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THE STATE OF COMPETITION IN CANADA'S TELECOMMUNICATIONS INDUSTRY – 2018

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The State of Competition in Canada's Telecommunications Industry – 2018

Montreal Economic Institute

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HIGHLIGHTS

The 2017 edition of this report argued that the Internet of Things, which will revolutionize every aspect of our lives, will soon force Ottawa to reconsider its telecommunications priorities and policies. It also analyzed some issues that had made headlines in the industry over the previous year, and looked back at the 2006 Policy Direction telling the CRTC to rely on market forces as much as possible. Here are some highlights from this year's edition.

Chapter 1 – How Does Canada Measure Up?

- Canadians continue to enjoy competitive, quality telecommunications services.
- Thanks to some of the most advanced and efficient wireless and broadband internet services in the world, download and connection speeds in Canada compare very favourably with speeds in other OECD countries.
- The prices Canadians pay for telecommunications services according to Nordicity's international comparisons remain generally higher than in most countries.
- Canada's density of wireless connections per km² is one of the lowest in the world.
- In terms of telecommunications companies' investment, Canada outshines most other countries, whether measured per wireless connection, per wireless subscriber, per capita, or as a percentage of revenues.

Chapter 2 – Are Canadian Telecom Prices Really among the Highest in the World?

- Despite a widely shared perception, the available data do not support the conclusion that Canadians pay significantly higher prices for telecommunications services than consumers in other developed countries.
- The Nordicity study upon which this perception is based compares prices for general categories of products, but ignores most factors that explain how these products and the markets where they are produced and sold are different.
- International metrics have consistently shown that Canada has some of the highest quality wireless networks in the world.

- Wireless carriers in Canada invested on average US\$78 per connection between 2010 and 2016, almost twice as much as their European counterparts, which only invested \$40.
- Canadians are heavy users of telecommunications services, and they're paying for world-class networks that can deliver the fast, reliable, high-quality services they expect.
- Nordicity's limited set of data hides the simple reality that Canadians have many more affordable options: They can get similar service baskets at cheaper prices by switching either to a flanker brand, a regional provider, or a reseller.
- The average bill that Canadians pay for their wireless and internet services keeps increasing not because they have to pay more for the same services, but because they are paying more for more and better services.
- Adjusted for inflation, the prices for wireless telephony service baskets have all gone down between 2008 and 2017, with reductions of from 6% to 45%.

Chapter 3 – Broadband Regulation: Should Canada Emulate the United States?

- The telecommunications sector in the United States has been buzzing with controversy since November 2017, when Ajit Pai, the recently appointed chairman of the FCC, announced his proposal—approved in December—to do away with the stricter “net neutrality” rules introduced in 2015.
- Although critics have used dramatic terms to characterize the repeal of Title II regulation, it merely reverts back to the lighter-touch regime that governed the internet from 1996 to 2015.
- Broadband network investment had fallen more than 5.6% since the FCC's 2015 net-neutrality decision, the first such decline outside of a recessionary period.
- Despite the repeal of the Open Internet Order, every major U.S. internet provider supports prohibitions against blocking, throttling, and unfair discrimination.
- The main concrete difference so far between the FCC's and the CRTC's approaches to net neutrality

has been the steadfast opposition of the Canadian regulator to zero-rating.

- In banning innovative and pro-competitive targeted pricing plans, the CRTC has not protected the integrity of the internet; rather, it has raised prices for certain consumers and lowered prices for no one.
- A 2016 study found that fibre-to-the-premises coverage in the United States was approximately double what it was in Europe, and overall next-generation access coverage was 82% in the U.S. compared to 54% in Europe.
- The CRTC should revisit its 2015 decision to give resellers access to high-speed networks, and phase out its broadband network sharing regimes, as the United States did in the early 2000s.
- The Wireless Code's two-year contract provision, far from being "pro-consumer," has reduced choice and limited the ability of carriers to develop innovative customer offerings.
- In its *Final Report* published in March 2006, the Telecommunications Policy Review Panel found that "the Canadian telecommunications industry has evolved to the point [...] where detailed, prescriptive regulation is no longer needed in many areas."
- The Danish experience with light-touch regulation, in particular the deregulation of its wholesale wireless market, should serve as a source of inspiration for Canada.

Chapter 4 – We No Longer Need a Telecommunications Regulator

- Over the years, the CRTC has shifted its attention from the retail side of the telecommunications market to the wholesale side, where it has implemented a variety of interventionist policies aimed at helping new entrants and resellers.
- Since Canada has successfully transitioned from monopoly to competition, there is a case to be made that the CRTC should be phased out as Canada's telecommunications regulator.
- Network sharing policies, initially adopted to stimulate competition in wireline telephony, failed to create facilities-based competition in Canada, and if anything undermined new entrants' incentives to build alternative facilities.
- Facilities-based competition, in wireline telephony and in the broadband internet market, was able to flourish in Canada thanks to the cable industry, not as a result of network sharing policies.

INTRODUCTION

For each of the past four years, *The State of Competition in Canada's Telecommunications Industry* has assessed how Canada measured up with other jurisdictions regarding the quality and pricing of its telecommunications services. The report has also evaluated how competition was faring in key areas of the Canadian telecommunications market, and provided a critical assessment of Canada's legislative and regulatory framework for this industry.

One of the primary motivations for the publication of the first four editions of this Research Paper was that many Canadians appear to be under the mistaken impression that Canada's telecommunications industry compares poorly with that of other jurisdictions.

This report has attempted to dispel the notion that Canadians pay uncompetitive prices for low quality services. It has also argued that the federal government's and the CRTC's interventions in the wireless and wireline sectors aiming to increase the number of players through indirect subsidies and mandated access were not likely to have the intended effects and might jeopardize investments and innovation. This is all the more important given the burgeoning Internet of Things, since only large, facilities-based competitors will be able to make the necessary investments in networks and manage those networks to answer the complex needs of this new sector.

This report has argued that the government should instead liberalize its policies and recognize the role of innovation in assessing the level of competition that exists in a dynamic market.

This fifth edition continues to explore these themes. Chapter 1 provides updated statistics regarding the performance of the Canadian telecommunications industry compared with other jurisdictions.

Chapter 2 provides a more in-depth analysis of the issue of pricing than has been offered in previous editions, explaining why the data contained in the annual Nordicity study fail to support the common perception that Canadian telecom prices are excessive and ever increasing.

Chapter 3 compares broadband internet regulation in Canada and the United States, looking at recent changes to net neutrality rules south of the border and Canada's continuing opposition to zero-rating, as well as the CRTC's 2015 decision to force broadband providers to share fibre-to-the-home broadband networks with resellers.

Many Canadians appear to be under the mistaken impression that Canada's telecommunications industry compares poorly with that of other jurisdictions.

Finally, Chapter 4 makes the case that since Canada has successfully transitioned from monopoly to competition, the CRTC should be phased out as Canada's telecommunications regulator, and the sector should move to a general regime of competition law, like almost all other sectors of the economy.

CHAPTER 1

How Does Canada Measure Up?

The criticism most often heard regarding the telecommunications industry in Canada, and especially wireless services, is that Canadians pay a lot more than people in other countries for lower quality services. It is this criticism that was used to justify the federal government's and the CRTC's numerous interventions over the past few years aimed at promoting more competition in the wireless sector. But does this criticism stand up under scrutiny?

It is difficult to form a perfectly clear and objective picture of the situation, not only because circumstances (like geography and types of regulation) vary from one country to the next, but also because of the use of different research methodologies. The available data, however, do not support such a conclusion.

The criticism most often heard regarding the telecommunications industry in Canada, and especially wireless services, is that Canadians pay a lot more than people in other countries for lower quality services.

The charts that follow come from the main organizations that publish international rankings related to various aspects of the telecommunications industry.

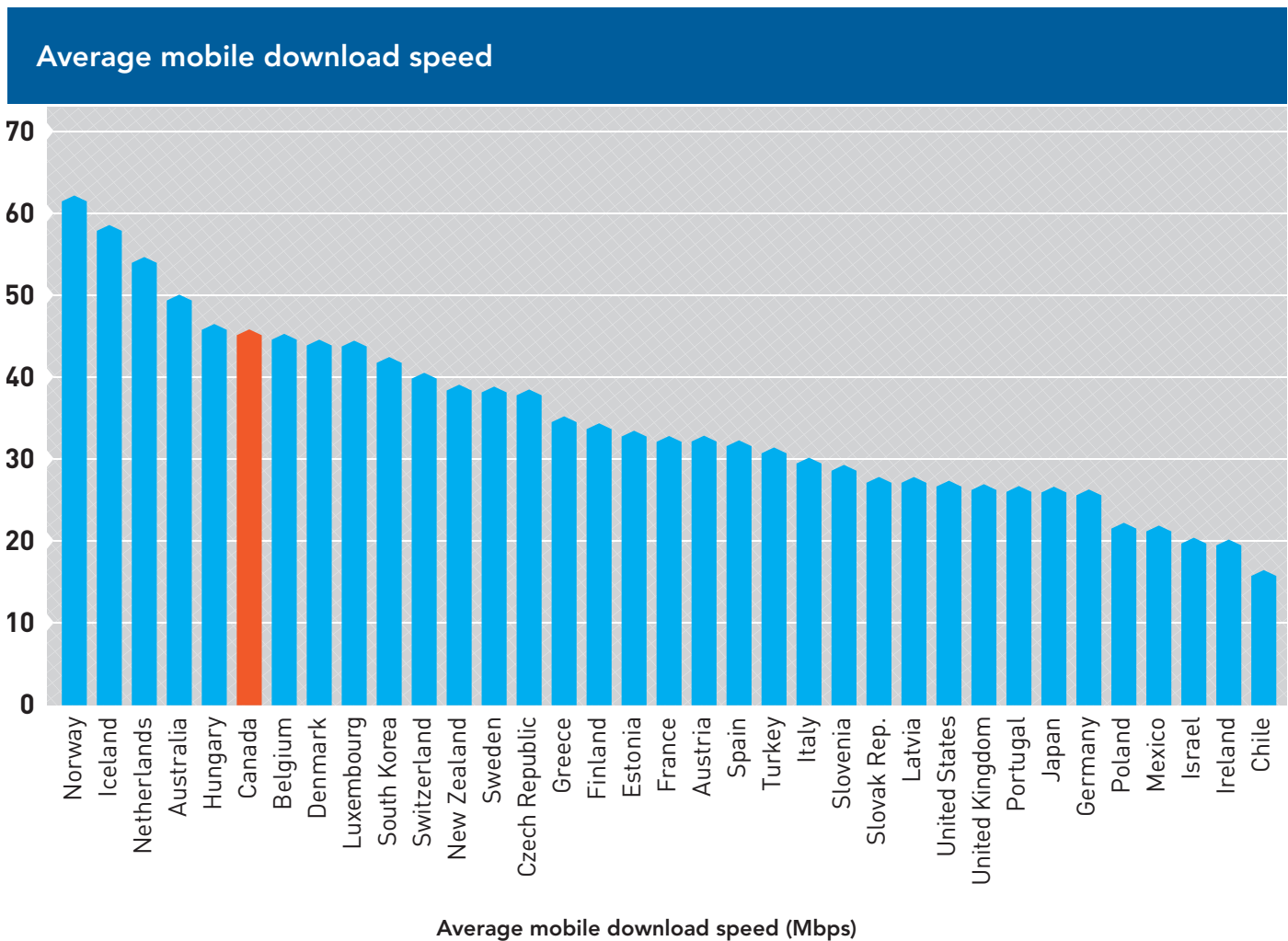
In terms of the quality of services, the data indicate that Canadians actually benefit from some of the most advanced and efficient wireless (Figures 1-1 and 1-2) and broadband internet (Figures 1-3, 1-4, and 1-5) services in the world.

As for the prices Canadians pay for telecommunications services, according to Nordicity's international comparisons (see detailed criticism of the methodology of this study in Chapter 2), they remain generally higher than in most countries (Figures 1-6, 1-7, and 1-8).

Canada's density of wireless connections per km² is one of the lowest in the world (Figure 1-9).

Finally, in terms of telecommunications companies' investment, Canada outshines most other countries, whether measured per wireless connection, per wireless subscriber, per capita, or as a percentage of revenues (Figures 1-10 to 1-13).

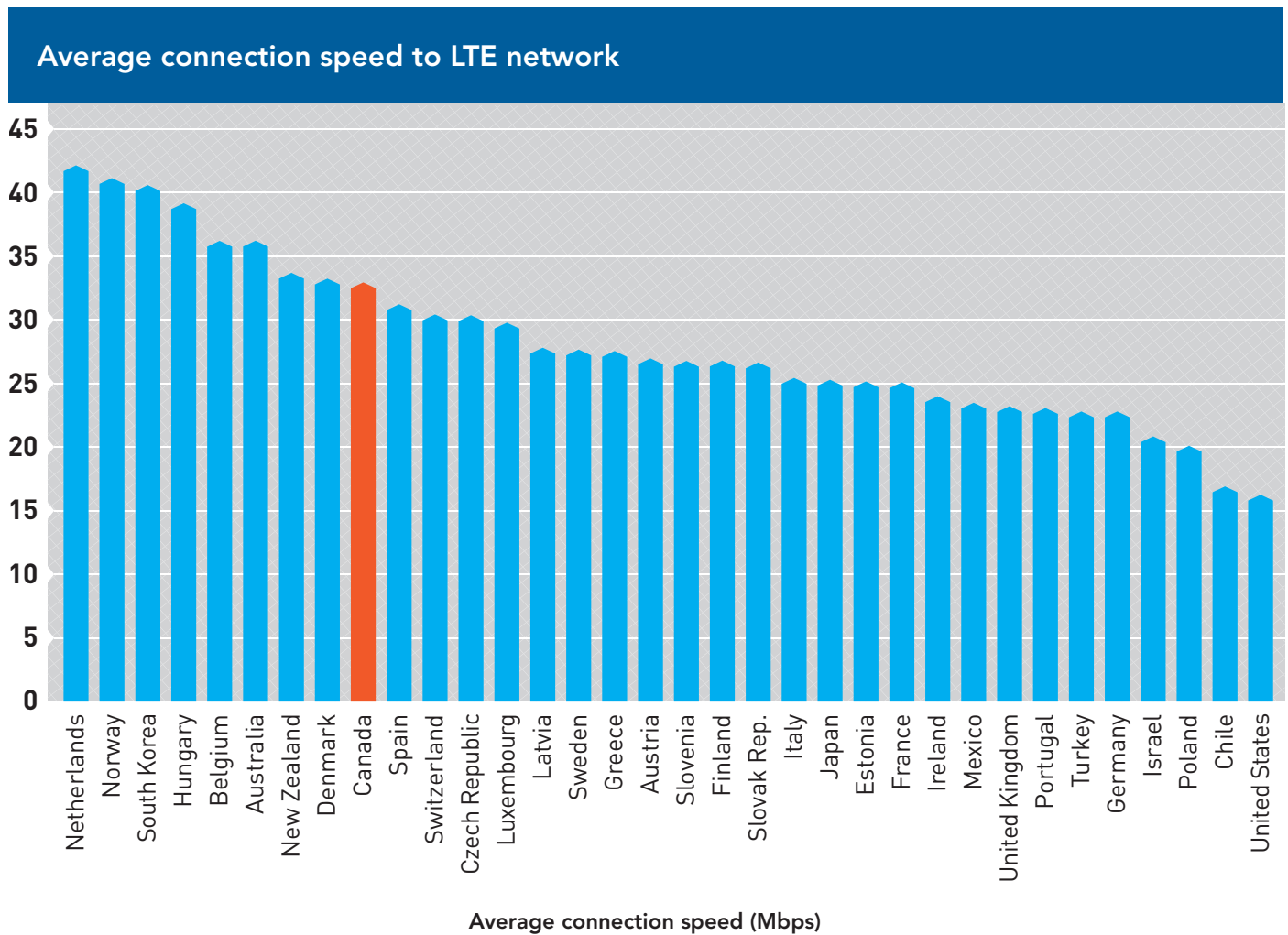
Figure 1-1



Source: Ookla, Speedtest Global Index—February 2018, Mobile.

According to Ookla, the average download speed for mobile connections in Canada is 45.67 Mbps. This speed places Canada 6th among the 35 countries of the OECD.

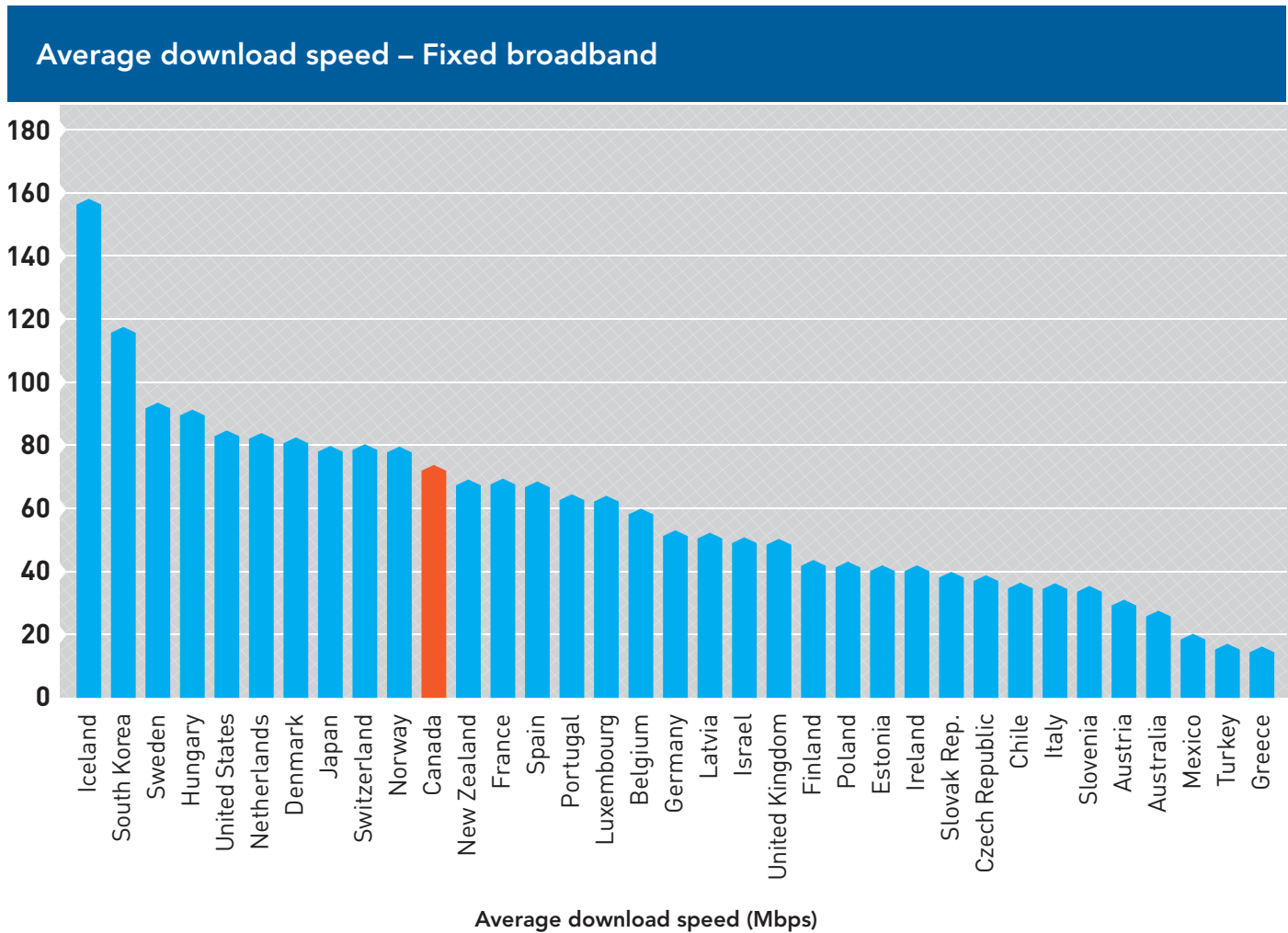
Figure 1-2



Source: OpenSignal, The State of LTE (February 2018), 4G Speed.

The average connection speed to the LTE network in Canada according to OpenSignal is close to 33 Mbps. This places Canada 9th among the 34 countries surveyed.

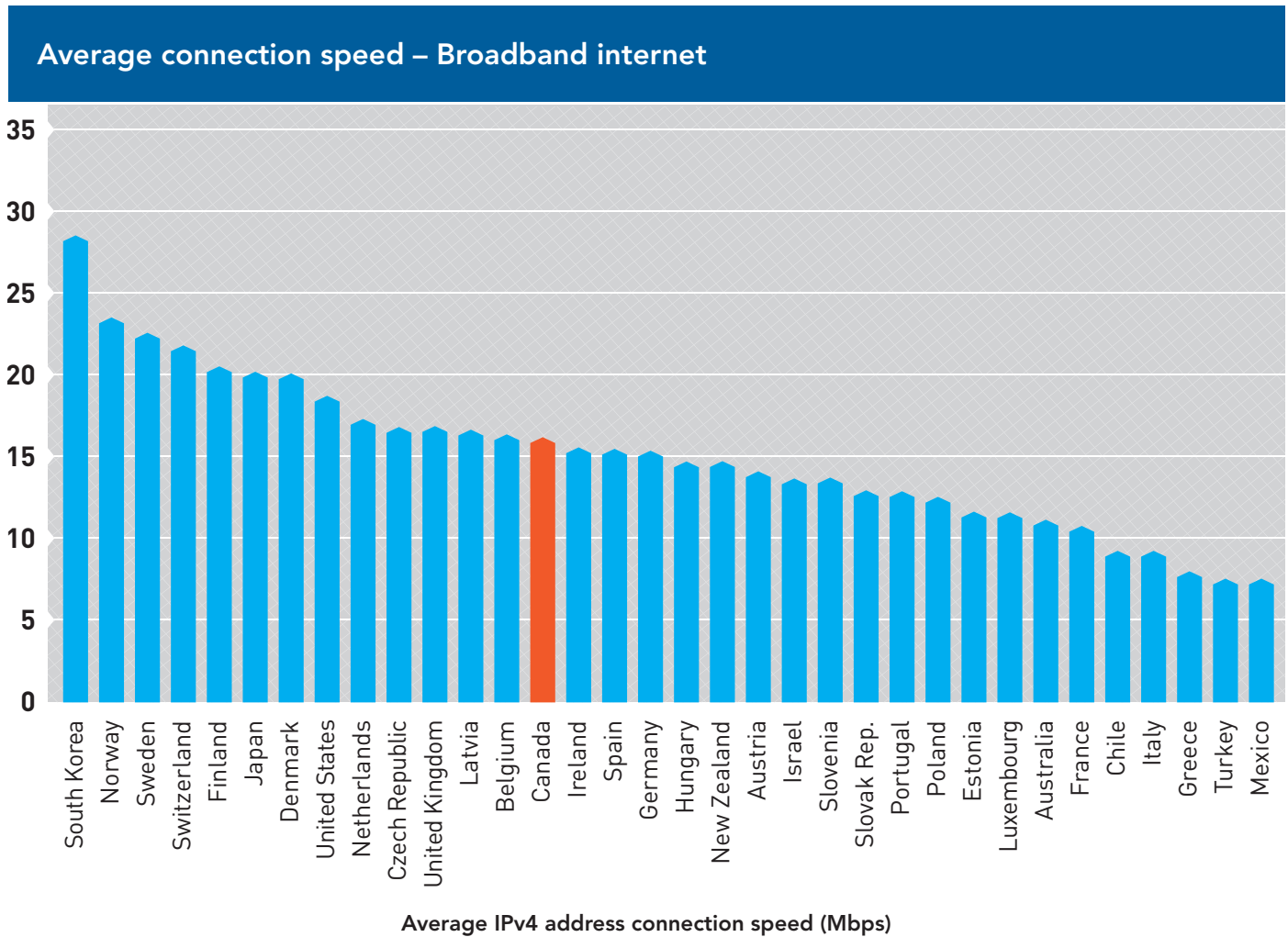
Figure 1-3



Source: Ookla, Speedtest Global Index—February 2018, Fixed Broadband.

When it comes to broadband download speed (which is to say the download speed for internet users with wireline or cable connections), Ookla estimates the average speed in Canada to be 73.41 Mbps. This places the country in 11th place among the 35 countries of the OECD.

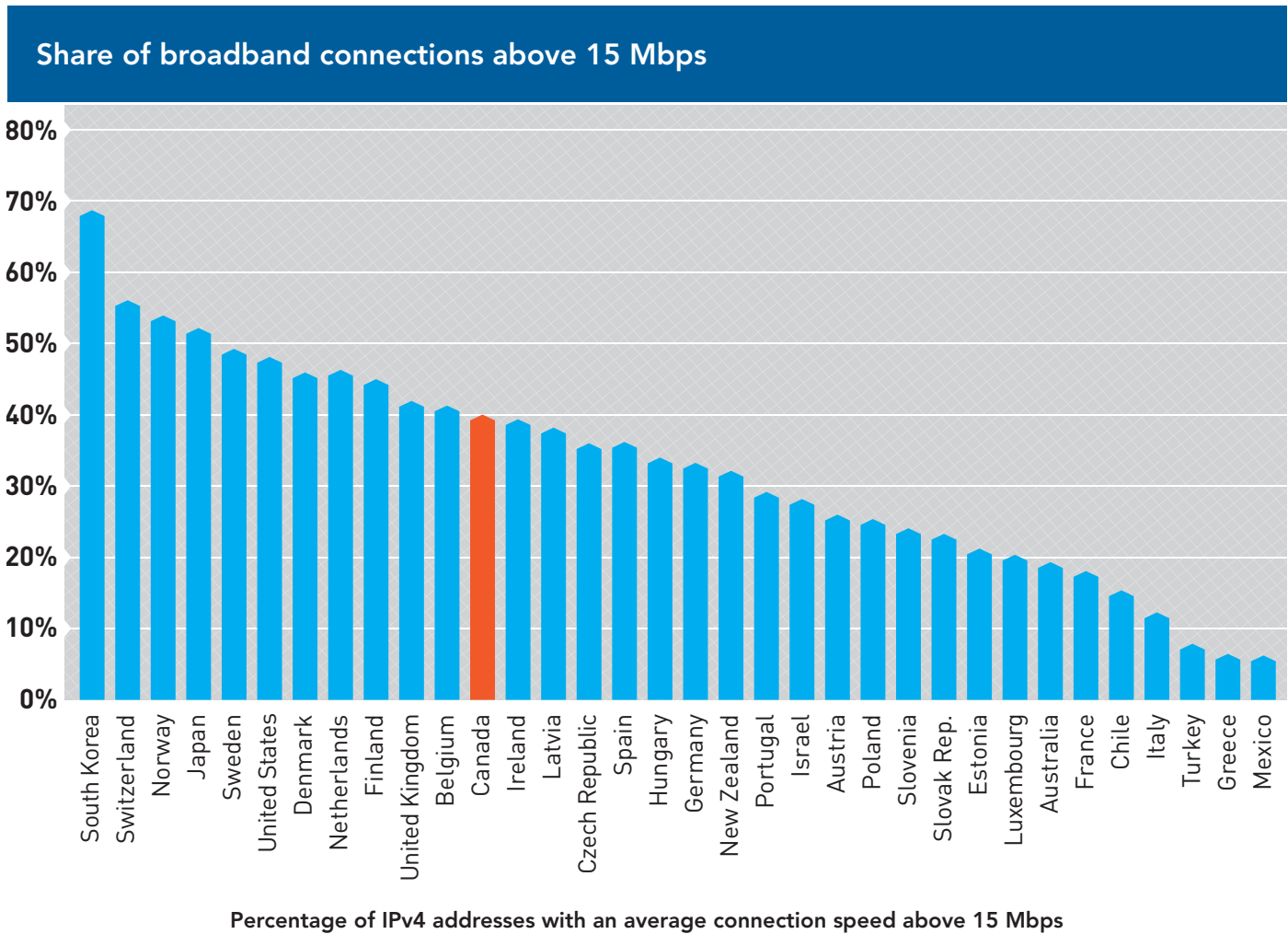
Figure 1-4



Source: Akamai, Akamai's State of the Internet: Q1 2017 Report, Vol. 10, No. 1, May 2017, pp. 54-55.

In terms of average connection speed to broadband internet (that is, download speed for internet users with a wireline or cable connection), the Akamai report for the first quarter of 2017 ranks Canada 14th among 34 OECD countries for which data was available.

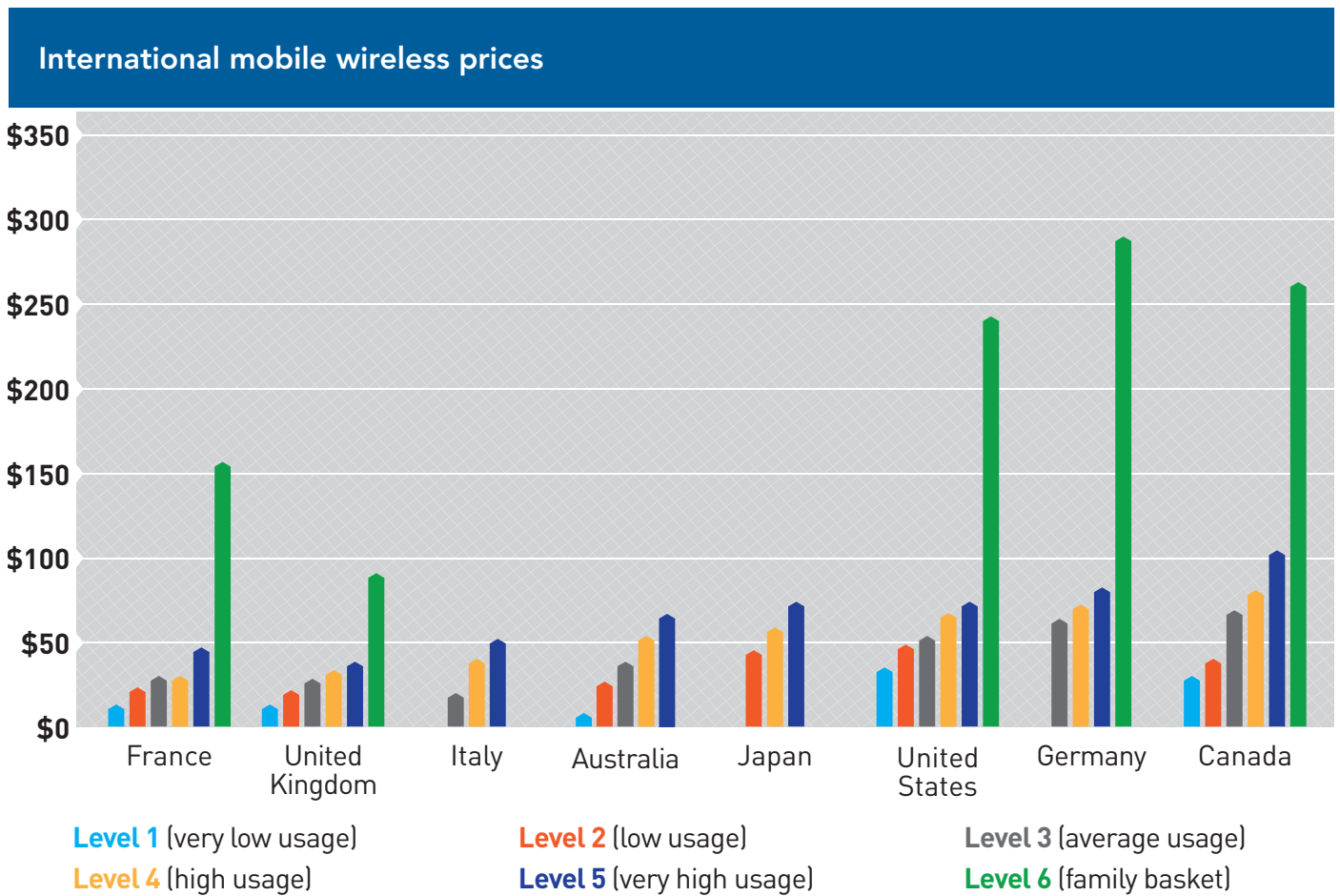
Figure 1-5



Source: Akamai, Akamai's State of the Internet: Q1 2017 Report, Vol. 10, No. 1, May 2017, pp. 54-55.

For the first quarter of 2017, Akamai estimates that 40% of IPv4 addresses in Canada had an average broadband connection speed above 15 Mbps. With this percentage, Canada ranks 12th among the 34 OECD countries for which such data were available.

Figure 1-6

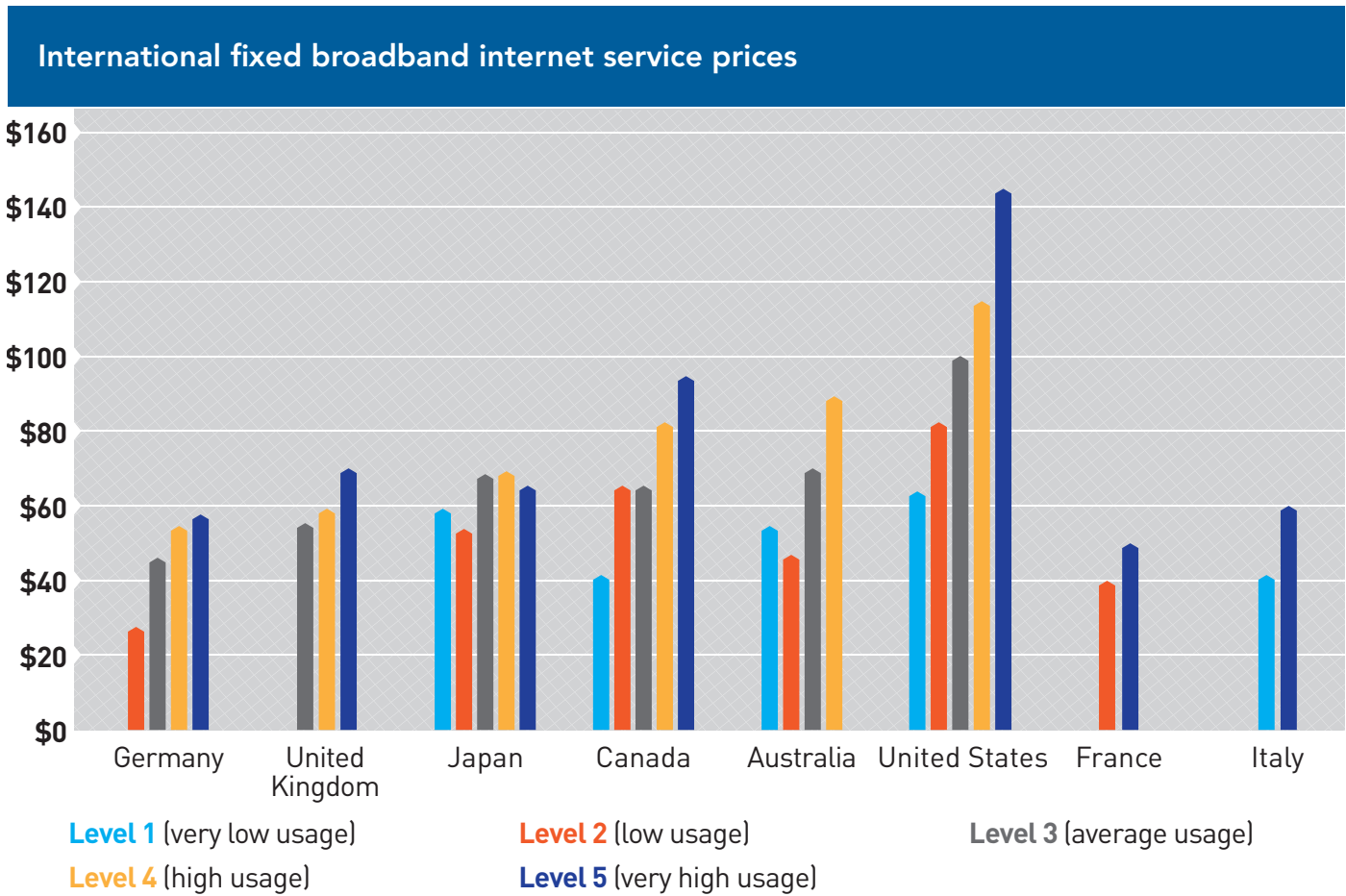


Note: The indicated values are in Canadian dollars, adjusted for purchasing power parity.
Source: NGL Nordicity Group, 2017 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions, Prepared for Innovation, Science and Economic Development Canada, Appendix D, Table D.2, October 5, 2017.

Nordicity Group has assembled different baskets of mobile wireless services in order to compare Canadian monthly rates with those of seven other countries. These baskets were built on a usage basis, ranging from very low- to very high-volume usage.

In terms of price, Canada ranks 4th out of 5 for very low-volume use, and 8th out of 8 for very high-volume use.

Figure 1-7



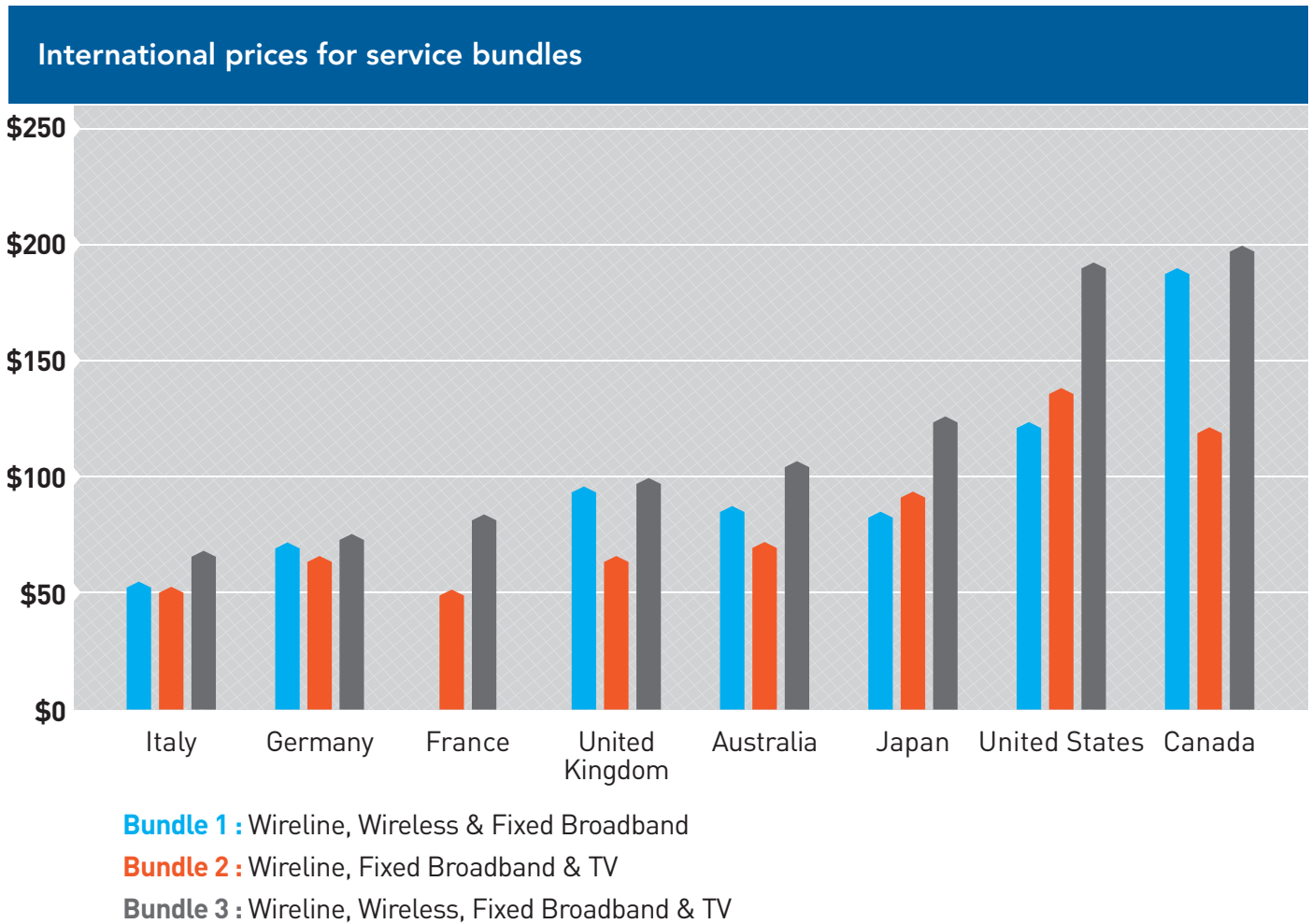
Note: The indicated values are in Canadian dollars, adjusted for purchasing power parity.

Source: NGL Nordicity Group, *2017 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, Prepared for Innovation, Science and Economic Development Canada, Appendix D, Table D.3, October 5, 2017.

Nordicity Group has assembled different baskets of fixed broadband internet service in order to compare Canadian rates with those of seven other countries. These baskets were built on a usage basis, ranging from very low- to very high-volume usage.

In terms of prices, Canada ranks 2nd out of 5 for very low-volume use, and 6th out of 7 for very high-volume use.

Figure 1-8

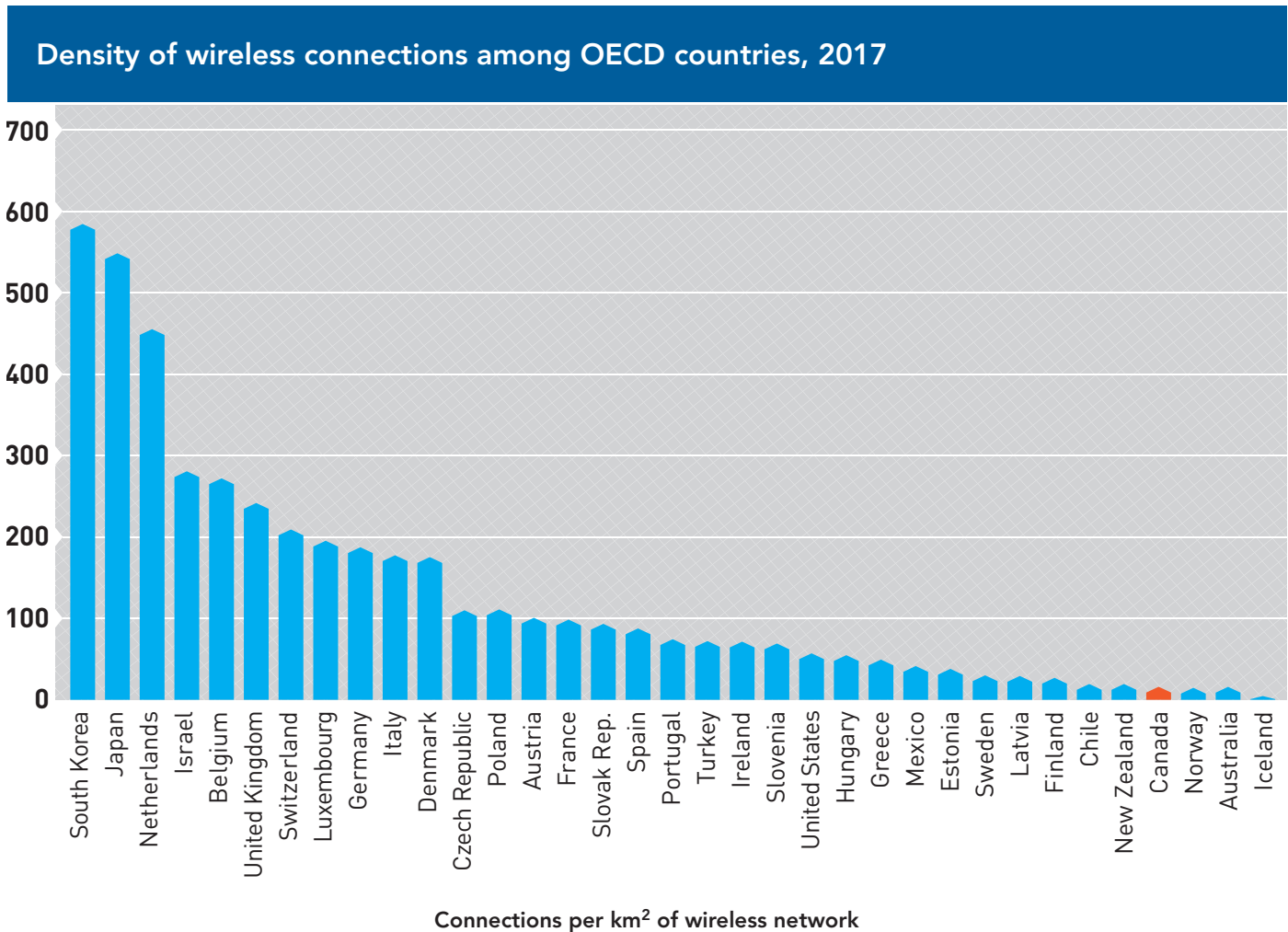


Note: The indicated values are in Canadian dollars, adjusted for purchasing power parity.

Source: NGL Nordicity Group, *2017 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, Prepared for Innovation, Science and Economic Development Canada, Appendix D, Table D.5, October 5, 2017.

Nordicity Group has assembled different service bundles in order to compare Canadian monthly rates with those of seven other countries. Canada has the highest prices for bundles 1 and 3. In the case of bundle 2, it ranks 7th out of 8, ahead of the United States.

Figure 1-9

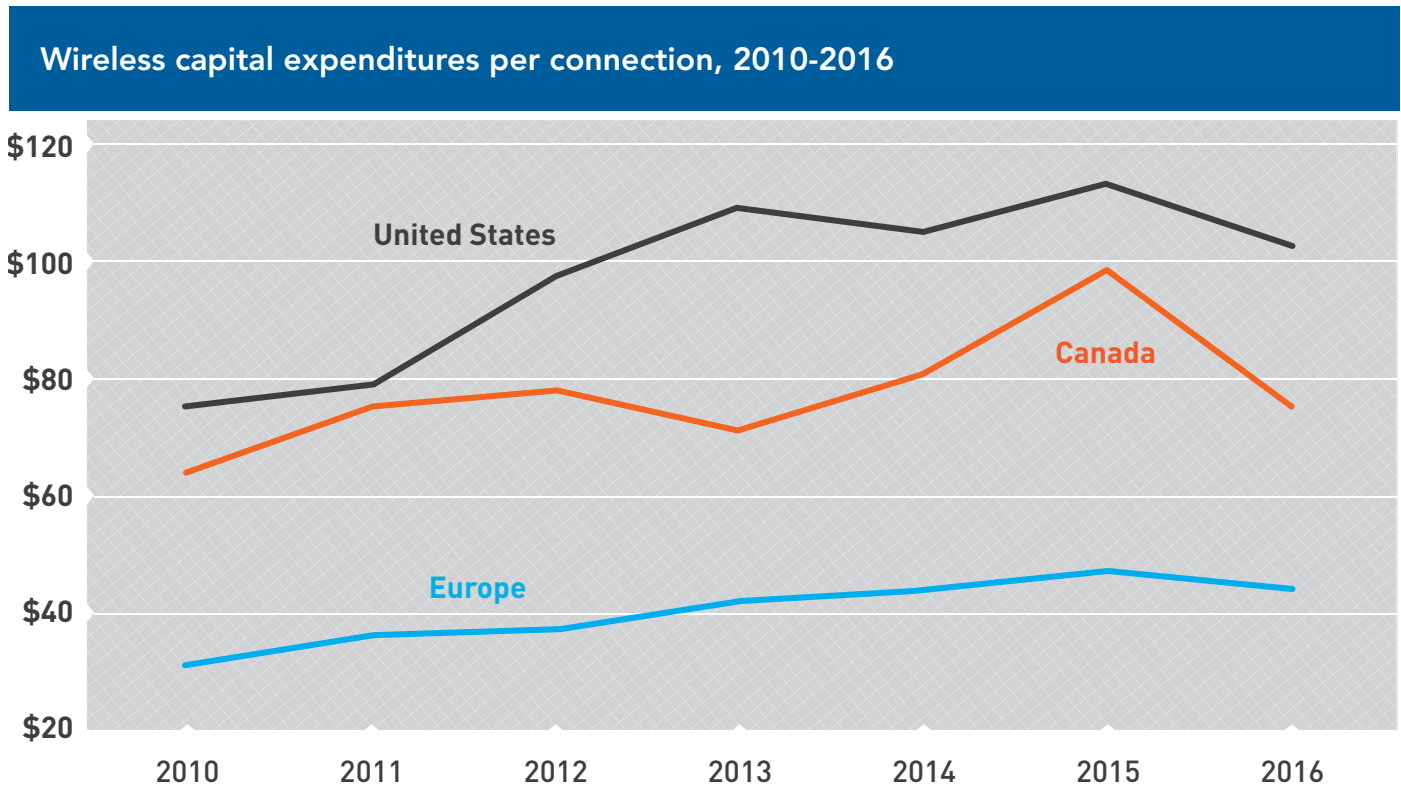


Note: Given that a substantial portion of their territory is uninhabited, total land area was adjusted based on the coverage of the network in Canada (20%), Australia (31%), and the United States (80.7%). We assume 100% coverage for the other countries.

Sources: OECD, OECD Broadband Portal, Total fixed and wireless broadband subscriptions by country, June 2017; World Bank, Land area (sq. km), March 23, 2017; CRTC, *Communications Monitoring Report 2016*, October 2016, p. 280; Federal Communications Commission, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless*, Chart III.A.1: Estimated Wireless Coverage by Census Block Including Federal Land Form 477, September 23, 2016, p. 29; OzTowers, Mobile Bands (frequencies) By Provider, Information.

Canada is ranked 32nd out of 35 OECD countries with just 14 wireless connections per km². This indicates that compared to countries like South Korea, Japan, and the Netherlands, where the density is over 450, it is much more expensive to develop and maintain a wireless network in Canada.

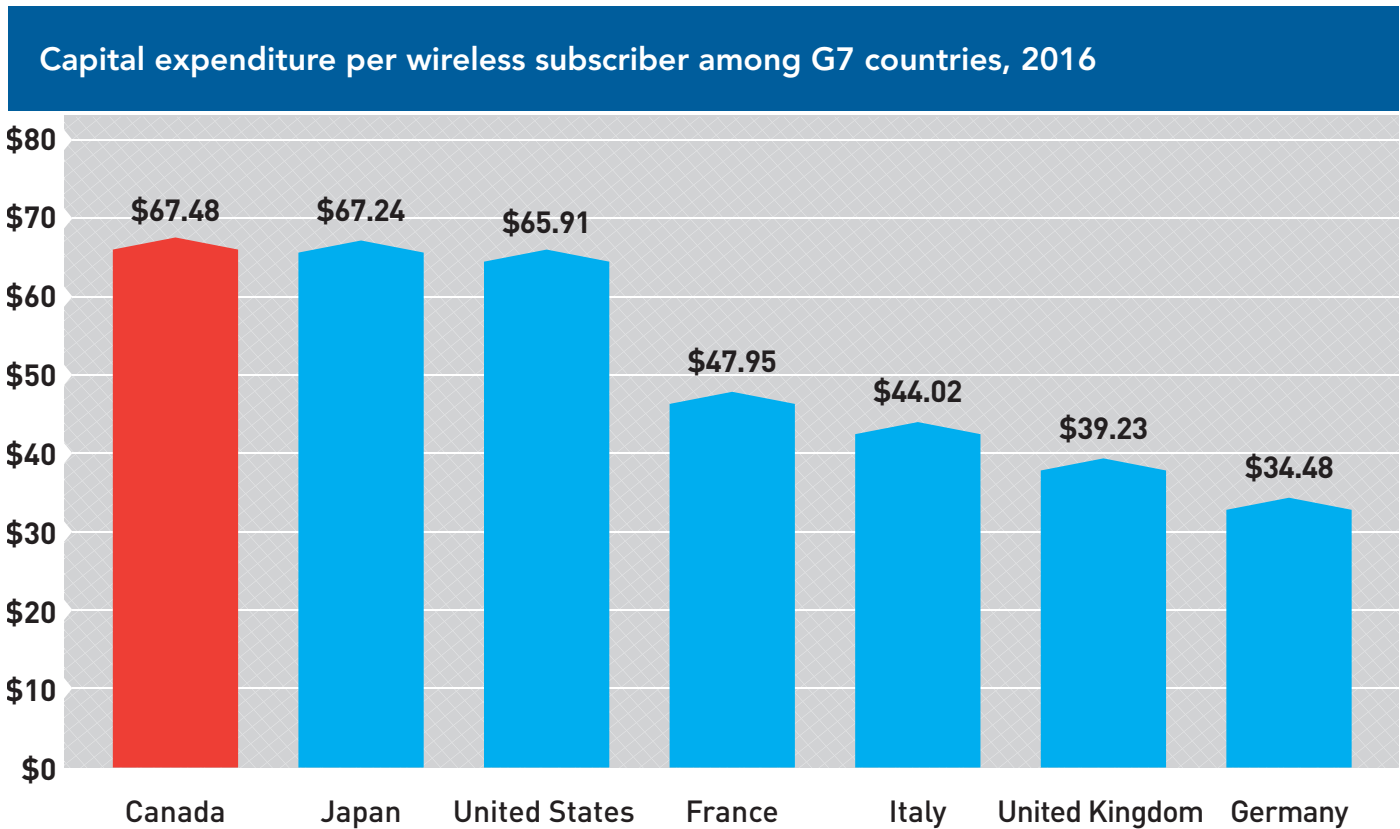
Figure 1-10



Note: Data are limited to carriers that have both connections and capex data for all quarters of a given year. Data indicate capital expenditures excluding spectrum purchases in current US dollars.
Source: GSMA Intelligence, cited in Jeffrey A. Eisenach, *Expert Report on Behalf of TELUS Communications Company*, CRTC 2017-259, Report presented before the CRTC, September 8, 2017, p. 29.

In terms of investments per connection for wireless services, Canada compares relatively well with the United States and Europe. Between 2010 and 2016, Canadian companies invested on average \$78 per connection, which is nearly double the average of \$40 in Europe, but less than the average of \$97 in the United States.

Figure 1-11

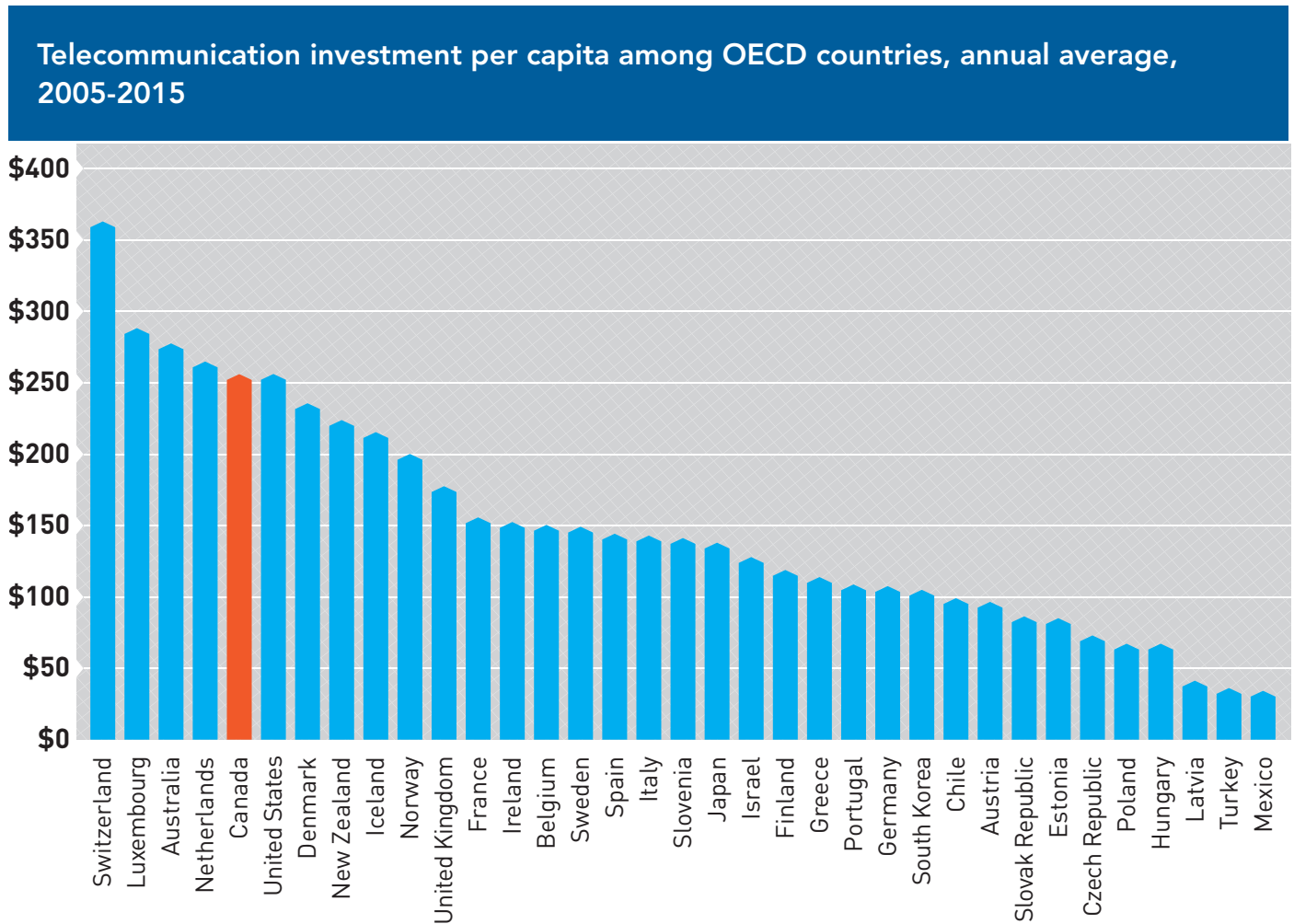


Note: Values are in US dollars.

Source: Bank of America Merrill Lynch, *Global Wireless Matrix Q1 2017*, cited in Rogers Communications Canada Inc., *Intervention*, Telecom Notice of Consultation CRTC 2017-259, September 8, 2017, p. 55.

Based on Bank of America Merrill Lynch data, it is clear once again that Canadian telecommunications companies invest a lot in their networks compared to the other G7 countries. With \$67.48 per wireless subscriber, Canada is in first place, far ahead of countries like the United Kingdom and Germany, which invest \$39.23 and \$34.48 respectively.

Figure 1-12

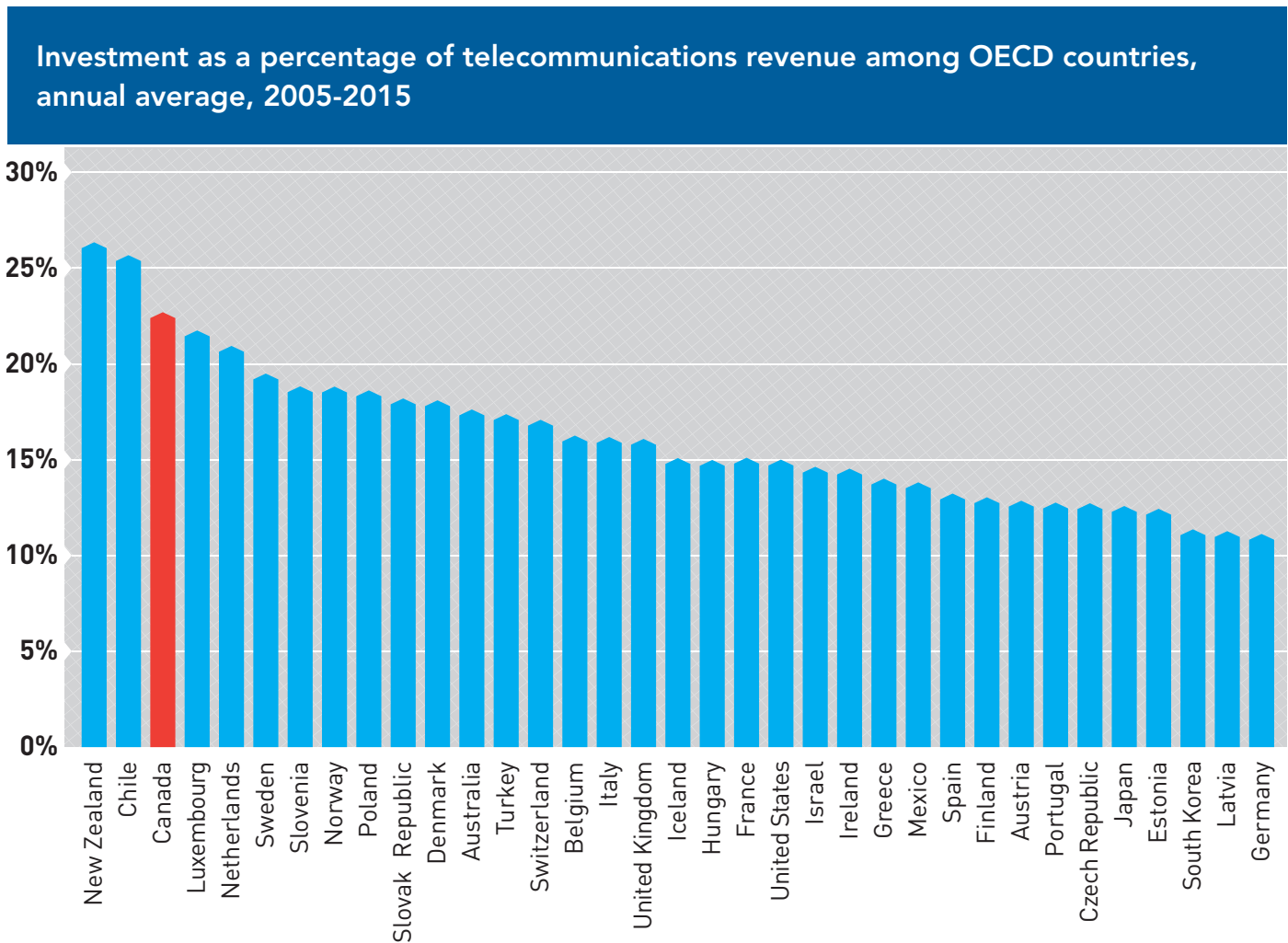


Notes: Does not include spending on R&D or related to the acquisition of licences or spectrum. The available data for Sweden, Israel, and Latvia start respectively in 2006, 2009, and 2012. Amounts are in current US dollars.

Source: OECD, *OECD Digital Economy Outlook 2017*, Table 3.10: Telecommunication investment in the OECD area, October 2017; United Nations, *World Population Prospects: The 2017 Revision*, Total population (both sexes combined) by region, subregion and country, annually for 1950-2100, June 2017.

In terms of telecommunication investment per capita, Canada is ranked 5th with an average of \$255 between 2005 and 2015, behind Switzerland, Luxembourg, Australia, and the Netherlands. Investment per capita in Canada is higher than in any other G7 country, and higher than the OECD average of \$156.

Figure 1-13



Notes: Does not include spending on R&D or related to the acquisition of licences or spectrum. Data for 2014 and 2015 are not available for Chile or the Netherlands. As for Israel and Latvia, available data start respectively in 2009 and 2014.

Source: OECD, *OECD Digital Economy Outlook 2017*, Table 3.11: Telecommunication investment as a percentage of telecommunications revenue, October 2017.

In terms of telecommunications companies' investment as a percentage of their revenue, Canada is ranked 3rd behind New Zealand and Chile with an average of 22.7% between 2005 and 2015. This percentage is far above the average of 15% for the 35 countries of the OECD.

CHAPTER 2

Are Canadian Telecom Prices Really among the Highest in the World?

A premise that seems to be widely accepted in discussions of telecommunications services in Canada is that we have some of the highest prices in the world, and that Canadians are paying more and more each year for these services due to a lack of competition among providers. This belief is partly reinforced every year by the conclusions of a price comparison study released by Nordicity. In its latest edition, it found again that in most categories, Canada has the highest or second highest prices among the eight countries surveyed¹ (see Figures 1-6 to 1-8 in Chapter 1 of this report).

Countless media stories and commentaries bemoan this state of affairs. The government and the CRTC use it to justify more telecom sector intervention and regulation, from preferential rules in spectrum auctions to the mandated sharing of networks and the adoption of a Wireless Code. In 2017, when he ordered the CRTC to review a decision on resellers' roaming access to the networks of large wireless providers, Innovation Minister Navdeep Bains stated that "middle-class Canadians—and Canadians who are working hard to join the middle class—are concerned about the rising cost of their internet and cellphone bills. They deserve more affordable options. They deserve more choice. That's why our government is taking action."²

The recently appointed chairman of the CRTC, Ian Scott, has refused to join this chorus, however. In a 2017 interview with *La Presse*, he declined to say whether he thinks prices are too high, even though he recognizes that many Canadians seem to think there is a problem:

"Price comparisons are difficult to make, [...] there are so many variables."³

Previous editions of this Research Paper have briefly argued, on the basis of various international metrics presented in Chapter 1, that the available data do not support the conclusion that Canadians pay significantly higher prices than consumers in other developed countries. Until now, though, we had never devoted a full chapter to the issue of pricing. The following pages explain why the data contained in the Nordicity study fail to support the common perception of excessive and rising Canadian telecom prices.

Methodological Limits to Nordicity Study Comparisons

Ian Scott identifies a crucial problem when it comes to comparing prices: There are so many variables to take into account that it is difficult to form an accurate picture. If all these variables are not accounted for because it is too complex to do so, we should at a minimum remain prudent when interpreting the numbers we do have.

The available data do not support the conclusion that Canadians pay significantly higher prices than consumers in other developed countries.

The 2016 edition of the Nordicity study contained a section entitled "Caveats to the Interpretation of the Findings of this Study"⁴ that recognized these methodological limits. (For some reason, it is nowhere to be found in the 2017 edition, even though it remains just as relevant, since the study's methodology has not changed.) The section noted that "[p]rices in Canada and international jurisdictions are driven by a complex mix of a number of factors: cost of service, competitive positioning, technological advances, consumer behaviour and regulatory frameworks." It acknowledged that

[t]his Study did not take into account the network technologies deployed in the networks nor the

1. NGL Nordicity Group Ltd., *2017 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, October 5, 2017. The seven other countries are the U.S., Italy, Germany, Japan, France, Australia, and the U.K. This annual study by Nordicity—formerly carried out by Wall Communications—used to be prepared for the CRTC. In 2017, it was prepared for Innovation, Science and Economic Development Canada.

2. Navdeep Bains, Speech at 2017 Canadian Telecom Summit, Toronto, Government of Canada website, June 5, 2017. For a discussion of the issue itself and why the minister was in the wrong, see Martin Masse and Paul Beaudry, "Wireless Services: Should Regulation Favour Resellers?" Economic Note, MEI, November 9, 2017. In March 2018, the CRTC decided not to carry out the minister's request and not to force the large providers to share their networks with resellers. See Martin Masse, "The CRTC's great wireless non-decision," *National Post*, March 29, 2018.

3. "Les comparaisons de prix sont difficiles à faire, [...] il y a tellement de variables." Vincent Brousseau-Pouliot, "Prix de la téléphonie sans fil : Le CRTC baisse le ton," *La Presse*, November 27, 2017.

4. NGL Nordicity Group Ltd., *2016 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, March 22, 2016, p. 12.

speed or quality of service of those networks. Finally, this Study did not account for any cost of service or socio-economic factors that may be relevant for price differences across different domestic and international jurisdictions. Thus, factors such as population density, terrain and climate have significant impacts on the cost of service. Similarly, socio-economic factors such as affordability indicators (i.e. mobile prices in relation to disposable income), number of handsets per subscriber, number of minutes of usage per subscriber and other factors were not within the scope of this Study.

In short, the Nordicity study compares prices for general categories of products, but ignores most factors that explain how these products and the markets where they are produced and sold are different. This amounts to comparing what two people have to pay to lease a car, without informing us that the first is a highly-paid executive leasing a Lexus that she uses every day, while the second is a low-income retiree leasing a Yaris that he uses once a week. The raw numbers simply do not tell us much.

In the case of the Nordicity study, almost all of the factors not taken into account would cast a better light on the situation in Canada. Ignoring them therefore creates a systematic bias against the affordability of Canadian telecom services.

Speed

When comparing six levels of mobile wireless service baskets, the Nordicity study includes the number of minutes and text messages, the amount of data, and the availability or not of features such as caller ID. But it takes for granted that network speed is the same everywhere.⁵

Yet international metrics have consistently shown that Canada has some of the highest quality wireless networks in the world. Canada ranks 6th among the OECD's 35 countries as surveyed by Cisco (see Figure 1-1), and 9th among 34 available OECD countries surveyed by OpenSignal (see Figure 1-2). In its latest report on the state of mobile networks in Canada, OpenSignal states that

Canada has become quite the LTE powerhouse, especially in terms of speed. Some of the fastest speed measurements we're seeing globally are

now coming out of the North American country. But raw speed isn't the only thing Canada can brag about. Access to LTE signals is excellent, and the country is laying a solid foundation for 5G. [...] There's no question Canada is a global 4G superpower today. That likely means there are few other countries better prepared than Canada to deploy the 5G networks of the future.⁶

Clearly, in terms of speed and service quality, Canadians are paying for a Lexus, not a Yaris.

Investments

It is no coincidence that Canadian telecommunications networks are among the best in the world: This is the result of massive annual capital expenses by the industry to deploy the latest technologies. And there is no doubt that Canadian carriers are among those that invest the most in the world, however one calculates it: per connection, per subscriber, per capita, or as a percentage of their revenue.

The Nordicity study ignores most factors that explain how these products and the markets where they are produced and sold are different.

According to GSMA Intelligence, wireless carriers in Canada invested on average US\$78 per connection between 2010 and 2016, almost twice as much as their European counterparts, which only invested \$40. Carriers in the U.S.—where prices are in some cases found by the Nordicity study to be higher than in Canada—invest even more, averaging \$97 per connection (see Figure 1-10).

Another set of data from Bank of America Merrill Lynch puts Canada ahead of the G7 pack in terms of capital expenses per wireless subscriber in 2016, at US\$67.48, closely followed by Japan and the U.S. at \$67.24 and \$65.91 respectively. European countries, praised by critics of the Canadian industry for their low prices, are once again predictably far behind when it comes to investing in their networks, with France at \$47.95 per subscriber, Italy at \$44.02, the UK at \$39.23, and Germany at \$34.48 (see Figure 1-11).

A third set of data from the OECD looked at investment in telecommunications services per capita. For the

5. For the three levels of usage in the comparison of data packages only, the study simply indicates a download speed equal or superior to 1.5 Mbps everywhere. NGL Nordicity Group Ltd., *op. cit.*, footnote 1, pp. 75-76.

6. OpenSignal, *State of Mobile Networks: Canada*, February 2018.

2005-2015 period, Canada ranked fifth among 35 countries, with an average of US\$255 invested per capita every year, behind only Switzerland, Luxembourg, Australia, and the Netherlands, and ahead of all other G7 countries (see Figure 1-12).

Finally, the OECD also provides a data set of investment as a percentage of telecommunications revenue. For the 2005-2015 period, Canadian telecommunications companies invested on average 22.7% of their revenue, which was the third highest percentage among the 35 countries (see Figure 1-13).

To return to our automotive analogy, a Lexus does not cost the same as a Yaris to develop, build, repair, and maintain, and their prices vary accordingly.

Usage

Canadians are among the biggest consumers of data in the world. According to Cisco, when it comes to tablet usage, Canada is ranked 6th among 21 countries surveyed. In terms of smartphone usage, Canada is also ranked 6th. Market penetration of smartphones is also high in Canada, with 83% of mobile subscribers using them, which puts Canada in 3rd place. Finally, almost two thirds of users are connected to the fastest LTE network. This puts Canada in 4th place among the 21 countries in Cisco's sample.⁷

International metrics have consistently shown that Canada has some of the highest quality wireless networks in the world.

In short, Canadians are heavy users of telecommunications services, and they're paying for world-class networks that can deliver the fast, reliable, high-quality services they expect. That's not a conclusion one could infer from the Nordicity study, however.

Affordability

One of the most distorted interpretations of the Nordicity study is the assumption that the prices it uses for Canada in its international comparisons are representative of all prices in the Canadian market and are paid by all Canadian consumers of telecommunications services. This is

implied in news reports headlined "Canadians pay..." that usually accompany the study's release.

However, the data it collects primarily reflect the most expensive service baskets. They exclude the cheaper flanker brands and are weighted according to each provider's market share as well as city population among the six Canadian cities surveyed. The resulting aggregated prices for all of Canada are very close to those of the three main national brands (Bell, Rogers, and TELUS).⁸

This limited set of data hides the simple reality that Canadians have many more affordable options. They can get similar service baskets at sometimes much cheaper prices by switching either to a flanker brand offering prepaid or postpaid services (such as Chatr and Fido, Rogers' flanker brands), a regional provider (such as Videotron or Freedom), or a reseller (such as PC Mobile or 7-Eleven SpeakOut). The majority who stick to the most expensive brands may do so because they are willing to pay more for a guarantee of quality and reliability, because these brands are better known, or because they are not budget-conscious enough to bother shopping around and switching to another provider. But one way or another, it is simply not true that "Canadians pay" these high-end prices. Anyone who does not want to pay these prices has a variety of options available.

Geographical differences

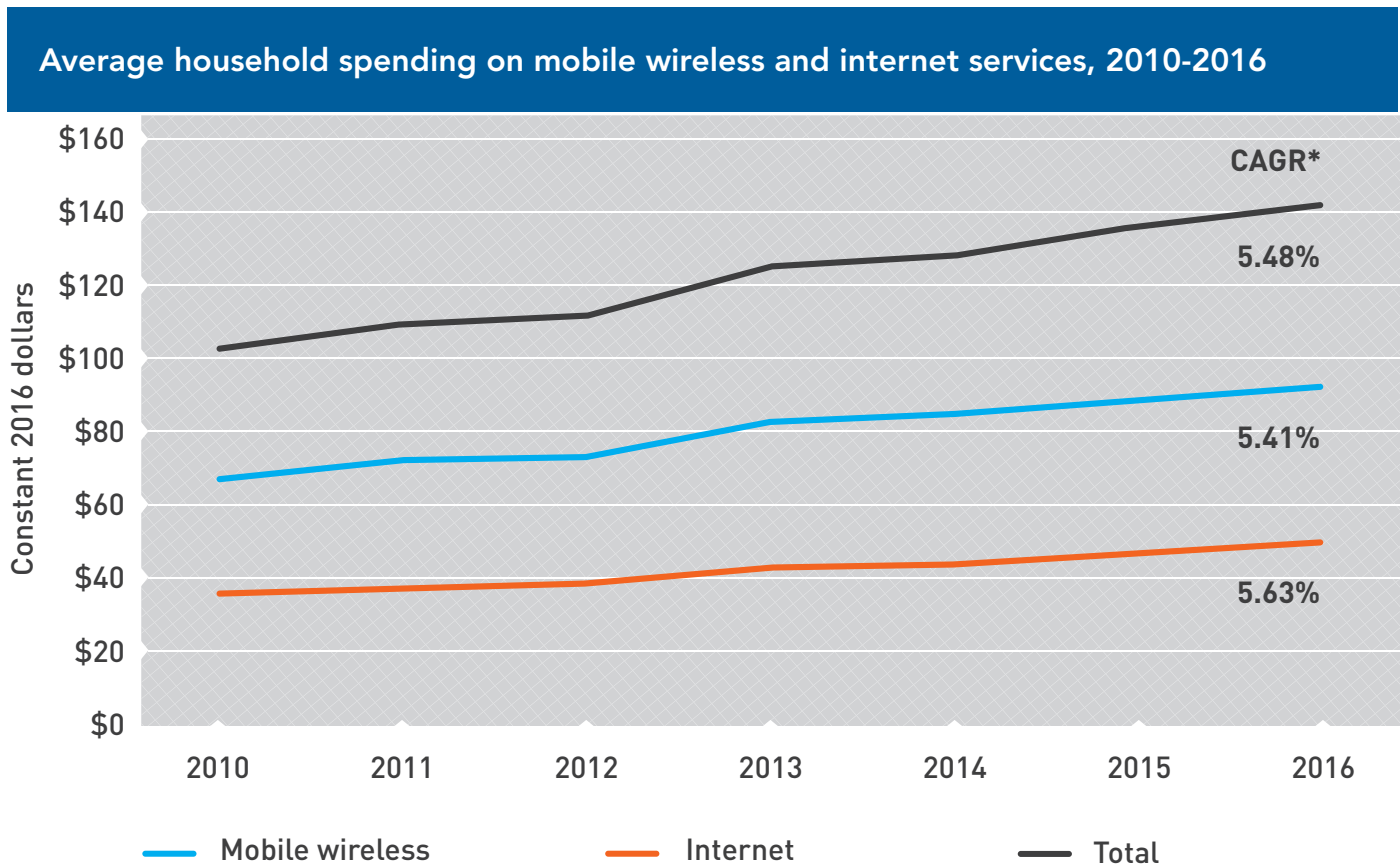
The Nordicity study does not take into account one key geographical factor affecting cost, which is the fact that Canada has a relatively small population on the second largest landmass in the world. Even if we subtract the substantial portion of the territory which is uninhabited, the density of wireless connections per square kilometer in Canada is the fourth lowest among 35 OECD countries, just above Norway, Australia, and Iceland. With only 14 connections per square kilometer in Canada, it's illogical to expect that the costs of deployment of a wireless network here will be the same as in South Korea, Japan, or the Netherlands, where this density exceeds 450, or in certain large European countries, where it is above 100 (see Figure 1-9).

There is another geographical component of the Nordicity methodology that might unduly penalize Canada in international comparisons. Since the study focuses on this country, its set of data for Canada is much more extensive than for the other countries in its comparison. While the

7. See Figures 1-1 to 1-4 of the 2017 edition of this research paper for all the metrics mentioned in this paragraph. Cisco's data have not been updated since 2016.

8. Indeed, the Canadian wireless prices used in international comparisons for basket levels 1, 2, 3, and 5 are actually *higher* than the unweighted average of the prices of the three main brands across the country. See NGL Nordicity Group Ltd., *op. cit.*, footnote 1, pp. 33, 35-37.

Figure 2-1



*CAGR = Compound annual growth rate.

Sources: Statistics Canada, CANSIM Table 203-0022: Survey of Household Spending, 2010-2016; Statistics Canada, CANSIM Table 326-0020: Consumer Price Index (CPI), 2010-2016. Prices in current dollars were adjusted to constant 2016 dollars

average prices for Canada are collected in six cities, those for the US come from just four cities, and those for the six other countries come from only one, usually the capital and biggest city in the country. All these countries (except Australia) have a larger population than Canada, but the prices included in the analysis are much less geographically representative.

Wireless carriers in Canada invested on average US\$78 per connection, almost twice as much as their European counterparts.

What is the effect of this unequal sampling? Are prices in the biggest city lower or higher than in other cities in the six countries? There is usually more competition and choice in large cities, which could mean lower prices. Alternatively, prices could be higher because of a higher

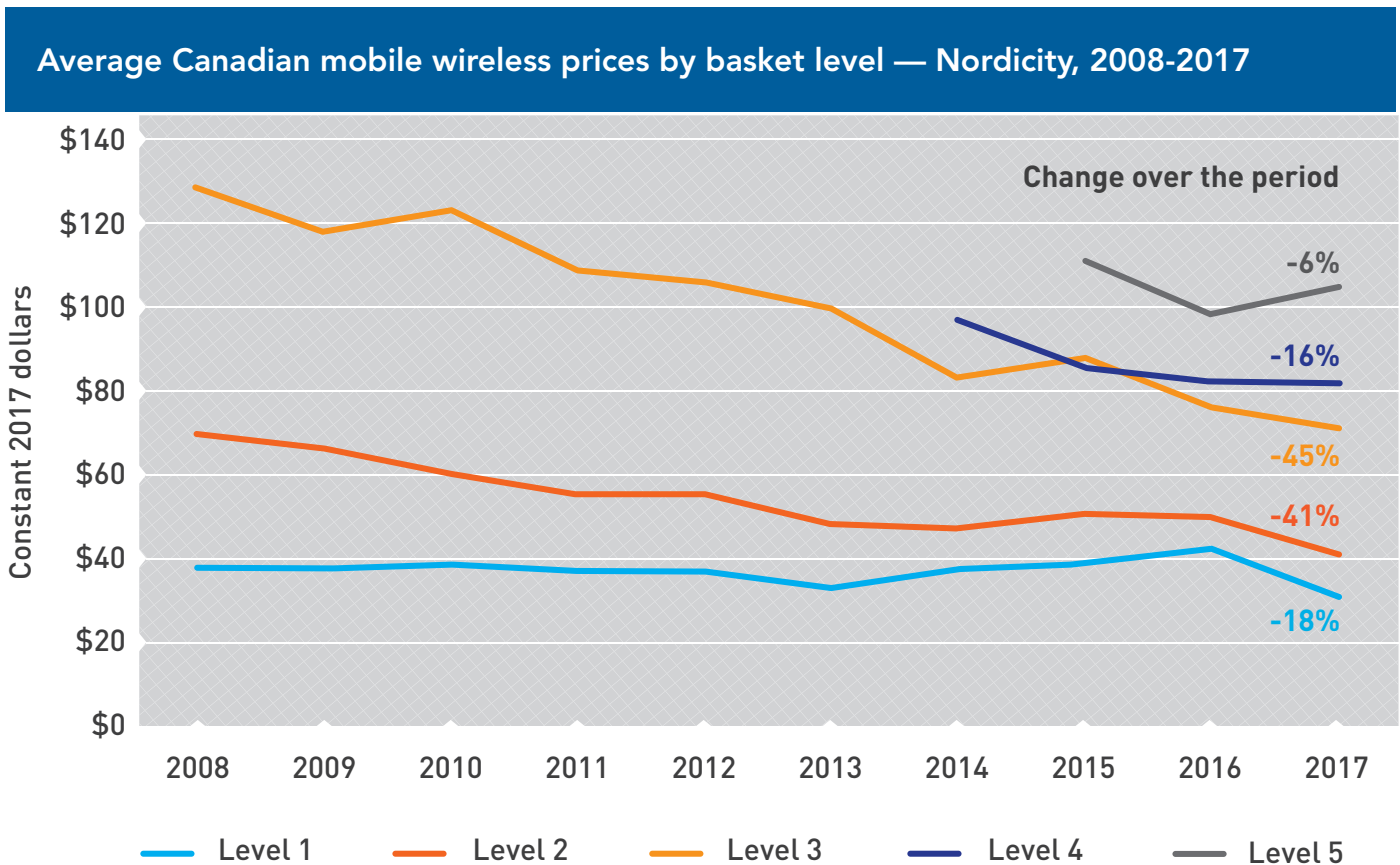
standard of living and higher prices overall. We simply do not know. What is certain is that this is another methodological shortcoming of Nordicity's comparisons, which again recommends prudence when interpreting its numbers.

Prices Are Actually Declining

Because the potential methodological pitfalls are much more circumscribed, the Nordicity study is on firmer ground when comparing how Canadian prices have evolved over the years than when comparing prices in Canada with those of other countries. And the numbers both it and the CRTC provide flatly contradict the widespread perception that Canadian telecom services cost more year after year. On the contrary, all indications are that most prices have been declining.

An important distinction needs to be made here to avoid a common confusion. It is certainly true that the average bill that Canadians pay for their wireless and internet

Figure 2-2



Sources: NGL Nordicity Group Ltd., *2017 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, prepared for Innovation, Science and Economic Development Canada, October 5, 2017, Figure 3, p. 29; Statistics Canada, CANSIM Table 326-0020: Consumer Price Index (CPI), 2008-2017. Prices in current dollars were adjusted to constant 2017 dollars.

services keeps increasing (see Figure 2-1). But that's not because they have to pay more for the same services. It's because they are paying more for more and better services.

Over the past several years, Canadians have been switching en masse from simple cellphones to smartphones with a data plan. The percentage of Canadians who own smartphones has risen from 51% in 2012 to 77% in 2016.⁹ They're also opting for wireless plans with more data: Average usage per month has doubled in just two years, growing from 641 MB to over 1.2 GB between 2014 and 2016.¹⁰ And they are buying home internet packages featuring higher speeds and more data, with subscriptions to plans including service speeds of

This limited set of data hides the simple reality that Canadians have many more affordable options.

50 Mbps and higher growing from 3.6% of residential high-speed subscriptions in 2012 to 26.2% in 2016.¹¹

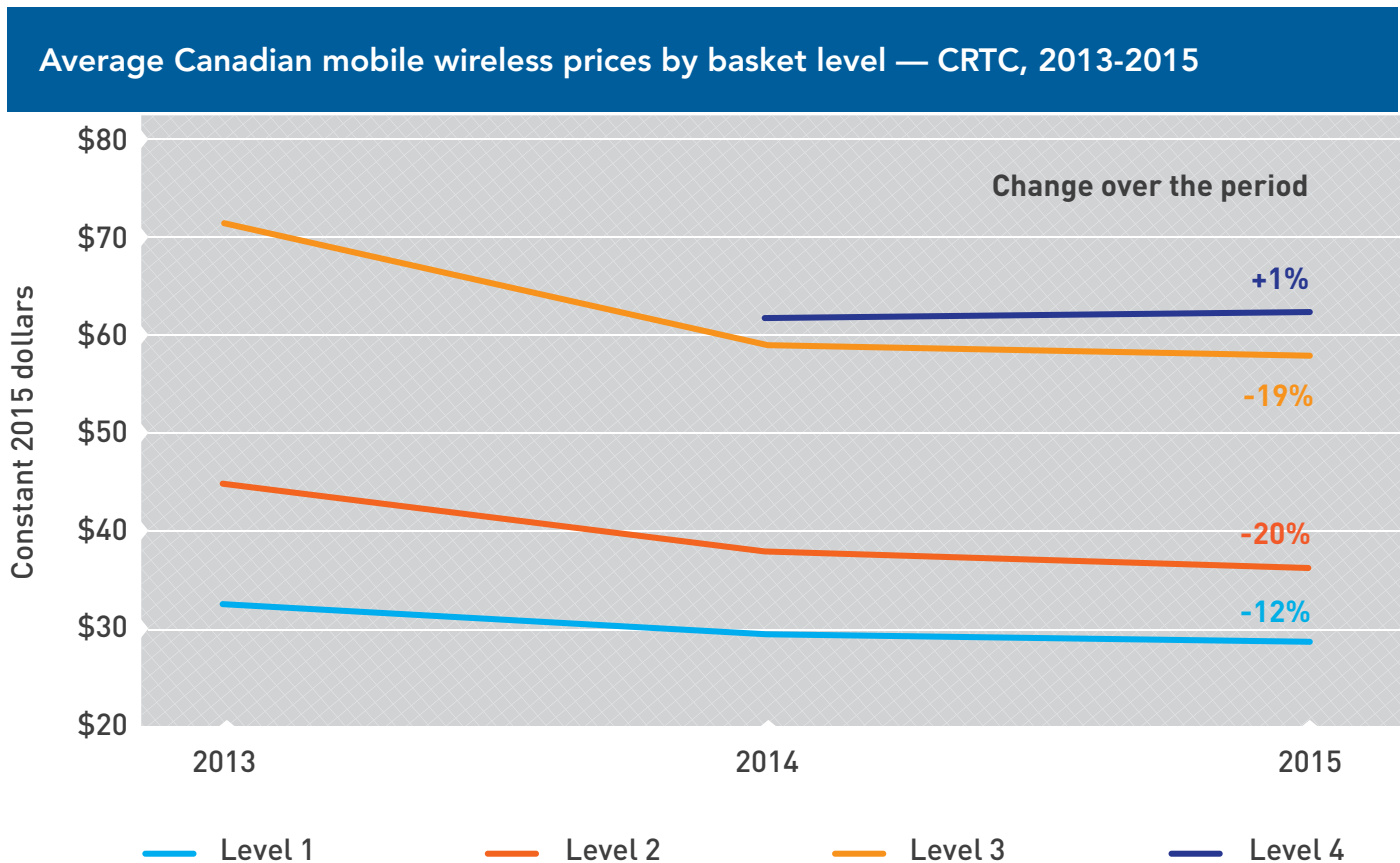
To once again return to our car analogy, even if the price of leasing a Yaris and the price of leasing a Lexus both go down from one year to the next, customers who switch from leasing a Yaris to leasing a Lexus will necessarily pay more. When almost everybody does this in a telecommunications market that is constantly evolving and offering better services, the end result is that the average bill goes up—even if the unit prices of all the services go down.

9. 18 years of age and older. CRTC, *Communications Monitoring Report 2017*, 2017, p. 305.

10. *Ibid.*, p. 300.

11. *Ibid.*, p. 254.

Figure 2-3



Sources: CRTC, *Communications Monitoring Report 2017*, 2017, p. 325; Statistics Canada, CANSIM Table 326-0020: Consumer Price Index (CPI), 2013-2015. Prices in current dollars were adjusted to constant 2015 dollars.

So what do the numbers tell us regarding the evolution of these unit prices? The Nordicity study has collected data for various levels of usage over the past decade. When adjusted for inflation, the prices for wireless telephony service baskets have all gone down between 2008 and 2017, with reductions ranging from 6% for Level 5 to 45% for Level 3 (see Figure 2-2).¹²

The latest edition of the CRTC's annual Communications Monitoring Report also has a data series, covering only three years, but showing a similar trend. While the prices for the basket with the highest usage have remained flat, those for the three other baskets have seen a 12% to 20% decrease over this short period, again after adjusting for inflation (see Figure 2-3).

Finally, the Nordicity study also shows that some prices for broadband internet connections have been falling, while others have been rising, after adjusting for infla-

The average bill that Canadians pay for their wireless and internet services keeps increasing because they are paying more for more and better services.

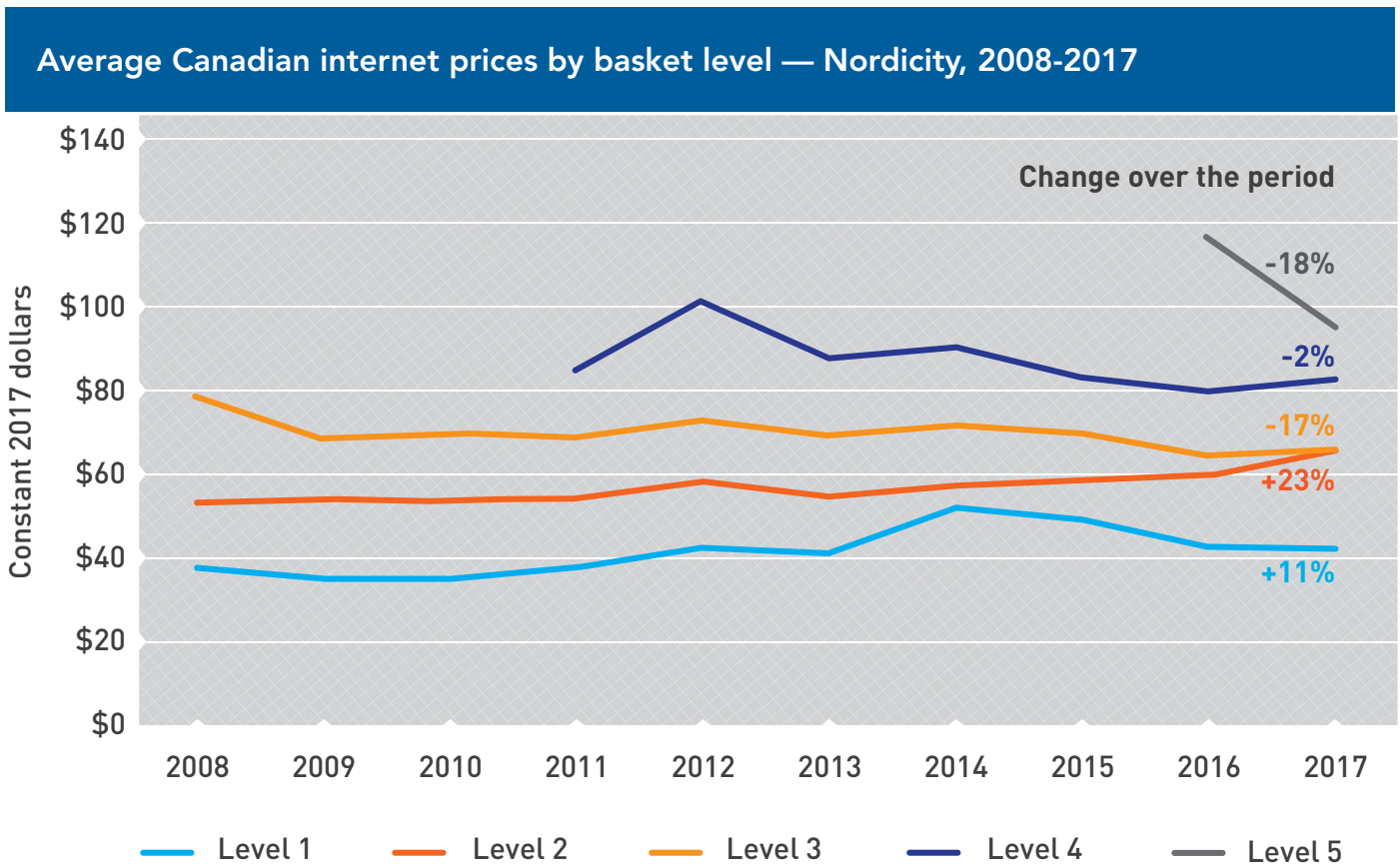
tion (see Figure 2-4). This graph, however, does not provide an accurate picture. As explained in the study, the basket levels are not constant, but have been regularly adjusted since 2010 to reflect the constant increase in download speeds on offer.

For example, the Level 1 basket offered speeds of up to 1.5 Mbps until 2011, but speeds of 3 to 9 Mbps in 2016-17, which is up to six times faster, while the Level 4 basket offered speeds of 20 Mbps or more in 2011, but 41 to 100 Mbps in 2016-17, up to five times faster.¹³ If the

12. A family package level with very high usage, for which only two data points were available, was not included in this graph.

13. NGL Nordicity Group Ltd., *op. cit.*, footnote 1, pp. 43-45.

Figure 2-4



Note: This graph does not provide an accurate picture. As explained in the Nordicity study, the basket levels are not constant, but have been regularly adjusted since 2010 to reflect the constant increase in download speeds on offer. If the price data were adjusted to reflect the constantly increasing quality of service in each basket, all the prices would go down, or go down even more than illustrated in the graph.

Sources: NGL Nordicity Group Ltd., *2017 Price Comparison Study of Telecommunications Services in Canada and Select Foreign Jurisdictions*, prepared for Innovation, Science and Economic Development Canada, October 5, 2017, pp. 43-45; Statistics Canada, CANSIM Table 326-0020: Consumer Price Index (CPI), 2008-2017. Prices in current dollars were adjusted to constant 2017 dollars.

price data were adjusted to reflect the constantly increasing quality of service in each basket, all the prices would probably go down, or go down even more than illustrated in the graph. Although price hikes, such as the one announced by Bell and Rogers in March 2018,¹⁴ attract a lot of media attention and give the impression that internet prices keep going up all the time, this long-term perspective shows that this is not the case.

Conclusion

The downward trend of prices for telecommunications services should surprise no one. It used to be prohibitively expensive to make long-distance calls. Today, most baskets of services offer unlimited long-distance calls within Canada, and it won't cost you anything

When adjusted for inflation, the prices for wireless telephony service baskets have all gone down between 2008 and 2017.

either to call abroad if you are using Skype or another similar application. A similar trend has been observed in computing and other information technology industries for decades. Nobody complains today that computers are out of reach for ordinary Canadians, even though they were an expensive gadget in the 1990s. What will the critics complain about a few years down the road when everybody in Canada can get amazingly fast wireless and internet service at reasonable prices, and reasonably fast service for a bargain?

14. Christine Dobby, "Rogers, BCE hike internet prices as TV loses traction," *The Globe and Mail*, March 10, 2018.

Technologies are evolving at an increasingly rapid pace, and massive investments by the industry are allowing consumers to get access to them quickly, while competitive pressure forces prices down. Even if we grant that average prices in Canada are higher than in other developed countries—and as we saw, the Nordicity study's methodology does not allow us to conclude this—nobody is forced to pay for the most expensive high-end services offered by the primary brands. Several more affordable options exist.

Everybody would of course prefer to pay less for these services, but this does not mean there is a problem with the telecom industry.

Everybody would of course prefer to pay less for these services, and for everything else as well, but this is simply a universal rule of consumer psychology. It does not mean there is a problem with the telecom industry, and it should not serve as the basis for regulatory intervention. The fact that the telecommunications industry was for a long time dominated by monopolies, and remains governed by a specific and cumbersome regulatory regime, probably heightens the scrutiny to which it is subjected, and needlessly politicizes every decision that applies to it.

Canada's telecommunications industry has a regulation problem, not a pricing problem. As we argue in Chapter 4, the solution is to regulate it like any other industry through a general regime of competition law, rather than micromanage it in the hope of lowering prices. Sustainably lower prices are the result of technological innovation, investment, and entrepreneurship, not of regulatory intervention.

CHAPTER 3

Broadband Regulation: Should Canada Emulate the United States?

The telecommunications sector in the United States has been buzzing with controversy since November 2017, when Ajit Pai, the recently appointed chairman of the Federal Communications Commission, announced his intention to do away with the stricter “net neutrality” rules introduced by the Obama administration in 2015. Pai’s proposal—approved by the FCC in December¹⁵—was met with outrage by supporters of a more interventionist approach to internet regulation. Critics warned that returning to the lighter regulatory framework that governed the internet during the first twenty years of its existence would lead to a stifling of free speech and innovation, threaten democracy, and bring about the end of the internet as we know it.¹⁶

The debate even spilled over into this country, with Innovation Minister Navdeep Bains stating that Canada “remains committed to the principles of net neutrality.”¹⁷ Former CRTC chairman Konrad von Finckenstein and former vice-chair Peter Menzies took to the pages of *The Globe and Mail* to urge millennials to fight for net neutrality and warned of the dire impact on Canada’s broadband landscape if Pai’s proposal prevailed.¹⁸

Will the recent policy changes south of the border have a significant impact on Canadian policy? And should Canadians fear these developments? The short answer to both questions is “no.”

Net Neutrality in the United States

In 2015, at the urging of President Obama, the U.S. Federal Communications Commission decided to subject the internet to so-called “Title II” regulation, a regulatory framework conceived in 1934 for Depression-era telephone monopolies. The rationale for this policy move was to curtail the power of broadband providers

which, in the words of the FCC, held “all the tools necessary to deceive consumers, degrade content, or disfavor the content that they don’t like.” The 2015 “Open Internet Order” introduced three bright-line rules of “no blocking,” “no throttling,” and “no paid prioritization,” in addition to a so-called “general conduct” standard, a vague rule providing the FCC with powers to sanction broadband providers that “unreasonably” interfered with net neutrality as defined by the agency.¹⁹

Notably, the general conduct rule was used, without compelling evidence of consumer or competitive harm, to launch an investigation against “zero-rating,” a practice whereby internet providers do not charge for data used by specific applications or services.

Although critics have used dramatic terms to characterize the repeal of Title II regulation, it merely reverts back to the lighter-touch regime that governed the internet from 1996 to 2015.

With the arrival of a new administration, the Federal Communications Commission switched to Republican hands, and its new chairman, Ajit Pai, favoured a much more deregulatory approach. Although critics have used dramatic terms to characterize the repeal of Title II regulation, it merely reverts back to the lighter-touch regime that governed the internet from 1996 to 2015.

While these net neutrality rules had only been on the books for two years, they had already negatively impacted the U.S. broadband market by creating regulatory uncertainty and reducing incentives to invest in next-generation broadband infrastructure. Broadband network investment had fallen more than 5.6% since the FCC’s 2015 net-neutrality decision, the first such decline outside of a recessionary period.²⁰ The new rules adopted in late 2017 repealed the aforementioned general conduct standard, as the regulators found that the costs associated with it—reduced investment and innovation—outweighed its benefits.

15. Federal Communications Commission, “FCC Acts to Restore Internet Freedom,” Press Release, December 14, 2017.

16. Sarah Kendzior, “Gutting net neutrality is a death knell for the resistance,” *The Globe and Mail*, November 27, 2017; Joe Concha, “CNN headline declares ‘end of the internet as we know it’ after net neutrality vote,” *The Hill*, December 14, 2017.

17. Michael Lewis, “Repeal of net neutrality in U.S. could impact Canada,” *Toronto Star*, November 22, 2017.

18. Konrad von Finckenstein and Peter Menzies, “Millennial moment: Will the tech generation fight for net neutrality?” *The Globe and Mail*, November 27, 2017.

19. Federal Communications Commission, *Report and Order on Remand, Declaratory Ruling, and Order*, March 12, 2015, para. 8.

20. Hal J. Singer, “2016 Broadband Capex Survey: Tracking Investment in the Title II Era,” Hal Singer’s personal blog, March 1, 2017; see also USTELECOM, *Historical Broadband Provider Capex*.

Also gone is the ban on paid prioritization, freeing broadband providers to enter into agreements with content providers to speed up content delivery. The Obama administration's net neutrality rules banned the practice outright, under the pretense that it undermined the open internet. But a blanket ban makes little sense: Not all prioritization is inherently harmful, and allowing parties to contract for different data delivery speeds may sometimes benefit consumers and competition. Many smaller content providers could actually benefit from prioritization as a means of getting a leg up and gaining market entry. All of today's giants—Google, Amazon, and Facebook—were once small players facing dominant incumbents. Prioritizing the delivery of certain types of data will also be necessary for the development of services such as telemedicine and smart-car navigation systems.

Every major U.S. internet provider already supports prohibitions against blocking, throttling, and unfair discrimination.

Moreover, the possible creation of "faster lanes" for some services with paid prioritization does not mean the rest of the internet will be stuck in a "slow lane." Slow internet will soon be a thing of the past thanks to the billions of dollars invested by providers every year to upgrade their networks. This could only be a problem if providers degrade specific services, but every major U.S. internet provider already supports prohibitions against blocking, throttling, and unfair discrimination.²¹ They have no interest in angering their clients, and there have only been a handful of cases of unfair discrimination over the past two decades, all of which were resolved quickly. Even now, after the repeal of the Open Internet Order, the FCC will nonetheless require providers to publicly disclose their neutrality practices. And, should anti-competitive broadband practices occur again, antitrust enforcement by the Federal Trade Commission will remain available to protect consumer interests.

Ken Engelhart, a communications lawyer and former Canadian telecom executive, argues that broadband providers have little incentive to adopt non-neutral practices.²² He points out that the "walled gardens" such as

AOL that prevailed in the early days of the commercial internet were replaced by neutral connections without any government intervention, simply because that's what customers preferred. Engelhart also notes that the likelihood of broadband providers extracting payments from major content platforms such as Google and Netflix for the use of their networks is remote, as broadband providers need these platforms and their millions of customers much more than the platforms need them.

The bottom line is that ending utility-style regulation of the internet in favour of a lighter-touch regulatory regime will not lead to the catastrophic scenarios depicted by some net neutrality activists. What is most likely to happen is that the internet will remain basically the same, except for some services that might be zero-rated, or be delivered faster than others thanks to paid prioritization.

Net Neutrality in Canada

Although the U.S. debate over net neutrality has reverberated in Canada, there is little chance that our regulatory approach on this issue will change as a result of the recent developments south of the border. Indeed, the new CRTC chairman, Ian Scott, reiterated the CRTC's commitment to net neutrality in his first speech as chair,²³ and the Canadian ministers responsible for both broadcasting and telecommunications have made it clear that the Canadian government remains an unwavering supporter of net neutrality.²⁴

Despite the fact that Canada's telecommunications legislation does not explicitly enshrine the concept of net neutrality, it does prohibit carriers from providing an undue preference and engaging in unjust discrimination when providing telecommunications services, or subjecting any person to an undue or unreasonable disadvantage.²⁵ It also prevents Canadian carriers from controlling the content or influencing the meaning or purpose of telecommunications carried by them for the public.²⁶ This provision has formed the basis for Canada's net neutrality regime, which has developed through a series of CRTC decisions and policy frameworks since 2009.²⁷

23. Ian Scott, "Ian Scott to the IIC Canada Communications Law and Policy Conference," Government of Canada, Speech, November 14, 2017.

24. Michael Lewis, *op. cit.*, footnote 17.

25. Government of Canada, *Telecommunications Act*, S.C. 1993, c. 38, last amended on September 30, 2015, s. 27(2).

26. *Ibid.*, s. 36.

27. Scott M. Prescott, "Net neutrality is alive and well in Canada," *Lexology*, April 24, 2017.

21. Tali Arbel, "After net neutrality, brace for Internet 'fast lanes'," *USA Today*, December 20, 2017.

22. Ken Engelhart, "Why concerns about net neutrality are overblown," *The New York Times*, December 4, 2017.

The main concrete difference so far between the FCC's and the CRTC's approaches to net neutrality has been the steadfast opposition of the Canadian regulator to zero-rating. In 2015, it found that certain carriers were giving preferential treatment to their mobile television services, creating a disadvantage for other internet content.²⁸ These carriers—namely, Bell and Videotron—offered mobile TV services to their subscribers at a flat rate per hour instead of billing them for the amount of data consumed. The CRTC ordered them to stop the practice, finding that it could potentially harm other content applications available on subscribers' mobile devices.

In banning innovative and pro-competitive targeted pricing plans, the CRTC has not protected the integrity of the internet; rather, it has raised prices for certain consumers and lowered prices for no one.

In 2017, the CRTC went even further by establishing new rules that effectively ban most types of zero-rating practices.²⁹ This required the regulator to accept the head-scratching notion that giving consumers free service is anti-consumer. Along with the new rules, the CRTC issued a decision sanctioning Videotron, Quebec's regional cable provider, for offering an "Unlimited Music" service to its customers.³⁰ Unlike the 2015 decision, however, this did not involve Videotron giving preferential treatment to its own content. Rather, its program was open to all music streaming services that met the program's technical criteria, and allowed Videotron customers subscribing to certain data packages to access these services without incurring data charges.³¹

Ironically, in banning this pro-consumer practice, the CRTC—which in recent years has been hell-bent on

fostering additional competition in Canada's wireless market—ended up handicapping a wireless entrant attempting to gain market share from incumbents. In banning innovative and pro-competitive targeted pricing plans such as Videotron's Unlimited Music program, the CRTC has not protected the integrity of the internet; rather, it has raised prices for certain consumers and lowered prices for no one. This decision will curb broadband providers' incentive to innovate and propose new data plans, which will ultimately hurt Canadian consumers.

The CRTC's rigid approach to net neutrality stands in contrast to the less heavy-handed regulatory approach now adopted by the FCC, where chairman Pai has rightly recognized that the practice of zero-rating enhances not only consumer welfare, but also broadband competition in general.

That said, it would be a mistake to believe that policy differences on net neutrality will take the broadband industries of Canada and the United States in vastly different directions. The changes in the U.S. simply mean that instead of regulating broadband with strict preventive rules, which have proven costly and often stifle innovation, the industry will return to a less cumbersome regulatory regime that can adapt to new business models and technological change, while maintaining the basic net neutrality rules against blocking and throttling.

Promoting Facilities-Based Competition

Despite their policy differences on net neutrality, both Canada and the United States can boast of having world-class broadband networks, thanks to strong competition between incumbent telecom companies and cable companies, each of which owns its own infrastructure. However, Canada's position as a broadband leader may be compromised by the CRTC's appetite for meddling in the market. In 2015, the CRTC took the unprecedented step of forcing broadband providers to share fibre-to-the-home broadband networks with resellers. As we have noted in previous editions of this report,³² mandating reseller access to fibre-to-the-home networks will slow down the deployment of fibre networks by reducing the incentives of telecom providers to invest and preventing them from fully recovering the capital costs associated with their investments.

28. CRTC, *Complaint against Bell Mobility Inc. and Quebecor Media Inc., Videotron Ltd. and Videotron G.P. alleging undue and unreasonable preference and disadvantage in regard to the billing practices for their mobile TV services Bell Mobile TV and illico.tv*, Broadcasting and Telecom Decision 2015-26, January 29, 2015.

29. CRTC, *Framework for assessing the differential pricing practices of Internet service providers*, Telecom Regulatory Policy 2017-104, April 20, 2017.

30. CRTC, *Complaints against Quebecor Media Inc., Videotron Ltd., and Videotron G.P. alleging undue and unreasonable preference and disadvantage regarding the Unlimited Music program*, Telecom Decision 2017-105, April 20, 2017.

31. *Ibid.*, pars. 18-19.

32. See in particular Chapter 3 in the 2015 edition of this Research Paper, "Mandatory Sharing of Broadband Networks: Fostering or Hindering Innovation?" and Chapter 4 in the 2016 edition, "Facilities-Based Competition as a Spur to Innovation."

Indeed, it is doubtful that telecom providers will continue to make fibre network investments at the same pace as they have in the past if forced to share their newly-deployed infrastructure with their competitors at artificially low prices. This short-sighted approach will hurt Canadian consumers in the long run, especially those living in rural and remote areas, where the costs of building out a fibre network are the highest, and the payback periods correspondingly longer.

By contrast, in the United States, whereas the FCC had initially imposed broad network sharing mandates on former telecom monopolies, it was forced to change course after the courts struck down those mandates in the early 2000s. The FCC eventually chose to refrain from mandating competitor access to next-generation networks, which paved the way for extensive investment in and deployment of advanced fibre networks and similar network infrastructure.³³

The CRTC should revisit its 2015 decision to provide reseller access to high-speed networks, and phase out its broadband network sharing regimes, as the United States did in the early 2000s.

At the other end of the spectrum lies Europe, which has taken the exact opposite approach to broadband deployment, with disastrous consequences. Once seen as a technology leader in the digital economy, over the past decade, Europe has lost ground against many Asian and North American markets in terms of providing coverage for fast and ultra-fast broadband. In a 2016 study, Andrea Renda, an expert on digital innovation in Europe, painted a grim picture of the European broadband landscape, pointing out that fibre-to-the-premises coverage in the United States was approximately double what it was in Europe, and overall next-generation access coverage was 82% in the U.S. compared to 54% in Europe.³⁴

The evidence clearly demonstrates that when it comes to broadband deployment, countries like Canada and the United States, which have embraced facilities-based competition (i.e., competition between market players

owning their own networks), have fared much better than economies that prioritized service-based competition, where new entrants compete with incumbents by leasing broadband infrastructure from them at regulated prices.

Even if Canada and the United States part ways on the issue of net neutrality, it is to be hoped that both countries will remain aligned when it comes to their commitment to facilities-based competition in the broadband sector. The CRTC should revisit its 2015 decision to give resellers access to high-speed networks, and phase out its broadband network sharing regimes, as the United States did in the early 2000s. The resulting regulatory environment would allow Canada to remain a global broadband leader, would maximize incentives for infrastructure investment, and would ensure that Canadians are well positioned to fully participate in the ever-growing digital economy.

33. CRTC, Fiber to the Home Council Americas Intervention, Review of Wholesale Services and Associated Policies, Public Notice 2013-551, January 31, 2014, paragraph 6.

34. Andrea Renda, *Winners and Losers in the Global Race for Ultra-Fast Broadband: A Cautionary Tale from Europe*, Macdonald-Laurier Institute, August 2016, p. 16.

CHAPTER 4

We No Longer Need a Telecommunications Regulator

The year 2018 marks the 50th anniversary of the CRTC. Canada's broadcasting regulator was established by the Broadcasting Act as the "Canadian Radio-television Commission" in 1968. It became Canada's telecommunications regulator in 1976, taking over from the Canadian Transport Commission, and was then renamed the "Canadian Radio-television and Telecommunications Commission."³⁵

The CRTC's role as telecom regulator has changed significantly since 1976. Until the 1990s, telecommunications services in Canada were provided by regional monopolies. Whether private or government-owned, these carriers were regulated as public utilities. Things changed in the 1990s, though, when the CRTC oversaw the transition from monopoly to competition in the provision of wireline voice services. It started by allowing competition in the provision of long distance telephony in 1992,³⁶ and then allowed competition in local telephone markets in 1997.³⁷ Between these two decisions came the enactment of the 1993 *Telecommunications Act*, which among other things empowered the CRTC to "forbear," or conditionally refrain, from regulating telecommunications services when this is consistent with the Act's telecommunications policy objectives.³⁸

As competition has flourished and expanded, the CRTC has increasingly used its forbearance power. In 2016, approximately 95% of telecommunications revenues were from services for which the Commission does not regulate retail rates.³⁹ Yet, despite the gradual deregulation of the sector, it would be a mistake to think that the CRTC has stepped back and adopted a less interventionist approach. Rather, the regulator has shifted its attention from the retail side of the communications market to the wholesale side, where it has implemented a variety of policies aimed at helping new entrants and resellers.

The reality is that despite attempts to guide the CRTC to adopt more market-friendly policies—such as the issuance by the federal government of the 2006 Policy Direction,⁴⁰ which instructed the regulator to rely on market forces to the maximum extent feasible—it has, in many cases, refused to change its old interventionist ways.

The federal government is currently in the process of reviewing Canada's telecommunications legislation.⁴¹ In the process, it should take a hard look at the CRTC, and assess whether there is still a need for a sector-specific regulator for Canada's telecommunications industry. Since Canada has successfully transitioned from monopoly to competition, there is a case to be made that the CRTC should be phased out as Canada's telecommunications regulator, and that the telecommunications sector should move from the sector-specific jurisdiction of the CRTC to the more general regime of competition law, like almost all other sectors of the Canadian economy.

Despite the gradual deregulation of the sector, it would be a mistake to think that the CRTC has stepped back and adopted a less interventionist approach.

Notably, such a transition would mean the end of the CRTC's counterproductive network sharing policies, as well as its micromanaging of Canada's wireless sector.

Network Sharing Policies Are No Longer Required

Wholesale access policies were developed when the CRTC opened local telephone markets to competition in 1997. The CRTC, not unreasonably, thought it would be difficult for new entrants to compete with the former monopolies and gain a foothold in the market. It therefore established a regulatory framework allowing emerging competitors to access the networks of the former monopolies at below-market rates.⁴² This measure was

35. CRTC, About us, The CRTC's origins, 2018.

36. CRTC, *Competition in the provision of public long distance voice telephone services and related resale and sharing issues*, Telecom Decision 92-12, June 12, 1992.

37. CRTC, *Local Competition*, Telecom Decision 97-8, May 1, 1997.

38. Government of Canada, *Telecommunications Act*, S.C. 1993, c. 38, s. 34.

39. CRTC, *Communications Monitoring Report 2017*, November 2017, p. 213.

40. Government of Canada, *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, SOR 2006/355, s. 1.

41. Department of Finance Canada, *Building a Strong Middle Class: Budget 2017*, March 22, 2017, p. 106.

42. CRTC, *op. cit.*, footnote 37.

seen as necessary to allow for an effective transition from monopoly to competition, and has been adopted by many jurisdictions around the world. The idea was that by allowing market entrants to access the networks of incumbents at reduced rates, they would be in a position to amass the necessary capital to deploy their own networks in the longer run.

Network sharing policies were initially adopted to stimulate competition in wireline telephony through the sharing of traditional copper-based networks. But these policies failed to create facilities-based competition in Canada. Competitors relying extensively on mandated network access at artificially low prices did not build significant infrastructure of their own. If anything, network access policies undermined new entrants' incentives to build alternative facilities. Canadians did end up benefiting from facilities-based competition in the wireline telephony sector, but this was thanks to cable providers, which started offering telephone services in the early 2000s. Cable providers already owned their networks, and therefore did not need to piggy-back on incumbent networks to offer telephone services.

The same kinds of policies have more recently been used to stimulate competition in the broadband internet market. However, as in the case of wireline telephony, network sharing policies have not encouraged the deployment of additional broadband networks, instead encouraging the emergence of a large number of small resellers (so-called "independent ISPs") that would not be viable without the CRTC's regulatory largesse. These resellers account for a tiny fraction of all infrastructure spending and contribute little to Canada's broadband landscape. Indeed, the CRTC reports that between 2012 and 2016, facilities-based carriers made on average \$11.7 billion worth of infrastructure investments a year, whereas resellers only accounted for \$32 million.⁴³

Despite these questionable results, the CRTC recently doubled down on its embrace of network access policies by requiring telecommunications carriers to allow independent ISPs to access their highest-speed fibre networks, also known as fibre-to-the-premises (FTTP) facilities.⁴⁴ As we have mentioned in previous editions of this report, there is no compelling case for mandating the sharing of FTTP networks. These do not rely on telcos' legacy copper networks, and telcos have no inherent

competitive advantage in deploying them. More importantly, FTTP facilities are still in the process of being built, and mandating their sharing could significantly reduce the amount of capital invested in their deployment. Such a short-sighted approach will hurt Canadians living in rural and remote areas of the country in particular, where the costs of building fibre networks are the highest, and the payback periods longer.

Canada already has a competitive broadband internet market, but this is despite mandated network access policies, not because of them. About 96% of Canadian households have access to download speeds of 5 Mbps, which the CRTC has long considered sufficient to participate in the digital economy. Furthermore, 82% of Canadians already have access to download speeds of 50 Mbps, which corresponds to the new aspirational target set by the CRTC in its 2016 digital policy regulatory framework.

Since Canada has successfully transitioned from monopoly to competition, there is a case to be made that the CRTC should be phased out as Canada's telecommunications regulator.

Facilities-based competition was able to flourish in Canada thanks to the cable industry, not as a result of network sharing policies. Indeed, cable providers started offering telephone services in the early 2000s and proved themselves to be fierce competitors to the former monopolies. Competition between Canada's telecom and cable companies is robust. In 2005, the revenues of incumbent telephone companies and cable companies as a percentage of total communications revenues were approximately 59% and 23%, respectively,⁴⁵ whereas in 2016, they stood at about 33% and 49%.⁴⁶

Ending the CRTC's mandate as Canada's telecommunications regulator would entail the phasing out of access requirement policies. The federal government would thus be sending an important message to the market: that at a time when demand for bandwidth is growing rapidly, in part due to the exponential growth of the Internet of Things, prioritizing an artificial increase in retail competition over growing investment in next generation broadband networks is no longer the order of the day.

43. CRTC, *op. cit.*, footnote 39, Table 5.0.5 Telecommunications investments made in plant and equipment, by type of provider of telecommunications service, p. 212.

44. CRTC, *Review of wholesale wireline services and associated policies*, Telecom Regulatory Policy 2015-326, July 22, 2015.

45. CRTC, *Communications Monitoring Report 2013*, September 2013, p. 41.

46. CRTC, *op. cit.*, footnote 39, p. 80.

Micro-Managing Canada's Wireless Sector Is No Longer Required

Since 2008, the federal government has been intent on bringing additional competition to Canada's wireless market, including by setting aside spectrum for new entrants and imposing spectrum caps on incumbents during auctions.

In previous editions of this report, we pointed out the shortcomings of this policy, notably that it encouraged the emergence of several small, poorly-capitalized wireless players (Public Mobile, Mobilicity, and WIND Mobile). These players were unable to adequately compete in the market, and ended up being acquired by larger players. It took a decade for the government to sort out that mess, during which time billions of dollars of investment were wasted and valuable spectrum went unused or was inefficiently allocated.

Canada already has a competitive broadband internet market, but this is despite mandated network access policies, not because of them.

Recently, the federal government set aside 30 MHz of spectrum for non-incumbent carriers in the upcoming 600 MHz spectrum auction, which is expected to occur in 2019.⁴⁷ This is misguided. Now that the 2008 auction entrants are part of established, well-financed companies, the case for providing them with preferential treatment is even less convincing.

Although the CRTC is not responsible for Canada's spectrum management policies, which fall within the jurisdiction of Innovation, Science and Economic Development Canada (ISED – formerly known as Industry Canada), the regulator has also enacted policies over the past few years that have resulted in additional micro-management of the wireless sector. Chief among these is the adoption of a Wireless Code in 2013 (amended in 2017), which aims to better inform consumers of their rights and obligations.⁴⁸

Notably, the Wireless Code allows consumers to cancel their wireless contract for free after two years. As a result, wireless carriers have stopped amortizing wireless

device subsidies over periods of more than two years, a change that has often resulted in higher monthly fees for wireless customers. Such a policy is not in the interests of consumers, and can have a particularly negative impact on those of modest means, for whom amortizing the price of a device over a longer time period had significant advantages.

In a way, the Wireless Code's two-year contract provision exemplifies the failures of the CRTC's "command-and-control" approach to competition. In an attempt to portray itself as "pro-consumer," the regulator has actually accomplished the opposite: It has reduced consumer choice and limited the ability of carriers to develop innovative customer offerings. In this instance—as in many others—Canadians would have been better off if the CRTC had relied on market forces instead of attempting to manage the competitive process.

Recent developments in Canada's wireless sector underscore how the market no longer requires the CRTC's heavy-handed oversight. In October 2017, Freedom Mobile sparked what some analysts referred to as a "price war" by offering customers in Ontario, British Columbia, and Alberta deals such as a 10-gigabyte phone plan for only \$50 a month. Rogers followed suit in December, offering customers in the same provinces 10 gigabytes of data plus unlimited calling for \$60 a month. TELUS and Bell quickly imitated Rogers by offering the same \$60 deal, which prompted Freedom Mobile to add unlimited calling to its original package. Some analysts have predicted that other such deals will be offered to customers in the future.⁴⁹

This example proves that Canada's wireless market is a competitive one, and not the "comfortable oligopoly" that some have depicted. As such, there is no longer any need for the CRTC to be constantly meddling with it.

Does Canada Still Need a Telecommunications Regulator?

In its *Final Report* published in March 2006, the Telecommunications Policy Review Panel (TPRP), a group of experts mandated to review Canada's telecommunications regulatory framework, found that "the Canadian telecommunications industry has evolved to the point where market forces can largely be relied on to achieve economic and social benefits for Canadians, and where detailed,

47. CRTC, *Technical, Policy and Licensing Framework for Spectrum in the 600 MHz Band*, SLPB-002-18, March 2018, p. 6.

48. CRTC, *Mobile, Consumer Rights, The Wireless Code*, simplified, December 1st, 2017.

49. Sophia Harris, "Missed out on the \$60 10 GB cellphone plans? Experts bet more deals are coming," *CBC News*, December 20, 2017.

prescriptive regulation is no longer needed in many areas.”⁵⁰

It has been more than 12 years since the TPRP's report was issued and, as discussed above, the CRTC has shown few signs of restraint in its approach to telecommunications regulation. While it has abandoned its prior focus on retail regulation, it has also expanded mandatory network access schemes, created policies that dull incentives to invest, and rewarded product imitators instead of product innovators. If maintained, these policies are bound to hurt Canadian consumers in the long run.

Over the past several decades, Canada's telecommunications sector has gone from monopoly to competition. Most Canadians can now choose between four facilities-based providers for their wireless services, and between a cable provider and an incumbent telecom carrier for their broadband needs. Providers offering services by satellite and fixed wireless can also fill in the gaps in rural regions. Although there was a clear rationale for the existence of a sector-specific regulator during the monopoly years and during the transition that followed the opening of local and long-distance markets, there is no compelling justification for maintaining a sector-specific regulator today, when the transition to a competitive market is complete.

The 10th anniversary edition of the *Telecommunications Regulation Handbook*, a publication of the World Bank and the International Telecommunication Union, provides an overview of how regulation evolves through time, from monopoly to full competition.⁵¹ The first phase, that of public monopoly, is characterized by limited regulation because government is the sole monopoly operator as well as the regulator. The second phase, that of private monopoly, is marked by an increase in regulation because the private operator must follow a well-defined set of rules, and the government needs a regulatory framework to facilitate oversight of the monopoly operator. In the third phase of partial competition, the regulator must implement tools to foster and sustain a new competitive market. Finally, when the stage of full competition is reached, the market can work properly

and *ex post* regulation is sufficient, just like for any other sector of the economy.⁵²

Getting rid of the CRTC as Canada's telecommunications regulator may strike some as impractical, even unfathomable. Admittedly, not many countries have opted to do away with their dedicated telecommunications regulator. However, there is a precedent: Denmark. This Scandinavian country is recognized as a top digital nation. It ranks fourth in the 2017 International Telecommunication Union's *Measuring the Information Society Report*, which measures countries' access to, use of, and skills in information communications technologies. And yet, for the past seven years, it has done without a dedicated telecommunications regulator.⁵³

It took a decade for the government to sort out that mess, during which time billions of dollars of investment were wasted and valuable spectrum went unused or was inefficiently allocated.

In 2011, Denmark eliminated its regulator and abandoned centralized regulation in favour of self-regulatory agreements negotiated among services providers.⁵⁴ The decision followed the implementation of a decision to do away with the wholesale regulation of the wireless sector, which the regulator found was no longer necessary due to the competitiveness of the wireless market, made up of four wireless network operators. The dedicated telecommunications regulator's limited regulatory powers were transferred to the general Danish Business Authority.

The Danish example shows that the presence of a dedicated telecommunications regulator is not a *sine qua non* of admissibility to the top ranks of the league of digital nations. Furthermore, its experience with light-touch regulation, in particular the deregulation of its

50. Industry Canada, Telecommunications Policy Review Panel, *Final Report 2006*, March 2006, pp. 1-22.

51. The World Bank Group, *Telecommunications Regulation Handbook: Tenth Anniversary Edition*, 2011, pp. 9-12.

52. If a state of full competition is achieved and sector-specific regulation is no longer necessary, the logical conclusion should be that the telecom authority should then be decommissioned. However, as noted by researchers at the Mercatus Center, although the *Handbook* is clear regarding how regulation ought to evolve through these different phases, no explicit mention is made of the fate of the regulator by the fourth stage. Roslyn Layton and Joseph Kane, *Alternative Approaches to Broadband Policy: Lessons on Deregulation from Denmark*, Mercatus Working Paper, Mercatus Center at George Mason University, March 2017, p. 22.

53. International Telecommunication Union, *Measuring the Information Society Report 2017 – Volume 1*, p. 31.

54. Roslyn Layton and Joseph Kane, *op. cit.*, footnote 52, pp. 43-46.

wholesale wireless market, should serve as a source of inspiration for Canada.

As the CRTC celebrates its 50th year of operations and the federal government embarks on a review of the *Telecommunications Act*, now is a good time to reconsider its relevance.⁵⁵ The truth is that a sector-specific regulator is no longer needed for Canada's telecommunications sector, which is now mature and competitive. It should be treated like most other sectors of the Canadian economy, and regulated for the most part through general competition law.

The CRTC—while a necessary actor in Canada's telecommunications landscape during the transition from monopoly to competition—has outlived its usefulness.

Although dismantling Canada's telecommunications regulator might meet with stiff opposition from partisans of continued heavy-handed regulation, it would be of net benefit to Canadian consumers and to Canada's economy. The CRTC—while a necessary actor in Canada's telecommunications landscape during the transition from monopoly to competition—has outlived its usefulness.

55. Note that the CRTC regulates both Canada's telecommunications and broadcasting sectors. The focus of this report is on telecommunications policy only, and our recommendation that the CRTC be phased out pertains to its role as telecommunications regulator.

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