

Telecom Notice of Consultation CRTC 2019-57

Review of Mobile Wireless Services

CRTC Reference No: 2001-NOC2019-0057

Further Comments

Tamir Israel, Staff Lawyer

Samuelson-Glushko Canadian Internet Policy & Public Interest Clinic (**CIPPIC**)

November 22, 2019

Table of Contents

Section 1. Canada’s Mobile Landscape	2
High Retail Costs for Mediocre & Underutilized Networks	2
High Impact of High Prices	5
Section 2. Lack of Choice & Competition	7
Section 3. Bold Regulatory Action is Required	10
Mandating Low-Cost Plans	11
Mandate Conditions for a Robust MVNO Presence	12
Mandate On-Demand Access Facilities Based Competition	15
Section 4. Conclusion	16

Introduction

1. The Samuelson-Glushko Canadian Internet Policy & Public Interest Clinic (CIPPIC) and OpenMedia are pleased to provide their reply comments in this consultation, which re-examines the Commission's regulatory framework for wireless services.

2. As outlined in our initial intervention, Canada's mobile ecosystem exhibits high revenues coupled with average or low levels of investment. This is suppressing usage and adoption, while providing mediocre quality.

3. Our reply comments underscore these conclusions, while elaborating how different proposed measures would mitigate different elements of Canada's mobile connectivity challenges. We specifically examine the three primary solutions that have been advanced in this proceeding:

- **Mandating Usable Low-Cost Plans.** Mandating low-cost plans will extend access to subscribers who are currently priced out of the market altogether to participate in the benefits of mobile connectivity;
- **Mandating Access to MVNOs.** Mandating full MVNO access on a cost recovery basis will provide an avenue for more choice and competition, allowing for new and innovative market participants and for price discipline;
- **Mandating On-Demand Access to Spectrum.** This will provide an avenue for those who wish to deploy facilities based competition to do so.
- **Examining More Structural Solutions.** If high prices and low network investment persists despite these measures, more structural solutions may be required.

We conclude that mandating low-cost plans, robust MVNO access, and on-demand spectrum access is a requirement if Canada is to move closer to a mobile ecosystem that is responsive to the social and economic needs of Canadians.

4. While we do not call for wide-ranging structural changes in this proceeding, we note that other jurisdictions (notably Ofcom) have recently seen fit to adopt structural mechanisms and conclude that such measures may be required in Canada should these initial measures fail to bring about a more responsive wireless ecosystem.

Section 1. Canada’s Mobile Landscape

5. As indicated in our initial Intervention, the Canadian mobile ecosystem is characterized by high prices, mediocre investment and quality, and low levels of adoption and usage. We conclude that the quality and robustness of Canada’s mobile networks is illusory, and that current levels of investment cannot explain the persistently high costs of Canadian retail mobile services.

High Retail Costs for Mediocre & Underutilized Networks

6. Canadian mobile providers have consistently extracted some of the highest revenues on the world on a per use basis. The Economist Intelligence Unit’s Inclusive Internet Index 2019, for example, indicates that Canadian mobile operators extract the highest blended ARPU in the world, with per user revenues that are more than double the average among countries designated by EIU as “high income”, and close to three times the EU average.¹ In addition, the Inclusive Internet Index 2019 rates Canada’s mobile plans at 30th (postpaid) and 43rd (prepaid) when calculated as a percentage of per capita Global National Income. The amount Canadians pay per GB of mobile data is also consistently among the highest in the world, with a recent ReWheel study finding Canada’s per GB rate to be 4th highest among 4G plans in surveyed countries – triple the OECD average and close to 4 times the EU28 average.²

7. As noted in our initial comments in this proceeding, capital intensity (capital expenditures as a percentage of service revenues) remains average in Canada:

2014	2015	2016	2017	2018	3Q2019	AVG
9.8%	9.1%	8.6%	8.1%	10.1%	10.8%	9.4%

Table 1: Capital Intensity, Top 3 National Providers, 2014-3Q2019³

At the same time, average per user revenues continue to climb in Canada even as technological

¹ Economist Intelligence Unit, Inclusive Internet Index 2019, Column AA: Blended ARPU (annual): Canada = 560.5191 USD; Average among countries EIU designates as High Income = 266.275 USD; and Average among EU countries = 199.711 USD.

² ReWheel/Research, “Root Cause of Weak Competition in the Canadian Wireless Market”, September 8, 2019, p 8 (Country Median gigabyte price in EU28 & OECD, April 2019): Canada = 7.3 Euro per GB; OECD Average = 2.2 Euro per GB; EU28 Average = 1.8 Euro per GB.

³ DATA SOURCE: Data for 2014-2017 from CRTC Communications Monitoring Report 2018, 6.22; Data for 2018-3Q2019 is from Bell, Rogers and TELUS’ public financial reports for 3Q2019.

advances lead to reduced costs around the world and as Canadian capital expenditures diminish:

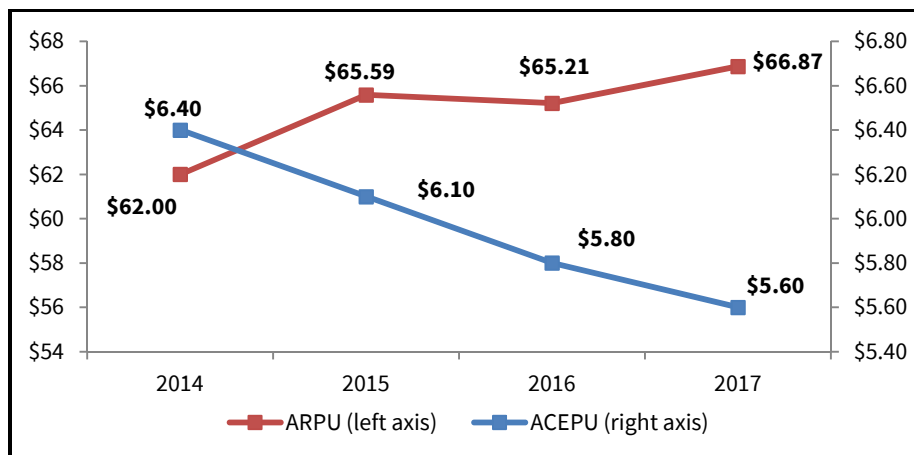


Figure 1: Top 3 Providers, Average Revenues vs Capital Expenditures (per user)⁴

As demonstrated in our initial intervention, these average levels of investment are reflected in Canada’s network quality.

8. Canadian mobile networks tend to rank highly in terms of maximum download speeds, ranking 3rd and 10th in OpenSignal’s survey of download and upload speeds, respectively.⁵ However, this high speed performance is not attributed to high levels of investment. Rather it is a factor of substantial network sharing, low urban population density and deeply suppressed customer usage. ReWheel Research ranked Canada as 32nd out of 38 surveyed OECD and EU countries in terms of mobile network utilization.⁶ The OECD also consistently ranks Canada well below average in terms of average data usage per user (Canada was 27th of OECD countries in 2017, with per month mobile data usage at 64% of the OECD average).⁷ With lower levels of network utilization, much faster speeds can be achieved with less investment.

9. A more recent study from ReWheel Research demonstrates that in addition to

⁴ DATA SOURCE: CRTC, Communications Monitoring Report, 2018, Figure 6.21 (Average Capital Expenditures /User/Month, Top 3 Providers, 2014-2017); Figure 6.20 (Average Revenues /User/Month, Top 3 Providers, 2015-2017); CRTC, Communications Monitoring Report, 2015, Table 5.5.7 (Average Revenues /User/Month, Top 3 Providers, 2014).

⁵ OpenSignal, “State of Mobile Network Experience”, May 2019, p 9, ranks Canada 3rd overall in terms of download speed experience and 10th overall in terms of upload speed experience.

⁶ ReWheel/Research, “Spectrum Usage in 2018 – Country Averages”, <http://research.rewheel.fi/networkeconomics/>, measured as per capita MB per Mhz of spectrum.

⁷ CIPPIC/OpenMedia, Intervention, May 15, 2019, Telecom Notice of Consultation 2019-57, Figure 6.

suppressed network data usage, Canadian operators also rely heavily on network sharing rather than investment when compared to operators in other countries.⁸ ReWheel found that Canadian operators have built a relatively staggeringly small number of cell sites given Canada's population and geographic area, relying instead on a comprehensive network sharing framework.⁹ This amounts to more efficient mobile deployment,¹⁰ with lower levels of investment needed to achieve comparable levels of coverage.

10. These low levels of network utilization and wide-ranging network sharing arrangements permit higher download speeds to be achieved with less investment, leaving higher profit margins for Canadian operators. However, the resulting infrastructure investment savings are not being passed along to customers. As generally indicative of Canada's substantial under-investment, ReWheel points out that Canadian operators have built roughly the same number of cell sites as Finland despite the fact that these cell sites need to serve 30 times the geographic area of Finland 6 times the population. We note that Finland's mobile data usage also dwarfs Canada's, with an average of 20 GB per mobile user per month by the end of 2018.¹¹ By contrast, Canada's projected data usage for 2018 is 2.3 GB/user/month.¹²

11. It is also a mistake to focus on download speed alone. Canadian mobile networks ranked a dismal 29th in terms of mobile data latency in OpenSignal's Mobile Network Experience survey. OpenSignal also ranked Canadian networks 17th in terms of video experience and 24th in terms of mobile voice app experience.¹³ Overall, high network speed rankings create the illusion, but not the reality, of a high quality mobile network.

⁸ ReWheel/Research, "Root Cause of Weak Competition in Canadian Wireless Market", September 8, 2019.

⁹ ReWheel/Research, "Root Cause of Weak Competition in Canadian Wireless Market", September 8, 2019.

¹⁰ ReWheel/Research, "T-Mobile and Tele2 4 to 3 Merger in the Netherlands", November 2018, p 2-3 demonstrates what a common level of duplication in terms of cell sites may look like. Its comparison of overlap between cell sites of two major MNOs that were seeking to merge demonstrates substantial overlap and duplication in cell sites.

¹¹ BEREC, International Roaming Benchmark Data Report: October 2018 – March 2019, October 3, 2019, BoR(19)174Rev.1, Figure 6.

¹² This presumes that Canada will replicate the 37.5% year over year growth recorded between 2016 and 2017: CRTC, Communications Monitoring Report 2018, Open Data Portal, Figure 6.15.

¹³ OpenSignal, "State of Mobile Network Experience", May 2019, p 9, ranks Canada 29th in terms of mobile data latency and 17th in terms of mobile video experience. OpenSignal, "The State of Mobile Voice App Experience", October 2019, p 5, ranks Canada 24th in terms of mobile voice app experience.

High Impact of High Prices

12. The impacts of these high prices and low levels of investment are wide-ranging. Across the board, high prices are suppressing adoption and usage. Canada remains a laggard amongst OECD countries in terms of mobile data adoption, ranking 33rd out of 37 OECD countries and falling well below the OECD average in terms of data subscriptions per 100 inhabitants.¹⁴ High retail prices are key factors in Canada’s persistently low levels of adoption.

13. Canada’s persistently high operator revenues likely contribute to our equally persistent low data usage.¹⁵ In terms of average data usage, Canada continues to fall behind. For example, per individual monthly data usage in the United States grew at a rate of 35% CAGR from 2014-2017 while data growth in Canada over the same period was only 27%:

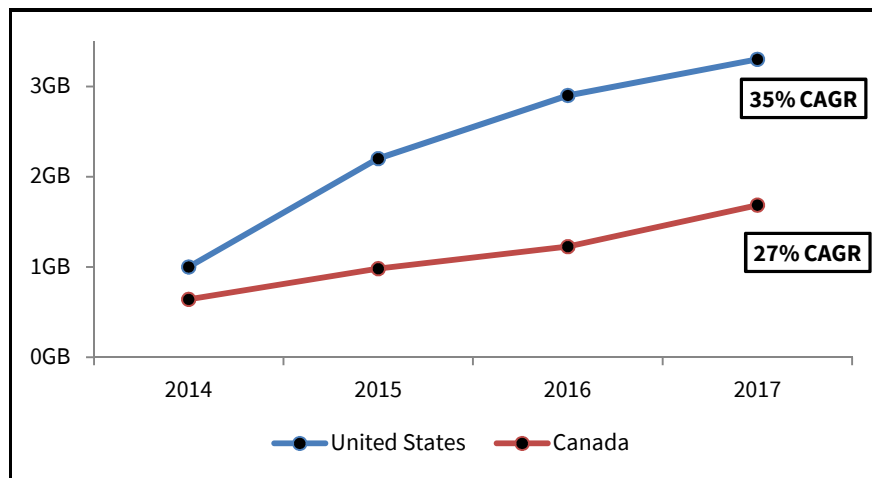


Figure 2: GB per User Per Month 2014-2017, Canada & US¹⁶

While the most recent per subscriber usage data for Canada is from 2017 (1.7 GB/user/month), if growth continues to grow at 2016-17 levels of annual growth (37.5%) would suggest average usage of 2.3 GB/user/month in 2018. In addition, the national providers annual reports for 2018 indicate blended ARPU of \$55.64, which converts to 37.84€, it becomes possible to compare Canada’s operator revenues and subscriber usage rates with European countries:

¹⁴ CIPPIC/OpenMedia, Intervention, May 15, 2019, Telecom Notice of Consultation 2019-57, para 24.

¹⁵ Tefficient, Industry Analysis #2 2019, Updated July 9, 2019, <https://tefficient.com/wp-content/uploads/2019/07/tefficient-industry-analysis-2-2019-mobile-data-usage-and-revenue-fy-2018-per-country-9-july-2019.pdf>. Canada is included, but data is from 2017.

¹⁶ DATA SOURCE: Federal Communications Commission, First Consolidated Communications Marketplace Report, November 21, 2018, FCC-CIRC1812-07, Figure A-8; CRTC, Communications Monitoring Report, 2018.

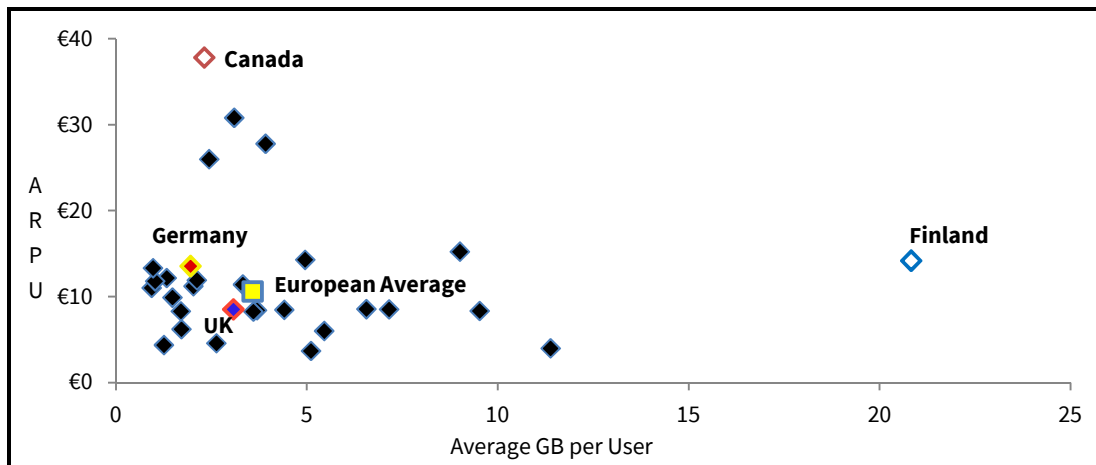


Figure 3: Mapping Average Revenues per Usage, Canada & Europe, 2018¹⁷

The top left of the chart indicates high network operator revenues and low subscriber usage, while the bottom right of the chart indicates low operator revenues and high subscriber usage. Based on these projections, Canada continues to be an outlier in terms of high operator revenues in return for low subscriber usage when compared to European countries. Canadian usage is 65% the European average, while ARPU is 3.6 times the European average.

14. High costs are impeding Canadians from fully realizing the potential of mobile connectivity. In an online questionnaire presented by OpenMedia for this proceeding, 8,596 of respondents identified price, while an additional 4,935 identified insufficient data allotments as factors impeding them from getting the service they want from their cell phone plan.

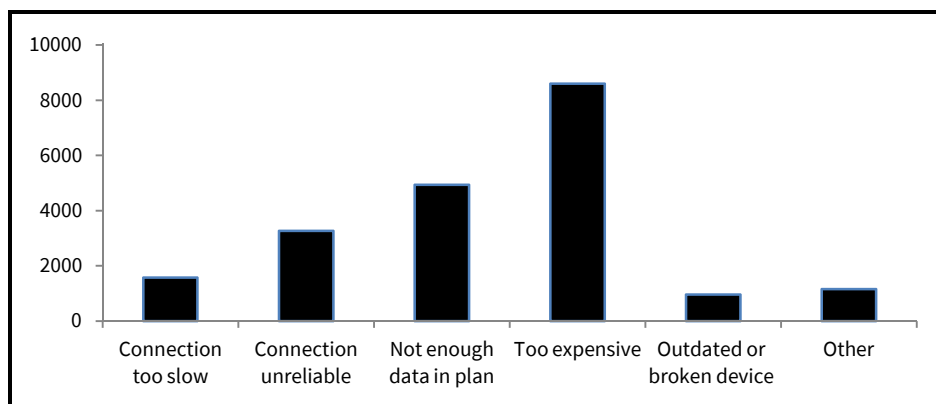


Figure 4: Factors impeding you from getting the service you want from your cell phone plan?¹⁸

¹⁷ DATA SOURCE: CRTC Communications Monitoring Report, 2018 (per subscriber data usage 2017, Annual growth in data usage, Canada); Bell, TELUS and Rogers public financial Annual Reports, 2018 (ARPU, Canada, 2018); BEREC, International Roaming Benchmark Data Report, October 3, 2019, BoR(19)174Rev.1 (ARPU and per subscriber data usage, Europe, 2018). The current exchange rate is 1 CAD = 0.68€. We did not adjust for PPP. Note that Blended ARPU was used, whereas Blended ABPU across all three top providers would amount to \$66.52 CAD or 45.23€.

In addition, 84.8% of individuals who responded to the question “Are you able to find plans that meet your needs at an affordable price” indicated ‘No’.¹⁹ In another survey conducted by the Province of British Columbia, only 6% of respondents agreed that the cost of their mobile service is reasonable and only 9% agreed they are getting good value.²⁰

15. High mobile costs also lead to detrimental impacts among subscribers. The First Nations Technology Council has similarly identified affordability as a substantial barrier to adoption of mobile services among the First Nations communities.²¹ This exacerbates economic exclusion of First Nations communities, while undermining efforts at reconciliation and generally preventing Indigenous peoples from fully participating in the benefits of the growing digital ecosystem.²² Mobile costs can have serious impacts in urban areas as well. For example, one recent study found that of Toronto respondents who have had to miss meals in order to pay for other necessities, 20% attributed the missed meals to their phone bills.²³

Section 2. Lack of Choice & Competition

16. Market concentration and lack of choice remains a factor in Canada’s mobile wireless ecosystem. Canada’s 3 national providers continue to maintain robust levels of subscriber and revenue share.²⁴

17. As noted in our initial comments, the presence of flanker brands does nothing to mitigate the indicators suggesting Canada’s mobile market is too heavily concentrated and characterized by lack of choice. Indeed, Mobile operators establish sub-brands precisely so

¹⁸ Appendix B. Of 10,067 respondents to the public online questionnaire, 8,596 individuals responded to the question: “What factors (if any) are impeding you from getting the service you want from your cell phone plan? Select all that apply:” by selecting “Too expensive” from a pre-populated list of factors. Other results were: Connection is too slow (1,572 indications); Connection is unreliable (e.g. lose reception or service drops)(3,266 indications); Not enough data (4,935 indications); Too expensive (8,596 indications); Outdated or broken device (960 indications); Other (please elaborate below)(1,149 indications).

¹⁹ Appendix B. Of 10,067 individuals who responded to the questionnaire, 1,510 answered ‘yes’ and 8,442 answered ‘no’ while 115 individuals did not answer the question “Are you able to find plans that meet your needs at an affordable price?”.

²⁰ Province of British Columbia, “Cellphone Billing Transparency: What We Heard”, 2019.

²¹ See First Nations Technology Council, Appendix A, para 6.

²² See First Nations Technology Council, Appendix A.

²³ “Who’s Hungry: Profile of Hunger in the Toronto Region”, 2019: <https://www.dailybread.ca/wp-content/uploads/2019/11/DB-WhosHungry-2019-Final-WebLR.pdf>, p 11.

²⁴ CIPPIC/OpenMedia, Intervention, May 15, 2019, Telecom Notice of Consultation 2019-57.

that they can reach certain other market segments *without* their primary brands. As we elaborated in our initial comments:

9. First, Canada's world-leading ARPU is inclusive of revenue obtained through the vehicle of flanker brands. That is, Canada's ARPU would be even higher if each national operator's revenue and user base were calculated to the exclusion of its respective flanker brand(s). Most flanker brands also operate on the same network as their incumbent's primary brand, meaning that conclusions relating to incumbent capital investment, network capacity, network quality and network reach do not change as a result of the presence of flanker brands.

10. Second, the flanker brands do not exert independent competitive pressure in the same manner as external competitors. One comparative analysis found that flanker brands offered consistently higher prices than independent competitors on average, as well as across most regions and service baskets. The study also concludes that, on the basis of an historical analysis of flanker, incumbent and independent competitor pricing trends, flanker brand pricing is converging on incumbent brand pricing while independent competitor pricing remains consistently and proportionally lower.

Flanker brands should therefore be viewed as an exercise of market power rather than a meaningful limitation. Sub-brands will not impose price discipline on primary brands, nor will they offer innovative service plans if these might undermine the primary brand's revenues. Canada's flanker brands simply do not have the structural separation and independence that would permit them to exercise market power in a manner that is separate from that of their primary brands.²⁵

18. Flanker brands also undermine choice. Where customers choose to leave a provider, either due to quality of service concerns, customer service challenges, or other considerations, that provider's sub-brand does not represent a meaningful 'switch'. Aside from the challenges this consolidation raises for price discipline, it also poses problems for the many individuals who already believe Canada lacks sufficient choice of providers. In an

²⁵ This approach is consistent with the Commission's approach to sub-brands in the broadcasting context. See for example: Broadcasting Decision CRTC 2016-110, generally and paras 18-19 specifically:

"... the structural separation between Shaw Communications and Corus has existed since 1999 when Corus was spun off from Shaw in response to the Commission's requirement for structural separation between the distribution and the programming functions of vertically integrated entities. However, this did not result in a change in the effective control of Shaw Communications and Corus, which continued to be exercised by Mr. JR Shaw. The Commission has since consistently recognized this common control in its policies and regulations related to transfers of ownership, diversity of ownership and ownership concentration. As such, the Commission considers that both entities are controlled by Mr. JR Shaw and that the proposed transaction does not constitute a change in effective control of Shaw Media, which has and will continue to be exercised by Mr. JR Shaw."

online questionnaire hosted on the OpenMedia website for the purpose of this proceeding, 8,829 individuals (89% of those who responded to the question) indicated they did not feel they had sufficient choice of cell phone service providers in Canada.²⁶

19. This lack of choice extends to uniformity in service plans. In a recent survey conducted by the Province of British Columbia, 58% of respondents indicated that more retail competition and innovation is needed while 47% indicated that more choices for low/mid cell phone plans are needed.²⁷ In the online questionnaire hosted by OpenMedia for this proceeding, 3,844 individuals (39% of those who chose to respond to the question in an online questionnaire hosted by OpenMedia on its website for this proceeding) indicated their preference for unlimited plans.²⁸ This was by far the most widely preferred data plan:

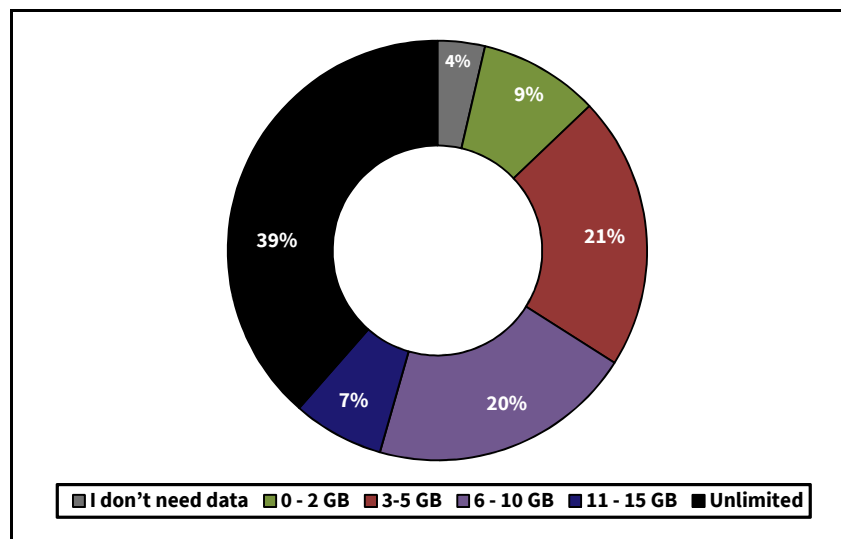


Figure 5: How much data would you like your cell phone plan to provide?²⁹

Yet unlimited plans remain elusive in Canada. Canadian providers have only begun to offer plans labeled as ‘unlimited’ in recent months, and even these plans are not truly ‘unlimited’, as speeds are drastically reduced after a certain amount of usage is exhausted.

20. Flanker brands also undermine the ability of new types of competitors to enter the market, as they deter national providers from offering reasonable wholesale offerings,

²⁶ Appendix B.

²⁷ Province of British Columbia, “Cellphone Billing Transparency: What We Heard”, 2019.

²⁸ Appendix B.

²⁹ Appendix B.

precluding the entry of MVNOs or facilities based wholesale providers. This, in turn, undermines innovation, as a proliferation of different types of mobile providers is often characterized by an array of dedicated and differently constituted mobile services.³⁰ The lack of reasonable wholesale options also undermines the ability of underserved municipalities and First Nation communities from developing their own mobile solutions. Regional governing bodies are left to rely on the priorities of national providers, and this contributes to economic exclusion while also undermining safety, security and emergency management.³¹ The impact on First Nation communities is additionally detrimental, as these bodies are denied an avenue for Indigenous communities to participate in the provision of their own mobile connectivity.³²

Section 3. Bold Regulatory Action is Required

21. Addressing Canada’s mobile landscape requires a three tiered regulatory solution:

- **Mandate Usable Low-Cost Plans.** Mandating low-cost plans will extend access to subscribers who are currently priced out of the market altogether to participate in the benefits of mobile connectivity;
- **Mandate Access to MVNOs.** Mandating full MVNO access on a cost recovery basis will provide an avenue for more choice and competition, allowing for new and innovative market participants and for price discipline;
- **Mandate On-Demand Access to Spectrum.** This will provide an avenue for those who wish to deploy facilities based competition to do so.
- **Examine More Structural Solutions.** If high prices and low network investment persists despite these measures, more structural solutions may be required.

We do not elaborate in great detail on the form that more aggressive structural solutions might take. We do note, however, that such structural solutions have been relied upon recently in other jurisdictions. For example, in the wireline context, Ofcom recently facilitated the partial structural separation of OpenReach from BT.³³ Similarly remedies could be explored in the wireless context if no other national competitors emerge and high prices

³⁰ See, for example, Teresa Cottam, “MVNO Opportunities and Strategies”, (2016) *Telesperience*, <https://amdocsoptima.com/wp-content/uploads/2018/04/MVNO-Opportunities-and-Strategies.pdf>.

³¹ First Nations Technology Council, Appendix A, para 5.

³² First Nations Technology Council, Appendix A, paras 6-7.

³³ Ofcom, “Delivering a More Independent Openreach: Annual Monitoring Report”, July 3, 2019, https://www.ofcom.org.uk/data/assets/pdf_file/0022/155218/openreach-annual-monitoring-report.pdf.

persist. For example, the national providers' respective flanker brands might be structurally separated.

Mandating Low-Cost Plans

22. Mandating low-cost, but functional plans on the model suggested by CCWS and the Manitoba Coalition would render Canada's telecommunications ecosystem far more responsive to the economic and social requirements of users of telecommunications services.³⁴ An initial low-cost package would comprise:

- 4G/LTE connectivity on service providers' primary brand;
- unlimited voice, SMS/MMS and 4GB of data;
- roam like at home throughout Canada;
- lower speeds, but no overage penalties once data limits are exceeded;
- available nationally in all regions; and
- a fixed monthly cost between \$20-\$30.

Mandating provision of such a package would particularly work to ameliorate Canada's low mobile adoption rates by allowing individuals who are currently priced out of mobile altogether an affordable option. It will also reduce the need for current subscribers to choose between mobile connectivity and other necessities such as food.³⁵

23. A low-cost package of this nature should not be limited to high-cost areas. As indicated above, affordability is an ongoing factor in urban areas as well as in underserved areas. A subsidy may be required for provision of this package on some high-cost areas. However, the lower profit margins these plans might attract for Canadian operators should not be passed to other mobile customers. Canada's operator revenues are sufficiently high as to accommodate the lower ARPU that these low-cost plans might attract.

24. Should such a plan be mandated as a condition of service under section 24, it should be closely monitored by the Commission. Specifically, we would recommend incorporating a persistent assessment of the ongoing utility of this low-cost package. Specifically, the CRTC's Communications Monitoring Report should indicate annually whether the low-cost package

³⁴ These proposals are summarized in CRTC, Requests for Information, July 5, 2019, CRTC File No: 1011-NOC2019-0057, Question 203.

³⁵ "Who's Hungry: Profile of Hunger in the Toronto Region", 2019: <https://www.dailybread.ca/wp-content/uploads/2019/11/DB-WhosHungry-2019-Final-WebLR.pdf>, p 11.

continues to meet the needs of Canadians. This assessment should take into account the following factors:

- **Evolving usage needs.** The 4GB data allotment may be sufficient as a low cost offering based on today's data needs, but these needs are rapidly evolving;
- **Evolving individual/household needs.** That the \$20-30 packages remains affordable for low-income households/individuals;
- **Evolving Data Costs.** As costs of data delivery continue to fall due to technological improvements, the per unit cost of data decreases and may require adjustments to the overall cost of the package or the size of the data allotment; and
- **Competitive Landscape.** Should the competitive landscape evolve through the entry of additional competitors (virtual or otherwise) to the point where sufficiently low-cost plans are provided organically, this requirement should be reconsidered on a geographic basis.

This component of a wireless regulatory solution alleviates high cost challenges for low-income segments of the population.

Mandate Conditions for a Robust MVNO Presence

25. Mandating a robust MVNO presence will facilitate low-cost entry by a multiplicity of new competitors. MVNOs can be a source of service innovation, diversity in choice, and competitive price discipline.

26. This will facilitate service innovation, as noted in our initial intervention:

34. The low entry costs associated with MVNOs allow for a multiplicity of market players, while also leading to lower risk aversion in terms of market entry as well as service differentiation. This leads not only to *more* operators (and, by extension, more competition), but also to a greater diversity of operators, including service providers that are not dedicated telecommunications companies, operate under distinct branding and are generally guided by different incentives. MVNO markets are also characterized by high entry/exit activity, as the lower up-front costs allow for market entry in spite of higher risk. The resulting providers cater to market segments with niche offerings that are not otherwise fully utilized, or generate innovative types of services that a facilities-based provider may never consider.

...

40. Additionally, a robust MVNO market can spur innovation or cater to market segments that existing providers have neglected. For example, MVNOs will often expand prepaid markets through better branding, more competitive prepaid pricing and innovative service packaging. Canadian providers have substantially neglected pre-paid service

markets, even as pre-paid offerings in other jurisdictions have evolved to match the types and quality of service available in post-paid. Canada currently has a relatively small pre-paid market, down to 17% of all subscribers in 2013, and could benefit from more carefully tailored prepaid offerings. Moreover, new MVNO models are developing that provide unique solutions to challenges such as international roaming and specific machine-to-machine implementations. Truphone, for example, operates a global MVNO network that spans 66 countries, letting customers keep their home phone number and device while travelling abroad.³⁶

This broader diversity in choice can also alleviate perceptions that Canada generally lacks choice, providing alternatives for any customers who are unhappy with their current providers for a variety of reasons, outlined in the previous section. MVNOs will also provide an opportunity for Indigenous providers and communities to offer localized mobile offerings. As pointed out by the First Nations Technology Council, facilitating First Nation participation in the provision of telecommunications services is “essential to reconciliation, and a critical step in facilitating Aboriginal rights to spectrum sovereignty.”³⁷

27. Other jurisdictions continue to recognize that full MVNOs can be a source of competitive price discipline as well. In our initial Intervention we pointed to examples where regulators have imposed MVNO access obligations as a condition of merger approval.³⁸ Other jurisdictions impose MVNO access obligations through spectrum license conditions. For example, France’s communications regulator has suggested draft spectrum license conditions that would include operator commitments to:

- (1) enable MVNOs to offer differentiated services (i.e. services different from those that the Host MNO will provide itself),
- (2) refrain from imposing exclusivity terms on MVNOs without due justification (i.e. MVNOs should be able to conclude multiple wholesale access agreements with different operators),
- (3) provide wholesale access to (Full) MVNOs on reasonable economic terms (i.e. preventing margin-squeeze on MVNOs); and
- (4) enable MVNOs/MVNEs/MVNAs to serve markets with new (5G) RAN technologies simultaneously with host MNOs.³⁹

³⁶ CIPPIC/OpenMedia, Intervention, May 15, 2019, Telecom Notice of Consultation 2019-57.

³⁷ Appendix A, para 7.

³⁸ CIPPIC/OpenMedia, Intervention, May 15, 2019, Telecom Notice of Consultation 2019-57, paras 35-39.

³⁹ MVNO Europe, “MVNO Europe Welcomes French Regulator ARCEP’s Proposed Terms for the Granting of 5G-Related Radio Spectrum”, September 10, 2019, <http://mvnoeurope.eu/mvno-europe-welcomes-french-regulator-arceps-proposed-terms-for-the-granting-of-5g-related-radio-spectrum/>.

We note that this mandate is explicitly intended to apply to spectrum intended for 5G networks in addition to legacy 4G/LTE networks.

28. Some have argued that MVNOs should not be mandated, as this would lead to competition on a non-facilities basis and ultimately undermine investment in network infrastructure. However, this argument belies the Canadian national carriers' own approach to mobile competition. As documented by ReWheel Research and discussed above, network sharing among Canada's national providers is so pervasive that it has led to national mobile coverage with a fraction of the mobile tower sites that would otherwise be required for a population and geographic area the size of Canada.⁴⁰ The exclusiveness of these arrangements results in the worse of both worlds – low levels of competition *and* of infrastructure investment. Mandating wholesale access would alleviate one of these conditions and, as access would be mandated on a cost-recovery basis, it would not substantially undermine infrastructure investment.

29. In its submissions to this proceeding, Cogeco suggests that virtual network access be tariffed on a limited basis, allowing only existing MNOs such as Cogeco to operate virtually on competitors' networks.⁴¹ Such an approach would undesirably limit the potential of a virtual competitor mandate, undermining the ability of *new* market entrants and the general conditions that allow for MVNOs to innovate (that is, capacity for high rates of low-cost entry/exit as outlined above). It does so in exchange for unverified claims that the revenues gained by virtualized operators such as Cogeco would be lead to greater investment in mobile infrastructure. However, MVNO-based competition can be a more efficient form of competition that avoids duplication.⁴² (Within limits – overly aggressive network sharing can be anticompetitive).⁴³ Cogeco's proposal also ignores the history of mobile network sharing in Canada, which suggests that network sharing arrangements

⁴⁰ See ReWheel/Research, "Root Cause of Weak Competition in the Canadian Wireless Market", September 8, 2019, and paragraphs 8-10, above.

⁴¹ Cogeco, Initial Comments, May 15, 2019, paras 72 *et seq.*

⁴² ReWheel/Research, "T-Mobile and Tele2 4 to 3 Merger in the Netherlands", November 2018, p 2-3; see also discussion at paras 10-11 above.

⁴³ European Commission, "Antitrust: Commission Sends Statement of Objections for Network Sharing Agreement in CZ", August 6, 2019, https://ec.europa.eu/commission/presscorner/detail/en/ip_19_5110; BEREC, Common Position on Infrastructure Sharing, BoR(19)110, adopted July 19, 2019.

do *not* lead to more infrastructure investment.⁴⁴

30. The argument for limiting virtual network access to existing MNOs also ignores the fact that MVNOs often grow to become facilities-based operators once they have established a firm subscriber base. Similarly, German MVNO 1&1 recently announced it would participate in an upcoming 5G auction as part of its bid to enter the German market as its fourth MNO.⁴⁵ TPG in Australia began as an MVNO and began transitioning to a facilities based MNO in 2017.⁴⁶ These plans have since been cancelled due to challenges with domestic regulation of TPG's network equipment provider (Huawei).⁴⁷ However, in rejecting a proposed merger between TPG and an established Australian MNO, the Australian Competition and Consumer Commission (ACCC) highlighted TPG's proven track record as a disrupting MVNO force in Australian mobile markets as well as the ACCC's belief that TPG is likely to resolve its network equipment security challenges and enter the facilities-based market even in the absence of a merger.⁴⁸

Mandate On-Demand Access Facilities Based Competition

31. The Commission should also affirm in principle a tariff for facilities-based access to spectrum on an 'on-demand' basis.

32. Approving this option in principle would permit municipalities, First Nations communities, and emerging MVNOs to explore deployment of regional or national facilities-based mobile networks without the need to purchase spectrum.

33. There is some evidence of demand for this type of wholesale solution. As noted above, MVNOs have in the past attempted to transition to full facilities based MNO status. As spectrum is a necessary input for mobile services, a tariff for wholesale spectrum access will

⁴⁴ ReWheel/Research, "Root Cause of Weak Competition in the Canadian Wireless Market", September 8, 2019, and paragraphs 8-10, above.

⁴⁵ Saleha Riaz, "United Internet Eyes 5G as Route to MNO Status", January 25, 2019, *Mobile World Live*, <https://www.mobileworldlive.com/featured-content/top-three/united-internet-eyes-5g-as-route-to-mno-status/>.

⁴⁶ ACCC, TPG Telecom – Proposed Merger with Vodafone, Statement of Issues, December 13, 2018.

⁴⁷ TPG recently cancelled its MNO plans in response to the Australian government's ban on its network equipment partner, Huawei. Before cancelling its plans TPG invested \$100 million AUD in equipment and built 1,500 cell sites: Tegan Jones, "TPG Cans Mobile Network, Blames Huawei Ban", January 29, 2019, *Gizmodo*, <https://www.gizmodo.com.au/2019/01/tpg-cans-mobile-network-blames-huawei-ban/>.

⁴⁸ Prudence Smith, "ACCC Opposes TPG-Vodafone Merger", *Jones Day*, May 2019, <https://www.jonesday.com/en/insights/2019/05/accc-opposes-tpg-vodafone-merger>.

permit such MVNOs to transition more rapidly to facilities-based competition without delaying market entry until another spectrum auction is held.⁴⁹ There is also some evidence that municipalities or First Nations communities might deploy localized networks should they be granted cost-efficient access to spectrum.⁵⁰

34. This tariff should be approved in principle, but MNOs would only be obligated to issue related tariffs if another provider indicates interest in deploying a network.

Section 4. Conclusion

35. CIPPIC/OpenMedia respectfully submit that these initial regulatory steps are necessary to improve the state of Canada's mobile wireless ecosystem to levels that are responsive to the social and economic needs of Canadians. Should these measures fail to bring about a sufficiently competitive and affordable ecosystem, more aggressive structural solutions may be required.

***** END OF DOCUMENT *****

⁴⁹ FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Seventeenth Report, WT Docket No. 13-135, DA 14-1862, December 18, 2014, para 92: "... robust competition depends critically upon the availability of spectrum as a necessary input in the provision of mobile wireless services."

⁵⁰ Province of British Columbia, "Connectivity Helps Keep People Safe on Haida Gwaii", October 1, 2019, <https://news.gov.bc.ca/releases/2019CITZ0111-001881#>; "Upgrades to our local internet network and cellular service are making a big difference in the work we do from an emergency-management perspective," Ashurst said. "In this modern world, much of our work is done online, and having stable and secure internet helps us better prepare for and manage emergency situations."; Jordan Pearson, "Bandwidth: How First Nation Kids Built Their Own Infrastructure", August 21, 2015, *VICE*, https://www.vice.com/en_us/article/mgb8qv/how-first-nations-kids-built-their-own-internet-infrastructure.