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## **Telecom Notice of Consultation CRTC 2014-76**

### **Review of mobile wireless services**

**CRTC Reference Nos.: 8620-C12-201401489, 8620-C12-201317230 & 8620-C12-201312082**

**Final Comments of the Samuelson-Glushko Canadian Internet Policy & Public Interest clinic (CIPPIC) & OpenMedia.ca**

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## Summary

1. The Samuelson-Glushko Canadian Internet Policy & Public Interest Clinic (CIPPIC) and the Open Media Engagement Network (OpenMedia.ca) are grateful for this opportunity to provide our final comments in this proceeding – a proceeding which is examining the structure of one of Canada’s wireless communications sector. In the last decade, the access services provided by this sector have become increasingly essential to achieving a range of telecommunications policy objectives as the downstream Internet ecosystem has become embedded in all aspects of our daily lives. The connectivity provided by mobile networks has become particularly important in recent years, and is set to become significantly more so.
2. Below, we provide our reply to many of the assertions that have been made throughout this proceeding. Specifically, we challenge claims by a number of parties that the Canadian wireless market compares favourably with similar international counterparts. We also address challenges to claims that the Canadian wireless landscape would not benefit from additional competition. Finally, we support calls (already on the record) for a number of regulatory measures designed to enhance competition as well as the vibrancy of the Canadian wireless market.

### **I. Canadian Mobile Communications: A Global Comparison**

3. A number of parties on the record of this proceeding have argued that Canada’s wireless services markets fairs extremely well when compared to other countries around the world. We challenge these statements. Canada exhibits extremely low penetration rates and comparably high costs, without any justification for these.

#### ***(a) Penetration rates are low***

4. Canada’s penetration rates are low. Amongst OECD countries, Canada remains dead last in terms of number of mobile subscriptions per 100 inhabitants:

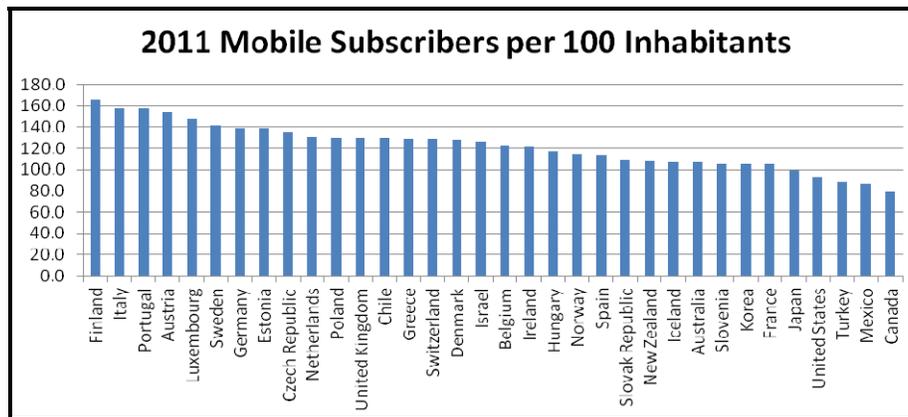


Figure 1: Mobile Subscribers per 100 Inhabitants in OECD countries, 2011

DATA SOURCE: OECD, Communications Outlook 2013, July 9, 2013, <<http://dx.doi.org/10.1787/888932801489>>

This is a concerning statistic, as 99% of Canadians have had *access* to mobile services for several years,<sup>1</sup> suggesting economic factors are the cause of these low adoption rates. This limited adoption is also evident in mobile broadband. By the end of 2012, Canada achieved 37% population compared to 54% across the European Union, up to 46% for Canada by end of 2013 and 62% for the EU by the end of 2013.<sup>2</sup> Some parties to this proceeding have suggested that these comparatively low penetration rates are not reflective of true comparative penetration. Specifically, it has been suggested that in a number of countries, the use of calling party pays billing systems leads customers to purchase multiple subscriptions, thereby distorting true per capita penetration rates. As explained below, accounting for any impact these differences may have does not substantially change Canada’s low mobile penetration rates.

5. To begin with, it is the importance to properly recognize the underlying factors that lead to multiple subscriptions per individual. In developed countries, multiple SIM adoption results from a range of factors. These include, for example, the desire to separate business from personal calls

<sup>1</sup> CRTC, Communications Monitoring Report 2009, August 2009, <<http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2009/2009MonitoringReportFinalEn.pdf>>, p. 238: “The wireless footprint covers approximately 20% of Canada’s geographic area. However, it encompasses approximately 99% of Canadians.”

<sup>2</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, September 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, Table 5.5.10, p. 221, lists 13 million mobile broadband subscribers for 2012 and 16.1 million for 2013, which is 37% and 46% of the Canadian populations for 2012 (34,754,312) and 2013 (35,184,304), respectively (World Bank, Population – Canada 2012 and 2013, <<http://data.worldbank.org/indicator/SP.POP.TOTL>>). By contrast, COCOM reports 54% mobile broadband subscriptions per capita by the end of 2012; European Commission, Communications Committee, “Broadband Access in the EU: Situation at 1 July 2013”, COCOM 14-03, March 25, 2014, <<http://ec.europa.eu/digital-agenda/en/news/broadband-access-eu-situation-1-july-2013>>, p. 34; European Commission, “Trends in European Broadband Markets 2014”, Digital Agenda Scoreboard 2014, May 2014, <<https://ec.europa.eu/digital-agenda/en/news/scoreboard-2014-trends-european-broadband-markets-2014>>, p. 24.

or an attempt to avoid steep roaming rates in neighbouring countries.<sup>3</sup> Canada is not immune from either of these incentives, however. Significant cross-border traffic and steep U.S.-Canada retail roaming rates persist, encouraging repeat travellers to purchase additional SIMs. Additionally, survey data shows that close to 10% of Canadians receive a mobile device from their employer,<sup>4</sup> suggesting that Canadians, too, separate business and personal calling through the use of multiple subscriptions.<sup>5</sup> However, as individual customers seem to derive value from this separation, prevalence of multiple subscriptions for such purposes should be seen as a positive, not a negative.

6. The desire to take advantage of cheaper on-network calls might also be a factor in the adoption of multiple SIMs particularly, as some have noted, in countries that use 'calling party pays' (CPP) as opposed to 'receiving party pays' (RPP) wholesale billing protocols. Where CPP prevails, wireless service providers tend to charge more for off-net calls than for on-net calls and this, in turn, leads customers to purchase multiple SIMs in order to facilitate cost-effective communication across multiple networks. This has led some to suggest that European subscription rates (which operate under CPP billing protocols) are highly inflated and do not offer an accurate picture of actual customer penetration and value in comparison to RPP-based Canadian and U.S. markets.
7. However, the impact of this factor in CPP jurisdictions has been significantly mitigated in recent years with the prevalence of unlimited or high-volume mobile calling plans and strict regulation of termination rates.<sup>6</sup> Regulation of termination rates has lowered the amount wireless service providers must pay when their customers make 'off network' calls. While this value has not yet fully trickled down to retail customers, it has significantly mitigated billing differences between on-net and off-net calls, particularly in European countries. This was noted as far back as 2008:

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<sup>3</sup> An examination of factors affecting multiple SIM uptake can be found in: World Bank, "Maximizing Mobile: 2012 Information and Communications for Development, Part II: Statistical Appendix", CC-BY-2013, <[http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/I\\_C4D\\_Part2\\_.pdf](http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/I_C4D_Part2_.pdf)>.

<sup>4</sup> See CWTA, Consumer Attitudes 2012, <<http://cwta.ca/wordpress/wp-content/uploads/2011/08/CWTA-2012ConsumerAttitudes.pdf>>, p. 24: Out of a total of n=2,011 respondents, n=162 respondents owned a 'cell phone provided by employer' = 8.1%.

<sup>5</sup> Some data suggests this trend towards personal/work separation in mobile devices is not as prevalent in Canada and the United States as it is in European countries. It is suggested that this difference can be attributed to the availability of larger calling blocks in US/Canadian plans, which encourages customers to merge work and personal use under one plan: Report by Analysys Mason for Ofcom, "Case Studies of mobile termination regimes in Canada, Hong Kong, Singapore and the USA", November 26, 2008, Annex 8.1, <[http://stakeholders.ofcom.org.uk/binaries/consultations/mobilecallterm/annexes/annex8\\_1.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/mobilecallterm/annexes/annex8_1.pdf)>.

<sup>6</sup> OECD, Communications Outlook 2013, July 11, 2013, <[http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013\\_comms\\_outlook-2013-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013_comms_outlook-2013-en)>, p. 205-206.

In CPP countries in general, an incentive for a customer to maintain multiple subscriptions is to take advantage of lower rates for on-net calls given that mobile termination charges are passed on to customers in the form of considerably higher prices for off-net calls. While this was the case historically in Europe, as mobile termination rates have fallen, the price discrepancy has reduced and, increasingly the primary reasons for maintaining multiple SIMs are tied to other factors such as a separation between work and personal handsets, and the purchase of data dongles (which have their own individual SIMs).<sup>7</sup>

More recently, the increasing prevalence of unlimited or high volume calling plans across all OECD countries has made it largely irrelevant whether a call is on-net or off-net, as the majority of customer calling to off-net numbers is covered by included minutes in a flat monthly rate.<sup>8</sup>

8. More to the point, data measuring the number of households that owned at least one mobile device strongly reinforces the general view that Canada is a laggard in terms of mobile penetration. In 2010, for example, in all OECD countries other than Canada and Mexico, over 80% of households had at least one mobile telephone, with 21 OECD countries evincing 90%+ per-household penetration.<sup>9</sup> These high unique subscriber penetration rates are confirmed by the European Commission's Eurobarometer E-Communications and Telecom Single Market Household Survey. As reported by BEREC, Eurobarometer found that 92% of EU(28) households had at least one mobile subscription in 2013.<sup>10</sup> This offers strong indication that low Canadian subscription-based penetration rates are an accurate indication of generally low mobile uptake.
9. In conclusion, Canada has been a serious laggard in terms of mobile penetration for some time. This lag cannot be attributed to lack of network coverage or to differences in wholesale billing practices. This strongly implies that cost is a central factor in these shortcomings in mobile adoption. This in turn suggests, at a macro level, surplus demand that could be exploited by increased competition.<sup>11</sup> More importantly, however, these persistently low penetration rates present a need for regulatory intervention. Given the growing importance of mobile, the CRTC

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<sup>7</sup> Report by Analysys Mason for Ofcom, "Case Studies of mobile termination regimes in Canada, Hong Kong, Singapore and the USA", November 26, 2008, Annex 8.1, <[http://stakeholders.ofcom.org.uk/binaries/consultations/mobilecallterm/annexes/annex8\\_1.pdf](http://stakeholders.ofcom.org.uk/binaries/consultations/mobilecallterm/annexes/annex8_1.pdf)>.

<sup>8</sup> OECD, Communications Outlook 2013, July 11, 2013, <[http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013\\_comms\\_outlook-2013-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013_comms_outlook-2013-en)>, p. 205

<sup>9</sup> OECD, Communications Outlook 2013, July 11, 2013, <[http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013\\_comms\\_outlook-2013-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013_comms_outlook-2013-en)>, Figure 8.12, p. 283, citing data from the International Telecommunications Union. Data source: <<http://dx.doi.org/10.1787/888932800406>>

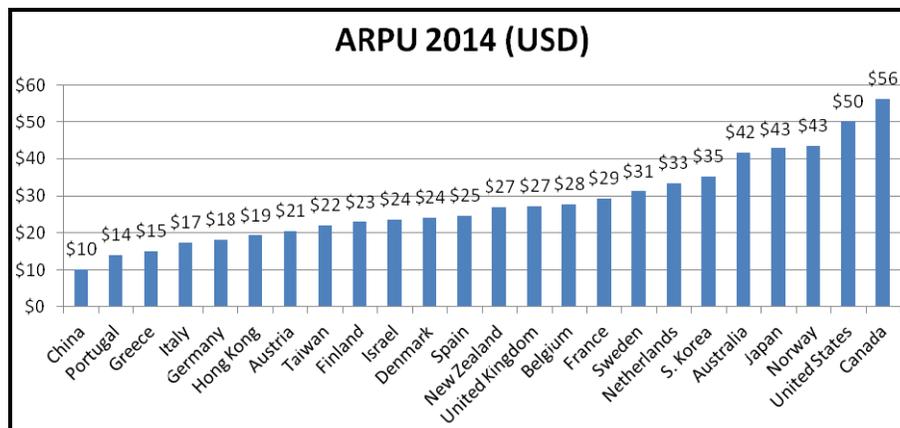
<sup>10</sup> BEREC, "Annual Reports – 2013", June 2014, BoR(14)60, <[http://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/annual\\_reports/4407-berec-annual-reports-for-2013](http://berec.europa.eu/eng/document_register/subject_matter/berec/annual_reports/4407-berec-annual-reports-for-2013)>, p. 62.

<sup>11</sup> Brattle Group, "Canadian Wireless Market Performance and the Potential Effect of an Additional Nationwide Carrier", May 12, 2014, Attachment A to Competition Bureau of Canada, Initial Intervention, Telecom Notice of Consultation CRTC 2014-76, pp. 12-14.

should take steps to secure a basic level of wireless service to all Canadians. While the record of this proceeding suggests that increased competition may successfully increase mobile penetration in Canada,<sup>12</sup> the Commission may need to examine other options such as the addition of a basic service obligation for wireless services if competition-increasing measures fail to secure improved penetration rates. We note that mobile data and telephony has social and communicative value independent and distinct from fixed telephony and data access. Near-universal adoption of both should be an objective.

**(b) Prices are high**

- In addition to low mobile penetration, Canadians face comparably high prices. This is particularly so with respect to pricing offered by incumbent national carriers, which continue to capture 92% of revenues and account for 90% of customers nationally.<sup>13</sup> These high prices are most clearly reflected in Canadian carriers’ ability to extract the highest revenues from their customers, measured in average revenue per subscriber:



**Figure 2: ARPU – International Comparison**

DATA SOURCE: BAML Global Wireless Matrix 2Q2014, April 21, 2014

While not an independent indication of excessive profits, ARPU does provide a strong indication of how much a company is charging comparatively to other comparable companies.

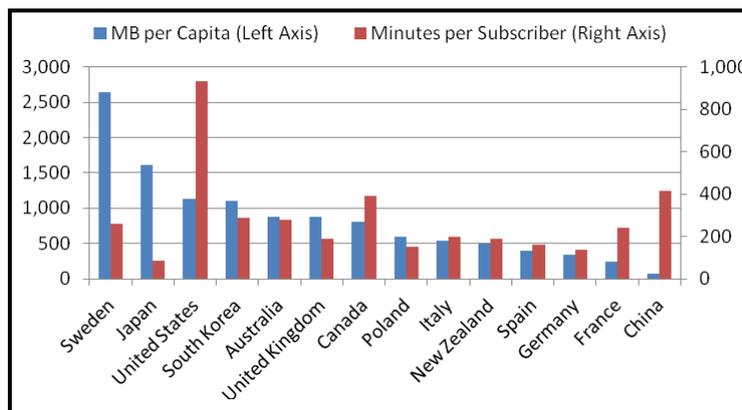
- A number of parties to this proceeding point to high usage patterns amongst Canadians as a means of explaining the comparatively high per-usage revenues being charged. Specifically,

<sup>12</sup> See, generally, Brattle Group, “Canadian Wireless Market Performance and the Potential Effect of an Additional Nationwide Carrier”, May 12, 2014, Attachment A to Competition Bureau of Canada, Initial Intervention, Telecom Notice of Consultation CRTC 2014-76.

<sup>13</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, Figure 5.5.5 TSPs’ wireless subscriber market share and Figure 5.5.6 TSPs’ wireless revenue market share, respectively.

parties suggest that revenues are reasonable when measured ‘per unit’ (per minute or per MB) and as such that overall revenues per user are not high. This approach is problematic for a number of reasons.

12. First, as industry expert Peter Nowak explains, Canadian ARPU is significantly high even when compared to other high-usage jurisdictions.<sup>14</sup> Nowak compares Canada to four jurisdictions with comparable or higher data and voice usage profiles (Japan, United States, United Kingdom and Australia). Canada exhibits comparable data and voice usage to these jurisdictions:



**Figure 3: Average Monthly Usage 2013**

DATA SOURCES: CISCO, Visual Networking Index, Mobile Forecast Highlights, 2013-2018 (Annual Total Data Usage); World Bank, Population (Country by Country populations); Bank of America Merrill Lynch Global Wireless Matrix 2Q2014 (Monthly Minutes of Use per Subscriber); Poland MOU based on UKE figures for 2012<sup>15</sup>

Even among this group of similar high-usage jurisdictions, Canadian ARPU is significantly higher.

13. Second, per unit costs are only loosely tied to customer cost. Customer rate plans are rarely assessed on a per-unit basis. Rather, the majority of customer usage occurs within plans that include buckets of usage. For this reason, most international pricing comparisons focus on usage baskets, not per unit cost. Usage baskets are more reflective of actual customer costs, because customers subscribe to baskets, not units of usage. In this regard, it is notable that Canada ranks on the high end for most usage baskets. Canadian pricing is particularly high

<sup>14</sup> P. Nowak, “Heavy Usage Not the Cause of High Wireless Bills”, June 18, 2013, <<http://wordsbynowak.com/2013/06/18/wireless-usage/>>.

<sup>15</sup> Annual Total Data Usage: CISCO, Visual Networking Index, Mobile Forecast Highlights, 2013-2018, <[http://www.cisco.com/assets/sol/sp/vni/forecast\\_highlights\\_mobile/index.html#~Country](http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html#~Country)>; Populations: World Bank, Population: Total, <<http://data.worldbank.org/indicator/SP.POP.TOTL>>; Minutes of Use per Subscriber: Bank of America Merrill Lynch Global Wireless Matrix. Polish Minutes of Use: Urząd Komunikacji Elektronicznej (UKE), Report on the Telecommunications Market in Poland in 2012, June 2013, <[http://www.en.uke.gov.pl/files/?id\\_plik=13486](http://www.en.uke.gov.pl/files/?id_plik=13486)>, p. 27 reports 1,810 minutes of mobile telephony use per subscriber in 2012, an increase of 7.7% over 2011.

with respect to more generous rate plans – a recent pricing comparison by Wall Communications found that only the United States had higher rates for its highest usage basket. All other surveyed jurisdictions (United Kingdom, France, Germany, Italy and Australia) had significantly lower pricing:

Country	Price	% Canadian Price
Canada	\$93	100%
United States	\$109	117%
United Kingdom	\$58	62%
France	\$50	54%
Germany	\$81	87%
Italy	\$62	67%
Australia	\$85	91%
Canada (New Entrants)	\$48	52%
Canada (National Incumbents)	\$95	102%

**Table 1: International Pricing Comparison, 2014**  
 DATA SOURCE: Wall Communications, Figure 5<sup>16</sup>

These service baskets provide a clearer presentation of customer value than per unit pricing, and demonstrate that even when higher usage scenarios are considered, Canadians are paying more.

14. Perhaps most importantly, advanced network technologies are able to handle the same amount of voice and data usage with the same amount of infrastructure costs due to their capacity to handle data more efficiently – an LTE network can handle the same volume of data and voice as an HSPA network, but at a much lower incremental per unit MB cost.<sup>17</sup> This means that per-unit cross-technology comparative analyses are misleading even in terms of service provider costs. Put another way, higher Canadian usage is not indicative of Canadian wireless service provider’s costs or, by extension, of their return on investment. Hence, even if comparative per unit rates were indicative of customer value, high usage alone does not, therefore, justify high prices.

***(c) Capital Investment & Network Quality***

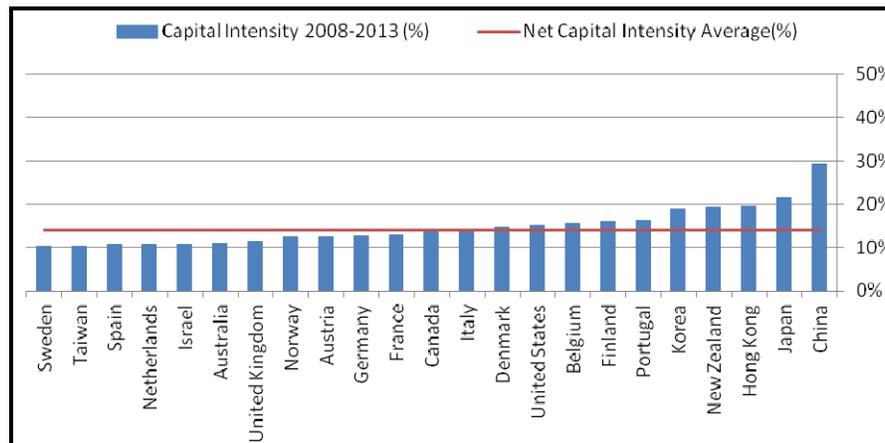
15. A number of parties to this proceeding explain Canada’s low mobile penetration and high prices by pointing to the advanced nature of Canada’s wireless networks. Parties point to Canada’s

<sup>16</sup> All rates are in PPP adjusted CDN\$. Usage basket shown includes 2 GB of data per month and unlimited nationwide calling and texting. Wall Communications Inc., “Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions: 2014 Update”, March 31, 2014, <[http://www.wallcom.ca/pdfs/price-comp-report\\_2014update\\_final\\_CRTC.pdf](http://www.wallcom.ca/pdfs/price-comp-report_2014update_final_CRTC.pdf)>. While only the largest usage basket is presented here, Canada is consistently in the highest 2 or 3 countries across all usage levels in the Wall Communications pricing comparison.

<sup>17</sup> See, for example, W. Polak, “Migration to LTE/SAE for a world connected”, Nokia Siemens Networks , January 2009, <<https://www.atis.org/lte/documents/The%20Road%20from%203G%20to%204G.pdf>>, p. 9 et seq.

early deployment of LTE networks in spite of Canada’s sparse population density. Europe, in particular, is pointed to as a laggard in adoption of next generation wireless networks, and it is argued that this explains the comparatively lower rates charged by EU wireless companies. The argument is that Canadian service providers have invested more in their networks and that Canadian customers are receiving better value.

16. Canada’s sparse population density can, indeed, pose a challenge to network development. However, these challenges are not reflected in the comparable levels of annual revenues invested by Canadian incumbent operators into their networks. A comparison of capital intensity over the last 5 years (2008-2013) shows that Canada is at best in the middle of the pack, with Canadian incumbent operators investing about 13.65% of revenues, slightly below the average of 14.04% across comparable countries:



**Figure 4: Capital Intensity 2008-2013 – Global Comparison**

DATA SOURCE: BAML Global Wireless Matrix 2014, 2Q14. China is excluded for calculation of net capital intensity average of 14.04%, see note<sup>18</sup>

The gains from these modest levels of investment are comparable to those achieved in other countries. Canada achieved 72% LTE population coverage by beginning of 2013 and 81% population coverage by start of 2014.<sup>19</sup>

<sup>18</sup> Capital Intensity (2008-2013) for each country is calculated as five year total CAPEX for reported operators, divided by the total revenues for those countries. Capital intensity average for all countries is calculated as the sum of all five year capital intensity percentages for all countries divided (excluding China) divided by total number of countries (excluding China). China is excluded from the average calculation to correct for its uncharacteristically high levels of capital intensity, but included in the graph given its high number of subscribers and high average speeds.

<sup>19</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, September 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, p. 207; CRTC, Communications Monitoring Report 2013 – Telecommunications, September 2013, <<http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2013/cmr2013.pdf>>, p. 157.

17. In the United States, by comparison, LTE population coverage reached 68% by late 2011 and 86% by late 2012, with one single operator (Verizon) projecting, at the time, 92% population coverage by the end of 2013. A number of European countries are showing recent and rapid LTE rollout as well. COCOM, for example, reports that 8 EU countries achieved 50% or more population LTE coverage by mid-2013,<sup>20</sup> up to 14 by the end of 2013, when EU-wide LTE population coverage reached 59%.<sup>21</sup> The United Kingdom and France have each achieved 73% and 60% population coverage, respectively, including coverage of outdoor geographic premises.<sup>22</sup> Germany registered 67% LTE population coverage by the end of 2012,<sup>23</sup> up to 81% by October 2013.<sup>24</sup> Norway and Finland, both of whom face population density challenges comparable to Canada's, have achieved 69% and 85% population coverage, respectively, by end of 2014 at comparable levels of historic capital intensity.<sup>25</sup> Australia's largest provider has also exceeded 66% LTE population coverage by mid-2013,<sup>26</sup> in spite of even lower population density levels than Canada. These countries are succeeding in achieving LTE rollout with comparable or lower capital intensity, while maintaining broader penetration rates and mostly with significantly lower prices and ARPU. Yet Germany, France, the United States, the United Kingdom and Australia all have comparable levels of capital intensity (varying at most by 2-3%).
18. Many of these jurisdictions also outperform Canada in terms of the average speed of their mobile networks. Recent assessments rank Canada as 17<sup>th</sup> in global average download speeds and only 22<sup>nd</sup> in terms of global upload speeds:

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<sup>20</sup> European Commission, Communications Committee, "Broadband Access in the EU: Situation at 1 July 2013", COCOM 14-03, March 25, 2014, <<http://ec.europa.eu/digital-agenda/en/news/broadband-access-eu-situation-1-july-2013>>, p. 36; Sweden, Portugal, Finland, Estonia, Denmark, Luxembourg, Germany and Poland.

<sup>21</sup> European Commission, "Trends in European Broadband Markets 2014", Digital Agenda Scoreboard 2014, May 2014, <<https://ec.europa.eu/digital-agenda/en/news/scoreboard-2014-trends-european-broadband-markets-2014>>, p. 5.

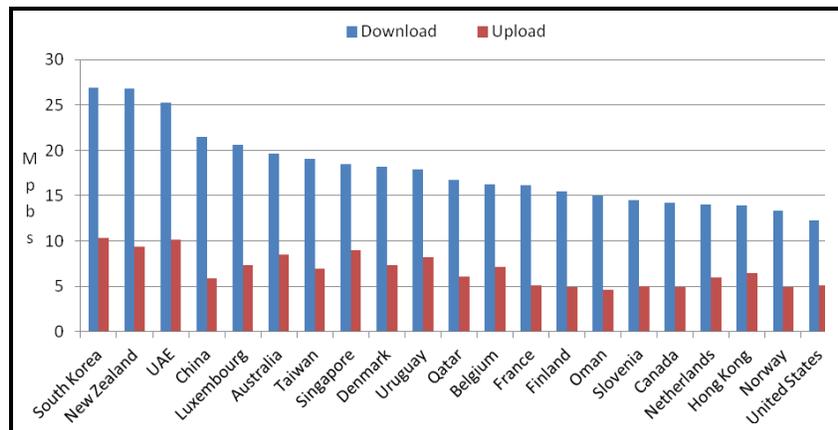
<sup>22</sup> Ofcom, The Communications Market Report, August 7, 2014, <[http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr14/2014\\_UK\\_CMR.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr14/2014_UK_CMR.pdf)>, p. 304 and ARCEP, Annual Report 2013, June 2014, <[http://www.arcep.fr/uploads/tx\\_gspublication/rapport-activite-2013-english-version.pdf](http://www.arcep.fr/uploads/tx_gspublication/rapport-activite-2013-english-version.pdf)>, p. 98.

<sup>23</sup> Bundesnetzagentur, Annual Report 2013, 2014, <<https://www.bundesnetzagentur.de/SharedDocs/Downloads/EN/BNetzA/PressSection/ReportsPublications/2014/2013AnnualReport.pdf>>, p. 77.

<sup>24</sup> European Commission, "Trends in European Broadband Markets 2014", Digital Agenda Scoreboard 2014, May 2014, <<https://ec.europa.eu/digital-agenda/en/news/scoreboard-2014-trends-european-broadband-markets-2014>>, p.5.

<sup>25</sup> European Commission, "Trends in European Broadband Markets 2014", Digital Agenda Scoreboard 2014, May 2014, <<https://ec.europa.eu/digital-agenda/en/news/scoreboard-2014-trends-european-broadband-markets-2014>>, p. 5.

<sup>26</sup> ACMA, Communications Report 2012-13, November 2013, <[http://www.acma.gov.au/~media/Research%20and%20Reporting/Comms%20Report%202012%2013/PDF/A\\_CMA%20Communications%20report%20201213\\_WEB%20pdf.pdf](http://www.acma.gov.au/~media/Research%20and%20Reporting/Comms%20Report%202012%2013/PDF/A_CMA%20Communications%20report%20201213_WEB%20pdf.pdf)>, p. 10.



**Figure 5: Average Wireless Data Speeds, Top 20**

DATA SOURCE: Ookla Net Index, 30 days ending August 18, 2014<sup>27</sup>

Moreover, only one Canadian city ranks in the top 20 fastest for average download speeds (Montreal), with only 2 Canadian cities (Montreal and Toronto) ranking in the top 50 cities for top download speeds.<sup>28</sup>

19. Given the modest levels of investment as a proportion of revenues in Canada, low population density cannot explain Canada’s comparably low mobile penetration rates, nor its comparably high prices. For one thing, Australia, outperforms Canada on all metrics (lower ARPU, lower retail pricing, higher mobile penetration rates, faster average speeds, higher data usage, comparable levels of capital intensity) while being more sparsely populated.<sup>29</sup> To some extent, this comparative disparity between low population density and lower than expected levels of capital intensity can be explained by Canada’s low geographic coverage. In the United States, for example, 3G/4G coverage not only extended to 99.5% of the population in late 2012, but also to 68% geographic coverage, including 91% of all roads.<sup>30</sup> This includes comparably extensive 3G/4G coverage in low density rural areas, including 97% population coverage by at least two providers, 87% rural road coverage and 64% geographic coverage.<sup>31</sup> Germany

<sup>27</sup> Ookla, Net Index, Mobile Download Index, <<http://www.netindex.com/mdownload/>> and Mobile Upload Index, <<http://www.netindex.com/mupload/>>, data retrieved on August 18, 2014.

<sup>28</sup> Ookla, Net Index, Mobile Download Index, <<http://www.netindex.com/mdownload/>> and Mobile Upload Index, <<http://www.netindex.com/mupload/>>, data retrieved on August 18, 2014.

<sup>29</sup> World Bank, “Population Density (people per square kilometre of land) – 2013”, accessed August 18, 2014, <<http://data.worldbank.org/indicator/EN.POP.DNST>>.

<sup>30</sup> FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>, Table 32, p. 135.

<sup>31</sup> FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>, pp. 27-28.

has similarly covered 65% LTE geographic coverage in 2013.<sup>32</sup> By contrast, Canadian carriers have achieved only 20% geographic coverage,<sup>33</sup> largely concentrated in Alberta, Saskatchewan and to a lesser extent Manitoba.<sup>34</sup> This lower level of coverage may explain to some degree the mediocre levels of Canadian capital investment to revenue proportions.

20. This comparative analysis suggests that high Canadian prices are not the result of higher network investment by Canadian carriers. The Brattle Group report analyzes returns on investment for two of Canada's three national incumbents and concludes that both are registering above-normal rates of return on their capital expenditure, indicating excess profits.<sup>35</sup> Taken together, this is strong evidence that Canadians are paying more and getting less, while Canadian carrier prices can be lower while still securing a reasonable and competitive return on their investments.

## **II. Concentration & Market Power in Wireless Mobility**

21. A number of parties to this proceeding urge a re-evaluation of the CRTC's framework established in Telecom Decision CRTC 94-19 as a means of assessing whether continued forbearance is justified. This framework is described in TD CRTC 94-19 as follows:

Various parties advanced criteria that the Commission should use in determining whether or not to refrain from regulation, and commented on the markets with respect to which the Commission should refrain. The criteria advanced generally reflected themes common in competition policy literature and jurisprudence, and can be summarized as follows:

- (1) the Commission should forbear when a market becomes workably competitive;
- (2) a market cannot be workably competitive if the dominant firm possesses substantial market power;
- (3) market power is a function of three factors: (a) market share held by the dominant firm; (b) demand conditions affecting responses of customers to a change in price of the product or service in question; and (c) supply conditions affecting the ability of other firms in the market to respond to a change in the price of the product

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<sup>32</sup> Bundesnetzagentur, Annual Report 2013, 2014, <<https://www.bundesnetzagentur.de/SharedDocs/Downloads/EN/BNetzA/PressSection/ReportsPublications/2014/2013AnnualReport.pdf>>, p. 77.

<sup>33</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, p. 207.

<sup>34</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, map 5.5.2, p. 235.

<sup>35</sup> Brattle Group, "Canadian Wireless Market Performance and the Potential Effect of an Additional Nationwide Carrier", May 12, 2014, Attachment A to Competition Bureau of Canada, Initial Intervention, Telecom Notice of Consultation CRTC 2014-76, p. 26.

or service;

(4) high market share is a necessary but not sufficient condition for market power; other factors must be present to enable a dominant firm to act anti-competitively.<sup>36</sup>

While the presence of substantial market power should, in and of itself, repudiate forbearance of any Commission powers under section 34 of the Act, it should not be a necessary requirement. The overriding question for a determination must be whether specific powers under the Act are needed to ensure the policy objectives are met and specifically whether the interests of users are being met.<sup>37</sup> Canada's incumbent national providers do possess substantial market power, in spite of the claims of some parties to this proceeding. Regardless of market power, however, Canada's wireless market requires regulatory intervention in order to address shortcomings in penetration rates and persistently high pricing.

22. Market power is an integral factor to assessing whether there is sufficient competition in the telecommunications market. Market power is typically defined as the ability of market players to act in ways that materially increase retail pricing or diminish the quality of a service. High HHI concentration levels in a relevant product and service market can be an indication that substantial market power exists. Canadian wireless concentration levels range from highly concentrated to extremely concentrated, depending on how these are measured. Based on subscriber market share across a national market for wireless services, HHI is 2,774 or 'highly concentrated', rising to 2,884 when measured by revenue shares. As noted by the Brattle Group's industry-wide study, however, concentration is significantly higher within each Provincial geographic region, ranging from 2,725 to 5,958.<sup>38</sup> Since wireless markets have both regional and national dimensions, both of these metrics are relevant to an understanding of overall concentration levels.<sup>39</sup> Market share concentration is but one factor, however.
23. The Competition Bureau's Brattle Group report provides a comprehensive inquiry into the return on investment garnered by two of Canada's three national incumbents, concluding that both Rogers and TELUS demonstrate profits consistently above normal returns on their investments relative to costs. This conclusion has been challenged by some parties to this

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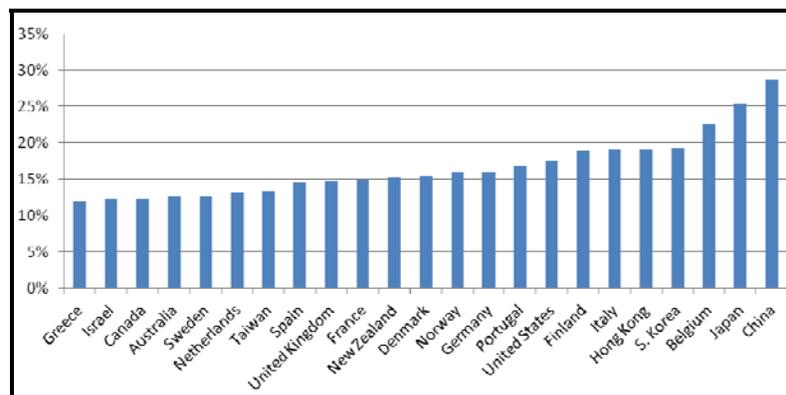
<sup>36</sup> Telecom Decision CRTC 94-19, Review of Regulatory Framework, September 16, 1994, <<http://www.crtc.gc.ca/eng/archive/1994/dt94-19.htm>>.

<sup>37</sup> *Telecommunications Act*, SC 1993, c. 38, sub-sections 34(1) and (2).

<sup>38</sup> Brattle Group, "Canadian Wireless Market Performance and the Potential Effect of an Additional Nationwide Carrier", May 12, 2014, Attachment A to Competition Bureau of Canada, Initial Intervention, Telecom Notice of Consultation CRTC 2014-76, Table 1, p. 8.

<sup>39</sup> FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>, p. 19.

proceeding, particularly on a few bases. First, it is suggested that revenues should be *expected* to be above current marginal costs in light of the high periodic fixed costs inherent in telecommunications service provision.<sup>40</sup> However, the Brattle Group’s analysis accounts for this by examining all fixed costs since 1988. Second, the report’s profit analysis is flawed for relying on anticipated future income, rather than only focusing on revenues to date.<sup>41</sup> However, the Brattle Group’s assumptions of future profits are not only defensible but relatively conservative. Canadian incumbents are in the final stage of rolling out LTE technologies, meaning they are at the end of a relatively intensive stage of capital investment. Indeed, 2013 represented a significant drop in capital investment, representing an 11.4% decrease in net investment year over year.<sup>42</sup> In that year, Canadian incumbents exhibited some of the lowest levels of capital intensity in the developed world:



**Figure 6: Capital Intensity 2013 – Global Comparison**  
 DATA SOURCE: BAML Global Wireless Matrix 2014, 2Q14

Finally, some suggests that the Brattle Group’s profit analysis is flawed for its *ex post* assessment of internal rate of return on investment – essentially for failing to account for *ex ante* risk calculations. Put another way, an investment will be rationally undertaken if it is likely to break even (match 15% investment level), hoped to generate a higher return if successful (30%) and also might fail (0% return).<sup>43</sup> However, the Brattle Group does take this into account in its analysis. Indeed, it expressly acknowledges that above-normal returns can arise for several reasons, including a string of successful investments. However, it concludes that where two

<sup>40</sup> M. Sanderson, “Wireless Retail and Wholesale Services in Canada: Assessing the State of Competition”, Appendix 3 to Bell Canada, Initial Comments, Telecom Notice of Consultation CRTC 2014-76, p. 8.

<sup>41</sup> Bell Canada, Second Intervention, Telecom Notice of Consultation CRTC 2014-76, August 20, 2014, para. 36, but see para. 38, arguing that it is anticipated that returns on investment in the wireless context will be low at first, but increase over time.

<sup>42</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, Table 5.0.4.

<sup>43</sup> Bell Canada, Second Intervention, Telecom Notice of Consultation CRTC 2014-76, August 20, 2014, paras. 37-38.

leading firms in a highly concentrated market earn above-normal profits, it is less likely that this can be attributed to firm-specific advantages or successes and more likely indicative of an exercise of market power.<sup>44</sup>

24. There are additional concerns arising from the potential of coordinated activities amongst Canada's three national providers. Contrary to claims made by some parties to this proceeding, the wireless industry is *highly* susceptible to coordinated activity amongst incumbent firms. In its analysis of a proposed merger between two national wireless providers, the U.S. FCC summarized these susceptibilities as they apply to the wireless services context:

As the courts have stated, “[t]he combination of a concentrated market and barriers to entry is a recipe for price coordination.” That coordination need not be explicit, and typically is not. But “[t]acit coordination is feared by antitrust policy even more than express collusion” as it is harder to detect and to prevent ... Coordinated effects are of particular concern here because the retail mobile wireless services market, being relatively concentrated and hard to enter, appears conducive to coordination... Features of this market make it likely that the remaining three nationwide providers would be able to reach a consensus on the terms of coordination (by identifying a mutually agreeable coordinated price), deter cheating on that consensus (by undercutting the coordinated price to steal high-margin business from its rivals), and prevent new competition in this market. Because these providers offer the same plans and share the same prices nationwide, increased coordination would most likely take the form of raising the level of prices.

Reaching a consensus would be facilitated by the small number of firms and the use of national prices and service plan offerings by most providers across most geographic markets. The transparency of prices (firms post and publicize them to market their plans), small size of individual retail transactions relative to the size of the market, and the common use of contracts by postpaid customers make it likely that cheating on a coordinated consensus would be detected rapidly and matched (or otherwise punished). Indeed, the nationwide providers pay close attention to each other's prices and quickly detect, evaluate and, if they choose, respond to pricing moves by rivals. Cheating would be deterred because a firm that expects its rivals to respond quickly to a price cut, as by matching, is unlikely to find it profitable to undercut a high coordinated price. Finally, new competition that would undermine or deter coordinated price is unlikely for reasons discussed in connection with analyzing the possibility that entry or expansion would preclude or counteract unilateral effects.<sup>45</sup>

The Canadian market is no different.

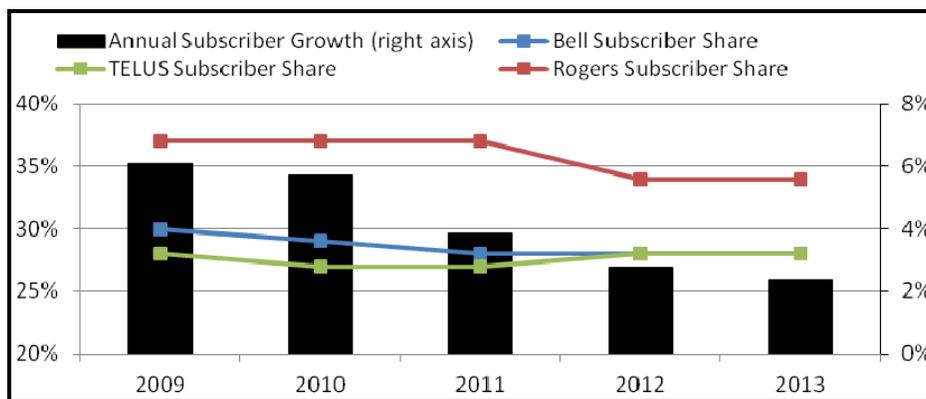
25. Some have claimed that coordination is unlikely in the wireless telecom industry because of pricing complexity arising from bundling, increased demand and the innovative nature of the

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<sup>44</sup> Brattle Group, “Canadian Wireless Market Performance and the Potential Effect of an Additional Nationwide Carrier”, May 12, 2014, Attachment A to Competition Bureau of Canada, Initial Intervention, Telecom Notice of Consultation CRTC 2014-76, pp. 26-27.

<sup>45</sup> FCC, Staff Analysis and Findings, AT&T and T-Mobile, WT Docket No. 11-65, <[https://apps.fcc.gov/edocs\\_public/attachmatch/DA-11-1955A2.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DA-11-1955A2.pdf)>, paras. 74-78.

industry.<sup>46</sup> However, given that all three Canadian incumbents are comparably converged in similar ways, they are able to match bundling offerings as readily as they are able to match direct pricing. These bundles are not overly complex. Indeed, the Commission has started tracing bundled pricing baskets in its annual Communications Monitoring Report, demonstrating that they are capable of ready comparison.<sup>47</sup> Further, only about 10.4 million bundled subscriptions in Canada, amounting to a *maximum* of a third of all mobile subscriptions (28.5 million).<sup>48</sup> With respect to claimed rapid growth in demand, while the percentage of net additions from each of the three national incumbents does fluctuate somewhat annually, these providers have large and stable subscriber bases and hence the impact on net subscriber shares remains marginal:



**Figure 7: Subscriber Growth, National Incumbents**

DATA SOURCES: Annual Subscriber Shares: CRTC, Communication Monitoring Reports, 2009-2014; Net Annual Subscriber Growth: CWTA, Facts & Figures, 2009-2013<sup>49</sup>

In the past five years, the total annual increase in subscribers collectively gained by the national incumbents ranged from 6-2%, while the total subscriber shares of each individual national incumbent remained substantially unchanged, with the exception of an adjustment from 2010-2012 to account for the AWS new entrants.<sup>50</sup> This annual growth and shift in demand can hardly be characterized as ‘volatile’, and is not sufficient to mitigate the coordination risks.

<sup>46</sup> M. Sanderson, “Wireless Retail and Wholesale Services in Canada: Assessing the State of Competition”, Appendix 3 to Bell Canada, Initial Comments, Telecom Notice of Consultation CRTC 2014-76, pp. 26-28.

<sup>47</sup> CRTC, Communications Monitoring Report 2013 – Telecommunications, September 2013, <<http://www.crtc.gc.ca/eng/publications/reports/policymonitoring/2013/cmr2013.pdf>>, p. 27; CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, Table 6.0.4, p. 256.

<sup>48</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, Tables 2.0.3 and 2.0.4.

<sup>49</sup> Annual Subscriber Growth for each year calculated by as follows: {Total number of subscribers added that year by TELUS, Rogers and Bell} divided by {Total number of subscribers at end of year for TELUS, Rogers and Bell}. CWTA, “Facts & Figures” 2009-2013, <<http://cwta.ca/facts-figures/>>, accessed October 20, 2014.

<sup>50</sup> Bell subscriber share dropped from 30% in 2009 to 28% in 2013, while Rogers dropped from 37% to 34% over the same period of time (see Figure 7), accounting for the 5% in subscriber share gained by the new entrants.

26. Finally, while the wireless service industry does *facilitate* significant innovation, it is not in and of itself innovative. The majority of service innovations that can be attributed to national incumbents relate to advances in the speed and efficiency of networks but, as indicated above, Canada's LTE adoption is in line with many of other countries around the world. Mobile devices are characterized by innovation, as are the downstream markets reached by these devices, but mobile service providers do not create the devices, nor are can credit for downstream application layer innovation be attributed to them.
27. Indeed, some exercises of market power by Canadian national incumbents (such as the practice of locking in customers to 3 year contracts, until recently) have acted more to hinder rapid innovation and change rather than to enhance it. Below, we examine these and some other historical examples that constitute potential indicia of adverse use of market power by Canada's national incumbents.

### ***Concerning Trends in the Canadian Wireless Market***

28. **Ubiquity of 3 year Contracts:** Three year contracts backed by stiff penalties for early termination became ubiquitous prior to regulatory intervention in TRP CRTC 2013-271. Such three year lock-in acted as a barrier to the development of a dynamic marketplace by effectively preventing customers from taking advantage of competitive offers.<sup>51</sup> While important regulatory intervention has already begun to curb this practice (with positive effect, as incumbent prices have dropped somewhat), the negative impacts of this practice are still being felt, as more than half of Canadians remain in a 2+ year contractual commitment as of 2013 while the effects of the Wireless Code gradually come into effect.<sup>52</sup> More importantly, the ubiquitous and sustained adoption of 3 year contractual lock-in amongst Canada's national incumbents – a unique situation that did not emerge in other jurisdictions – is indicative of market power.<sup>53</sup> Finally, while we do not challenge the reasonableness of 2 year contracts in general, we note that even this more limited contractual length (coupled with limited early termination rates) imposes a switching cost and, by extension, reduces the extent to which risk of switching can act as a check on marker power and coordination. As recently noted by the FCC with respect to the effect of contracts in the US wireless market:

Post-paid customers account for nearly three-fourths of retail wireless subscribers, and a higher percentage for AT&T and Verizon... The vast majority of postpaid customers have a contract (often

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<sup>51</sup> Telecom Regulatory Policy CRTC 2013-271, para. 217.

<sup>52</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, figure 5.5.3.

<sup>53</sup> Telecom Regulatory Policy CRTC 2013-271, para. 218.

for two years), and such contracts commonly impose early termination fees. Under such circumstances, a competitor cannot expect to induce much switching immediately by unexpectedly lowering price, giving rivals time to observe and respond (for example by matching the price decrease).<sup>54</sup>

This is particularly so for incumbents who have amassed a large base of locked-in customers.

29. **Network Sharing for Some, Steep Roaming Rates for Others:** There has been a recent proliferation of network sharing agreements. Under these, two of Canada's three major incumbents (Bell and TELUS) no longer compete with each other on network quality, as they are using a joint network. Rogers has similar arrangements with MTSA and Vidéotron in Manitoba and Québec, respectively, regarding sharing of network capacity.<sup>55</sup> These agreements have negative competitive impact as new entrants must pay steeply in order to access the same geographical coverage, and are therefore more greatly constrained from competing. Moreover, as pointed out by the Competition Bureau of Canada in its Reply Comments and the Commission in Telecom Decision CRTC 2014-398, Rogers has been abusing its market power to unjustly discriminate against new entrants for years in its roaming arrangements. In the absence of market power, Rogers would not need to discriminate in its wholesale arrangements with new entrants, but rather would view these as opportunities to capture additional revenues from its existing network holdings.
30. **Assessing Impact of Advertising:** A number of parties to this proceeding point to the advertisement initiatives undertaken by Canada's national providers as an indication that there is no substantial market power. While Canadian national providers do provide a high volume of advertisements, the quality of such messaging needs to be assessed. Many of these advertisements do not indicate any significant product differentiation amongst the national incumbents. For example, some incumbents advertised the shift from three to two year contracts in mobile phone service packages – a regulatory measure imposed uniformly on all Canadian providers and no possible means for service differentiation among them.<sup>56</sup> Some advertisements

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<sup>54</sup> FCC, Staff Analysis and Findings, AT&T and T-Mobile, WT Docket No. 11-65, <[https://apps.fcc.gov/edocs\\_public/attachmatch/DA-11-1955A2.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DA-11-1955A2.pdf)>, footnote 224.

<sup>55</sup> Bell Canada, First Intervention, Telecom Notice of Consultation CRTC 2014-76, Attachment 4: Selective Comparative Activity in Canada's Wireless Industry", May 15, 2014, p. 5: "Rogers to bring LTE to Manitoba customers through extended network sharing agreement with MTS"; "Vidéotron and Rogers announced an agreement to bring LTE to even more customers in the province of Québec and the Ottawa region. Under the 20-year agreement, the two companies will pool their efforts to quickly build out and operate a shared LTE wireless network, the most advanced wireless technology in the world."

<sup>56</sup> Bell Canada, First Intervention, Telecom Notice of Consultation CRTC 2014-76, Attachment 4, "Selective Comparative Activity in Canada's Wireless Industry", May 15, 2014, p. 4: "TELUS offers Canadians clear and simple two-year wireless plans".

do, indeed, advertise the acquisition of new devices, network investment commitments and network expansion initiatives. While indicative of an ongoing intention to compete for customers, however, these advertisements have not led to comparatively high levels of capital intensity (see Figure 4 above) or population coverage (see paras. 17-19, above), nor to world-class acquisition of advanced devices.<sup>57</sup> The limited impact of these advertising initiatives is therefore concerning, and should not weigh heavily against a finding that Canadian service providers wield substantial market power, nor against a finding that the Commission must reinstate its forborne powers in order to achieve its policy objectives.

31. **Conformity in Pricing & Packaging:** The national incumbents offer similarly priced and configured service packages through their primary brands. For example, on its Bell Mobility site, Bell provides the following advertisement:

Choosing a provider: knowing the facts			
Who would you choose?			
	Bell	Competitor A	Competitor B
Standard monthly rate for an unlimited nationwide plan with 500 MB of data <sup>1</sup>	\$70	\$70	\$70
Number of LTE site/cellular towers <sup>2</sup>	▼ 4,020	3,863	▼ 4,020
Number of live mobile TV channels supported	▼ 35+	16	0
Number of corporate owned stores for shopping and service <sup>3</sup>	▼ 768	236	300

The choice is clear. Just three ways Bell is better.

Figure 8: Bell Mobility Advertisement, October 20, 2014<sup>58</sup>

Even in its own advertisements on its own website, Bell Mobility cannot differentiate itself from the other national incumbents in terms of the top two metrics: pricing and network quality. It has identical pricing to Rogers and TELUS, and shares its LTE network with TELUS. This leaves only ancillary metrics to highlight such as perceived benefits of converged holdings (Bell Mobile TV) and number of retail outlets owned. Further, while Canada’s national incumbents have introduced unlimited talk and text plans following competitive pressures from new entrants, they have yet to introduce any unlimited data plans at all.<sup>59</sup> Finally, as cross-carrier network technologies have rapidly converged on LTE and HSPA, any historical differentiation between

<sup>57</sup> See CIPPIC/OpenMedia.ca, Final Reply, TNC RTC 2012-557, March 15, 2013, <[https://cippic.ca/uploads/2012-557\\_FinalReply.pdf](https://cippic.ca/uploads/2012-557_FinalReply.pdf)>, Table 3, p. 8.

<sup>58</sup> Screenshot taken October 20, 2014: <<http://www.bell.ca/Mobility>>.

<sup>59</sup> Wall Communications Inc., “Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions: 2014 Update”, March 31, 2014, <[http://www.wallcom.ca/pdfs/price-comp-report\\_2014update\\_final\\_CRTC.pdf](http://www.wallcom.ca/pdfs/price-comp-report_2014update_final_CRTC.pdf)>, p. 27.

Canada's incumbents (CDMA vs. GSM) has largely disappeared. All in all, this leaves a highly similar set of offerings across all national incumbents, suggesting a lack of service innovation and, by extension, a lack of market-driven incentive to differentiate.

32. **'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.<sup>60</sup> In other jurisdictions, MVNOs facilitate a wider and deeper market, improving penetration rates and expanding incumbent revenues.<sup>61</sup> 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.<sup>62</sup> 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.
33. **No national competitor has adopted the 'challenger' mantle.** While all the national incumbents continue to compete for subscribers annually, no national competitor in Canada has adopted the mindset, strategy or branding of an industry disrupter or 'maverick'.<sup>63</sup> In the U.S., for

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<sup>60</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, Table 5.6.6 Wireless Mobile Wholesale Revenues, by Type of Service (non-roaming wholesale revenues for 2013 were \$142 million) and Table 5.5.0 Wireless Market Sector at a Glance (total wireless revenues for 2013 were \$20.2 billion).

<sup>61</sup> S. Sale & P. Rusby, "MVNO Market Analysis: Status Update, Emerging Opportunities and Outlook for Europe", April 2014, Analysys Mason, Executive Summary, <<http://www.analysismason.com/Research/Content/Reports/MVNO-market-analysis-Apr2014-RDMM0/>>, p. 13.

<sup>62</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, Table 5.5.7 (extension incumbent brands gained 8% subscriber share while primary incumbent brands lost 8% subscriber share); Figure 5.5.6 (Incumbent proportionate share of revenues remained constant at 92% year over year).

<sup>63</sup> When assessing market concentration in the context of a merger, detrimental impact on a vigorous and effective competitor (or 'maverick'), is recognized as posing a disproportionate risk to post-merger competition. Even a proportionately smaller market player is therefore recognized as being able to decrease the capacity of larger industry players to exercise substantial market power through coordination or otherwise. The absence of a national competitor of this sort in Canada increases the ability of Canada's national incumbents to exercise market power

example, the FCC has identified a number of branding decisions<sup>64</sup> and service innovations that have made T-Mobile a ‘maverick’ competitor, including through: the adoption of unlimited data plans; consistently lower pricing than other national competitors;<sup>65</sup> adoption of pre-paid plans where customers were nonetheless offered the same plans as post-paid customers;<sup>66</sup> being the first to offer additional discounts for customers who brought their own handsets; and providing an entry avenue for providers of other services, such as television content providers, seeking innovative wireless connectivity solutions, but unable to find any due to reluctance of the other national competitors (who are primarily converged) to enable a competitor to their own television content offerings.<sup>67</sup> That no national player has adopted an overt disruptive role leaves the risk of coordination effects or other unilateral exercises of substantial market power.

34. In conclusion, the substantial market power pointed to in the Brattle Group’s report is not only defensible, but is borne out by market practices. In light of this, the Commission should re-instate its forbore powers under the Act. Regardless of market power, however, a few regulatory steps need to be adopted in the short term in order to properly fulfill the policy objectives. We canvass some of these in the following section.

### **III. New Wholesale Regime for wireless Required**

35. A number of parties to this proceeding have argued that harm would result from any additional regulatory measures adopted by the Commission. We disagree. Our view is that there is sufficient evidence of substantial market power among the three national incumbents to justify measures designed to impose greater pricing discipline than can be achieved by current new entrants. Regardless of any ultimate findings with respect to market power, wireless services in Canada would benefit from a national ‘maverick’ or vigorous and aggressive competitor. This will provide an influx of service innovation. Finally, regardless of market power determinations, measures should be adopted to increase Canada’s low mobile penetration rates.
36. There are essentially three sets of mechanisms that parties have proposed that would help to

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through coordination or otherwise: Competition Bureau Canada, “Merger Enforcement Guidelines”, October 6, 2011, <[http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/cb-meg-2011-e.pdf/\\$FILE/cb-meg-2011-e.pdf](http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/cb-meg-2011-e.pdf/$FILE/cb-meg-2011-e.pdf)>, sections 6.38-6.39.

<sup>64</sup> *U.S. v. AT&T Inc. et al.*, Case 1:11-cv-01560, Department of Justice, Antitrust Division, Complaint, <<http://www.justice.gov/atr/cases/f274600/274613.pdf>>, paras. 27, 31-32.

<sup>65</sup> FCC, Staff Analysis and Findings, AT&T and T-Mobile, WT Docket No. 11-65, <[https://apps.fcc.gov/edocs\\_public/attachmatch/DA-11-1955A2.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DA-11-1955A2.pdf)>, para. 25.

<sup>66</sup> FCC, Staff Analysis and Findings, AT&T and T-Mobile, WT Docket No. 11-65, <[https://apps.fcc.gov/edocs\\_public/attachmatch/DA-11-1955A2.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DA-11-1955A2.pdf)>, para. 24.

<sup>67</sup> FCC, Staff Analysis and Findings, AT&T and T-Mobile, WT Docket No. 11-65, <[https://apps.fcc.gov/edocs\\_public/attachmatch/DA-11-1955A2.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DA-11-1955A2.pdf)>, paras. 27-28.

address these issues. First, adopting cost-based roaming rights is essential to ensuring the ongoing viability of existing facilities-based competitors while permitting these to compete more effectively on a national level. Second, taking steps to establish a robust MVNO framework is critical to increasing penetration rates in Canada and to providing an additional source of innovation. Finally, imposing general open access obligations on incumbents will provide an avenue for new facilities-based competitors to emerge without needing to rely on scarce spectrum holdings. We elaborate on each of these below.

### ***Cost-based Roaming***

37. Domestic roaming creates a tangible impediment to the development of any non-incumbent competitor and thus poses a unique challenge to wireless competition. In the wireline context, gradual geographic rollout is feasible and a facilities-based competitor can grow their coverage year by year. However, given the nature of mobile services, lack of geographic coverage is a direct impediment to any effective roll-out of a competitor service. This applies to any existing competitor such as WIND and Vidéotron, seeking to potentially expand their presence to cities and Provinces outside their current footprint. It also applies any additional new entrant that may enter the Canadian market in the future. Even national incumbents are not immune from the challenges of wireless roaming – TELUS and Bell were obligated to share their entire networks in order to successfully compete with Rogers. Rogers was obligated to enter a reciprocal sharing agreement with two regional providers (MTS and Vidéotron) in order to mutually expand coverage within these respective regions. However, much like wireline peering arrangements, strong incentives align against the offering of comparable reciprocal sharing agreements with any true competitor. Indeed, the Commission’s analysis of Roger’s wholesale roaming arrangements strongly suggests that in the absence of regulatory intervention, incumbents will impose unjustly high rates onto competitors as a means of raising competitor costs.<sup>68</sup>
38. In recognition of this concern, section 27.1 of the *Telecommunications Act* was enacted this summer as a temporary measure limiting wholesale roaming rates that a provider can charge other providers. Section 27.1 prevents Canadian wireless carriers from charging domestic roaming rates in excess of the average per-unit retail revenues accrued by that carrier in the previous year. This is a useful temporary measure, but it does not address the underlying problem because of its reliance on per-unit average retail revenues. Average retail rates, while useful as a general backstop and temporary relief, will neither neutralize the problems arising from roaming challenges nor alleviate the challenges faced by non-incumbent competitors.

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<sup>68</sup> Telecom Decision CRTC 2014-398.

39. Average retail rates are a coarse measure and would prevent regional competitors from offering comparable services to customers. For example, regional competitors will not be able to offer customers the unlimited talk & text from anywhere in Canada plans that are now common amongst incumbents. This is because the regional competitor will be obligated to set non-roaming (or 'in zone') rates based on actual provisioning costs, but roaming (or 'out of zone') rates based on highly marked up competitor retail rates. Exacerbating this problem are the reciprocal deals entered into by Bell/TELUS to share all networks and by Rogers to share network coverage within Manitoba and Québec. These compound the advantage that national incumbents have with respect to necessary inputs over those of any competitors, and permits these national incumbents to offer no-cost national roaming to customers whereas regional challengers will never be able to. Only a cost-based approach, which limits wholesale tariffs to cost recovery (plus reasonable markup), can ensure that allow regional competitors have access to the inputs they need to truly realize their competitive potential.
40. A number of parties have not only argued that the adoption of such a measure is 'unnecessary', but suggest that the adoption of such measures run the risk of harming the development of Canada's wireless industry.<sup>69</sup> The measure is necessary because the need to impose disproportionately high domestic roaming rates onto their customers will continue to be a serious competitive impediment for regional competitors. On the other hand, it's not clear how mandating cost-based access to roaming will harm Canada's wireless industry. Incumbent providers will be able to recover their network costs while even gaining some profit from regional providers' roaming customers. Moreover, cost-recovery based roaming obligations can facilitated investment in underdeveloped rural areas by removing an impediment to regional development – in the absence of such obligations, there would be little incentive for individual firms to develop a rural region, as their customers within that region would not be able to use their devices nationally (see description of Verizon's LTE Rural America program, below). By contrast, the reciprocal network sharing arrangements entered into by Bell/TELUS and Rogers/MTS and Vidéotron diminish the incentive to invest. Instead of expanding its national network, Bell can rely on TELUS' network to serve its customers nationally, and vice versa, leading to less network investment in total.

### ***Developing a Robust MVNO Presence***

41. A number of parties have called for the CRTC to take steps to establish an MVNO presence in Canada. CIPPIC/OpenMedia agree. MVNOs play an invaluable role in wireless markets, and can

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<sup>69</sup> Bell Canada, Second Intervention, Telecom Notice of Consultation CRTC 2014-76, August 20, 2014, para. 14.

become a source of brand differentiation, market innovation and competition. A recent comprehensive study of the impact of MVNOs in 23 European countries highlighted the importance of this market segment, concluding that MVNOs have had a profound beneficial impact on the development of wireless services in a number of countries throughout the EU:

MVNOs have played a significant role in shaping the market in countries in which they are active, by enhancing offerings to customers, both in terms of the range of services on offer and of prices.<sup>70</sup>

In Canada, a robust MVNO presence can help address a number of the existing gaps in the market. This is especially the case with regards to Canada's persistently low penetration rates, as truly independent MVNOs tend to target underutilized niche markets, leading to a wider and deeper market.<sup>71</sup>

42. Functional MVNO markets are typically characterized by a large number of market players capturing a small percentage of revenue and subscriber share.<sup>72</sup> The low entry costs associated with MVNOs allow for this 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, 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.<sup>73</sup> 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,<sup>74</sup> or generate innovative types of services that a

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<sup>70</sup> S. Sale & P. Rusby, "MVNO Market Analysis: Status Update, Emerging Opportunities and Outlook for Europe", April 2014, Analysys Mason, Executive Summary, <<http://www.analysismason.com/Research/Content/Reports/MVNO-market-analysis-Apr2014-RDMM0/>>, p. 13.

<sup>71</sup> OECD, Communications Outlook 2013, July 11, 2013, <[http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013\\_comms\\_outlook-2013-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013_comms_outlook-2013-en)>, p. 21; FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>, para. 35: "MVNOs engage in some price rivalry and some forms of non-price rivalry. The strategic partnerships between MVNOs and facilities-based providers increase competition and consumer welfare by providing service to various market segments using the capacity of the hosting facilities-based provider and the marketing strategy and distribution network of the MVNO."

<sup>72</sup> Developed EU wireless markets are generally characterized by a significant MVNO presence in terms of number of virtual operators, however these rarely capture more than 10-15% of subscribers in any given country: S. Sale & P. Rusby, "MVNO Market Analysis: Status Update, Emerging Opportunities and Outlook for Europe", April 2014, Analysys Mason, Executive Summary, <<http://www.analysismason.com/Research/Content/Reports/MVNO-market-analysis-Apr2014-RDMM0/>>, Figure 5.

<sup>73</sup> OECD, Communications Outlook 2013, July 11, 2013, <[http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013\\_comms\\_outlook-2013-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013_comms_outlook-2013-en)>, p. 32.

<sup>74</sup> FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including

facilities-based provider may never consider.<sup>75</sup>

43. Canada can gain a number of specific benefits from a robust MVNO presence. For example, MVNOs tend to generate branding and pricing better tailored to low-usage and price sensitive customers.<sup>76</sup> While Canadian prices are comparatively high across the range of usage baskets, Canadian prices rank particularly high on the very highest and lowest usage baskets.<sup>77</sup> Additionally, MVNOs tend to expand prepaid markets through better branding, more competitive prepaid pricing and innovative service packaging. Canada currently has a relatively small pre-paid market, down to 17% of all subscribers in 2013,<sup>78</sup> 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.<sup>79</sup>
44. A robust MVNO market has not developed organically in Canada, nor is one likely to in the absence of regulatory intervention in the near future. Normally, MVNOs will not have the market power to negotiate favourable agreements with MNOs, as the latter are not likely to let them develop to a point where they threaten the MNOs' market share.<sup>80</sup> MVNOs can, over time,

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Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>, para. 31.

<sup>75</sup> OECD, Communications Outlook 2013, July 11, 2013, <[http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013\\_comms\\_outlook-2013-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-communications-outlook-2013_comms_outlook-2013-en)>, pp. 21-22.

<sup>76</sup> FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>, para. 29.

<sup>77</sup> Wall Communications Inc., "Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions: 2014 Update", March 31, 2014, <[http://www.wallcom.ca/pdfs/price-comp-report\\_2014update\\_final\\_CRTC.pdf](http://www.wallcom.ca/pdfs/price-comp-report_2014update_final_CRTC.pdf)>.

<sup>78</sup> CRTC, Communications Monitoring Report 2014 – Telecommunications, October 2014, <<http://www.crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2014/cmr5.pdf>>, Table 5.5.5, down from 21% in 2010.

<sup>79</sup> MVNO Dynamics, "Truphone Redefines Local", October 20, 2014, <<http://www.mvnodynamics.com/2014/10/20/truphone-redefines-local/>>.

<sup>80</sup> See: P. Kalmus & L. Wiethaus, "On the Competitive Effects of Mobile Virtual Network Operators", (2010) 34 *Telecommunications Policy* 262, p. 263; FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>, footnote 125:

AT&T argues that competition among nationwide providers at the wholesale level to sell to TracFone results in lower wholesale and retail prices; i.e. TracFone exerts competitive pressure on its hosting nationwide providers...However, see, also, On the Competitive Effects of Mobile Virtual Network Operators (stating, "It is found that MNOs host MVNOs if and only if the latter do not exert a competitive constraint on MNOs' retail businesses. Thus, absent access regulation, MVNO entry may happen but is unlikely to reduce consumer prices").

develop some negotiation market power, but this requires the time-consuming development of brand recognition and embedded presence across multiple domestic MNOs.<sup>81</sup> If Canada is to reap the benefits of a robust MVNO market, regulatory intervention is necessary to mandate high level network access and to set the conditions of such access, at least in the short term.

### ***Facilities-based Competition***

45. Finally, mandated facilities-based wholesale access can play a significant role in providing a long-term solution to competition in wireless networks. While recent times have seen a number of spectrum auctions, spectrum is, in the long term, a finite resource. True and enduring competition will be dependent on creating a mechanism for facilities-based competition that is not spectrum dependent and can leverage existing network sites around the country. Combined with roaming obligations, cost-based wholesale network access will allow and encourage companies to invest in regional footholds that would not otherwise develop. This can not only assist with general competition, but also greatly enhance rural investment. For example, Verizon's LTE Rural America Program allows independent companies to use its under-utilized spectrum holdings in rural areas to develop regional facilities-based LTE networks.<sup>82</sup> Customers on these networks can then roam on Verizon's primary network when outside the local footprint of the regional provider. No such comparable program has developed organically in Canada, but imposing cost-based roaming and facilities-based access obligations would open the door to such regional rural development initiatives.

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<sup>81</sup> FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>.

<sup>82</sup> FCC, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report, WT Docket No. 11-186, March 21, 2013, <[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-13-34A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-13-34A1.pdf)>, para. 395.