In the matter of

Telecom Notice of Consultation CRTC 2019-57, 2019-57-1

Call for Comments – Review of mobile wireless services

Further Comments of

Canadian Wireless Telecommunications Association

November 22, 2019

Executive Summary

E1. The wireless industry, under policies that encourage facilities-based competition, has seen positive consumer outcomes across all key metrics:

- the Commission's August 2019 Communications Service Pricing Report shows that prices for mobile service-baskets tracked by the Commission declined by an average of 28% between 2016-2018;
- in the summer of 2019, the national wireless providers launched unlimited data plans that provide large allotments of high-speed data at significantly lower prices and with no overage fees;
- Regional Providers such as Freedom Mobile and Videotron have captured close to 25% of net new subscribers over the last two calendar quarters, while at the same time expanding their networks;
- Canadians continue to increase adoption of mobile wireless services with over 1.5 million net new subscribers in the first three calendar quarters of 2019 finding wireless service plans that suit their needs and their budgets;
- subscribers to the new unlimited plans are consuming as much as 50% more data; and
- as result of the investments of facilities-based wireless providers, Canada's reputation as having world-class wireless networks continues, including in rural areas where Canada has been found to have remarkably high 4G availability and some of the fastest average download speeds.

E2. In light of these continuing positive trends, there is simply no evidence to support a deviation away from policies that recognize facilities-based competition as the best way to protect the interests of consumers.

E3. The negative impact of mandated MVNO access on investment in wireless infrastructure is well-documented, and is further supported by recent domestic and international events such as the expected impact of the recent setting of final rates for wholesale high-speed internet access service, and the Israeli government's concern that facilities-based operators in Israel will cease upgrading their wireless networks and investing in 5G as a result of the country's push towards service based competition.

E4. 5G is about much more than providing consumers with a better mobile experience. 5G will expand the capabilities of wireless networks and enable new innovations across industries and all levels of government, while also enhancing the quality of life of Canadians. A new study by Accenture outlines some of the anticipated benefits that 5G will deliver to the governments, businesses and citizens of cities and rural communities, including in the area of transportation and mobility, energy management, rural connectivity and precision agriculture.

E5. Introducing policies that discourage investment in wireless infrastructure will likely delay the move to 5G and slow the expansion of wireless networks into underserved areas. While other countries are seeking ways to encourage investment in network infrastructure and are accelerating their deployment of 5G, introducing policies such as mandated MVNO access will have the opposite effect and is ill-advised.

E6. Mandating MVNO access would also disproportionately harm the regional facilities-based new entrant providers (Regional Providers), the very companies whose participation in the wireless industry has been encouraged by successive federal governments. MVNOs largely target the same customers as Regional Providers, but cannot replace the positive impact that Regional Providers have had in increasing competition based not only on price but also on investment in independent networks. Mandating MVNO access would undermine hundreds of millions of dollars of investment that Regional Providers have made in spectrum and infrastructure over the last decade.

E7. Quite simply, there is no resale model, whether labelled "MVNO", "Full MVNO", "HMNO" or other, that offers the same positive consumer outcomes or that would not significantly impair investment in Canada's wireless network infrastructure. Facilities-based competition is the only form of competition capable of delivering sustainable competition and encouraging the level of investment in wireless network infrastructure that is necessary to achieve the desired outcomes of quality, coverage and reasonable prices, as well as taking Canada into the 5G era.

Introduction

1. Pursuant to the procedure outlined in Telecom Notice of Consultation CRTC 2019-57, CWTA provides these further comments to the proceeding.

2. In setting out the scope of the Consultation, the Commission stated that its focus "is to ensure that its mobile wireless service regulatory framework facilitates sustainable competition that provides reasonable prices and innovative services, as well as continued investment in high-quality mobile wireless networks in all regions of the country."[1] (emphasis added).

3. In our initial comments in this proceeding, CWTA made the case that, under policies supporting facilities-based competition, sustainable competition in the wireless retail market is gaining momentum, resulting in continuing growth in the number of wireless subscribers, increasing data consumption, declining prices and more choice for consumers. Equally important, continuing innovation and investment by Canada's facilities-based carriers is providing Canadians with even faster and higher quality networks, as well as broader coverage and even more reliable services.

4. In addition, we noted that the presence of the Regional Providers is contributing to the realization of the Government's and Commission's objectives, but that the Regional Providers are still in the process of establishing themselves in the market, and that further time should be given by the Commission before the full benefit of their activities can be measured.

[1] Telecom Notice of Consultation CRTC 2019-57 ("Notice of Consultation"), at paragraph 22.

5. Given this positive momentum, we argued that it makes no sense to depart from the Commission's long-standing and sound preference for facilities-based competition as being the best form of competition to deliver sustainable competition and encouraging the level of investment necessary to achieve the desired outcome of high-quality mobile wireless networks in all regions of the country.

6. Furthermore, we noted that the current number of MVNOs in the Canadian wireless retail market is not a symptom of a competition problem, and that there is no statistically significant correlation between MVNO penetration and positive consumer outcomes globally. On the other hand, there is credible evidence that mandated MVNO wholesale access would have a negative impact on investment by facilities-based carriers. With MVNOs not assuming any of the risk of network investment, the resulting decline in facilities-based provider investment would threaten Canada's leadership role in wireless telecommunications, stifle the momentum of the Regional Providers and their important contribution to sustainable competition, worsen the urban/rural digital divide and jeopardize Canada's opportunity to be among the world leaders in the development and deployment of 5G technology and services. It would also hamper Canadians' and nearly every industry sector's ability to utilize the latest mobile innovations to increase productivity, grow the economy, and create well-paying middle-class jobs.

7. The negative impact of mandated wholesale access has been recognized time and time again by the Commission, which has concluded in past proceedings that the costs of mandated wireless access outweigh any potential benefits. Since those decisions, the need for massive ongoing investment in innovation, infrastructure and spectrum has only increased.

8. In these further comments we highlight how facilities-based competition continues to deliver positive consumer outcomes in Canada, providing further evidence that there is no need to mandate wholesale access to the networks of facilities-based wireless providers. We also provide further evidence of the harm of mandating wholesale access, including the negative impact on investment and on the Regional Providers who have played an important role in introducing more competition to Canada's wireless industry. We also provide additional evidence of the importance of 5G to Canada, not just at a macro-economic level, but also for the benefits that it will deliver to cities and rural communities, as well as Canadians' quality of life. Finally we argue that there is no resale model, whether labelled "MVNO", "Full MVNO", "HMNO" or other, that would not significantly impair investment in Canada's wireless network infrastructure.

Further Evidence of Sustainable Competition and Positive Consumer Outcomes

Price Declines and Unlimited Data

9. Following the filing of initial comments in this proceeding, further evidence has emerged which shows that, under policies supporting facilities-based competition, sustainable competition in the wireless retail market is gaining momentum. First, in August 2019, the Commission published its Communications Service Pricing in Canada report (Pricing Report).[2] It shows that prices for mobile service baskets measured by the Commission have declined from 2016-2018 by an average of 28%, with plans of unlimited minutes, SMS & 5GB data category declining from an average of $78.36 per month in 2016 to $51.05 – a decline of 35%.

10. Starting in June 2019, the national wireless providers each announced unlimited data plans with no overage fees. These plans come after Freedom launched its Big Gig plans in 2018 which also offer large data allotments and no overage fees.[3] Under these plans, users receive a large allotment of high-speed data (e.g. 10GB, 20GB), and if they exceed that allotment[4] in a given month the speed is reduced, but they incur no data overage fees.

11. These plans far exceed the data allocations of the 5GB plans that the Commission used in its Pricing Report as a proxy for a large data plan for the years 2016 to 2018. Previous to 2016, a 2GB plan was used by the Commission as a proxy for a large data plan. As consumer demands for data increases, the facilities-based providers have answered by offering more data, and even unlimited data, at a significantly lower price per GB.

12. For example, if we look at just one of the national wireless providers, when Rogers announced its *Infinite* plans in June 2019, there was an immediate 25% price reduction from its prior unlimited minutes, SMS/MMS, 10GB plan ($100 down to $75/month) and 38% from a year prior ($120 to $75 month), plus the elimination of overage fees. Proof that these plans are responding to consumer demand is evidenced by Rogers indicating that the adoption rate of its *Infinite* plans was three times higher than what was anticipated.[5]

13. Currently, Canadians can get unlimited plans with 10GB of maximum speed data with no overage charges from between $50 and $75 per month. This is a far cry from the oft-cited figures from ISED's most recent study published in December 2018 which states that, on average, a $75 plan provides only 2GB of data. [6] Importantly, these reductions have been the result of competition between facilities-based wireless providers, and did not require regulatory intervention.

[2] https://crtc.gc.ca/eng/publications/reports/policymonitoring/2019/cmr2.htm#a1.0
[3] Other providers that offer plans that do not charge overage fees include SaskTel, Lucky Mobile and Chatr Wireless.
[4] Plus any bonus data allotment that may be part of a promotion or other offer.
[5] Rogers Press Release, *Rogers Communications Reports Third Quarter 2019 Results*, October 23, 2019.
[6] https://www.ic.gc.ca/eic/site/693.nsf/eng/00169.html - uses data collected in June/July 2018.

Continuing Rivalrous Behavior

14. The Commission has stated that evidence of rivalrous behaviour is important when accessing the competitiveness of the market.[7] Rivalrous behaviour is not limited to falling prices, but also includes "vigorous and aggressive marketing activities, or an expanding scope of activities by competitors in terms of products, services and geographic boundaries".[8] Aside from the unlimited data plans referenced above, the facilities-based wireless providers continue to introduce new and innovative offerings, such as double the data of some of their previous plans with no price increase, large bonus data allotments (e.g. 100GB) that can be used throughout the year in addition to monthly data allotments, other forms of data overage protection, and new forms of device financing. As Scotiabank reported, "…. the recent back to school period has been one of the most competitive periods in the past decade driven by facility based competitors such as Shaw/Freedom, Quebecor/ Videotron and Eastlink."[9]

15. The impact of the Regional Providers is further evidenced by the proportion of new subscribers captured by the Regional Providers. Of the Regional Providers that report quarterly subscription numbers, Freedom Mobile and Videotron continued to have success in attracting new subscribers in the second and third calendar quarters of 2019, accounting for a combined 24% and 25% of new wireless subscribers in each of those quarters.[10] Scotiabank estimates that Videotron has approximately 19% of the market share in the province of Quebec, and "with its Fizz brand, the momentum has actually accelerated".[11] Scotiabank further estimates that Freedom has captured approximately 10% of the market share of the population it covers, and "we see gains continuing, driven by network quality improvement, and supported by network and spectrum investment."[12]

16. As referenced above, the Regional Providers' ability to attract subscribers is not only the result of price competition, but also because their significant investment in strengthening and expanding their networks. For example, in its 2019 fiscal year, Freedom Mobile expanded into 19 new communities and can now reach 18 million Canadians.[13]

17. As convincing as the above statistics are, they do not reflect the full impact of the Regional Providers. Other Regional Providers, such as Sasktel, Eastlink, Tbaytel, and Xplore Mobile, together with Videotron and Freedom Mobile, ensure that there is a fourth facilities-based wireless provider in every province, providing consumers in every province with greater choice and differentiated services.

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[7] CRTC 94-19, Review of Regulatory Framework.
[8] Ibid.
[9] Scotiabank – Daily Edge – Telecommunications Services – September 23, 2019.
[10] Subscriber numbers for TELUS used in this calculation is based on reported net additions of mobile phone wireless subscriptions and excludes mobile connected device subscriptions such IoT and mobile health subscriptions.
[11] Scotiabank, Converging Networks, *Wireless Results Rule Out the Need for MVNOs.* November 11, 2019, page 1.
[12] Ibid.
[13] Shaw Q4 2019 earnings call, October 25, 2019.

18. In addition, Regional Providers are not content with their existing share of the market. Scotiabank foresees that each of Videotron and Freedom have aspirations to capture 20%-30% of their covered population.[14] But in order to do so, they require additional time and a stable regulatory environment in which to operate; especially one that recognizes the importance of facilities-based competition. As discussed in paragraphs 43-45 below, mandating MVNO access would be especially harmful to Regional Providers, negatively impacting their ability to continue to contribute to sustainable competition in the retail wireless market.

Increasing Wireless Adoption and Data Usage

19. The intense competition in the wireless industry is evidenced not only by the success of the Regional Providers, but also by the overall increase in adoption of wireless services by Canadians. In the third calendar quarter of 2019 alone, nearly 600,000 net new subscribers were added by the wireless providers who publicly report subscriber numbers.[15] For the first three calendar quarters of 2019, there have been 1,530,230 net added subscribers by these same providers. As these numbers show, Canadians, in large numbers, are finding wireless services that suit their needs and their budgets.

20. As the price per GB declines, not only are more Canadians adopting wireless services, the early evidence is that they are also consuming more data. As part of its Q3 2019 financial results announcement, Rogers reported that subscribers to its *Infinite* plans are using 50% more data, while subscribers to its flanker brand, Fido, Data Overage Protection plans are using 14% more data.[16] In conjunction with its Q3 2019 financial reports, Bell reported that average mobile data use among its subscribers was up to 3.1 GB per month, an increase of 15% year-over-year, and subscribers of its unlimited plans were using three times the amount of data.[17] TELUS similarly reported increased data usage of approximately 50% for subscribers to its Peace of Mind plans.[18]

Network Coverage and Quality

21. In our initial intervention we noted that, as a result of the massive investments made by facilities-based wireless providers, Canadians enjoy world-class wireless networks which consistently rank amongst the best performing and most expansive networks in the world. This is true not just for Canadians living in urban centres. According to a new report from OpenSignal[19], despite having a population that is spread across a vast area, network coverage and performance in Canada's rural areas is also among the best in the world.

[14] Scotiabank, Converging Networks, *Wireless Results Rule Out the Need for MVNOs.* November 11, 2019, page 2.
[15] Net additions of 592,611 reported by Freedom, Videotron, Bell, TELUS, and Rogers.
[16] Rogers Press Release, *Rogers Communications Reports Third Quarter 2019 Results*, October 23, 2019.
[17] TD Securities, Action Note, *No Surprises in Q3/19 Results*, November 1, 2019.
[18] TELUS Q3 2019 earnings call, November 7, 2019.
[19] *The state of rural Canada's Mobile Network Experience*, OpenSignal - https://www.opensignal.com/blog/2019/09/25/the-state-of-rural-canadas-mobile-network-experience.

22. In terms of performance, OpenSignal observed that network performance in rural Canada, while understandably slower than in urban centres, "still outperforms the average speeds of many countries in the world including the USA."[20] That is not just outperforming networks in rural areas of other countries, but outperforming networks over the whole country. In fact, OpenSignal states that "[i]f rural Canada were a country, it would rank 12th in our Download Speed Experience ranking, with our rural Canadian users on average seeing faster 4G download speeds than our users in Sweden, New Zealand, France, and 73 of the other countries we reported on". [21]

23. When it comes to coverage in rural Canada, OpenSignal reports that "[c]ompared to other countries, Canada has remarkably high 4G Availability in its expansive rural territories."[22] For example, 4G connectivity in rural districts in Germany averaged 73.5%, with a range of 77.3% to 66.7%.[23] In the U.S., 4G availability was below 80% for all but one operator. Meanwhile, in Canada, users in rural areas were able to connect to 4G an average 80.8% of the time.

24. Despite the impressive performance and reach of Canada's wireless networks when compared to other countries, there is still work to be done. Increasing the capacity of our wireless networks to deal with the increasing demand for wireless data, expanding networks to reach underserved rural communities, and deploying 5G wireless technologies will continue to demand massive private sector investments from facilities-based wireless providers.

Key Measures Show that Facilities-Based Competition is Working

25. As highlighted in our initial submission and herein, the wireless industry, under policies that encourage facilities-based competition, is seeing continuing positive progress across all key metrics, including world-class network quality and coverage, declining prices, and increasing wireless adoption and data usage. In light of these positive trends, there is simply no evidence to support a deviation away from policies that recognize facilities-based competition as the best way to protect the interests of consumers.

<u>Further Evidence of Negative Effect of Mandated Access on Investment</u>

26. In our initial comments we noted that the Commission has repeatedly declined to mandate wholesale MVNO access out of concern that doing so would undermine investments in spectrum and networks.[24] We also referenced expert reports submitted in previous CRTC proceedings that validate this concern.[25] Further evidence has been submitted in this proceeding.

[20] Ibid.
[21] Ibid.
[22] Ibid.
[23] It is notable that Germany is approximately 3.5% of the size of Canada (357,386 km2 vs 9.985 million km2).
[24] The CRTC's analysis in Telecom Regulatory Policy 2015-177, Telecom Decision 2017-56, and Telecom Decision 2018-97 concluded that mandated alternative wireless service provider access to the national carriers' networks would be too harmful to investment and would not be in the public interest.
[25] See paragraph 64 of CWTA May 15, 2019 submission in this proceeding.

27. In support of its submission in this proceeding, Bell Mobility filed a report from the Former Commissioner of the U.S Federal Communications Commission (F.C.C.), Jonathan Adelstein, in which Mr. Adelstein provided an overview of the FCC's approach to regulating wholesale wireless arrangements in the United States and the importance of a regulatory framework that promotes investment in facilities-based networks.[26] Based on the lessons learned in the United States, Mr. Adelstein concluded that the CRTC was correct in its previous decision that wholesale MVNO access would negatively impact investment, and that such a mandate would especially harm investment in rural areas. In addition he stated that mandated MVNO wholesale access "is clearly not warranted when three facilities-based competitors are present, with a fourth ascendant. It is particularly dangerous and ill-advised at the outset of a major new generation of service like 5G that requires large investments…". [27]

28. As part of its initial intervention, TELUS submitted a report from Dr. Robert W. Crandall in which Dr. Crandall states that there is a consensus from the extensive empirical economics literature that mandated wholesale access to telecommunications networks at regulated prices reduces the incentive of network carriers to invest in their networks.[28] He concludes that:

> The reduction in network investment caused by mandated MVNO access would surely reduce the quality of broadband services available to Canadian consumers in the long run. Since the short-term benefit of the additional competition from MVNOs is likely to be small or nonexistent, the cost of the Canadian economy from reduced investment and innovation in the communication sector and related industries would loom large for decades as the European Union is discovering.[29]

29. Dr. Crandall's conclusion that mandated MVNO access would reduce investment and innovation is echoed by the expert report of Dr. Christian Dippon.[30] In addition, Dr. Dippon concludes that the negative impact in investment is not offset by investments by the wholesale access seekers.[31]

30. The conclusions of the experts cited above are reinforced by recent events in Canada and abroad. In Canada, the Commission recently issued its decision setting final rates for wholesale high-speed Internet access service.[32] The effect of this decision was to significantly reduce the rates that Bell Canada, Bell MTS, Cogeco, Eastlink, RCCI, Sasktel, TCI, and Videotron can charge competitors who purchase high-speed access services.

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[26] Appendix B to Bell Mobility's intervention in this proceeding dated May 15, 2019.
[27] Ibid.
[28] Appendix A to TELUS' intervention in this proceeding dated May 15, 2019, paragraph 60.
[29] Ibid at paragraph 64.
[30] Appendix C to TELUS' intervention in this proceeding dated May 15, 2019, paragraph 79.
[31] Ibid paragraph 84.
[32] Telecom Order 2019-288. On September 27, 2019 the Federal Court of Appeal granted a temporary stay of the Commission's order.

31. In assessing the impact of this decision on the investment capacity of facilities-based broadband providers, TD Securities concluded that investments in wireline/cable infrastructure in 2021 and beyond would decline by about $1.68 billion in aggregate for the publicly-traded companies, equal to a 22% decline in wireline investment.[33] It added:

> …the economic reality, as we see it, is that the loss of over $2.3 billion in high gross margin broadband revenue will force management teams in the industry to mitigate the impact on cash flow with much higher hurdle rates for new capital investment.

32. This assessment was supported by public statements made by some of the affected companies:

- Bell indicated that the decision would have an estimated $100 million impact on its broadband Internet buildout;[34]
- Rogers stated that the "final rates do not recognize the true cost of building and expanding Canada's world-class broadband networks and will certainly impact Rogers future network investments";[35]
- Shaw indicated that it was reviewing its future plans for capital expenditure and network deployment and lamented that the "decision undermines the direction from the government to expand broadband connectivity to all Canadians and to make Canada a leader in the digital economy";[36]
- Videotron expressed concern "about the long-term consequences that delays in investments may have for the country";[37]
- Sasktel indicated that the decision would "severely impact" long-term expansion plans;[38]
- In this proceeding Eastlink has stated that "[i]n light of the uncertainty in the regulatory environment we have suspended all planned upgrades and expansion in our wireline network, if a similar situation occurs in the our wireless network we will have to seriously consider any further investments in this network".[39]

33. New evidence of the negative impact on investment of mandated access can also be found outside of Canada. In our initial intervention we mentioned that Israel is a case study for the devastating impact that regulatory intervention can have on the quality of wireless services and network investment. Similar evidence was submitted by Bell Mobility as part of its initial intervention.[40]

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[33] TD Securities – Industry Insights – September 4, 2019.
[34] http://www.bce.ca/news-and-media/releases/show/CRTC-wholesale-decision-impacting-investment-in-rural-broadband-networks-1?page=1&month=&year=
[35] https://about.rogers.com/2019/08/19/rogers-disappointed-crtc-decision-final-broadband-wholesale-rates/
[36] https://newsroom.shaw.ca/materialDetail.aspx?MaterialID=6442452269
[37] http://corpo.videotron.com/site/press-room/press-release/1029
[38] https://business.financialpost.com/telecom/telecos-threaten-to-pull-rural-internet-investment-after-crtc-lowers-wholesale-rates
[39] Bragg (Eastlink) Response to Interrogatory – 5July2019-102 – September 12, 2019.
[40] Appendix D to Bell Mobility's intervention in this proceeding dated May 15, 2019- report from Yossi Abadi.

34. The negative effects of such intervention are still being felt. In September 2019, Cellcom Israel Ltd., the nation's largest cellphone operator, announced a comprehensive financial restructuring plan that is reported to include laying-off 20% or more of its workforce and cutting capital investments by the equivalent of approximately CA$150 million to CA$190 million.[41]

35. Israel's push towards service-based competition not only negatively impacted the investment capacity and network quality of Cellcom Israel. In June 2019 the Communications Ministry of Israel issued a report that all facilities-based operators saw their ability to invest in wireless networks decrease and there is " 'a real concern' that they will desist from upgrading their wireless networks, a necessary step to ensure that Israel's broadband speeds stay competitive with global developments".[42] According to the Times of Israel, the authors of the report stated that: "We deem that in the coming years a new balance must be struck between technological competition and price competition," so "that cellular firms will have the incentive to undertake the big investments required of them to upgrade the fourth-generation wireless networks and the transition to fifth generation."[43]

The Importance of 5G

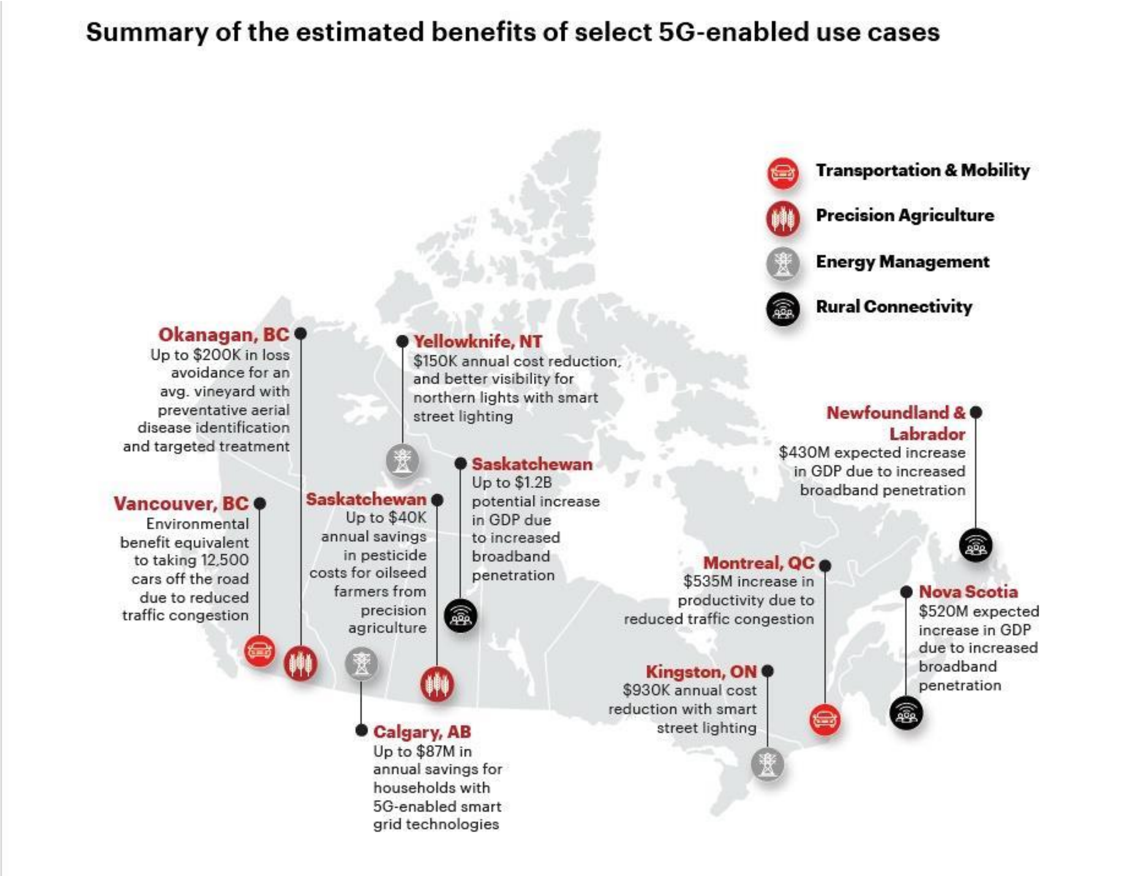
36. As quoted in paragraph 27 above, regulatory intervention that negatively impacts investment capacity would be "particularly dangerous and ill-advised" at a time when 5G networks are being launched around the world. 5G will bring more than improved and faster wireless communications. 5G will expand the capabilities of wireless communications through the use of different bands of spectrum, new technologies, and a more intelligent and dynamic wireless network. 5G will be an indispensable platform for innovation, increased economic prosperity, and improved quality of life, and countries that do not recognize the importance of 5G will fall behind their international counterparts.

37. The deployment of 5G in Canada will add an estimated $40B annual GDP to the economy by 2026 and close to 250,000 new permanent fulltime jobs in the same time frame.[44] Beyond these macroeconomic factors, 5G will provide benefits to cities and rural communities, as well improve the quality-of-life of Canadians, including helping fight climate change and other environmental impacts, and extending network connectivity to underserved rural communities.

38. To better understand how 5G will benefit Canada's cities and rural communities, CWTA commissioned a study by Accenture that looks at specific 5G-enabled use cases and how they will benefit local governments, businesses and citizens. In its report, a copy of which can be found at https://www.accenture.com/ca-en/insights/strategy/5g-canada-benefits, Accenture focused on transportation & mobility, precision agriculture, energy management, and rural connectivity. A summary of Accenture's findings are set out in Figure 1 below.

41 https://www.timesofisrael.com/cellcom-israels-largest-cellphone-operator-to-cut-jobs-amid-stiff-competition/
42 https://www.timesofisrael.com/report-warns-that-israel-cellular-operators-may-lag-on-5g-network-investment/
43 Ibid.
44 CWTA intervention in this proceeding, May 15, 2019, at paragraph 58.

Figure 1:



39. As Accenture's findings demonstrate, the benefits of 5G extend far beyond a better mobile experience for consumers. 5G will unleash a new generation of innovation that will positively impact all sectors of our economy and society, through increased productivity, improved efficiency, and greater inclusivity, while also helping reduce negative impacts on the environment.

40. However, deploying 5G will require massive investments by facilities-based wireless providers. According to Accenture, this level of necessary investment is estimated to be $26B by 2026.[45] This does not include the several billions more that is likely to be spent by facilities-based wireless providers from 2020 to 2022 in the upcoming 3500MHz, mmWave, and 3800MHz spectrum auctions.

41. As Accenture notes, the government of Canada has an important role to play in creating "a regulatory framework that encourages investments in advancing the Canadian network infrastructure"[46] and "[t]he government's ability to encourage investment in wireless infrastructure

[45] Accenture Strategy – Fuel for Innovation: Canada's Path in the Race to 5G URL: https://www.5gcc.ca/resources/
[46] Accenture Strategy – Accelerating 5G in Canada: Benefits for Cities and Rural Communities, page 16, URL: https://5gcc.ca/resources/

will continue to be a key success factor"[47] to the deployment of 5G and the realization of its benefits.

42. It is clear from the evidence in this proceeding that mandating MVNO access will discourage future investment in wireless infrastructure, which will negatively impact the timely deployment of 5G in Canada. According to Scotiabank, mandating MVNO access "will likely deter the move to 5G because of the uncertainty of return on the future investment (ROIC) and the higher cost of capital".[48] As Accenture's report illustrates, the impact of 5G extends well beyond the wireless industry and to Canada's entire economy as well as the quality of life of Canadians. While other countries are accelerating their deployment of 5G[49], mandating MVNO access would be an unnecessary and harmful regulatory intervention that would place Canada at a 5G disadvantage.

The Negative Effect of Mandated Access on Regional Providers

43. Regional Providers have played an important role in increasing the intensity of competition in Canada's wireless industry. With more facilities-based wireless providers, all of which are heavily investing in their own networks and vigorously competing for subscribers through innovative service offerings and subscription plans, consumers are reaping the benefits of increasing network quality and coverage, as well as declining prices.

44. Mandating wholesale MVNO access would disproportionately harm the Regional Providers and disrupt the indisputable progress towards sustainable and robust competition in the wireless industry. As Dr. Eric Emch states, Regional Providers are more vulnerable to mandated MVNO access because MVNOs and Regional Providers tend to target a similar group of consumers and, because Regional Providers generally have lower margins and higher investment intensity than the larger facilities-based wireless providers, they are more sensitive to subscriber losses to MVNOs.[50] As a result, mandated MVNO access risks reducing the Regional Providers' ability to invest in continued network expansion and in deploying 5G technologies. Given the positive impact Regional Providers have had on wireless competition in Canada, imposing regulatory interventions that would likely weaken their role is unjustified and will "undermine a decade of investment in spectrum licenses and network build-out"[51].

45. As we explained in our initial submission, mandating MVNO access will not improve consumer outcomes, nor will it substitute for the positive impact that Regional Providers have had in increasing sustainable competition, investment, and declining prices. In particular, in the few international jurisdictions where MVNO access has been mandated in the context of a merger,

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[47] Ibid.
[48] Scotiabank, Converging Networks, *Wireless Results Rule Out the Need for MVNOs.* November 11, 2019, page 4.
[49] As of October 2019, 50 operators have launched 3GPP compliant commercial 5G services in 27 countries. https://gsacom.com/paper/5g-market-snapshot-october-2019/
[50] Shaw Communications' intervention in this proceeding, May 15, 2019 – *The evolution of facilities-based competition in Canada: Recent gains and regulatory risks*, Eric Emch, PhD, Bates White Economic Consulting. Section VII.A.
[51] Scotiabank, Converging Networks, *Wireless Results Rule Out the Need for MVNOs.* November 11, 2019, page 4.

prices have increased post-merger.[52] Mandated MVNO access as a result of a finding of significant market power are rare and have only been imposed in markets that are far more concentrated than in Canada. As Dr. Emch explains:

> Canada, in contrast, is a country with effective facilities-based entrants that are having an increasing impact on the market. Imposing a broad MVNO-access mandate at this stage of the evolution of market risks undercutting that budding competition and consigning Canada to a need for ongoing intervention for an indefinite period, rather than achieving the CRTC's goal of letting "market forces take hold".[53]

Submissions from other Parties to this Proceeding

46. In addition to our initial intervention in this proceeding, the Commission received approximately thirty other initial interventions (not including interventions from individuals), as well as supplementary contributions in the form of responses to requests for information. The remainder of our comments will focus on some of the arguments and proposals made by other intervenors and for which the Commission requested further information from various parties.

International Comparisons

47. While we showed in our initial intervention and herein that facilities-based competition is delivering increasingly positive consumer outcomes, with world-class coverage and performance as well as declining prices, some intervenors argue that despite declining prices, prices in Canada are still "too high". The majority of these claims cite international price comparison studies as the basis for this conclusion.

48. As Dr. Dippon points out, the government of Canada has commissioned studies[54] that are often cited by it and others as evidence that prices for wireless services in Canada are "too high".[55] Yet none of the studies make such a finding. What these studies, and others like them, show, if anything, is that there are differences in the average prices for a limited set of somewhat similar service baskets in a limited set of international cities based on a "snapshot" of prices that were available over a limited period of time in the past.

[52] Ibid, paragraph 69.
[53] Ibid, paragraph 72.
[54] Reports commissioned by ISED from Wall Communication Inc. and NGL Nordicity Group Ltd. The most recent at https://www.ic.gc.ca/eic/site/693.nsf/eng/00169.html
[55] Christian M. Dippon, Ph.D., *An Accurate Price Comparison of Communication Services in Canada and Selected Foreign Jurisdictions*, October 19. 2018 – Appendix B to the initial intervention of TELUS, dated May 15, 2019 (Dippon – Price Comparison)at page 10.

49. For example, the Wall/Nordicity studies compare the weighted average of plans in one country against the weighted average of somewhat similar but not identical plans in another country, without making any allowance for the many factors that have an impact on price. As Dr. Christian Dippon points out in a recent study, "[t]here is no reason to believe that this repeated apples-to-oranges comparison produces meaningful results."[56]

50. As the 2016 Nordicity study makes clear, its findings have serious limitations:[57]

- "As prices for telecommunications services are constantly evolving, the prices cited in this Study represent a 'snapshot' of prices in time."
- "….the price differentials found are highly sensitive to currency fluctuations."
- "…..the prices cited for Canada, US or the international jurisdictions are not meant to be statistically representative of the individual countries as a whole."
- "Prices in Canada and international jurisdictions are driven by a complex mix of a number of factors: cost of service, competitive positioning, technological advances, consumer behaviour and regulatory frameworks."
- Prices in any basket "may in part, simply reflect better service levels offered to consumers."
- "This Study did not take into account the network technologies deployed in the networks nor the speed or quality of service of those networks."
- "Finally, this Study did not account for any cost of service or socio-economic factors that may be relevant for price differences across different domestic and international jurisdictions. Thus, factors such as population density, terrain and climate have significant impacts on the cost of service."
- "Similarly, socio-economic factors such as affordability indicators (i.e. mobile prices in relation to disposable income), number of handsets per subscriber, number of minutes of usage per subscriber and other factors were not within the scope of this Study."

51. Curiously this long list of caveats was omitted from the 2017 price comparison study also prepared for the Government by Nordicity[58]. We sought an explanation for such omission at that time but none was forthcoming.

52. As acknowledged by Nordicity, differences in average prices between countries for selected service baskets can be attributable to many factors. Obvious examples include the quality of the service being offered, the coverage of the network, plan attributes, subscribers purchasing services from

[56] Christian M. Dippon, Ph.D., *An Accurate Price Comparison of Communication Services in Canada and Selected Foreign Jurisdictions*, October 19. 2018 – Appendix B to the initial intervention of TELUS, dated May 15, 2019 (Dippon – Price Comparison)
[57] *2016 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, NGL Nordicity Group Ltd (Nordicity) at https://crtc.gc.ca/eng/publications/reports/compar/compar2016.htm#Caveats
[58] *2017 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, NGL Nordicity Group Ltd. (Nordicity), October 5, 2017

more than one carrier due to a lack of roaming or other quality/coverage issues, whether the cost of a device is included in the price, country attributes such as size, population density, rural/urban population dispersion, climate and terrain, labour costs as well as spectrum and regulatory costs[59]. Assessing whether prices are "too high" or "too low" cannot be done without a full understanding of the qualitative differences between services and the difference in cost of delivering the services.

53. Notwithstanding the questionable value of such comparisons, the Commission has asked some intervenors to identify what criteria should be used when selecting comparable jurisdictions for benchmarking purposes, and to provide a list of countries that would meet these criteria.[60] With respect, the question itself is problematic. First it does not state for what purpose the "comparisons" would be made or what would be compared. Assuming it is referring to a comparison of prices, while there may be some value in trying to compare prices between countries that are closest to one another in terms of demographics, economies, size, and so on, it does not eliminate the fact that there will always remain differences between the countries. So, while we agree with the majority of our members that the United States is the closest comparable to Canada, when comparing prices between Canada and the United States one must also consider remaining differences such as the higher cost of spectrum fees in Canada and the higher performance and better rural coverage of networks in Canada.

54. It is also important to recognize that any comparison of prices is, as acknowledged by Nordicity, just a "snapshot". It does not provide insight into the relative health of the different countries' wireless industries or whether the conditions that are driving price reductions are sustainable. For example, as referenced herein, Israel has experienced a significant drop in wireless prices over the past several years. But as has become clear, the regulatory interventions that contributed to the decline in prices are not sustainable. In the meantime, the quality and coverage of its wireless networks are suffering.

55. Sustainability is also a question for Australia, a country which some argue has attributes similar to Canada yet price comparison studies show has lower average wireless service prices. We encourage the Commission to pay close attention to the description of the Australian market provided by Rogers in its response to the Commission's request for information.[61] As Rogers explains, it is not the presence of MVNOs that is the cause for lower prices in Australia. It is facilities-based competition.

56. Faced with a dominant wireless provider in Telstra, the number two and three facilities-based carriers, Optus and VHA, with less expansive networks and coverage, have sought to gain subscribers from Telstra through price reductions. Prices also likely went down in reaction to the announcement of a proposed new facilities-based entrant, TPG. With TPG having since abandoned plans to enter the market and the financial viability of the number three carrier, VHA, in doubt, it is

[59] Dippon references many of these factors. Ibid at page 26.
[60] CRTC Requests for Information, July 5, 2019, Q201.
[61] Rogers response to requests for information, dated September 12, 2019, CRTC 5-July-2019 Q202.

questionable as to whether the current level of competition is sustainable. It is telling that the Australia regulator is focusing its efforts on enhancing facilities-based competition and has expressed little interest in promoting MVNOs.[62]

57. Instead of relying on one-dimensional and methodologically-flawed price comparisons, the Commission should be looking at whether facilities-based competition is producing positive consumer outcomes in Canada. As we have shown in our initial intervention, facilities-based competition is delivering outstanding network performance and coverage, as well as a significant downward trend in prices, helped in large part by the increased competition from Regional Providers. As highlighted herein, this positive momentum has only accelerated since May 2019.

<u>MVNOs</u>

58. Facilities-based competition is the only form of competition capable of delivering sustainable competition and encouraging the level of investment in wireless network infrastructure that is necessary to achieve desired outcomes of quality, coverage and reasonable prices. Quite simply, there is no resale model that offers the same positive consumer outcomes or that would ensure the level of investment that is required to continue to expand and upgrade Canada's wireless network infrastructure.

59. The alleged benefits of mandated MVNO access are purely speculative, and the idea that mandating MVNO access is widely used around the world or would have minimal negative impact on investment is unfounded.

60. Expert evidence provided by Robert Madelin[63] and Richard Feasey[64] shows that regulatory intervention to mandate MVNO access has been used sparingly elsewhere in the world, and is likely to be used even less in the future. In Europe, there is only one country that currently has an MVNO wholesale access obligation as a result of a finding of significant market power. That is Norway, which has only two MNOs, and the MVNO access obligation was placed on the one dominant MNO. There have also been a limited number of cases where wholesale MVNO access obligations have been part of a merger of carriers or, in one case, as a condition of acquiring spectrum. In these cases the access obligations were voluntarily adopted and did not mandate access rates. In other countries where MVNOs had previously been prohibited – Brazil, China, Japan, Oman, Korea, and Israel – regulators imposed obligations on network operators to supply wholesale access to licensed MVNOs, but this lifting of the prohibition on MVNOs "did not involve any formal assessment of competitive conditions which the CRTC undertakes".[65] Mandated MVNO access has not been imposed in the United States or Australia.

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[62] https://www.afr.com/companies/telecommunications/accc-blocks-vodafone-tpg-merger-20190508-p51lcl
[63] *Wholesale access obligations on Mobile Network Operators in EEA*, Robert Madelin, Appendix C to Bell Mobility initial intervention dated May 15, 2019.
[64] *Report on Developments in the Regulation of Wholesale Services for MVNOs in the Rest of the World*, Richard Feasey, Appendix 2 to Rogers Communications Canada initial intervention dated May 15, 2019.
[65] Feasey paragraph 8.

61. Regarding the alleged benefits of MVNOs, Feasey concludes "that MVNOs have had no statistically significant impact on retail prices, particularly low cost tariffs, despite the many claims of potential MVNOs to the contrary."[66] Dr. Dippon similarly finds that there is no correlation between the size of a country's MVNO market and consumer benefits such as network performance, 4G uptake rates, ARPU, data usage, churn rates or spectrum utilization.[67]

62. Feasey also questions the sustainability of MVNOs and observes that the MVNO model may be falling out of favour. This is attributed to the fact that, in order to survive, MVNOs have had to focus on markets underserved by MNOs, but as those opportunities are exhausted and as MNOs turn their attention to these markets, the business opportunity for MVNOs has led many MVNOs to exit the market. Feasey concludes that the "commercial opportunities for new independent MVNOs appear more limited than they have been in the past and their future prospects more uncertain."[68]

63. This finding is also supported by Dr. Christian Dippon, who observes that most MVNOs target niche markets and that in a typical market with MVNOs, their total market share is about 5%.[69] More importantly, only about two of the independent MVNOs typically compete directly with the facilities-based operators and gain less than 1% market share when they do so.[70] The remainder compete for niche markets. According to Dr. Dippon, the implication is that "an 'MVNO market' is not sustainable because it fails to attract a sufficiently large subscriber base", and that "their small market share does not arise from competition with MNOs…"

64. It is not surprising then that mandated MVNO wholesale access has not had a significant impact on market concentration. As Charles River Associates illustrates in its report, market concentration has actually increased in countries such as Hong Kong, Germany and Austria.[71] Where markets became less concentrated, the decline was not a result of MVNO entry, "[r]ather, the declines in concentration were the result of entry from new mobile operators or changes in market share among existing mobile carriers."[72]

65. Charles River Associates also conclude that, in looking at countries that have mandated MVNO access, "there is no indication that mandated access for MVNOs increased penetration rates above and beyond what penetration rates would have been without mandated access."[73]

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[66] Feasey, paragraph 12.
[67] *An Examination of the Regulatory Framework for Mobile Virtual Network Operators and Other Wholesale Mobile Services*, Christian M. Dippon, Ph.D., NERA Economic Consulting, Appendix C to TELUS initial intervention dated May 15, 2019 (Dippon – Appendix C), paragraph 24.
[68] Feasey, paragraph 18.
[69] Dippon – Appendix C, paragraph 23.
[70] Ibid page 14.
[71] *The Value of High Quality Networks*, Charles River Associates – Margaret Sanderson, Andy Baziliauskas and Migiwa Tanaka, Appendix A to Bell Mobility initial intervention dated May 15, 2019 (Charles River).
[72] Ibid, page 22.
[73] Charles River, page 24.

66. While there is little evidence that mandating MVNO wholesale access will produce positive consumer outcomes that are not already being achieved through existing facilities-based competition, as discussed in the "Further Evidence of Negative Effect of Mandated Access on Investment" section above, evidence shows that mandated MVNO wholesale access would have a significant impact on investment.

67. In its expert report, Charles River Associates estimates that, in the short run, investment in Canada's wireless infrastructure by the national operators would fall $489 million as a result of mandated wholesale access. [74] Of course, that number would be higher if it included the reduction in investment by the regional facilities-based new entrants.

Cogeco – HMNO Proposal

68. In its initial intervention to this proceeding, Cogeco proposed an MVNO model that would mandate access to facilities-based carriers' wireless networks at regulated rates for companies that meet its prescribed eligibility criteria. It describes the model as essentially the same as permanent roaming,[75] but with eligibility criteria that extends roaming rights to facilities-based carriers "that have registered with the CRTC as a facilities-based carrier, deployed a facilities-based wireline or wireless network in Canada and currently serve active broadband clients".[76] Cogeco calls these eligible carriers Hybrid Mobile Network Operators (HMNOs).

69. Under this model, access would be granted to national incumbent wireless networks for Tier 4 regions in which an HMNO has homes passed or homes covered with their existing facilities.[77] They would be able to offer wireless services to retail customers in such Tier 4 regions and their ongoing eligibility would be contingent on their "proven investment in ***any part*** of their network facilities".[78] (emphasis added)

70. Cogeco claims that its HMNO model addresses concerns with other MVNO models that mandated access to wireless networks at regulated rates will negatively impact investment in network infrastructure. It does not. As described, there is no obligation on an HMNO to invest in wireless infrastructure, nor is there any incentive to do so. By its very nature, the HMNO model put forward by Cogeco is designed to allow HMNOs to become wireless providers without having to invest in RAN or spectrum. There is nothing to suggest that they will do anything different and any investments they make will be to bolster their own wireline networks. Not only would the HMNO model not preserve incentives to invest in wireless infrastructure, it would allow HMNOs to use mandated access to wireless networks to subsidize investment in their wireline broadband networks.

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[74] Charles River at page 27.
[75] Cogeco's intervention dated May 15, 2019, footnote 1.
[76] Ibid paragraph 103.
[77] Ibid paragraph 104.
[78] Ibid paragraph 105.

71. Like any MVNO model, and as further discussed in paragraphs 43-45 above, HMNOs would be especially harmful to the Regional Providers who have widely been credited with helping drive increased competition in the retail wireless market. The Regional Providers are still in the process of building out their networks and subscriber bases. HMNOs would take away from that subscriber base, depriving the Regional Providers of the ability to continue to expand their networks and threatening their business models. This negative impact would extend to all facilities-based providers' capacity to invest in 5G networks, the importance of which is discussed above.

Conclusion

72. In the short time since the initial interventions in this proceeding were filed, the measurable benefits of facilities-based competition have increased. Prices for wireless services have further decreased and data allotments have increased, Canada's mobile wireless adoption rate continues to grow, as does the share of new subscribers captured by the Regional Providers; all of which are signs of continuing robust competition between facilities-based providers. The superior quality and coverage of Canada's wireless networks has been further attested to, particularly with respect to the performance and availability of wireless services in rural Canada. Continued investment and improvement in wireless networks would not have occurred if there were not intense competition between facilities-based wireless providers.

73. Despite the positive consumer outcomes resulting from facilities-based competition, there is still work to be done. Increasing the capacity of our wireless networks to deal with the increasing demand for wireless data, expanding networks to reach underserved rural communities, and deploying 5G wireless technologies will continue to demand massive private sector investments from facilities-based wireless providers.

74. Not only will mandated MVNO wholesale access not be able to improve upon or replicate the benefits of facilities-based competition, the negative impact of mandated wholesale access on investment has become more evident. This is especially the case as it relates to the negative impact mandated MVNO access would have on Regional Providers, extending networks into underserved rural areas, and the deployment of 5G.

75. Of the interventions made to date that advocate for mandated wholesale access, none are able to credibly address the glaring deficiency of all resale models: that they would all impair investment in Canada's wireless network infrastructure. Regardless of what name is given to them, they are all predicated on the desire to become a wireless service provider without having to risk making investments in the acquisition of spectrum or building RAN. Promises to invest in other network infrastructure, such as broadband facilities, will do nothing to fill the gap in investment that will result from mandated MVNO wholesale access.

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