

impact, it would be minimal because the Commission's roaming framework allows for only incidental roaming, not permanent access.

48. CNOOC, Execulink Telecom Inc., and Ice Wireless argued that mobile wireless infrastructure spending would likely be stimulated through the increase in competition that would result from mandating access to wireless carriers' networks. They also argued that mandated wholesale roaming rates, if set properly, would ensure that the national wireless carriers receive a fair rate of return on investment. They further submitted that wireless carriers' investor relations documents do not suggest that there is any anticipated reduction in investment planned as a result of the outcome of this proceeding and that, generally, threats to reduce investment as a shield against regulatory change rarely ever come to pass.
49. Ice Wireless argued that the national wireless carriers have consistently engaged in a fundamental logical reasoning error – they argue that Wi-Fi-first service providers will have no impact on affordability while simultaneously arguing that expanding the definition of “home network” will have catastrophic negative impacts on investment. Ice Wireless submitted that both arguments cannot be true – if Wi-Fi-first service providers have nothing to contribute, then they would be unable to gain market share, and there would, therefore, be no negative impact on investment.
50. Ice Wireless filed expert evidence by Dr. Markus von Wartburg in which it was argued that, given the national wireless carriers' earnings before interest, taxes, depreciation, and amortization (EBITDA), greater competition through the introduction of Wi-Fi-first service may actually increase their level of network investment. Specifically, a wireless carrier's investment in networks increases with intensity of competition as long as its profit is above a threshold of 37% to 40% of its total revenue. It was argued that because each of the national wireless carriers' profits fall within that threshold, network investment in Canada should increase with greater intensity of competition.
51. OpenMedia and PIAC submitted that the Commission must assess whether an expanded definition of “home network” would have not just an effect, but a significant effect, on investment in wireless infrastructure. A lower level of investment may be far from constituting the type of underinvestment that would result in poor service quality or slow technological advances.
52. PIAC argued that the impact of network sharing on investment must be considered, since network sharing could have a detrimental impact on network coverage, particularly in rural and remote areas. If, as some wireless carriers argued, network sharing is efficient and brings benefits (e.g. offsetting capital costs and making efficient use of network capacity) to consumers, then (i) Wi-Fi-first service providers could generate the same type of benefits, and (ii) mandating access is unlikely to have a significant impact on wireless network quality because many wireless networks are already shared with no detrimental effect.

Commission's analysis and determinations

Broadening the definition of "home network"

53. Under current Commission rules, only wireless carriers (i.e. wireless companies that own and invest in network facilities such as spectrum and towers) are eligible to use mandated wholesale roaming. Wholesale roaming has always been understood to be incidental, and not intended for permanent use. This distinction encourages ongoing investment in facilities-based networks by wireless competitors, while supporting their competitive mobile service offerings.
54. The purpose of defining "home network" for wholesale roaming is to identify when an end-user is within a wholesale roaming customer's own network footprint versus when the end-user is incidentally roaming on another carrier's network.⁷
55. If public Wi-Fi facilities, which are not owned or operated by wireless service providers and require no infrastructure investment, were to be included in the definition of "home network," there would be no reliable or practical way of distinguishing between a service provider's home network and all other network equipment connected to the Internet.
56. As such, if wholesale roaming were made available to a company that did not own or operate its own network (i.e. a Wi-Fi-first service provider), that company's customers would not be roaming, as that term has always been understood within the industry and the Commission's framework up to this point. Instead, the company would have wholesale access to a national wireless carrier's network on a permanent basis.
57. The Commission has held multiple public proceedings, in which significant time and energy have been invested, with a view to establishing the rates, terms, and conditions associated with mandated wholesale roaming. Providing certainty to wireless carriers is essential to their investment decisions and, in the case of competitors, solidifying their competitive positions. If the Commission were to alter the meaning of roaming in Canada by broadening the definition of "home network" to include Wi-Fi access, doing so would introduce regulatory uncertainty into the market.
58. From a regulatory perspective, there should be a clear line drawn between incidental access to the national wireless carriers' networks (wholesale roaming) and permanent access to the national wireless carriers' networks (resale, or MVNO access). These two types of network access serve different purposes. Wholesale roaming facilitates wireless carriers' entry into and competition in the market, while

⁷ An exception is in-footprint roaming, which occurs when a wholesale roaming customer's end-users roam on the national wireless carrier's network while they are within their home carrier's network footprint because of the existence of coverage gaps or areas of weak signal strength within the wholesale roaming customer's own territory.

wholesale MVNO access facilitates service-based competition. The Commission intentionally made this distinction in the wholesale wireless framework and expressly chose not to mandate the latter service, given its concerns that it could negatively impact investment, particularly from wireless competitors and outside urban core areas.

59. For all of these reasons, the Commission maintains the view that public Wi-Fi should not form part of a wireless carrier's home network for the purpose of establishing what constitutes incidental use of the visited network pursuant to the relevant wholesale roaming tariff.

Impact of broadening the definition of “home network” on the affordability of mobile wireless services

60. While there is evidence that average prices for mobile wireless services are declining, concerns about affordability can be justified given the slow rate of this decline and given how much Canadians are spending for their communications services, and for mobile wireless services in particular. The 2017 CMR found that throughout 2015, the average Canadian household spent \$218.42 per month on communications services, an increase of \$3.67 (1.7%) from 2014, with mobile wireless services representing the largest share (\$87.25 or 40% of the average monthly expenditures on communications services).⁸
61. The 2017 CMR also shows that households in the first and second income quintiles spent a higher proportion of their household income on communications services. Households in these income quintiles also led in having mobile wireless service only (i.e. no home telephone), with 35% of first-income-quintile and 30.4% of second-income-quintile households having mobile wireless service only.
62. To better understand the availability of lower-priced mobile wireless plans, the Commission reviewed the lowest-price postpaid and prepaid plans available from several wireless carriers. In general, the evidence suggests that there are some lower-cost options available for consumers. For postpaid plans, the cost and the associated voice, text messaging, and data allotments of the lowest priced plans were varied. For example, one carrier offered 100 local minutes, unlimited text messaging, and no data for \$25, another carrier offered 100 local minutes, unlimited text messaging, and 100 megabytes (MB) of data for \$30, while a third offered 100 local minutes, unlimited text messaging, and 250 MB of data for \$30.
63. In the case of prepaid options, prices are comparable to postpaid plans, but generally include slightly higher data allotments.

⁸ Communications services include mobile wireless services, home television services, Internet services, and home telephone services.

64. If some lower-cost options exist today, the question is whether the introduction of additional competitive choice (i.e. by mandating roaming access for Wi-Fi-first service providers) would have a positive impact on affordability. In general, any action taken by the Commission that increases the number of competitors in the mobile wireless services market would put downward pressure on the retail price for wireless services to some degree, since new entrants are likely to attempt to attract customers through lower prices.
65. The potential effect of additional competitive options on pricing can be clearly seen when one considers that prices for wireless service in regions of Canada where numerous competitors are present are often lower than in other regions where there are fewer facilities-based carriers.⁹
66. Introducing Wi-Fi-first service providers in the Canadian market would likely introduce additional lower-cost mobile wireless service plans, assuming the rates, terms, conditions, and constraints associated with the wholesale service were set appropriately. The impact on affordability would also depend on the demand for the service. However, it is unclear what the demand would be for services offered by Wi-Fi-first service providers given, for example, that public Wi-Fi networks are generally unmanaged and are susceptible to quality of service issues. Also, most consumers already use Wi-Fi for a substantial portion of their data usage with their current wireless carriers, for instance through home broadband connections, so it is unclear how many consumers would find a Wi-Fi-first service to be novel enough to consider switching service providers on that basis alone. All things considered, the overall potential impact on affordability is uncertain and cannot be properly assessed until such competition has been introduced into the market and pricing data is analyzed over a period of time.

Impact of broadening the definition of “home network” on investments in mobile wireless services

67. Over the years, the Commission has consistently articulated its view that facilities-based competition is the best means of ensuring that Canadians receive high-quality, affordable mobile wireless services provided over leading-edge wireless networks. In the past decade, both the Commission and Innovation, Science and Economic Development Canada (ISED) have sought to bring the benefits of facilities-based competition to consumers by supporting policies designed to foster strong competitive wireless carriers at both the national and regional levels. The Commission’s wholesale wireless framework and ISED’s spectrum management policies are examples in this regard. It has been the Commission’s view that the presence of additional wireless carriers would increase wireless network penetration while helping to reduce mobile wireless service rates paid by Canadians.

⁹ As indicated in the 2017 CMR, urban centres with four or more wireless service providers generally had the largest variance between the lowest and highest prices reported, as well as the lowest prices in each of the four service baskets.

68. With this in mind, it is clear that the wireless services market is at a critical point in Canada. Although the national wireless carriers still collectively possess a roughly 90% national market share, the record shows that several competing wireless carriers, such as Eastlink, Freedom Mobile, SaskTel, and Videotron, and, more recently, Xplornet, have invested heavily in network expansion, and plan to continue to expand their networks. All told, the wireless carriers have spent billions of dollars in network investments over the past few years, supported, in part, by the existing regulatory conditions.
69. The effect of broadening the definition of “home network” to include other forms of connectivity, including Wi-Fi, would allow any company to access the wholesale roaming tariff as if they were a wireless carrier, without the necessity of having invested and built one’s own wireless network. One consequence of this action would be to disincent existing wireless competitors from investing in their networks, since they could more broadly rely on the national wireless carriers’ networks to offer service outside their traditional network footprints.
70. Wireless carriers have indicated that in the coming years, they will begin to deploy 5G technology in their networks across the country. This technology upgrade will mean that wireless networks will become considerably faster, more pervasive, and more versatile. With a predicted maximum throughput of 10 gigabits per second (Gbps) and improved latency, the arrival of this technology will support innovative and bandwidth-intensive new services. Among its many potential uses, 5G will be relied upon to support the guidance systems for fleets of self-driving cars and potentially billions of devices that will form part of the Internet of Things. Everything from wireless payment systems to remote medical monitoring and on-demand delivery of government services will benefit from the improved connectivity that 5G offers, and wireless carriers will require a significant investment in new and upgraded equipment to bring 5G networks and their benefits to Canadians.
71. In general, there is a strong incentive for wireless carriers to continue to invest in networks. With 5G on the horizon, wireless carriers have already begun to plan investment strategies to ensure that they will be competitive as the technology rolls out. As the evidence shows, total industry capital expenditures for the upcoming years are expected to be several billion dollars. While the national wireless carriers’ longer-term plans are unlikely to be affected to any noticeable extent by the introduction of mandated resale competition at this time, the risk to investment and expansion is greater for the other wireless carriers.
72. The business case for these other wireless carriers to expand their networks into new markets, particularly in less densely populated areas outside major metropolitan centres, is challenging. For an investment to make sense, the company’s projected revenue in the expansion area must exceed the projected costs of expansion over a given time frame, and must also compare favourably relative to other potential investment opportunities (in larger cities).

73. If mandated resale competition were to occur in these areas it would likely splinter the market and reduce the number of customers that the other wireless carriers are relying on to generate revenue. Because of a challenging business case, the loss of customers to Wi-Fi-first service providers could reduce projected revenue enough to make the business case for a targeted expansion area unprofitable and prevent the facilities-based carrier from going ahead with the investment.
74. In conclusion, while the introduction of resale competition could result in some improvement to affordability, the Commission considers that the potential negative impact on investment outweighs that benefit.
75. As to whether the evidence demonstrates in a “sufficiently clear and significant manner” that that potential negative impact on investment is outweighed by the potential positive impact on affordability, the Commission notes that its findings in this regard are based on the evidence that comprises the record of the current proceeding. Given the circumstances, the Commission considers that the record is persuasive insofar as it establishes that there is a risk to the investment by certain wireless carriers, especially with respect to expansion in rural areas, if the Commission were to expand access to wholesale wireless roaming.

Could impact on investment be mitigated by imposing conditions on mandated wholesale roaming?

Positions of parties

76. Bell Mobility argued that it is fundamentally impossible to place sufficient limitations on mandated network access to ensure that it would be incidental only. When Wi-Fi-first service providers offer VoIP applications and have no networks of their own, any mandated access would allow them to transform their applications into services with ubiquitous connectivity.
77. SaskTel argued that there are no conditions that can be placed on mandated network access that would adequately limit its negative impacts.
78. CNOC and Ice Wireless opposed placing conditions or restrictions on wholesale roaming under an expanded definition of “home network.” Since, in their view, there would be no negative effects on investment that would result from mandating access to Wi-Fi-first service providers, they argued that limitations to protect investment are unnecessary. At the same time, they argued that retail pricing will act to ensure roaming is only done on an incidental basis. As an example, they submitted that when Sugar Mobile was operating on RCCI’s network, the pricing constrained usage in the following way:
 - 400 MB of cellular data cost a Sugar Mobile customer \$19.
 - In comparison, 1 gigabyte (GB) plans were available from wireless carriers for \$38 to \$50.

- To obtain 900 MB of data from Sugar Mobile, a customer would need to pay a total of \$38, thus eliminating the cost-saving proposition of the service.
79. While RCCI did not support mandating network access for Wi-Fi-first service providers, it suggested the following limitations in the event that the Commission chooses to do so:
- retail service should be limited to low-income Canadians, verified via a means test,
 - data usage should be capped at 50 MB,
 - the wholesale rate for the 50 MB of data should be \$3.75 per month,
 - only third-generation (3G) networks (not long-term evolution [LTE] or higher) should be mandated,
 - only domestic service providers should qualify for access, and
 - 9-1-1 obligations must be met.
80. Ice Wireless argued that there is no justification for Wi-Fi-first service providers to pay an inflated wholesale roaming rate. It submitted that there is no need for technical or system changes to host Wi-Fi-first service providers. Ice Wireless further submitted that final wholesale rates will be set based on Phase II costs plus a reasonable markup, and will implicitly (i) deter excessive use of a wireless carrier's network, (ii) preserve the incentive for Wi-Fi-first service providers and wireless carriers to invest in networks, and (iii) ensure that wireless carriers achieve a fair rate of return.
81. Shaw and TCI submitted that follow-up processes would be necessary to determine limitations such as data caps and wholesale rates.
82. The CWTA submitted that mitigation of the negative impact on investment through the imposition of conditions, if even possible, would be difficult, and that one or more separate proceedings would be required to determine the appropriate conditions.

Commission's analysis and determinations

83. In the Commission's view, the record of the proceeding demonstrates, in general terms, that conditions such as higher rates or capacity limits could be used as tools to limit the use of a service, regardless of whether that service is a wholesale roaming service or a wholesale MVNO access service.
84. However, as to what those conditions might be, wireless carriers generally indicated that no potential condition would mitigate the potential risk to their investments, while potential users of the service indicated that no meaningful condition to restrict

the service would be necessary. Consequently, the Commission considers that the record of this proceeding is inconclusive on this matter, such that the Commission cannot render a clear decision on what specific constraints would be required to appropriately mitigate impacts on carrier investment.

Conclusion

85. In light of the above, the Commission considers that other alternatives to improve the choice of innovative and affordable mobile wireless services, particularly for Canadians with low household incomes, would be desirable to avoid the regulatory uncertainty and risk of negative impact on investment that would be created by broadening the definition of “home network.”
86. In addition, the Commission acknowledges the Governor in Council’s desire to improve the choice of innovative and affordable mobile wireless services, particularly for Canadians with low household incomes, and agrees that such improvement is important.
87. Accordingly, as set out in greater detail below, the Commission considers that there are alternative means to address the concerns identified by the Governor in Council.

What can the Commission do to address concerns regarding the lack of choice of innovative and affordable mobile wireless services, particularly for Canadians with low household incomes?

88. The Order in Council referred to the following three policy objectives of the Act:
 - 7(b) to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada;
 - 7(g) to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services; and
 - 7(h) to respond to the economic and social requirements of users of telecommunications services.
89. With these objectives in mind, the Commission intends to take immediate measures to improve choice and affordability for mobile wireless services and, in the near term, review the overall effectiveness of its policies on wireless resale competition by moving forward with a broad review of the wholesale wireless framework. The Commission’s rationale and approach are discussed in detail below.

Lower-cost data-only plans

90. During the proceeding, the Commission sought comments from parties as to whether the introduction of lower-cost data-only plans could address the considerations identified in the Order in Council, especially with respect to improving affordability and choice while minimizing negative impacts on investment in wireless

infrastructure. The Commission also asked how any type of regulatory intervention in this regard might be imposed under the Act, and what service parameters might be applied to such plans to ensure that they address the challenges faced by Canadians, especially those with low household incomes.

Positions of parties

91. Wireless carriers generally opposed any regulatory intervention mandating lower-cost data-only plans, arguing that there are numerous data-only options currently available, and that market forces alone should dictate which types of plans are offered.
92. Competitors such as CNOC and Ice Wireless, and consumer groups, indicated that mandated wholesale access was preferable to mandated data-only plans.
93. Bell Mobility proposed that if wholesale access to its wireless network is not mandated, it would voluntarily introduce a prepaid data-only retail mobile wireless service plan for consumers that offers the following:
 - a monthly rate of \$20 with a one-time \$10 SIM [subscriber identity module] card charge,
 - 300 MB of nationwide cellular data and unlimited public Wi-Fi data,
 - access to the 3G network,
 - a bring-your-own device structure,
 - no credit check, and
 - availability to low-income households.
94. Parties that commented on Bell Mobility's data-only plan proposal argued that it would be unattractive due to the proposed limitations, especially the fact that it is limited to 3G networks, and because it would require Canadians who want to access the plan to identify as low-income. They submitted that low-income Canadians should not have to disclose their financial situation to qualify for a certain plan.
95. Several parties submitted that the obligation to offer a data-only plan could be mandated by applying a condition of service under section 24 of the Act.
96. SaskTel, Shaw, and TCI submitted that mandating a data-only plan would be beyond the scope of this proceeding, since it would require a decision to change the Commission's retail forbearance decision.

Commission's analysis and determinations

97. Canadians are increasingly relying on mobile wireless data services to participate in the digital economy, access government services, and communicate with each other on a number of platforms. The number of consumers with data plans, and the consumption behaviour of these consumers, are continually growing.

98. The Commission has observed, however, that while entry-level wireless plans with lower price points are widely available from several wireless service providers, most of these plans contain voice minutes and text messaging but offer only very limited data allotments. Further, there is a noticeable gap in the market in terms of lower-cost data-only plans available to consumers.
99. For instance, Freedom Mobile recently began offering data-only plans, which consist of, for example, 10 GB of data for \$50 per month. The release of such offerings should stimulate competitive responses from other wireless carriers, given the revenue potential that high-data users represent. Competition for high-data users is therefore likely to result in choice of innovative service plans at increasingly affordable prices. However, the situation for users of lower amounts of mobile wireless data appears to be different. While the market and pricing of mobile wireless services is fluid, the Commission can find few examples of data-only options available at lower price points, and most entry-level plans include a combination of voice and text messaging with only limited data or no data. For example, a review of the national wireless carriers' main brands indicated that Bell Mobility offers a \$25 postpaid plan that provides 100 voice minutes and no data, while RCCI offers a prepaid plan with 50 voice minutes and 250 MB of data for \$30, and TCI offers, on both a prepaid and postpaid basis, 300 voice minutes and 250 MB of data for \$45.
100. At the lower end of the range, wireless service plans appear to be priced in a way that prioritize voice minutes (and, to a lesser extent, text messaging) over data, such that the ability of Canadians to leverage lesser amounts of wireless data (aside from Wi-Fi connectivity) is limited. Given that these services do not generate as much average revenue as higher-end plans, it is not clear whether market forces can be relied upon to ensure that requirements of consumers who desire lower-cost data-only plans will be met.
101. The lack of lower-cost data-only plans in the market may have been a contributing factor to the entry of Wi-Fi-first service as a business model, since providers of these services generally use mobile wireless data with Wi-Fi connectivity to offer services to consumers looking for an alternative to traditional wireless plans.
102. In the Commission's view, if more options for lower-cost data-only plans were available in the market from wireless carriers, consumers would be further empowered to use the voice and messaging applications of their choice when and where they want, using a combination of Wi-Fi access and cellular networks. In other words, consumers would not necessarily have to purchase the voice and text messaging services offered by wireless carriers, and could instead purchase a lower-cost data-only plan and use an application for voice and text messaging if they chose to do so.

103. In this context, lower-cost data-only plans would support the continued development of innovative business models and technological solutions, since they would enable application providers to continue to innovate and offer new applications as an alternative to the wireless carriers' voice and text messaging services.
104. As well, the introduction of lower-cost data-only plans into the market would better support the continued development of facilities-based competition and result in less risk to network investment when compared to broadening the definition of "home network" to include other forms of connectivity, since such plans would not require wireless carriers to provide access to their networks to Wi-Fi-first service providers on a mandated basis.
105. While the Commission supports, in principle, Bell Mobility's proposal, on a practical level it is not persuaded that the proposed plan, as structured, would meet the needs of consumers looking for a reliable lower-cost data-only plan in order to use alternative applications, including voice and text messaging services.
106. For example, Bell Mobility's plan would only be available on its 3G network. In the Commission's view, the types of plans that would fill the noted gap in the market should be available on the latest network technologies, including 4G and LTE to, for example, ensure access to wireless public alerting.
107. As well, Bell Mobility's plan would be limited to low-income households. In the Commission's view, such plans should be available to as many consumers as possible.
108. Finally, Bell Mobility's plan would be available to prepaid customers only. In the Commission's view, such plans should be available on both a prepaid and postpaid basis in order to support a broader potential consumer market.
109. With respect to the appropriateness of the other aspects of Bell Mobility's plan, and whether these would respond to the gap in the market identified by the Commission, including price and capacity, the Commission does not have a view at this time, and will need to gather additional evidence before coming to a conclusion.
110. Accordingly, concurrent with the release of this decision, the Commission is initiating a public process with the goal of ensuring that lower-cost data-only plans are widely available to Canadians. Since the Commission's goal is to have these plans as broadly available as possible across Canada, including urban and rural areas, the Commission considers that the focus of this process should be on the national wireless carriers, given their national wireless network coverage.
111. In Telecom Notice of Consultation 2018-98, also released today, the Commission has directed the national wireless carriers to file proposals for lower-cost data-only plans, subject to certain parameters that are set out in the notice. Interested persons will have an opportunity to comment on the proposals pursuant to the procedure set out in that notice.

112. The intent of the process is to determine whether the national wireless carriers should be required to offer lower-cost data-only plans by, for instance, imposing a section 24 condition of service, and how such plans should be structured to address the gap in the market for lower-cost data-only plans and further the policy objectives set out in section 7 of the Act.

Wireless framework review

113. In Telecom Regulatory Policy 2015-177, the Commission determined that the regulatory measures it had established should remain in place for a minimum period of five years to allow for the development of sustainable competition, and to encourage continued innovation and investment in high-quality telecommunications facilities. The Commission committed to monitoring the competitive conditions in the mobile wireless services market during this time.

114. There have been positive signs that the intensity of facilities-based competition is increasing across the country. Facilities-based wireless competitors such as Eastlink, Freedom Mobile, SaskTel, and Videotron are continuing to invest in wireless facilities, and evidence shows that prices are generally lower in areas where there are several facilities-based carriers operating.

115. That being said, the development of sustainable facilities-based competition is a strategy that requires nurturing and regulatory certainty. The investments required to acquire spectrum, build an extensive network, and obtain a critical mass of customers are considerable (especially given the dominant positions of the national wireless carriers), and can be put at risk by many factors, including regulatory uncertainty.

116. The Commission fully supports a vibrant and diverse competitive landscape that includes a mix of facilities-based competitors and resellers, and is of the view that strong facilities-based competition should naturally result in more opportunities for resale competition, such as through the sale of excess network capacity or through differentiation strategies. In the Commission's view, the best way to support the growth of facilities-based competition at this time is to provide certainty and stability to wireless competitors by adhering to the five-year time frame identified in the wholesale wireless framework before considering significant regulatory changes.

117. If, however, the amount of resale competition in the Canadian market remains limited after the five-year time frame, it would be an opportune time for the Commission to consider whether regulatory intervention through a mandated wholesale MVNO access service or other means would be necessary to add increased choice to the marketplace.

118. In addition, there are several other issues that could be included in the scope of the next wholesale wireless framework review. For instance, the evolution to 5G networks will bring new challenges that the Commission will likely need to examine to determine if regulatory measures are required to support its introduction.

119. In light of the above, the Commission determines that it intends to initiate a review of its wholesale wireless framework within the next year, with a view to completing the review within the 2020 time frame, to align with the five-year time frame identified in the original framework decision. The Commission intends to include in the review an examination of its wholesale MVNO access policy to ensure that there is a sufficient degree of choice of innovative and affordable mobile wireless services in the Canadian market.

Conclusion

120. The Commission considers that the next two years represent a critical phase in the growth and development of the Canadian wireless industry. In the Commission's view, a continued commitment to facilities-based competition will encourage the capital investment necessary to ensure Canada's wireless networks are world class. At the same time, the Commission considers that, while wireless resale represents an important part of a fully functioning wireless market, it would be premature for the Commission to change its policy on mandated wholesale access.

121. To that end, the Commission's intends in the near term to look closely at whether there are impediments to the development of both facilities-based competition and resale competition in Canada through a fulsome review of its wholesale wireless framework.

122. The Commission recognizes that the time for facilities-based competition to develop has been long, and that during this process there have been challenges, particularly for Canadians with low household incomes. In the Commission's view, its short-term action to address the availability of lower-cost data-only plans will provide consumers with more choice when it comes to innovative and affordable mobile wireless services and applications. The Commission expects that the introduction of these new lower-cost data-only plans will serve as a catalyst for further competition in the market.

Policy Direction

123. The Commission considers that the determinations set out above address the policy objectives set out in section 7 of the Act, and, in particular those identified in the Order in Council and set out at paragraphs 7(b), (g), and (h) of the Act.

124. Further, the determinations made in this decision are consistent with the Policy Direction¹⁰ for the reasons set out below.

125. The key issues under consideration in this decision relate to determining whether changes to the terms and conditions for mandated wholesale roaming established in Telecom Decision 2017-56 should be modified to expand the types of service

¹⁰ *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, Order in Council P.C. 2006-1534, 14 December 2006

providers that qualify for mandated wholesale roaming and, if not, what other regulatory measures may be appropriate to support the availability of innovative, high-quality mobile wireless services at affordable prices.

126. In this decision, the Commission relies on market forces to the maximum extent feasible insofar as it does not consider it appropriate, at this time, to expand the types of providers that qualify for mandated wholesale access. The Commission considers that such an expansion would result in regulation that is unlikely to be efficient and proportionate to its purpose of supporting the availability of high-quality, innovative mobile wireless services at affordable prices.

127. Nonetheless, the record has revealed that some regulatory intervention may be necessary to address the policy objectives. Therefore, the Commission has initiated additional process to assess this issue in further detail.

Secretary General

Related documents

- *Lower-cost data-only plans for mobile wireless services*, Telecom Notice of Consultation CRTC 2018-98, 22 March 2018
- *Reconsideration of Telecom Decision 2017-56 regarding final terms and conditions for wholesale mobile wireless roaming service*, Telecom Notice of Consultation CRTC 2017-259, 20 July 2017; as amended by Telecom Notice of Consultation CRTC 2017-259-1, 5 October 2017
- *Ice Wireless Inc. – Application regarding roaming on Rogers Communications Canada Inc.’s network by customers of Ice Wireless Inc. and Sugar Mobile Inc.*, Telecom Decision CRTC 2017-57, 1 March 2017
- *Wholesale mobile wireless roaming service tariffs – Final terms and conditions*, Telecom Decision CRTC 2017-56, 1 March 2017
- *Regulatory framework for wholesale mobile wireless service*, Telecom Regulatory Policy CRTC 2015-177, 5 May 2015

Appendix 1 to Telecom Decision CRTC 2018-97

Order of the Governor in Council

P.C. 2017-0557, 1 June 2017

Whereas the Canadian Radio-television and Telecommunications Commission (“the Commission”), rendered Telecom Decision CRTC 2017-56, *Wholesale mobile wireless roaming service tariffs - Final terms and conditions*, on March 1, 2017 (“the Decision”);

Whereas, in the Decision, the Commission confirmed that wholesale roaming, as defined in Telecom Regulatory Policy CRTC 2015-177 – *Regulatory framework for wholesale mobile wireless services*, provides only incidental access to a host network to the customers of a wireless carrier when these customers are outside their home network’s footprint;

Whereas, in the Decision, the Commission defined Public Wi-Fi and excluded it from the definition of “home network” for the purposes of establishing what constitutes incidental use of a host network under the relevant wholesale roaming tariff;

Whereas the Canadian telecommunications policy objectives set out in section 7 of the *Telecommunications Act* (“the Act”) include the objective set out in paragraph 7(b), namely, to render reliable and affordable telecommunications services of high quality accessible to Canadians in both urban and rural areas in all regions of Canada; the objective set out in paragraph 7(g), namely, to stimulate research and development in Canada in the field of telecommunications and to encourage innovation in the provision of telecommunications services; and the objective set out in paragraph 7(h), namely, to respond to the economic and social requirements of users of telecommunications services;

Whereas Canadians continue to pay high rates for mobile wireless telecommunications services;

Whereas Canada has among the lowest adoption rates for mobile wireless telecommunications services among industrialized countries;

Whereas Canadians with low household income in particular face challenges related to the affordability of telecommunications services;

Whereas subsection 12(1) of the Act provides that, within one year after a decision by the Commission, the Governor in Council may on its own motion refer the decision back for reconsideration;

Whereas, in accordance with section 13 of the Act, the Minister of Industry has notified a minister designated by the government of each province of the Minister’s intention to make a recommendation to the Governor in Council for the purposes of an order under section 12 of the Act and has provided an opportunity for each of them to consult with the Minister and has considered their comments;

Whereas the Governor in Council recognizes that the Commission has previously determined that it would not be appropriate to mandate wireless carriers to provide Mobile Virtual Network Operators with wholesale access to their networks, as doing so could negatively impact investment in wireless network infrastructure;

Whereas the Governor in Council considers that innovative business models and technological solutions can result in more meaningful choices for Canadian consumers, especially those with low incomes who are not well served by current market offerings;

Therefore, His Excellency the Governor General in Council, on the recommendation of the Minister of Industry, pursuant to subsections 12(1) and (5) of the *Telecommunications Act* hereby refers Telecom Decision CRTC 2017-56 back to the Commission for reconsideration, to be completed by no later than March 31, 2018, and considers that it is material to the reconsideration that the Commission consider whether:

- (a) broadening the definition of “home network” to consider other forms of connectivity, such as Wi-Fi, would have a positive impact on the affordability of retail mobile wireless services to consumers in Canada;
- (b) the evidence demonstrates in a sufficiently clear and significant manner that the potential negative impact on investment in wireless infrastructure from the inclusion of Wi-Fi connectivity in the definition of “home network” outweighs the potential positive impact on the affordability of retail mobile wireless services to consumers from that inclusion; and
- (c) impact on investment could be mitigated by imposing conditions on mandated wholesale roaming services, such as ensuring that roaming by customers of providers who offer service primarily over Wi-Fi would be incidental rather than permanent by, for example, limiting roaming in amount, subjecting such roaming services to a different tariffed wholesale rate, or both.

Appendix 2 to Telecom Decision 2018-97

List of interveners

Eleven individuals

Bell Mobility Inc.

Bragg Communications Incorporated, carrying on business as Eastlink

Canadian Cable Systems Alliance Inc.

Canadian Network Operators Consortium Inc.

Canadian Wireless Telecommunications Association

Coalition pour le service 9-1-1 au Québec

Cogeco Communications inc.

DERYtelecom Inc.

Distributel Communications Limited

Execulink Telecom Inc.

Government of Saskatchewan

Ice Wireless Inc.

Internet Society Canada Chapter

OpenMedia Engagement Network

Province of British Columbia

Public Interest Advocacy Centre

Quantum Republic Inc.

Quebecor Media Inc., on behalf of Videotron Ltd.

Rogers Communications Canada Inc.

Saskatchewan Telecommunications

Shaw Communications Inc.

SSi Micro Ltd.

TELUS Communications Inc.

TNW WIRELESS INC.

Tucows, Inc.

Xplornet Communications Inc.