Intervention of OpenMedia

Submitted to the
Canadian Radio-television and Telecommunications Commission

In the Matter of

TNC CRTC 2017-259
Reconsideration of Telecom Decision 2017-56 regarding final terms and conditions for wholesale mobile wireless roaming service
CRTC File No.: 1011-NOC2017-0259

27 October 2017

OpenMedia is a community-based organization that works to keep the Internet open, affordable, and surveillance-free.

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Introduction and Executive Summary

1. When Minister Navdeep Bains of Industry, Science, and Economic Development Canada announced the decision to have the Commission revisit Telecom Decision CRTC 2017-56, he was clear that the Commission's determinations should revolve around certain key concerns. Several of them have emerged as central issues on the record of the proceeding, including affordability of mobile wireless services, the state of mobile wireless competition in Canada today, and the role of network investment and maintaining a facilities-based approach to regulation.

2. OpenMedia thanks the Commission for this opportunity to submit supplementary comments. Since this proceeding began, over 8,300 Canadians[1] have taken action or expressed support through a petition for opening up the networks of mobile network operators (MNOs) to WiFi-first mobile virtual network operators (MVNOs) on reasonable terms.[2]

3. This submission is divided into three sections, and each addresses one of the key issues listed above: affordability of mobile wireless services in Canada; mobile wireless competition and market concentration; and the impact of investment levels and facilities-based competition.

4. First, mobile wireless affordability is absolutely a problem in Canada. The existence of low-priced plans does not mean that mobile wireless services in general impose no financial burden on Canadians, particularly without accounting for if such plans meet their needs. Interveners in the proceeding leading up to Telecom Regulatory Policy CRTC 2016-496, *Modern telecommunications services – The path forward for Canada's digital economy*, such as low-income subscribers and users with disabilities, made clear that data was one of their communications priorities and that any could not afford it. The Commission must recognize that it is affordability that drives usage; rather than low usage indicating low needs and thus affordability is addressed by low-utility plans. Consequently, the presence of MVNOs would effectively address the issue, through more affordable offerings as well as competitive price discipline.

5. Second, the Canadian mobile wireless services market lacks sufficient competition to organically address the affordability issue for low-income subscribers. The market is highly concentrated nationally, and more so within each province and territory, based on the Herfindahl-Hirschman Index. That there are other countries with even higher HHI levels than Canada's does not mean that the situation is optimal or acceptable in Canada, simply that market concentration is even worse elsewhere. Research by Finnish telecom consultancy Rewheel demonstrates why recent merger developments in Manitoba and the nature of new entrants and flanker bands provide cold comfort to Canadians concerned about the state of competition and market concentration in mobile wireless services.

6. Third and lastly, there is a body of academic literature that examines the connections between regulatory policies such as facilities-based competition, network operator investment levels, and ultimate quality of the resulting networks. This scholarship demonstrates that the correlation between all three things is uncertain, such that facilities-based competition does not necessarily lead to greater network investment on the part of incumbent operators; and that if it did, greater levels of investment do not necessarily lead to higher-quality networks. There is evidence that facilitating MVNO presence in Canada would in fact promote greater investment in mobile wireless telecommunications as a whole, thus dispensing with the need to weigh factors against each other. If the Commission does not accept that, however, then the described uncertainty of correlation demonstrated in the abovementioned academic research should militate towards determining this proceeding in favour of the tangible difference that more affordable mobile wireless offerings would make to Canadians' lives.

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1 Or otherwise those who live in Canada and consider it their home.
2 Hosted at <https://act.openmedia.org/lowermycellbill>.

I. Wireless Affordability Is a Problem in Canada

A. Claims of Mobile Wireless Affordability Are Incomplete or Ignore Key Factors

7. Various interveners have suggested that mobile wireless affordability is not an issue in Canada.[3] These claims for the most part are grounded in the fact that low-priced mobile wireless plans exist. However, this is a limited and misguided view of the issue, as it fails to address whether or not such plans actually address the connectivity and communications needs of those who can afford only them and nothing more. The Wall Communications Inc. report ("Wall Report") is particularly flawed on this count, by simply presenting the existence of low-priced plans and thus concluding "that mobile wireless is not creating an affordability problem."[4] For this and other reasons, the Commission should reject arguments that mobile wireless affordability is not a problem or imposes no burden on low-income Canadians.

8. First, the Wall report's analysis fails to account for the actual data requirement of Canadians today. According to the 2016 Communications Monitoring Report, the average data usage per subscriber per month is 921 MB, and average data usage per subscriber per month for those who subscribed to a data plan is 1,320 MB.[5] Trusting that this reflects what is on average required to participate meaningfully in today's digital society—particularly given that people actively limit usage where possible to avoid overage fees—this is nearly twice as much as and up to thirteen times what is available under the lowest available data-inclusive plans in Tables 5 and 6 of the Wall Report.

9. It may be true that "the wide-spread availability of low-priced mobile services … indicates that purchasing *these* services would not generally cause an undue burden on low income consumers."[6] However, the prices of these services say nothing of whether or not the plans that users actually need cause an undue burden on low-income consumers. This would be more accurately assessed by examining the usage patterns of customers who are likely less constrained in meeting their mobile wireless needs, and assessing the affordability of plans available at that level.

10. If a user were to subscribe to, for instance, Bell's postpaid $25 plan, and used 921 MB of data, at Bell's overage fee of $0.07/MB that would result in overage fees of $57.47, capped at $50.00 by the Wireless Code. The price of the plan triples to $75, three times what the user would have presumably been able to afford at the outside.

11. Similarly, 7-Eleven's Speak Out pre-paid smartphone plan includes 100 MB for $30 ($20 talk and text plus $10 100 MB add-on), with an overage fee of $0.10 per MB.[7] If the subscriber used 921 MB by the end of the month, that would result in a total cost of $112.10, which the *Wireless Code* would bring down to $90. It seems incomplete to claim there is no affordability problem because lower-priced plans exist, when they exist only with little to no data, while simultaneously touting Canadians' high levels of data usage. The NERA Report by Jeffrey Eisenach ("Eisenach Report"), for instance, cites an average monthly usage of 2.2 *GB* per subscriber,[8] and various interveners at the Commission's *Review of basic telecommunications services* hearing explained the high data requirements of users with disabilities.[9] The specific plans in the Wall Report may be affordable, but given their limitations, they do not speak to whether mobile wireless services in general are affordable, in terms of available plans that actually include what users need in Canada's contemporary digital society.

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3 See e.g. Interventions of Bell Canada and TELUS.
4 Wall Report, at page 28.
5 Canadian Radio-television and Telecommunications Commission, *Communications Monitoring Report 2016* [*CMR 2016*], Table 5.5.6 Average monthly SMS/MMS (messages/month) and data (MB/month) usage, at page 285.
6 Wall Report, at page 19 (emphasis added).
7 7-Eleven SpeakOut, "Prepaid Cell Phone Plans & Add-Ons" online: <https://www.speakout7eleven.ca/phone-rates.html>.
8 TELUS Intervention, Expert Report of Jeffrey A. Eisenach [Eisenach Report], at para 8.
9 See para 11 of this submission.

12. "Affordable" does not mean being able to buy the least option available, particularly when it does not actually suit one's needs. That people are buying such plans does not necessarily indicate that those are the right plans for them and thus there is no affordability problem. On the contrary, and as well established at the basic telecommunications services hearing, evidence suggests that that mid-range or higher-level options are the ones that would best fit their needs—again, based on the high levels of data usage incurred as a matter of course by those who can afford it—but are not affordable.

13. Second, the Wall Report states:

> Of the services examined in the OFCOM study, the strongest consensus opinion was that the ability to make and receive telephone calls was the most essential capability sought by low income users. The ability to text and message was not considered as critical to low income users, nor was mobile internet.[10]

The implication here is that data is not as important to low-income users, and by extension, it matters less if it is not affordable. This is unhelpful, as such a position assumes that such users will remain on voice alone forever, or that it would be good public policy to have them remain on voice-only services. It also ignores well established recognition that nearly all communications functions, particularly in mobile, are trending towards becoming increasingly Internet- and data-based every day, and that such services (and their affordability) will only grow in importance.

14. Furthermore, the Wall report bases this finding of user priorities in an OfCom report, which may not reflect the priorities and needs of Canadian subscribers—particularly given that Canadians have been characterized as particularly voracious data users globally.[11] What does reflect the priorities and needs of Canadian subscribers—low-income, with disabilities, or otherwise—are their own words, such as may be found in the transcript of the Commission's basic services hearing from 2016:

> 6966 And within the wireless service providers, there are a number of issues. A lot of them have a wide disparity offered in the data plans that are not clear and within their own companies, they are not clear and they are not advertised specifically, and there are no fair plans available for ASL and LSQ users and customers. 6967 When we speak about audio versus video, video uses a greater bandwidth than audio which results in higher data usages or overages, i.e. the bill shock that I spoke of previously. 6968 When deaf users receive their bill, they're often shocked at the amount of the bill and did not realize that they had overseeded their data allotment.[12]
>
> 6971 MS. MARSH: We conducted a Canada-wide survey which provided 905 valid responses that we could analyze. 6972 Eight-one (81) percent of the respondents were deaf, hard of hearing, and deafblind. ... 6974 Eighty-three (83) percent use video communications currently on their smart phones. Popular choices right now are Glide, FaceTime, and Skype. ... 6977 The top four needs for visual communication today are texting, emailing, photo communication, and video communication. 6978 Fifty-three (53) percent of the survey respondents went over their data plan limit, while 45 percent of them were very careful and stayed within their limits, and the rest simply didn't know. This indicates that the amount of gigabytes given do not meet the consumer needs.[13]
>
> 7300 MR. TIBBS: In a lot of cases, these technologies, when they're being used as a core means of communication and connectivity to the outside world, be that somebody who is deaf or non-verbal or what have you, it becomes a far more critical component that is less of a want and more of a need. And when we get to service providers who, for example, you know, the cheapest plan that has any amount of data on it might be $60, even though they don't need a lot of the other features that come with that, but that data plan is the

[10] Wall Report, at page 5.
[11] "Canadians are among the most engaged users in the world. According to comScore, Canadians spend more hours online (36.7 per month) than anyone else in the world." CIRA, CIRA Internet Factbook 2016, online: <https://cira.ca/factbook/domain-industry-data-and-canadian-Internet-trends/internet-use-canada>.
[12] TNC CRTC 2015-134, *Review of basic telecommunications services*, Hearing Appearance of Deaf Wireless Canada Committee, Transcript (18 April 2017), at paras 6966-68.
[13] *Ibid*., at paras 6971-78.

> critical part. And they're going to have to pay the $60. 7301 For a lot of other Canadians who have low income, they may need a phone, they may need some connectivity, but there may be other ways around it. But in this case, it's a fundamental -- for many people with disabilities, this is a fundamental tool that's needed for every aspect of their life. It's not, as somebody else mentioned before, it's not augmenting what is already available in other ways. It may be the only way.[14]
>
> 5791 MR. CAMERON: Thanks for having me. My name is Blaine Cameron. I am an ACORN member. I am here to talk to you about the cost of internet for low-income people like myself. 5792 I am a resident of Ottawa and have been so for most of my adult life. My income is from Ontario Disability Support Program and CPP Disability. About 70 percent of my income is devoted to shelter, leaving only about 30 percent of my income for bill payments and food. … 5803 For me, affordable internet means being connected to places I cannot access and it connects me to programs that help reduce the day-to-day barriers that I face. 5804 Being poor and having to pay for exorbitant internet costs makes me feel that people like myself don't matter much and don't deserve consideration. I wouldn't want to imagine my life without the internet; it's my access to the world as a disabled person.[15]
>
> 5808 MS. FORD: Hello. My name is Tina Ford and I am a low-income person and I am a member of ACORN Canada. I am here to tell you why we need affordable internet. … 5812 My income now is $700 a month. I am on Ontario Works until May when my EI kicks in. My internet bill last month was $170 and I could only pay half of it. 5813 Because I paid this bill I could not buy fruits or vegetables or meat for my family. I am taking money out of my food budget so I can for the internet to find a job and support my family. It's now a constant struggle every month. … 5815 The internet also helps me to check the status of the report of my EI and plan my budget. Otherwise I would have to walk to the employment centre, which is 20 to 30 minutes away since now I can't afford a bus pass I have to walk there. … 5819 Internet is a necessity for me and I would like to have affordable internet so I can get a job, manage my bills, and so I don't have to take Welfare.[16]
>
> 5867 MS. FORD: Well, I have a cell phone. It's just a little (inaudible) mobile phone and I have a landline. And I had cable. I just got laid off in February so I had all of that, but now I don't have cable because I can't afford nothing. I'm on EI now so that's what I have for now. But I think I'll be disconnecting the landline too soon because it's too expensive. I need the internet to look for jobs, so I'm going to keep that.[17]

15. The above testimonies indicate that in Canada at any rate, low-income subscribers do prioritize Internet connectivity and in some cases more so than voice call functionality. This is also true in many cases for those with disabilities, particularly if voice functionality is inaccessible, and if accessibility apps such as video calling require large amounts of mobile data. At the time, the appearances of interveners such as individual members of ACORN demonstrably made an impact on the Commissioners listening. It would seem that now is the time to address such concerns as they expressed in a concrete, tangible manner that see more *functionally* affordable options on the market within a short amount of time, without waiting for a "trickle-down" effect from non-guaranteed incumbent MNO investments.

16. Third, TELUS faults the Nordicity report for ignoring prepaid services, and Bell also points to prepaid services as an available option for low-income Canadians.[18] However, neither party or any of their experts examine whether these plans in fact meet the needs of low-income Canadians. Just because limited functionality plans exist that are affordable, does not mean mobile wireless services in Canada in general are affordable in any meaningful sense.

17. In fact, a study from Finnish telecom consultancy Rewheel found that price drives adoption—that is to say, affordability drives usage:

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14 *Ibid*., Hearing Appearance of Media Access Canada, at paras 7300-301.
15 *Ibid*., Hearing Appearance of Members of ACORN, Transcript (18 April 2017), at paras 5791-5804.
16 *Ibid*., at paras 5808-19.
17 *Ibid*., at para 5867.
18 Bell Intervention, at para 77; TELUS Intervention, at para 14.

> In competitive markets, where a challenger operator group is present and where Gigabyte prices are up to 100 times lower than in protected markets (see Finland €0.17/GB versus Greece €17/GB) mobile data consumption per capita is several times higher (up to 20 times) than in protected markets. There is a clear pattern of significantly lower usage in protected markets where competition is not functioning and operators are collectively suppressing demand by keeping Gigabyte prices artificially high. High prices have similar effect, although not so pronounced, on mobile connectivity adoption. Mobile broadband population penetration is lower in protected markets where Gigabyte prices are significantly higher.[19]

18. Low-usage cannot then be assumed to indicate low and thus affordable needs. This further bolsters the fairly common-sense notion that those who can afford more data will in fact use more data, given how critical it is to nearly all activities in today's digital society. Pointing out that low-priced, but also low-utility, plans exist, is thus not a satisfactory response to the finding that plans with meaningful amounts of data that would meet users' needs are not in fact affordable to a large segment of the population.

19. Fourth, Bell states that according to Statistics Canada, the price of "telephone services" have risen more slowly than the consumer price index (CPI).[20] This is again an incomplete claim, as Bell fails to take into account its own acknowledgement that "telephone services" here includes both wireline telephony and mobile wireless voice services—two markets with vastly different regulatory and competitive contexts, and which also omits the critical data component. Isolating for the actual service at issue in this proceeding, mobile wireless services, the Nordicity Report found that the price of wireless services have in fact been increasing at rates greater than the CPI (which was 1.1% in 2015 according to CMR 2016,[21] and roughly 2% as noted below):

> This year, Canadian wireline service baskets prices have increased significantly. The Level 1, 2 and 3 service basket prices increased 4%, 9% and 8%, respectively, relative to last year. These increases are consistent with the historical trends in wireline service prices over the last five years which has seen Level 1 and 2 basket prices increase at average annual rates of 6% and 5%, respectively, whereas Level 3 basket prices have increased more slowly at 2% per year on average (i.e., at roughly the rate of inflation)."[22]

20. Level 1 and 2 price baskets would contain plans most likely to be considered affordable, so it is notable that their prices are rising more quickly than the more expensive Level 3 plans. All three levels are thus rising more quickly than the Consumer Price Index, indicating that there is in fact a mobile wireless affordability problem.

21. Fifth, while the Monti Stampa Furrer report ("Furrer Report") points to Switzerland as an example for the Commission, it is worth noting that even Mr. Furrer notes that in Switzerland, "salaries are higher than elsewhere". According to the OECD's Better Life Index, Switzerland has a higher average annual household net-adjusted disposable income per capita than Canada does (USD 35,952 compared to UDS 30,474), while also having a lesser income gap between those with the highest and lowest incomes in each country ("the top 20% of the population earn about five times as much as the bottom 20%" in Canada, and "more than four times" as much in Switzerland).[23] It is also remarkable that Mr. Furrer considers Swiss prices "on the higher side", while Figure 5 on page 13 of his report shows they are nevertheless only approximately half as high as Canadian prices: average 5.57 US$/PPP per GB, compared to $11.02 US$/PPP.[24]

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[19] Rewheel, "Price level drives mobile connectivity adoption and use" (March 2014), online: <research.rewheel.fi/insights/2014_march_penetration_vs_price/>.
[20] Bell Intervention, at para 52.
[21] *CMR 2016*, at page 50. More recent data puts inflation at 1.55%: Inflation.eu, "Current inflation Canada - CPI inflation" online: <http://www.inflation.eu/inflation-rates/canada/current-cpi-inflation-canada.aspx>.
[22] Nordicity Group Limited, Report commissioned for CRTC, *2016 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions* (11 August 2016), online: <https://www.crtc.gc.ca/eng/publications/reports/compar/compar2016.htm> [Nordicity Report].
[23] OECD Better Life Index, "Switzerland" online: <http://www.oecdbetterlifeindex.org/countries/switzerland/>; OECD Better Life Index, "Canada" online: <http://www.oecdbetterlifeindex.org/countries/canada/>.
[24] Furrer Report, at pages 12-13.

22. Sixth and lastly, research commissioned by the CRTC has demonstrated that there is indeed an affordability problem in Canada:

> If we assume that fixed broadband and mobile online services represent functional substitutes for legacy voice and broadcasting, this pattern provides some explanation of the expenditure growth patterns outlined above in Table 2. Prices and revenues for Internet subscriptions have become less varied over the past few years, converging to around $50 for fixed Internet and $60 for mobile per month. It is therefore reasonable to assume that a consumer requiring access to the two services has to allocate roughly $1,200 per year to the purchase of the broadband services that enable them to forgo legacy phone and TV subscriptions. Based on the standard 5% expenditure share of the income affordability threshold level used by the UN Broadband Commission and some stakeholders in Canada, then those with incomes below $24,000 per year would find basic communications services unaffordable. It is important to keep in mind that this threshold income level is substantially higher than the annual average income level for the lowest income quintile of around $18,500, which indicates that a significant proportion of Canadian households in the lowest income quintile fall well below this threshold level of affordability."[25]

23. Given all of the above, the conclusion that mobile wireless affordability is not an issue in Canada cannot reasonably be drawn, particularly where low-income and other intersectionally marginalized Canadians are concerned. Even if the Commission were to rule against the inclusion of WiFi-based or other MVNOs in Canada's mobile wireless regulatory regime, it must be on grounds other than this incorrect one of imagining the problem doesn't exist at all.

B. MVNOs Would Effectively Address Affordability Problem

24. Several parties suggested that the Commission permitting WiFi-first and other MVNOs to operate would not relieve Canada's affordability problem in any case.[26] This is untrue, for several reasons.

25. First, when the Commission has mandated access or set regulated rates in the past, the service providers who benefited from such actions have often followed by passing along their savings to their customers. For example, Wind Mobile cut its prices for customers after the Commission set interim roaming rates in 2014,[27] as did TekSavvy in the wireline context, after the Commission set more reasonable wholesale access rates.[28]

26. Second, TELUS states that WiFi-first MVNOs would not fully address affordability because "it requires a private broadband connection if the customer wants Wi-Fi connectivity at his [or her] residence. This is a subscription service that must be accounted for in the overall price of mobile connectivity—the Wi-Fi first service price is not the only fee that the customer must pay as a Wi-Fi first provider relies exclusively on other networks."[29] This ignores one of the major points of WiFi-first plans, which is that they may be all that the user is able to afford, particularly if only able to subscribe to one Internet-connected service.

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[25] Reza Rajabiun, David Ellis and Catherine Middleton, *Literature Review: Affordability of Communications Services*, Report Prepared for the Canadian Radio-television and Telecommunications Commission (March 2016), online: <http://www.broadbandresearch.ca/ourresearch/lit-review-for-crtc-2016-affordability-rajabiun-ellis-middleton.pdf>, at page 32 (footnotes omitted)

[26] Margaret Sanderson, "Investment and Competition Effects from Creating Mandated MVNO Access to Wireless Networks in Canada by Redefining MVNO Networks to Include Public Wi-Fi" in Bell Intervention, Appendix 2 [Sanderson Report], at page 7.

[27] Christine Dobby, "Wind cuts roaming rates following Ottawa's price caps" (21 August 2014), online: Globe and Mail <https://beta.theglobeandmail.com/report-on-business/wind-cuts-roaming-rates-following-crtc-price-caps/article20144519/>.

[28] CBC News, "CRTC ruling prompts Teksavvy to cut prices, hike some internet speeds" (21 December 2016), online: CBC News <www.cbc.ca/news/business/crtc-teksavvy-1.3906730>.

[29] TELUS Intervention, at para 90.

27. Studies including the CMR 2016 have shown that low-income populations are more likely to be mobile-only, so one of the assumptions is that they do not have broadband Internet at home to begin with.[30] That means the option is between mobile wireless plans as currently available, or nothing, if they cannot afford those as well. WiFi-first MVNOs would provide a solution to these particular users, that would not be available otherwise.

28. Third, empirical evidence from 20 countries in Europe in 2014 has demonstrated that “the entry of an additional MVNO into the market decreases the prices of the plans by up to 2%.”[31] There is no question that the presence of MVNOs would improve affordability of telecommunications for Canadians, both through their own plans and price points as well as through imposing competitive discipline on the prices of other wireless service providers.

C. Devices Are Not the Issue in this Proceeding

29. Bell Canada suggests that rather than directly get to the root of the issue and address the price of mobile wireless services directly, that the Commission should instead indirectly curb prices by removing its requirement for maximum two-year contract terms. This would be a poor decision. The Commission implemented 2-year contracts for a number of reasons, as it articulated in the first *Wireless Code* decision:

> 216. The Commission considers that consumers should be able to switch WSPs [wireless service providers], upgrade devices, and take advantage of competitive offers at least every two years, in order to contribute to a more dynamic wireless marketplace and to enable consumers to take advantage of technological advances. In this regard, the Commission notes Bell Canada et al.’s submission that a portion of its customers’ devices are at least two years old. However, the record of the proceeding indicates that while such devices may continue to be functional, they are less likely to be supported by their manufacturers, covered by a warranty, or technologically comparable to contemporary mobile devices, given the rapid pace of technological advancement.
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> 217. The Commission considers that the Wireless Code should minimize consumers’ barriers to switching WSPs and to keeping pace with technological progress. The Code should also enable consumers to take advantage of competitive offers more frequently. The Commission considers that the fundamental barrier to consumers taking advantage of competitive offers every two years is not the availability of three-year contracts in the marketplace, but rather the high early cancellation fees that many consumers must pay if they wish to upgrade devices or change WSPs.
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> 218. The Commission notes that early cancellation fees are a mechanism by which WSPs enforce wireless contracts and considers it appropriate for WSPs to have the ability to charge limited early cancellation fees in certain circumstances. However, the Commission considers that early cancellation fees must be significantly limited to empower consumers to take advantage of competitive offers and technological advances at least every two years. The record of the proceeding is clear that market forces alone have not appropriately restricted early cancellation fees in a way that responds to consumer concerns.
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> 219. Many parties who opposed limiting contract length proposed that early cancellation fees should be calculated over the length of the contract or, for indeterminate contracts, a maximum of 48 months. If a 48-month period were used, a customer under an indeterminate contract could end up paying an early cancellation fee four years into a contract. However, the evidence in this proceeding demonstrates that permitting WSPs to

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[30] “Canadians embrace mobile wireless services, a more precise picture emerges when examining this trend across income quintiles. For instance, wireless-only households are most prominent among the two lowest income quintiles (see Table 2.0.7). This suggests that the rise of mobile-only households does not solely reflect changing preferences but may also be driven by affordability.” CMR 2016, at page 42.

[31] Joan Calzada and Fernando Martinez-Santos, "Pricing strategies and competition in the mobile broadband market" (2016) 50 Journal of Regulatory Economics, accessed at: <http://diposit.ub.edu/dspace/bitstream/2445/107806/1/668398.pdf> at page 20.

require early cancellation fees over such long periods is a barrier to consumers taking advantage of competitive offers.[32]

30. The Commission should not allow the current proceeding to be used as a vehicle through which to re-litigate a side issue that has already been definitively resolved, and is not a subject of the Order-in-Council. As the Commission noted, allowing for longer contracts once again would add to subscriber switching costs and be out of sync with technological progress. This is even more so the case where technology companies may be engaging in planned obsolescence,[33] and will bar consumers from taken advantage of alternative, competition-enhancing deals and options such as the recent iPhone 8 offer from Staples.[34]

31. Whether or not handsets are also unaffordable, that is not the issue in question, and not the problem that WiFi-first or other MVNOs would resolve. The central issue is the price of mobile wireless service itself, particularly mobile Internet data and the connectivity it enables. That connectivity is what WiFi-first and other MVNOs would make more affordable to more Canadians.

II. Canadian Telecommunications Market Lacks Sufficient Competition

A. Canadian Mobile Wireless Market Is Not Competitive

32. The Canadian wireless market may appear to be competitive in light of the various activities that dominant companies engage in,[35] but in many ways, such activities are competitive the way that running on a treadmill would be: there is a lot of movement, but no progress. This is even more so the case when one narrows down the market to options that include or offer mobile Internet data, given that data often seems to be the most expensive yet increasingly critical component of mobile wireless plans for many users.

33. The Commission should remain cognizant that many of the arguments incumbent MNOs put forward, in their submissions and expert reports, rest upon the assumption that the Canadian mobile wireless market is competitive. This is far from a given assumption, however, and evidence suggests that this assessment of the state of telecommunications in Canada is incorrect.[36] Thus, arguments based on the implicit or explicit notion that Canada has a decently competitive mobile wireless market cannot be taken at face value, and may not prove sound regulatory guidance given the underlying mistaken assumption.

34. For example, the Bates White report uses market share movement in the United States as an example of functioning competition: “In 2012, Verizon, AT&T, Sprint, and T-Mobile held connection shares of 35%, 32%, 17%, and 9%, respectively. By the end of 2015, Verizon and AT&T’s shares of connections were almost the same, Sprint’s had dipped to 15%, while T-Mobile’s share had increased to 16%.”[37] This already seems a limited level of market movement, given the top two companies’ market shares remained almost untouched, but Canada has not

[32] Telecom Regulatory Policy CRTC 2013-271, *The Wireless Code* (3 June 2013), at paras 216-19.
[33] Brad Jones, "Planned obsolescence has led to ridiculous product cycles, and it’s time to say enough is enough" (22 May 2016), online: Digital Trends <https://www.digitaltrends.com/computing/apple-iphone-7-planned-obsolescence/>; Nicole Bogart, "Is Apple guilty of using ‘planned obsolescence’ to force iPhone users into upgrading?" (7 September 2016), online: Global News <https://globalnews.ca/news/2926170/is-apple-guilty-of-using-planned-obsolescence-to-force-iphone-users-into-upgrading/>.
[34] Cision, News Release, "Unlocked iPhone 8 and iPhone 8 Plus now available at Staples Canada" (26 October 2017), online: <www.newswire.ca/news-releases/unlocked-iphone-8-and-iphone-8-plus-now-available-at-staples-canada-653382173.html>.
[35] See e.g. Bell Intervention, Appendix 3.
[36] See generally Interventions of Public Interest Advocacy Centre (PIAC) and Canadian Network Operators Consortium (CNOC).
[37] Eric Emch, "An assessment of wholesale roaming policy in Canada" (8 September 2017), in Shaw Intervention, at para 61 (footnotes omitted) [Bates White Report].

seen even this. Rogers describes what appears to be healthy market share movement between incumbent and regional WSPs at the provincial level;[38] however, this only conceals the outstanding lack of movement at the national level.

35. The following tables show Canada's mobile wireless market shares nationally by subscriber and by revenue, in 2005, 2010, and in 2015:

	Rogers	TELUS	Bell	Other
2005	37%	27%	32%	4%
2010	37%	27%	29%	7% (5% other + 2% new entrant)
2015	33%	29%	28%	10%

Table 1. Wireless TSPs' Subscriber Market Share[39]

	Rogers	TELUS	Bell	Other
2005	38%	30%	28%	4%
2010	33%	29%	28%	10%
2015	34%	29%	29%	8%

Table 2. Wireless TSPs' Revenue Market Share[40]

36. In both revenue market shares and subscriber market shares, there has been little movement between Canada's three largest mobile wireless service providers throughout the decade. While "Other" providers, i.e. new entrants, regional telecommunications service providers (TSPs), and other non-incumbent providers, have gradually gained a toehold, the data also shows that they *lost* 20% of their revenue market share between 2010 and 2015. This is despite the Commission having ostensibly attempted to create during these years a more competitor-friendly environment, suggesting that minor tweaks to produce a truly competitive mobile wireless market have not sufficed.

37. It remains to be seen whether this trend has continued, with the release of the 2017 Communications Monitoring Report. What the tables demonstrate, however, is that not only is Canada's mobile wireless market not very competitive, but it has not been for a very long time. The fresh competitive pressure that MVNOs, WiFi-based or otherwise, would bring may be exactly what Canada—and more to the point, Canadians—need(s).

38. As another example of mobile wireless competition, Bell Canada describes its and other TSPs' customer service initiatives and efforts.[41] However, it seems that customer service efforts should occur as a matter of course, in terms of best business practices, and are not so much indicative that the situation is optimal, as their absence would demonstrate that something had gone dramatically wrong. It is also worth noting that compared to the wireline Internet market, which does have mandated wholesale access and is thus more competitive, mobile wireless services remain the subject of a much greater degree of customer complaints to the Commission for Complaints for Telecom-Television Services (CCTS). The former accounted for approximately half of total complaints in 2015-16, 50.3%, nearly twice as many as wireline Internet-related complaints.[42] Of those complaints, data charges were among the top ten issues raised, and the CCTS's 2016 mid-year report shows that data charges have moved up two spots, from ninth to seventh, among customers' top ten issues.[43]

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[38] Rogers Intervention, at para 184.
[39] Data from CMR 2007, "Figure 4.6.8 Wireless TSPs' subscriber market share; CMR 2012, Figure 5.5.4 Wireless TSPs' subscriber market share; and CMR 2016, Figure 5.5.5 TSPs' wireless subscriber market share.
[40] Data from CMR 2007, Figure 4.6.9 Wireless TSPs' revenue market share; CMR 2012, Figure 5.5.5 Wireless TSPs' revenue market share; and CMR 2016, Figure 5.5.6 TSPs' wireless service revenue market share.
[41] Bell Intervention, at paras 34-37.
[42] CCTS Annual Report 2015-16, online: <https://www.ccts-cprst.ca/wp-content/uploads/2017/06/CCTS-Annual-Report-2015-2016.pdf>, at pages 7 and 11.
[43] CCTS Mid-Year Report 2016-2017, Table 3, online: <https://www.ccts-cprst.ca/wp-content/uploads/2017/07/CCTS-Mid-Year-Report-2016-20171.pdf>, at page 3.

B. Flanker or Subsidiary Brands Are No Substitute for Independent Competition

39. In arguing its position that Canada has a competitive mobile wireless market, Bell states, "There are at least nine national and five major regional brands in Canada."[44] That may be true for *brands*, but brands are not parent companies—or rather, they are exactly their parent companies, and that is the problem. Brands of one company are not likely to cut away from that same company's market share in any meaningful way, to the extent a true competitor would. If a brand did, then the company would not likely continue it, except perhaps as a way to stave off abovementioned genuine, independent competitors. Given that Virgin Mobile is an extension of Bell, Koodo and Public Mobile are TELUS, and Fido is Rogers, Canada does not have nine national brands, but closer to four.

40. In the proceeding leading to Telecom Regulatory Policy 2015-177, the Canadian Internet Policy and Public Interest Clinic (CIPPIC) and OpenMedia submitted a joint intervention,[45] which noted flanker brands as a "concerning trend" in the market:

> **'Flanker' brands in place of an organic wholesale market.** Whereas in other jurisdictions, mobile network operators have embraced wholesale and, particularly, wholesale MVNO and other reseller offerings as a means of expanding the reach of their services, no wholesale market at all has developed in Canada, with wholesale revenues (aside from roaming) amounting to just $142 million or less than 1% of net wireless revenues. In other jurisdictions, MVNOs facilitate a wider and deeper market, improving penetration rates and expanding incumbent revenues. However in Canada, the prevalence of incumbent-owned extension or 'flanker' brands provides a strong dis-incentive for the development of resellers. However, while extension brands exhibit lower prices and distinct branding opportunities, they do not fulfill the potential beneficial effects of a robust reseller market as they will never operate to substantially undercut the incumbent's primary revenue share. Indeed, while 2013 saw a substantial increase in extension brand subscriber share (the proportion of wireless customers on extension incumbent brands increased by 8% year over year), this did not correlate with any increase at all in overall penetration (the proportion of wireless customers on primary extension brands decreased by a corresponding 8%) nor to any decrease in the incumbents' proportionate share of overall telecommunications revenues. In this sense, flanker brands in Canada operate to extend market power of all national incumbents rather than provide a potential competitive check on it.[46]

41. The above holds true today. According to the 2016 Communications Monitoring Report, wholesale wireless revenues, omitting roaming, amounted to $160 million in 2015, out of total 2015 wireless retail revenues of $22.5 billion: still less than 1%. As for proportion of customers on extension brands versus parent companies, from 2014 to 2015, primary brands increased their share of subscriber market share from 72% to 73%, while extension brands dipped from 28% to 25%. Where revenue market share is concerned, that decreased from 82% to 80% among primary brands, and correspondingly increased from 17% to 19% among their subsidiaries.[47] Independent competitors remained at 1% market share in both categories throughout—further suggesting that they are unlikely to grow without the Commission providing for MVNO access on fair and reasonable terms.

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44 Bell Intervention, at para E21.
45 This submission did not form part of the record of that proceeding, as it had been filed after the deadline for final reply. However, the passage is presented this way to ensure proper attribution.
46 Final Comments of CIPPIC/OpenMedia written for Telecom Notice of Consultation CRTC 2014-76, at para 32 (footnotes omitted), available at: <https://cippic.ca/uploads/2014-76_FinalReply.pdf>.
47 CMR 2016, Figure 5.5.7 Percentage of revenues and subscribers derived via primary brands, extension brands, and resellers/rebillers, at page 288.

C. Canadian Mobile Wireless Market is Highly Concentrated

42. Parties have stated that Canada's market concentration and associated characteristics such as the Herfindahl-Hirschman Index (HHI) are not necessarily cause for concern. The suggestion is that compared to particular sets of other countries, Canada's HHI is relatively low;[48] and that in any case, "high levels of market concentration are *prima facie* not a basis for inferring market power."[49] However, Canada's level of market concentration, as indicated by HHI level, should remain of concern to the Commission.

43. First, a recent study by the European Corporate Governance Institute (ECGI) examined the connection between market concentration and quality of service in mobile communications. The study found that "by and large the effect of concentration on quality is negative. Quality is higher in more competitive markets."[50] The study went on to conclude that

> contrary to industry claims, markets with higher prices tend to exhibit lower, not higher, quality of services. The results are not super strong. Thus, we would not necessarily conclude that more competition leads to higher quality, but we can certainly reject the opposite claim: that less competition leads to higher quality. In particular, there is no evidence suggesting that a government should tilt the rules in a non-competitive dimension to enhance the quality of services.[51]

44. The above suggests that the Commission should reject the false dichotomy that the MNOs present, between increasing competition through providing for fair MVNO access to networks, and promoting quality of networks with investment levels as an imperfect proxy.

45. Furthermore, the authors "reach the same conclusion when [they] look at the impact of concentration, competition, and prices on investments" directly:

> Most of the coefficients in Table 5.B have the opposite sign of what the industry lobbying theory would suggest (i.e., that high profitability and prices lead to more investments), albeit no coefficient is statistically different from zero. As before, we cannot conclude that more competition and lower profits lead to more investments, but we can certainly reject the opposite claim: that less competition and higher profits leads to more investments.[52]

46. In sum, the authors of the study found that that increasing competition and decreasing concentration in mobile wireless markets will neither harm investments nor ultimate quality of networks. Other evidence on the record indicates that, on the contrary, increasing competition and diversifying the market will likely improve both,[53] and can only benefit Canadians by imposing competitive pricing discipline and increasing affordability.

47. Second, simply because Canada's HHI level is low relative to other countries, does not mean it is objectively low and thus insignificant from the perspective of the HHI itself. If that were the case, then the Index would have been calibrated differently. According to the United States Department of Justice, "The [U.S. antitrust] agencies generally consider markets in which the HHI is between 1,500 and 2,500 points to be moderately concentrated, and consider markets in which the HHI is in excess of 2,500 points to be highly concentrated."[54]

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48 Sanderson Report, at pages 16-17;
49 Eisenach Report, at para 59.
50 Mara Faccio and Luigi Zingales, ECGI, Finance Working Paper No. 494/2017, "Political Determinants of Competition in the Mobile Telecommunication Industry" (January 2017) available at: <http://www.ecgi.global/sites /default/files/working_papers/documents/SSRN-id2893869.pdf>, at page 18.
51 *Ibid*., at page 19.
52 *Ibid*.
53 See e.g. CNOC Intervention.
54 United States Department of Justice, "Herfindahl-Hirschman Index" online: <https://www.justice.gov/atr/herfindahl-hirschman-index>.

48. With a current HHI of 2590,[55] Canada's mobile wireless market would be considered outright highly concentrated, and that is according to standards in the United States. The fact that Canada sits low on the HHI scale compared to other countries in Sanderson's table simply demonstrates that other countries' mobile wireless markets are even more excessively concentrated. It does not excuse Canada, or the Commission, from trying to do better, as opposed to being content with or telling Canadians, "It could be worse."

49. In fact, the Canadian Media Concentration Research Project (CMCRP) has noted that according to the United Kingdom's standards, the Canadian mobile wireless market's state of concentration would be even more concerning:

> We should also bear in mind that, in the UK, the Competition Commission, Office of Fair Trading and Ofcom set the HHI bar lower than in the US and work with an even more sensitive dial regarding the magnitude of change needed to raise alarms. In the UK (and Europe), the standard for a "highly concentrated" market is 2000 or more (versus 2,500 in the US). In the US, a merger has to move the dial more than 200 points before antitrust regulators kick in, while in the UK they get twitchy when the dial swings upward 150 points or more (Ofcom, 2012a, p. 13, fn 27).[56]

50. As mentioned above, Rogers cites changes in market share within provinces as "evidence of a highly competitive market."[57] However, calculating the HHI for each province and territory tells a different story. Table 3 below reproduces Table 5.5.8 from the CMR 2016, which shows wireless subscriber market shares, by province/territory, and adds an additional column showing the calculated HHI number based on the CMR data. An HHI of 10,000 indicates a monopoly, and an HHI number above 2,000 or 2,500 points is considered highly concentrated for the purpose of engaging antitrust or competition concerns:

Province or Territory	Bell Group	TELUS	Rogers	Other	HHI
British Columbia	20	42	37	0	**3,533**
Alberta	25	53	23	0	**3,963**
Saskatchewan	15	13	5	66	**4,775**
Manitoba	8	7	36	49	**3,802**
Ontario	30	22	47	1	**3,594**
Quebec	31	28	28	13	**2,698**
New Brunswick	57	26	17	0	**4,214**
Nova Scotia	54	33	12	0	**4,149**
Prince Edward Island	57	31	12	0	**4,354**
Newfoundland and Labrador	71	27	1	0	**5,771**
Yukon, Northwest Territories, Nunavut	99	0	0	1	**9,802**

Table 3. Wireless Subscriber Market Share and HHI, by Province/Territory (2015)[58]

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[55] Sanderson Report, Table 2, at page 17.
[56] Canadian Media Concentration Research Project, "Mobile Wireless in Canada: Recognizing the Problems and Approaching Solutions" (March 2014), online: <www.cmcrp.org/wp-content/uploads/2014/03/Mobile-Wireless-in-Canada-Final-Report.pdf>, at page 19.
[57] Rogers Intervention, at para 184.
[58] CMR 2016, Table 5.5.8 Wireless service subscriber market share, by province and territory, at page 289.

51. Based on the numbers above, provincial and territorial market concentration is even worse than Canada's national market concentration. This is not a surprise, given that not all providers operate in all regions, resulting in fewer competitors and thus less competition within each bounded geographical area, and available to subscribers in reality. The CMCRP has noted that after accounting for the Bell-MTS merger, Manitoba's HHI still remains alarmingly high at 3,441.[59]

52. While some changes to the above numbers may occur as Freedom Mobile gains a stronger position in the market and as Xplornet activates in Manitoba, it is unlikely that they will prove meaningful soon, if at all, barring an unexpectedly aggressive strategy on Freedom's part (elaborated upon in next section). Otherwise, there is every indication that Canada's mobile wireless market is harmfully concentrated to the extent of impairing competition, both at the national level and on the level of individual provinces and territories. The Commission could remedy this state of affairs by mandating open access for WiFi-based and similar MVNOs, thus injecting much needed independent competition into the market across Canada.

D. Nature of Mergers and New Entrants Fail to Alleviate Competition Concerns

53. Many point to the existence of the "new entrants"—Videotron, Eastlink, and Freedom Mobile—as reason that there is sufficient mobile wireless competition in Canada, in addition to SaskTel in Saskatchewan and formerly MTS in Manitoba. In a similar vein, bringing Xplornet to Manitoba has been presented as a satisfactory remedy to Manitobans losing MTS to Bell in a significant merger.[60] However, neither of these situations or responses fully resolve the competition deficit that Canadians experience in their mobile wireless telecommunications market.

54. First, Manitoba has for the time-being become a three-MNO province. Rewheel, a Finnish mobile wireless, spectrum, and network economics consultancy, has collected extensive empirical data regarding the nature and state of mobile telecommunications markets throughout the European Union as well as throughout OECD countries. On the issue of four-player versus three-player markets, Rewheel found in 2016 that wireless service providers in four-MNO markets throughout the European Union sold *three times* as much 4G data for 35 euros, as did service providers in three-MNO markets.[61] This demonstrates the tangible consumer impact of reducing operators in a region, and goes to further explaining the public interest and civil society opposition to the Bell-MTS merger.

55. Second, where Xplornet has become active in Manitoba, it has begun by itself acquiring a former competitor and another local independent provider in Manitoba: NetSet Communications.[62] Thus the intended remedy for what by many accounts was an ill-advised merger, in turn contributed to further market concentration in telecommunications within the province.

56. Third, Rewheel compares the effects of pure-play, or mobile-centric, service providers (i.e. they provide mobile wireless services only, with the former Wind Mobile as an example) to integrated service providers such as the incumbent MNOs, who sell both wireline broadband and mobile wireless services simultaneously (and in some cases, media and/or broadcasting services as

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[59] Benjamin Klass and Dwayne Winseck, "Why Bell's Bid to Buy MTS is Bad News: Report Submitted to the Competition Bureau assessing Bell Canada Enterprises' proposed bid to acquire Manitoba Telecommunications Services" (May 2016), online: <klass.files.wordpress.com/2016/05/final-cmcrp-report-bell-mts-bid-25may161.pdf>, at page 17.

[60] "The Commissioner is satisfied that the terms of the Consent Agreement, including Bell's commitment to complete the TELUS Transaction, divest assets and provide transitional services to Xplornet, and Xplornet's planned entry into the mobile wireless market in Manitoba, address his concerns related to the Proposed Transaction." Competition, "Competition Bureau statement regarding Bell's acquisition of MTS" (15 February 2017), online: <http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04200.html>. However, see: Rewheel, "Effectiveness of MVNO wholesale access remedies" (25 January 2016), online: <research.rewheel.fi/downloads/Effectiveness_MVNO_wholesale_access_remedies_25012016_PUBLIC.pdf>.

[61] Rewheel, "The state of 4G pricing – 1 st half 2016 DFMonitor 5 th release" (February 2016), online: <research.rewheel.fi/downloads/1H2016_DFMonitor_fifth_release_11052016.pdf> (emphasis added).

[62] Dean Daley, "Xplornet acquires Manitoban fixed-wireless broadband provider NetSet" (23 October 2017), online: <https://mobilesyrup.com/2017/10/23/xplornet-purchases-netset/>.

well). The report states, “Mobile data challenger operators (‘disruptors’) that belong to mobile-only or mobile-centric groups sell *8 times* more 4G gigabyte volume allowance for €35 than EU28 operators that belong to groups that have fixed-line broadband interests.”[63]

57. In a separate report, Rewheel looked more specifically at the differences between “disruptor” TSPs, mobile-only service providers, and integrated (both wireline and mobile wireless) providers. Here, the data showed that “data disruptor operator groups” in the European Union sold, on average, *twelve times* more GBs of data for €35, than did major integrated MNOs such as Deutsche Telekom, Orange, and Telefonica.[64] The research also showed that mobile-only operators sold four times more data for €35, than providers who were also in the wireline business.[65]

58. Canada now has *zero* mobile-only service providers. Consequently, the Commission must be more vigilant than ever in safeguarding the best interests of Canadian telecommunications users. This in part involves ensuring that the market is as competitive as possible, which according to the Rewheel data, involves both four-player markets and mobile-only providers, and ideally “disruptor” providers as well. Manitoba currently has none of the above, and the rest of the country is only marginally better off. Opening the mobile wireless market to MVNOs, WiFi-first or otherwise, would provide a much-needed remedy to this issue.

59. Fourth, Shaw and Wind Mobile gave very little indication after their own merger that they would truly disrupt the wireless market dominated by Rogers, TELUS, and Bell. In fact, some of their public statements have rather indicated the contrary:

> Mr. Shaw said as the wireless company improves its coverage and upgrades to LTE (fourth-generation), "I see pricing somewhat discounted, but probably closer to the incumbents as we go forward, which allows us to increase ARPU [average revenue per user]. But listen, growth is very important to us and that's going to be a key driver, as well as making sure consumers feel there's value.[66] ***
>
> But Freedom Mobile CEO Alek Krstajic has said the Canadian market doesn't warrant as aggressive an approach. The company has seen "great growth already" on its original 3G network, he says, referring to the segment at the lower end of the market. "I think you will see that kind of thing continue in a much more stcognizable approach to how we attack the market." He says the company is not chasing quick subscriber growth but is focused on profitability.[67] ***
>
> "As everyone likes to put us in the corner, then you come out fighting a bit more," Brad Shaw says with a wide-eyed grin. But he's careful to offset his boasts about being unpredictable and "guerilla" with a dose of caution. "You know, we're not going to be crazy and nuts," he says. "*I wouldn't say we're going to 'disrupt' the market*, but really add a lot of value in it."[68] ***
>
> Shaw plans to go the same route as Videotron, not T-Mobile, the fourth wireless player in the U.S. known for its aggressive promotions, Mehr said. While Shaw would consider going a bit further with deals in order to meet its goals, he added it will be *“nowhere near” what T-Mobile has done*.[69]

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[63] *Ibid*. (emphasis added)
[64] Rewheel, "EU's 5G competition challenge" (19 July 2016), online: <research.rewheel.fi/downloads/Mobile_only_vs_fixed_mobile_4G_smartphone_GBs_EU28_eur35_July2016_PUBLIC.pdf>.
[65] *Ibid.*, at page 2.
[66] Christine Dobby, "Shaw to buy Wind Mobile for $1.6-billion" (16 December 2015), online: Globe and Mail <https://beta.theglobeandmail.com/report-on-business/shaw-buying-wind-mobile-for-16-billion/article27791628> (emphasis added).
[67] Christine Dobby, "Shaw's bid to win back the West" (3 February 2017), online: <https://beta.theglobeandmail.com/report-on-business/shaw-communications-strategy-telecom-wireless/article33896160/>.
[68] *Ibid*.
[69] Emily Jackson, "'Millions and millions and millions of subscribers': Shaw's Freedom Mobile wants to grab quarter of wireless market" (14 June 2017), online: Financial Post <business.financialpost.com/technology/millions-and-

60. Much of the above would have been disappointing for Canadians to hear, primed as they have been for the silver bullet fourth-player that Freedom Mobile has been heralded to them as. While the recent launch of Freedom's "BigGig" feature[70] seems promising and commendable, the Commission should consider in its determinations if such moves will be likely to continue occurring going forward, particularly in the event that the CRTC decides not to mandate MVNO access and MVNOs no longer pose a regulatory or competitive threat.

61. After all, while the Commission may consider "new entrants" as such for the purpose of assessing the mobile wireless services market, in a broader sense they remain longstanding, incumbent-like, integrated, and in some cases vertically integrated telecommunications service providers. The incumbent MNOs emphasize the potentially disruptive and competitive aspect of "new entrants" in the mobile wireless context, but they too have recognized that such a designation only goes so far.[71]

62. As interveners such as PIAC and the Internet Society (Canada Chapter) stressed in the first-round interventions, MVNOs are very unlikely to occur organically if MNOs are left to their own devices. There is no evidence from the past that would lead anyone to believe otherwise, and ample grounds on which to believe the contrary.[72] However, the evidence set out above indicates that the Canadian mobile wireless services market is highly concentrated, nationally and within each province and territory; has seen little movement in market shares over more than the past ten years nationally; lacks key competitive pressure from either mobile-only providers or overt "disruptors"; has suffered further concentration and fallen below the critical four-player threshold in Manitoba, without satisfactory remedy; and relies largely on subsidiaries for competition against their own parental entities. Canada simply needs more competition if affordability is to be meaningfully addressed, and permitting WiFi-based or similar MVNOs to access networks on reasonable terms would be a positive and effective solution.

III. High Investment Levels and Facilities-Based Competition Are Not Ends in Themselves

63. Throughout many of the interventions from MNOs, as well as from would-be competitors and underlying the Notice of Consultation and Order in Council themselves, is the idea that facilities-based competition is a good in itself, and will automatically lead to the greatest possible telecommunications welfare for Canadians. This is accompanied by the closely related idea that higher investment levels are also intrinsically tied to better networks. However, the academic literature demonstrates that this is not always necessarily the case, drawing on the wireline context in expanding broadband networks.

64. For example, in examining the policy implications of continually looking to Europe (as seemingly nearly all interveners have done, including OpenMedia), scholars Reza Rajabiun and Catherine Middleton found that a facilities-based approach to competition, and higher levels of capital expenditure, do not always correlate with ultimately higher-quality networks:

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millions-and-millions-of-subscribers-shaws-freedom-mobile-wants-to-grab-quarter-of-wireless-market> (emphasis added).

[70] Emily Jackson, "Shaw turns around cable business at a cost, but wireless wins as Freedom Mobile will finally sell iPhones" online: Financial Post <business.financialpost.com/telecom/shaw-turns-around-cable-business-at-a-cost-but-wireless-wins-as-freedom-mobile-will-finally-sell-iphones>.

[71] Emily Jackson, "Shaw turns around cable business at a cost, but wireless wins as Freedom Mobile will finally sell iPhones" online: Financial Post <business.financialpost.com/telecom/shaw-turns-around-cable-business-at-a-cost-but-wireless-wins-as-freedom-mobile-will-finally-sell-iphones>.

[72] See e.g. Intervention of Tucows; Telecom Decision CRTC 2014-398, *Wholesale mobile wireless roaming in Canada – Unjust discrimination/undue preference* (31 July 2014); and record of proceeding in Part 1 Application by TNW Wireless, *Wholesale Roaming Agreements required under Telecom Regulatory Policy CRTC 2015-177* (5 July 2017).

> Empirical research on regulation, investment and broadband development in Europe documents that investments by incumbents have tended to be lower in European countries with relatively more intensive national regulatory frameworks than in those with more streamlined rules and standards. On the other hand, *EU member states with regulatory frameworks that have been more successful in promoting service-based competition tend to have higher measured connectivity speeds and penetration of next generation fibre-to-the-premises (FTTP) broadband networks.* Access regulation and service-based competition may be associated with lower investment inputs, but they are positively associated with network infrastructure outcomes as measured by broadband speeds. In other words, *higher capital expenditures do not always translate into the development of faster broadband connectivity*.[73]

65. Rajabiun and Middleton also stress that capital expenditure is merely one of many factors involved in network roll-out and quality:

> If the objective of the policymakers is to maximize private sector investment in network infrastructure [in and of itself], the traditional policy model provides a logical basis for exercising forbearance from regulating essential facilities access in the name of long term dynamic efficiency. However, the level of capital expenditures is only one determinant of long term broadband market outcomes. The ability and incentives of operators to translate these investments into network quality improvements is particularly important for evaluating the effectiveness of public policy in promoting network development. Because the existence of market power in the short run relaxes the budget constraints facing incumbent platform operators, it can have negative implications in terms of their incentives to deploy capital.[74]

66. While parties have consistently pointed to the European Union as a counter-example, despite the findings above, they have held up Korea as an exemplary model in terms of regulation and intended results. The important thing to note, however, is that many factors aside from the decision of whether or not to mandate MVNO access contributed significantly to the current success of Korea's mobile wireless networks and markets. This included, according to one study, national IT infrastructure programs, government funding, regulations to incentivize R&D, low subscription prices (i.e. affordability), dense housing patterns, popular mobile apps, an "IT-friendly culture", intense competition between service providers, and changes in business model from closed-network to open-network.[75] Not all of the above are necessarily the case in Canada, such as, for instance, the pre-existing conditions of affordability or intense competition between WSPs.

67. Just as Rajabiun and Middleton indicated above, then, factors such as regulatory approach are not guaranteed to lead to more investment, and if so, higher investment itself may not necessarily result in higher quality networks. It is critical that the Commission keep in mind, when weighing investment arguments, that investment will not necessarily lead to better networks than would occur in any case, and certainly not while also addressing the urgent need to make mobile wireless telecommunications more affordable for all Canadians.

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[73] Reza Rajabiun and Catherine Middleton, "Regulatory Federalism and Broadband Divergence: Implications of Invoking Europe in the Making of Canadian Telecom Policy", Intereconomics 2017, available at: <https://www.ceps.eu/system/files/IEForum42017_5.pdf>, at 217. See also Rajabiun and Middleton, "Regulation, investment and efficiency in the transition to next generation broadband networks: Evidence from the European Union" (2015) 32 Telematics and Informatics 230 at 238: "As noted in the introductory sections to this article (Figs. 1 and 2), EU members with a higher degree of competition (service-based or inter-platform) appear to have developed relatively high capacity networks. This observation stands in sharp contrast to the literature on regulation and investment in the EU outlined in the previous section which suggests more competition may not be good for network development (i.e. due to lower investment incentives for incumbents). If efficiency gains from competition and market discipline are strong enough, policies that promote competition may reduce investment levels and enhance infrastructure quality simultaneously."

[74] *Ibid*. ("Regulation"), at 233.

[75] Seonjin Shin and Joon Koh, "Analysis of Mobile Broadband Service Penetration in Korea" (Paper delivered at the 48th Hawaii International Conference on System Sciences, 2015), available at: <https://pdfs.semanticscholar.org/3c16/a2a0d20aec3d8174956a8c601fcc3c028873.pdf>.

68. This is particularly the case given that academic research in the wireline context has also indicated that “inter-platform competition does not affect significantly retail prices”:

> Our results also suggest that inter-platform competition does not affect significantly retail prices. Entrants that invest in cable and FTTH networks are able to commercialise highquality services, but this does not necessarily mean a reduction in their retail prices. Moreover, although cable and FTTH plans involve lower prices per Mbps than those charged by xDSL plans, the former typically offer more downstream speed and additional services such as TV, which increase prices. A further important aspect that should be taken into account when interpreting our results is that in our model competition is introduced at the national level, but in some countries technologies are geographically segmented and so there is little competition between them. […]
>
> We have found no evidence that interplatform competition and stand-alone entry (the last rung on the “ladder of investment” approach) reduce prices. This means that when entrants bypass the incumbents’ networks, retail prices are not reduced. This might be because this type of entry does not generate sufficient competition, and because the operators offer high-quality products that are more expensive.[76]

69. Further evidence that higher-than-otherwise investment is not guaranteed even if the Commission denies open access to MVNOs (WiFi-based or otherwise) lies in the extent of network sharing that has occurred between MNOs even in the absence of MVNOs. In these cases, individual MNOs are not solely building out their own networks but are also using each other’s in different regions of Canada.[77] The OECD has noted that while there may be benefits from network-sharing, “regulators will need to remain vigilant when overseeing network sharing agreements. Under some conditions network sharing agreements may lead to a decrease in competition similar to a potential diminution of competition experienced with a merger.”[78]

70. Given all of the above, the Commission should consider whether the possibility of marginally greater investment than would occur in the absence of the MVNOs, and the possibility that it may not lead to higher-quality networks than would occur in any case, outweigh the demonstrable need to address affordability of mobile wireless communications for Canadians, in a tangible and meaningful way.

Conclusion

71. There are unquestionably complex issues at the heart of this proceeding, and the Commission has no easy task in balancing them all with a view to fully and accurately accounting for their various interrelations, cross-implications, and potential future consequences. In determining outcomes, however, OpenMedia would urge the Commission to remain as close to the ground as possible. This involves not losing sight of the real people who appeared before a panel of Commissioners last year to express real hardship and needs regarding their mobile wireless services and ability to remain connected. The current proceeding is an opportunity to create tangible, concrete change for the better in people’s lives, and such positive impacts should not be derailed by abstract economic theory that may not guarantee desired outcomes in any case.

72. Thank you for the opportunity to comment.

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[76] Joan Calzada and Fernando Martínez, “Broadband prices in the European Union: competition and commercial strategies” (2013) Research Institute of Applied Economics, Working Paper 2013/09, available at: <http://www.ub.edu/irea/working_papers/2013/201309.pdf> at pages 19 and 20.

[77] OECD, "Wireless Market Structures and Network Sharing" (2014), OECD Digital Economy Papers, No. 243, available at: <https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/CISP(2014)2/FINAL&docLanguage=En> at pages 33-34.

[78] *Ibid*., at page 70.