

RESEARCH
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THE STATE OF COMPETITION IN CANADA'S TELECOMMUNICATIONS INDUSTRY – 2014

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Executive Summary

Canada's telecommunications industry has been criticized on numerous occasions for being insufficiently competitive. Critics of Canada's wireless sector in particular have claimed that additional regulation is required to foster more competition, improve service quality and lower prices.

The federal government has relied on these criticisms to justify interventionist spectrum allocation policies and advocate for additional regulation of the wireless sector. In the fall of 2013, it even took the unusual step of launching an ad campaign aimed at publicizing its efforts to support greater competition in wireless.

But how does one analyze competition in an industry like telecommunications? This question pits two visions of competition against one another: the "static" vision of competition and the "dynamic" vision of competition.

Proponents of the static vision of competition will generally favour government intervention to prevent a monopolist (or oligopolists) from charging prices above what would have been the competitive price. Proponents of the dynamic competition model emphasize that competition should be viewed as a process rather than a fixed state of affairs. They notably fault the static competition model for ignoring the crucial role of the entrepreneur in the competitive process.

The negative perception of the industry that justifies interventionist measures is simply mistaken. Canadian consumers actually benefit from one of the most advanced telecommunications networks in the world, are among the biggest users in the world, and generally pay prices that are about average with respect to other industrialized countries.



Despite this, since 2008, the federal government has intervened in various ways to foster the emergence of a fourth wireless provider in each of Canada's regional markets that would compete with the so-called "big three" players (Bell, TELUS and Rogers). It has set up rules governing the auction of new spectrum in such a way that the large players are prevented from acquiring all of the available blocks of frequencies, thereby leaving some for smaller regional providers and new market entrants. But none of the new players that purchased spectrum in the 2008 auction (Public Mobile, Mobilicity and Wind Mobile) ended up being successful.

There has to be a level playing field for the auction process to work. Rules such as set-asides distort the process and prevent the optimal allocation of resources. The misallocation of resources only becomes evident further down the road, when the business venture hits a breaking point and cannot be artificially sustained any longer.

The federal government has also actively promoted the emergence of wireline competitors since the early 1990s by providing emerging competitors access to the networks of the incumbent telephone providers (i.e., the former monopolies) at low, regulated rates. Such measures have sheltered competitors from market forces and undermined the competitive process.

Instead of micromanaging competition in the telecommunications industry, the government should remove the barriers that prevent real, dynamic competition from taking place. Two such barriers prevent the transfer of assets, and thus a more efficient allocation of resources: (i) foreign ownership restrictions and (ii) restrictions regarding the transfer of spectrum licenses.

The federal government has lost sight of the ultimate goal of promoting the development of a dynamic, efficient industry. It should set up fair rules for all that would allow fourth players to emerge if the market could support them. This would have the effect of actually encouraging sustainable competition in Canada's telecommunications industry and consolidating the dynamism of this industry, to the great benefit of consumers across the country.

INTRODUCTION

Competition Is More Than a Numbers Game

“We want to see at least four players in all markets across the country. [...] I think we have seen some evidence elsewhere to suggest that the oligopolistic tendencies of the industry tend to break down a little bit as you move from three to four.”
-Stephen Harper, February 20, 2014

Canada's telecommunications industry, and in particular its wireless sector, has been criticized on numerous occasions for being insufficiently competitive. Citing various Canadian and international studies,¹ critics of Canada's wireless sector have claimed that additional regulation is required to foster more competition, improve service quality and lower prices.

The federal government has relied on these criticisms to justify interventionist spectrum allocation policies and advocate for additional regulation of the wireless sector. In doing so, it has made clear its objective to promote greater competition in wireless. Former Industry minister Christian Paradis stated in June 2013 that the federal government would “continually review the regulations and policies that apply to the wireless telecommunications industry to promote at least four wireless providers in every region of the country so that Canadian consumers benefit from competition.”²

1. See for example: the biannual reports of the OECD (*OECD Communications Outlook*); Berkman Center for Internet and Society at Harvard University, *Next Generation Connectivity: A review of broadband Internet transitions and policy from around the world*, October 2009; Bank of America Merrill Lynch, *Global Wireless Matrix 3Q11: Look beyond the macro storm*, September 2011; SeaBoard Group, *Long Term Evolutionary Challenge: Limiting Wireless Carrier Gluttony*, February 2012; C. Hart, S. Anderson, L. Pinto and R. Yeo, “Time for an Upgrade: Demanding Choice in Canada's Cell Phone Market,” OpenMedia, April 2013.
2. Industry Canada, “Harper Government Protecting Consumers and Increasing Competition in Canadian Wireless Sector,” News Release, June 4, 2013.

In the fall of 2013, the government took the unusual—and unprecedented—step of launching an ad campaign aimed at publicizing its efforts to support greater competition in wireless. Among other things, the government's ad made the oft-repeated claim that “Canadians pay some of the highest wireless rates in the developed world.”³

“How does one analyze competition in an industry like telecommunications? This question pits two visions of competition against one another: the ‘static’ vision of competition and the ‘dynamic’ vision of competition.”

The government's concerns about wireless competition appear to be shared by the CRTC, which launched a public consultation earlier this year “to review whether the wholesale mobile wireless services market is sufficiently competitive, both now and in the future.”⁴ Even the Competition Bureau, which has generally supported “light-touch” regulation, recently came out in favour of regulating wireless roaming rates, stating that the largest wireless companies “have an incentive to enact strategies to protect their market power by ensuring that entrants are not, and do not become, fully effective competitors.”⁵

Two Visions of Competition

Competition is the cornerstone on which the market economy rests. Every aspect of economic life—from prices and wages to the means of production and income distribution—results from competitive processes. But how does one analyze competition in an industry like telecommunications? This

3. The ad's transcript can be found at <http://www.ic.gc.ca/eic/site/icgc.nsf/eng/07405.html>.
4. Canadian Radio-television and Telecommunications Commission, “CRTC invites comments on the state of competition in the wholesale mobile wireless services market,” News Release, February 20, 2014.
5. Competition Bureau, *Submission by the Commissioner of Competition Before the Canadian Radio-television and Telecommunications Commission, Telecom Notice of Consultation CRTC 2013-685, Wholesale mobile wireless roaming in Canada – Unjust discrimination/undue preference*, January 29, 2014.

question pits two visions of competition against one another: the “static” vision of competition and the “dynamic” vision of competition.

Under the static vision, “perfect competition” occurs when there are so many competitors in a market that none can be said to dominate the market or exert control over pricing. All competitors share more or less the same technology and the same business models, and markets are said to be in a state of equilibrium.

“A more dynamic concept of competition shows that competitive discipline and rivalry are not necessarily conditional on the presence of a multitude of players in the market; they can also be generated by anticipation of new services in the future.”

The static model contrasts perfect competition, at one end of the spectrum, with monopoly at the other end. Oligopoly falls somewhere in between, with a few players said to dominate the market and exclude competitors through collusion. When facing a monopoly or oligopoly, proponents of the static vision of competition will generally favour government intervention to prevent the monopolist or oligopolists from charging prices above what would have been the competitive price (i.e., the price charged by market players in a market with many competitors). Economists who embrace the static vision of competition generally acknowledge that real life examples of “perfect competition” are impossible to find. However, they still find the static model useful in understanding how markets work.

This static vision of competition has been increasingly replaced by a “dynamic” vision emphasizing that competition should be viewed as a process rather than a fixed state of affairs. Proponents of the dynamic competition model place less weight on market share allocation and the number of players in a market, and more weight on potential competition.⁶ They reject the static competition model

because it does not provide a useful framework for analyzing modern markets, and also because of its unrealistic assumptions. The static competition model is notably faulted for ignoring the crucial role of the entrepreneur in the competitive process. The entrepreneur is a central actor of the dynamic competition model, as he attempts to anticipate consumer needs by identifying profit opportunities, and makes risky investments in order to innovate and satisfy consumer demand.⁷

Furthermore, a static view of competition, which focuses solely on the number of players in the industry at a given time, does not take into account other competitive pressures that can exist in dynamic markets like the telecommunications market. A more dynamic concept of competition shows that competitive discipline and rivalry are not necessarily conditional on the presence of a multitude of players in the market; they can also be generated by anticipation of new services in the future.⁸ Even antitrust regulators, which have traditionally espoused a more static view of competition, now recognize that the extent of technological change in a market must be assessed in competitive analyses, and that a conventional comparison of market shares is only a starting point.⁹

Innovation Is More Important Than Imitation

As noted by antitrust scholar Gregory Sidak and economist David Teece, there are a multitude of examples in many industries of innovation-driven competition that modified, if not overturned, the established order.¹⁰ For instance, the refrigeration cooling method eliminated the ice-harvesting industry, electronics destroyed the typewriter, and electricity replaced natural gas for lighting. All of these life-changing innovations, which played a

6. J. Gregory Sidak and David J. Teece, “Dynamic Competition in Antitrust Law,” *Journal of Competition Law & Economics*,

Vol. 5, No. 4, December 2009, p. 619.

7. See Israel M. Kirzner, “Competition, Regulation, and the Market Process: An ‘Austrian’ Perspective,” *Cato Policy Analysis*, No. 18, September 30, 1982.

8. Neil Quigley, “Dynamic competition in telecommunications,” C.D. Howe Institute, 2004.

9. Competition Bureau, *The Abuse of Dominance Provisions* (Sections 78 and 79 of the *Competition Act*), pp. 6-7.

10. J. Gregory Sidak and David J. Teece, *op. cit.*, footnote 6, p. 603.

crucial role in enhancing consumer welfare, are ignored in the static model.

Telecommunications is a perfect example of an industry that has significantly changed due to innovation-driven technology. Over the past two decades, traditional copper-wire telephony has been replaced, to a large extent, by wireless and Internet telephony. Telecommunications equipment has evolved from simple wireline voice devices to complex wireless devices that can convey voice, text and data worldwide. These examples demonstrate how important dynamic (i.e., innovation-driven) competition is, and how the gains it generates overshadow the benefits of static competition without innovation.¹¹ To sum up, today's potential competitors—who have no market share and therefore are not considered relevant in the static approach—may be tomorrow's industry game-changers.

“Unlike the static model, the dynamic competition model does not consider high market concentration to have *a priori* harmful effects in an industry.”

Unlike the static model, the dynamic competition model does not consider high market concentration to have *a priori* harmful effects in an industry. Indeed, economists have not found much evidence of a consistent relationship between market concentration and innovation.¹² On the contrary, competitive pressure resulting from high market shares and consolidation may spur rival firms to increase their capital expenditures to keep up with the dominant entity.

Unsurprisingly, the adoption of a rigid static competition model often serves as a linchpin in the justification of economically harmful regulations. Indeed, because competition will rarely, if ever, be

“perfect,” the static competition model allows regulators to feel justified in making (presumably perfect) interventions in the market. These interventions are not costless, however, and more often than not, they will hamper competition rather than enhance it.

In a dynamically competitive market such as telecommunications, consumers are best served by policies that promote innovation rather than focusing on static objectives such as increasing the number of competitors.¹³ Interventionist policies aimed at helping smaller players gain market share can have harmful effects on competition, and ultimately on consumer welfare. Such policies, instead of enhancing competition, actually weaken firms' incentives to innovate and invest. As noted by economist Dennis Weisman, these policies will tend to attract product imitators rather than innovators: “policies that reward imitation [i.e., multiplying the number of parties offering identical or quasi-identical services] rather than innovation will attract those market entrants adept at imitation, predominantly arbitragers, while driving away genuine innovators.”¹⁴

Because the static competition model largely ignores innovation-driven competition and the forces of what Joseph Schumpeter called “creative destruction” (i.e., innovations that stimulate general economic growth while simultaneously destroying specific jobs as emerging technologies replace older technologies¹⁵), it is of limited relevance to an analysis of the Canadian telecommunications market, which is in a constant state of flux due to the emergence of new technologies. Not only have these technologies deprived larger players of their traditional competitive advantages; they have also significantly altered the Canadian telecommunications landscape and enhanced consumer welfare.

11. *Ibid.*

12. Wesley M. Cohen & Richard C. Levin, “Empirical Studies of Innovation and Market Structures,” 1989, quoted in J. Gregory Sidak and David J. Teece, *op. cit.*, footnote 6, p. 588.

13. Erik Bohlin, Kevin W. Caves and Jeffrey A. Eisenach, *Mobile Wireless Market Performance in Canada – Lessons from the EU and the US*, Navigant Economics, May 2013, p. 23.

14. Dennis L. Weisman, *Principles of Regulation and Competition Policy for the Telecommunications Industry – A Guide for Policymakers*, Center for Applied Economics, University of Kansas School of Business, May 2006, p. 23.

15. Thomas Grennes, “Creative Destruction and Globalization,” *Cato Journal*, Vol. 22, No. 3, Winter 2003, p. 543.

Outline of This Study

It is from the perspective of the dynamic competition model that this paper will review the state of competition in Canada's telecommunications industry.

“Interventionist policies aimed at helping smaller players gain market share can have harmful effects on competition, and ultimately on consumer welfare.”

First, we shall see in Chapter 1 that contrary to popular belief, the perception of the Canadian telecommunications industry's dismal performance is inaccurate. Chapter 2 focuses on the federal government's repeated, but failed, attempts at fostering the emergence of a fourth wireless player in each of Canada's regional markets. Chapter 3 discusses another type of government intervention aimed at artificially encouraging more competition—mandatory network sharing—which has also produced very meagre results in the wireline sector. Finally, Chapter 4 explains why one efficient way for the government to foster sustainable competition would be to liberalize Canada's foreign investment regime in the telecommunications industry and also liberalize spectrum licence transfer rules.

CHAPTER 1

How Does Canada Measure Up?

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

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.

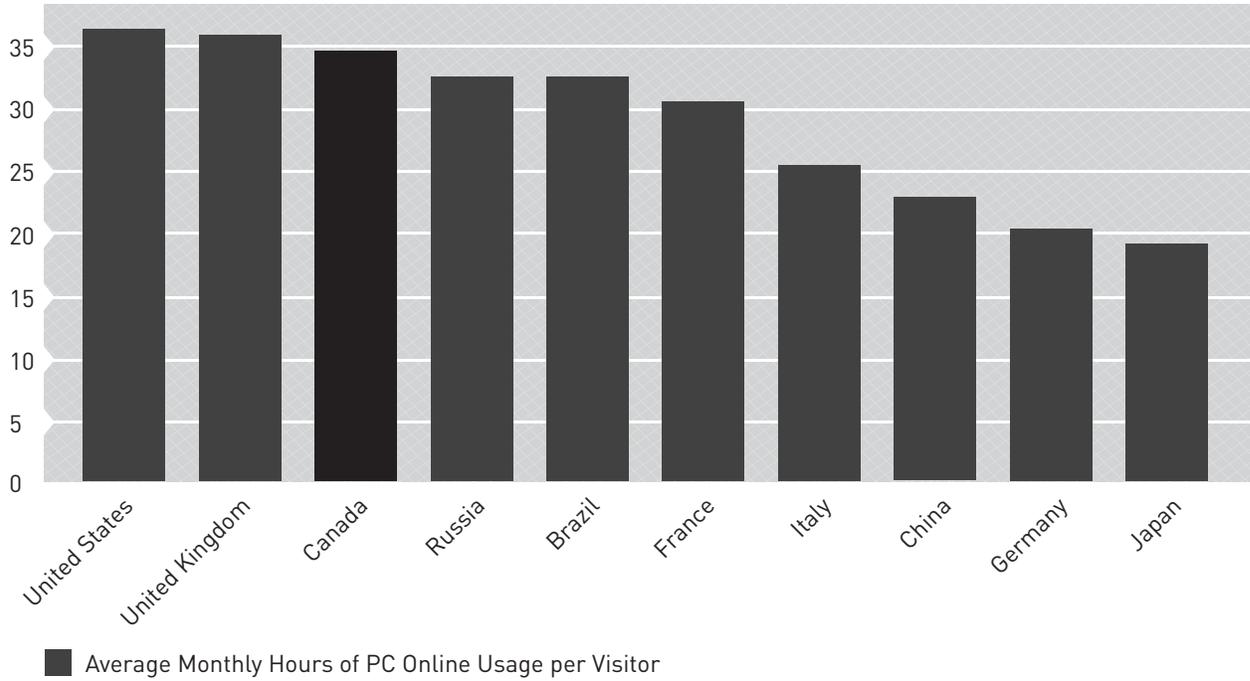
The charts and tables that follow come from the main organizations that publish international rankings related to various aspects of the telecommunications industry.

The picture that emerges from these data is first of all that Canadians are among the biggest consumers of telecommunications services in the world. This does not constitute a proof, but it is certainly an indication that Canadians enjoy competitive, quality services. Another indication is that the penetration rates of the latest wireless technologies are also among the highest for industrialized countries.

In terms of the quality of services, the data indicate that Canadians actually benefit from one of the most advanced and efficient wireless networks in the world. Only broadband Internet services leave something to be desired compared to other countries.

As for the prices Canadians pay, they are generally higher than in Europe, but lower than in the United States or Japan. These low prices are not necessarily a positive sign for the European telecommunications industry, however. In recent years, they have been correlated with falling capital expenditures and a lagging deployment of new technologies, as we shall see in further detail in Chapter 2.

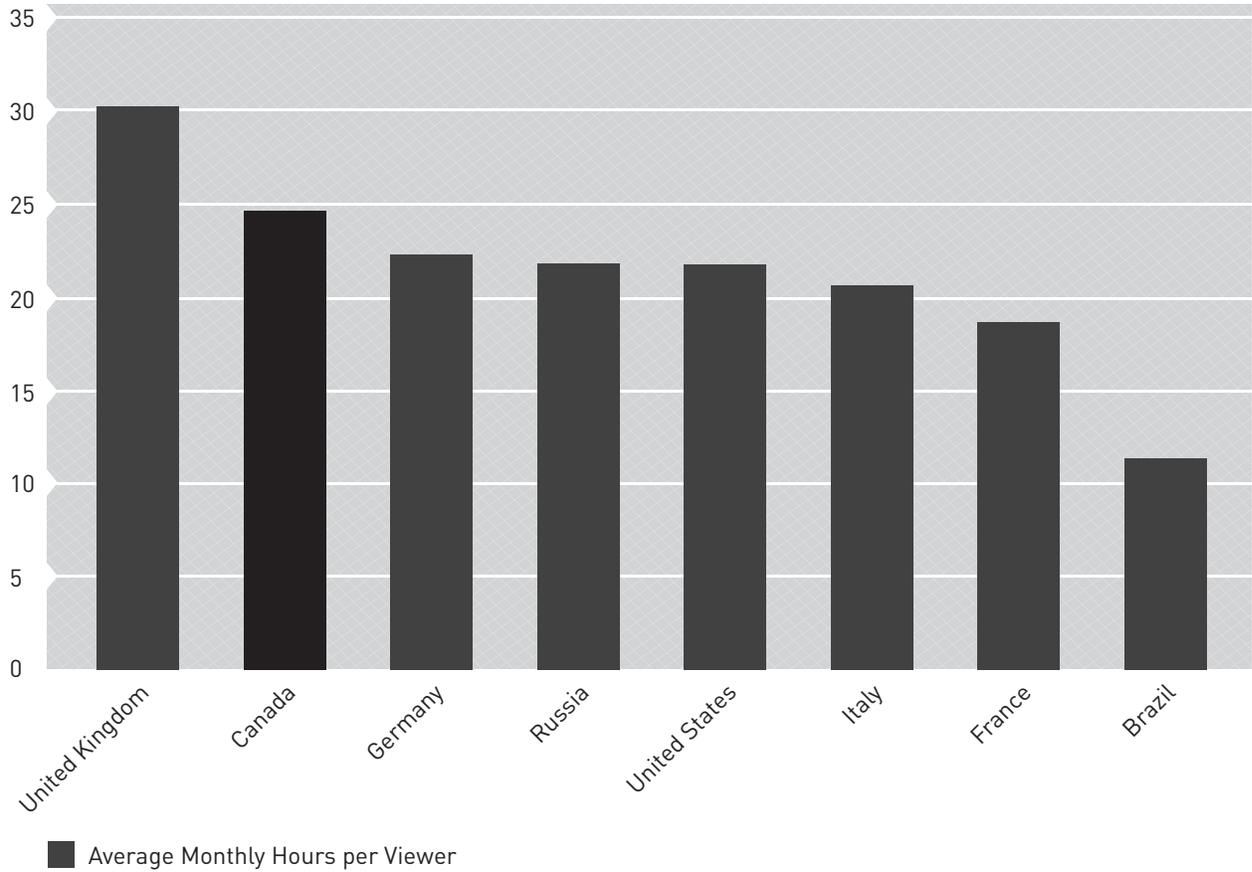
Figure 1-1
PC Online Usage



Source: comScore, *Canada Digital Future in Focus 2014*, March 31, 2014.

Canada is ranked 3rd behind the United States and the United Kingdom in terms of the number of hours visitors spend online on average every month. This is a reminder that Canadians are among the biggest Internet users in the world.

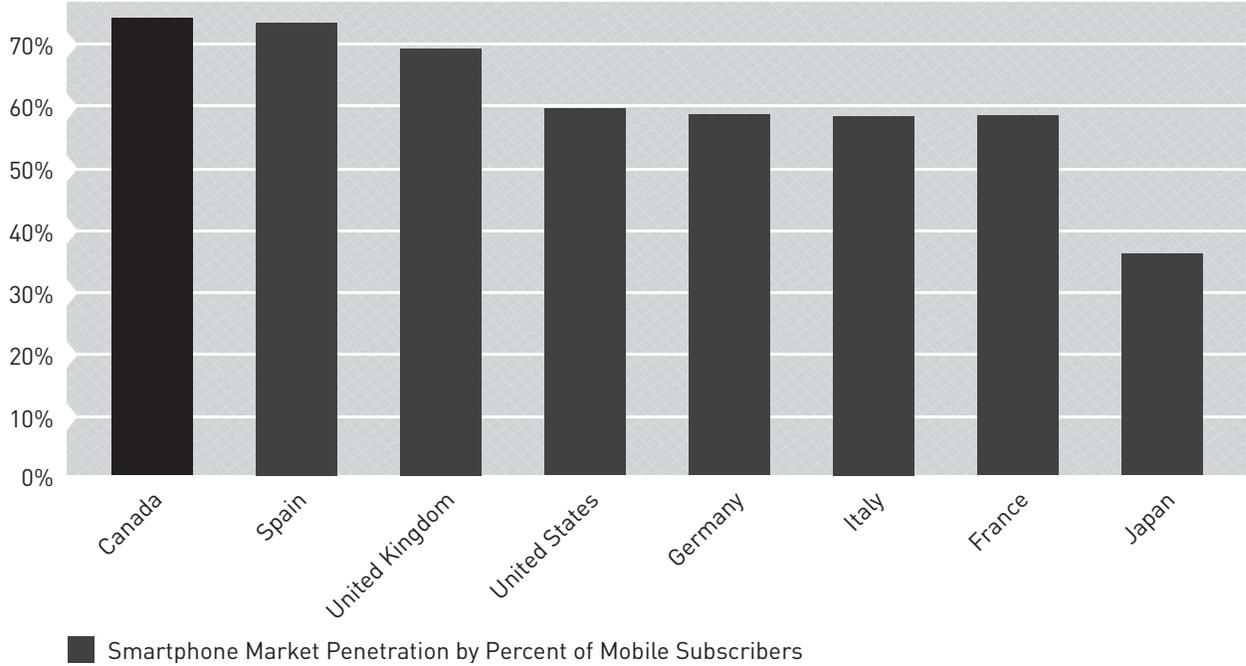
Figure 1-2
Online Video Engagement



Source: comScore, *Canada Digital Future in Focus 2013*, March 4, 2013.

Canada is ranked 2nd out of eight sampled countries, behind the United Kingdom, in terms of the number of hours users spend watching videos online, both at home and at the office.

Figure 1-3
Smartphone Market Penetration

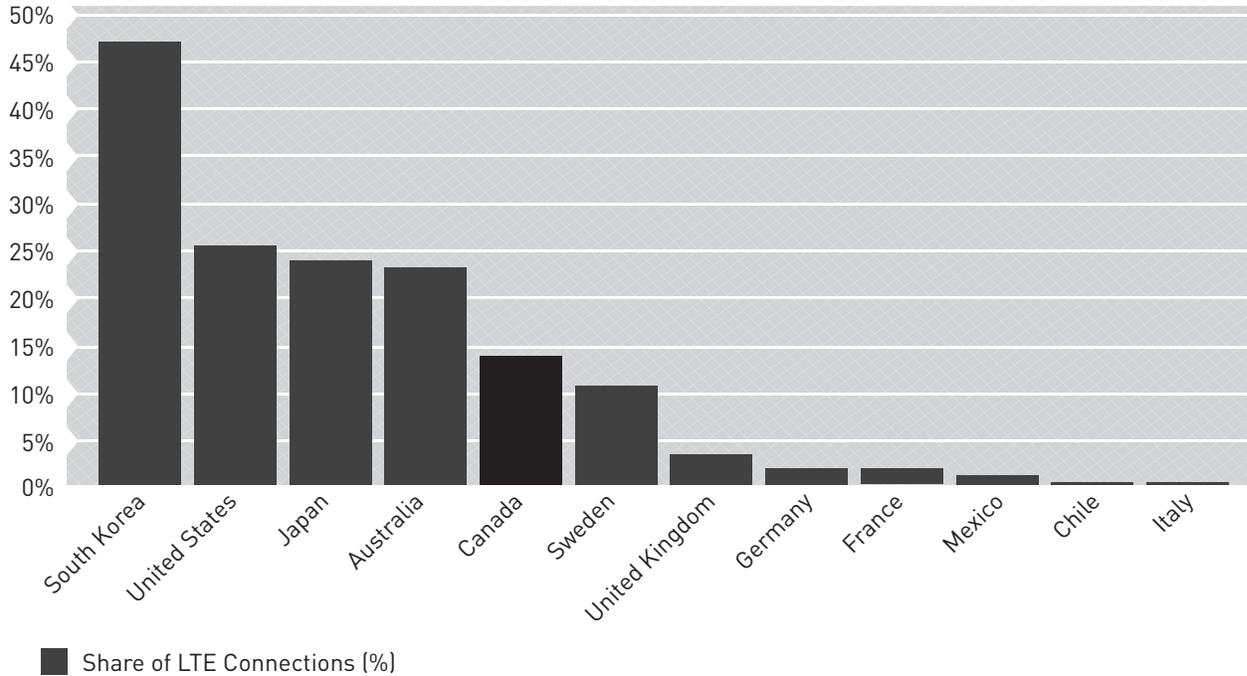


Sources: comScore, *The Digital World in Focus*, March 4, 2013; comScore, *Canada Digital Future in Focus 2014*, March 31, 2014.

Note: Because data were not available for all countries for the same period, the figure for Canada is from December 2013 and the other figures are based on a three-month average ending in July 2013.

In terms of smartphone market penetration, Canada leads the way, with a total of 75% of its mobile subscribers using smartphones, a 13% increase over 2012.

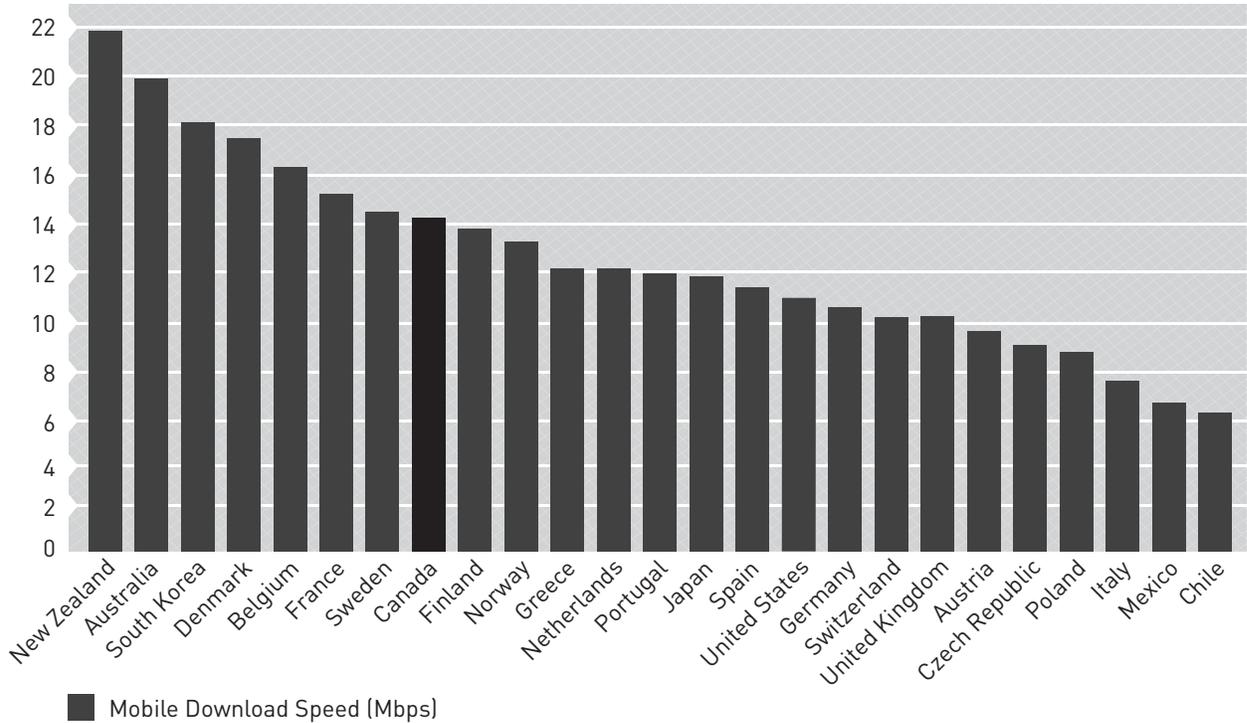
Figure 1-4
LTE Connections as a ratio of total connections



Source: Cisco, Network Connections, VNI Mobile Forecast Highlights 2013 – 2018, 2013.

Canada ranks 5th among the 12 selected OECD countries in terms of the proportion of mobile users connected to the fastest network, with 14% of total connections being LTE (*Long Term Evolution*, or 4G) connections.

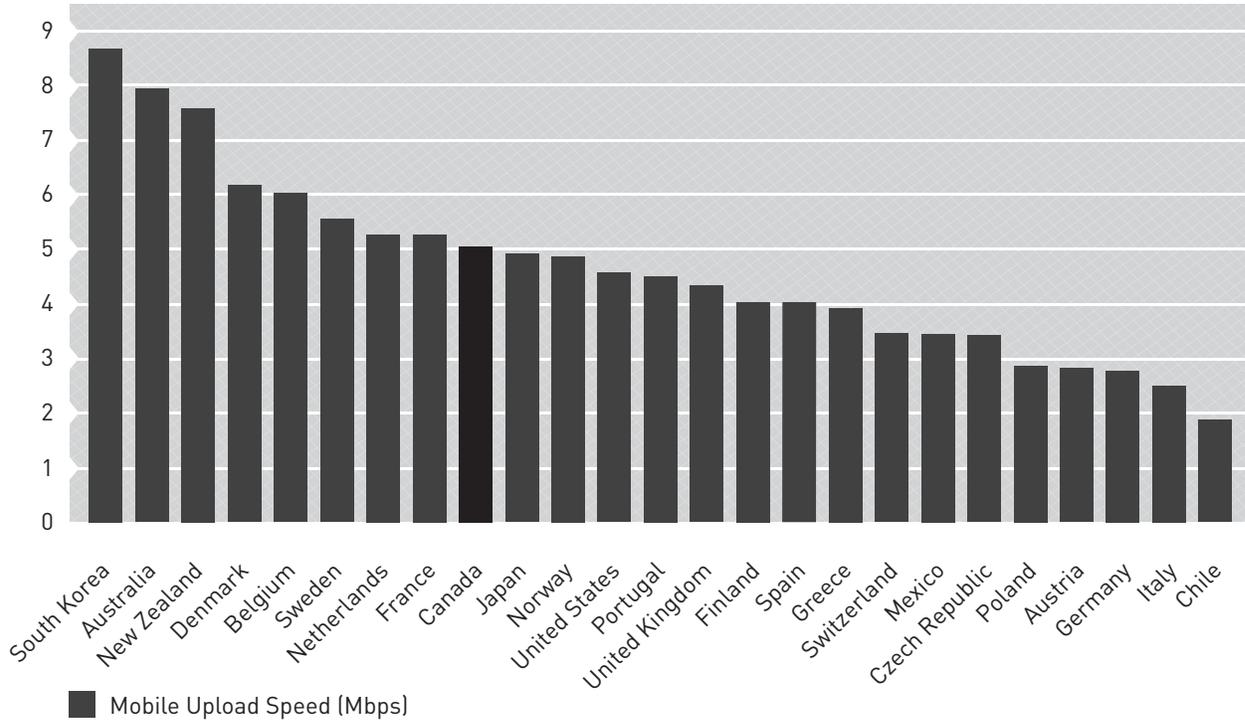
Figure 1-5
Mobile Download Speed



Source: Ookla Net Index, Mobile Download Index, April 6, 2014. Results were obtained by analyzing test data between March 8, 2014 and April 6, 2014.

In terms of mobile download speed, Canada ranks in the top ten among industrialized countries, in front of Japan, the United States and Switzerland, and just behind countries such as Sweden and France.

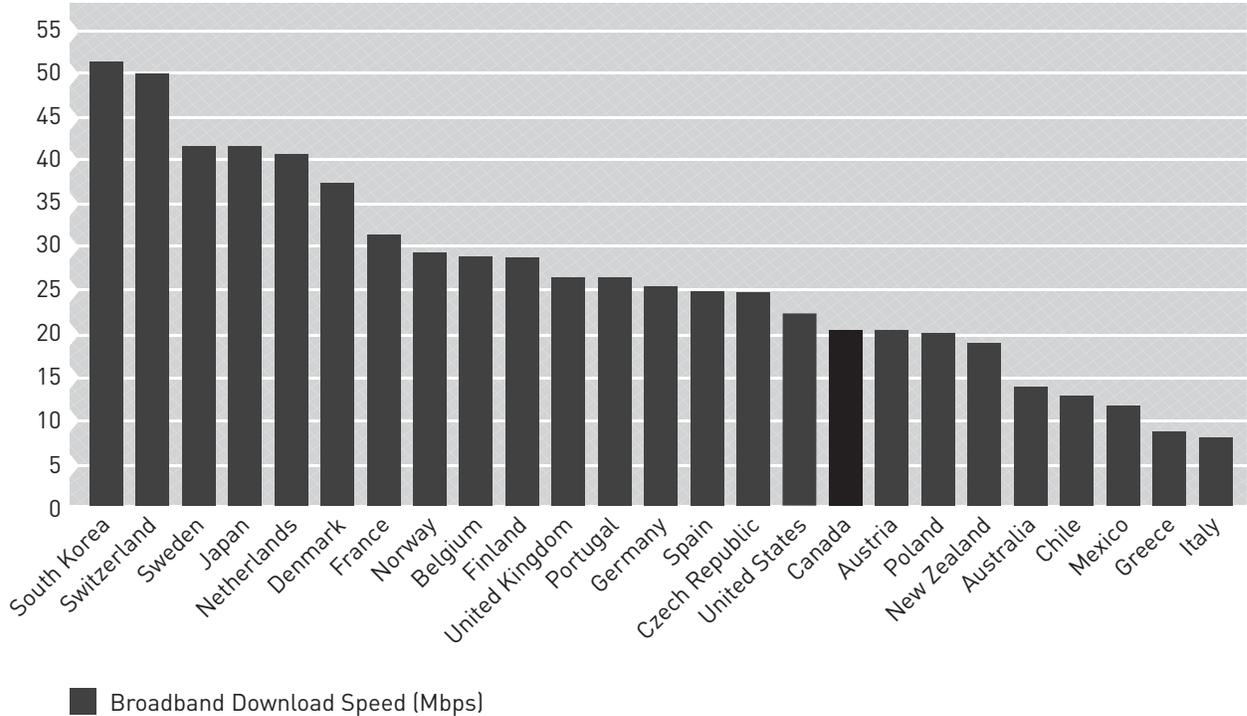
Figure 1-6
Mobile Upload Speed



Source: Ookla Net Index, Mobile Upload Index, April 6, 2014. Results were obtained by analyzing test data between March 8, 2014 and April 6, 2014.

In terms of mobile upload speed, Canada ranks among the top ten industrialized countries, ahead of countries such as Japan, the United States, the United Kingdom and Switzerland, and just behind France and the Netherlands.

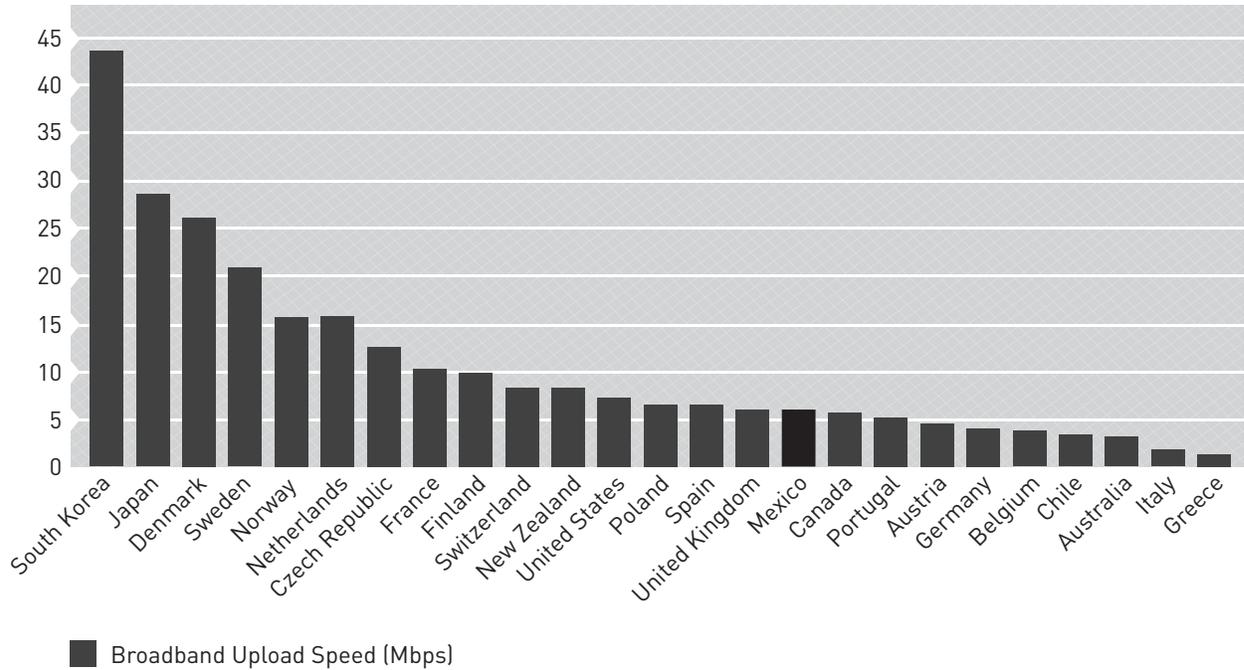
Figure 1-7
Broadband Download Speed



Source: Ookla Net Index, Household Download Index, April 6, 2014. Results were obtained by analyzing test data between March 8, 2014 and April 6, 2014.

In terms of broadband download speed (that is, download speed for Internet users with a wireline or cable connection), the Ookla Net Index ranks Canada just 17th among 25 industrialized countries.

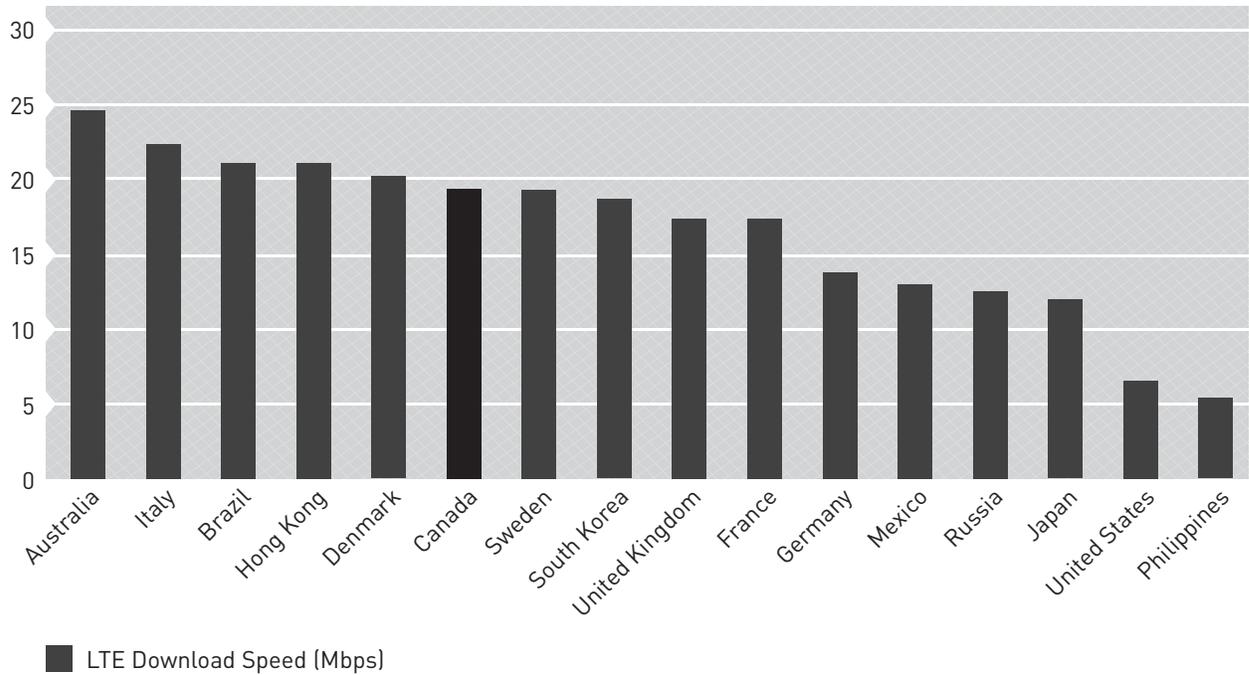
Figure 1-8
Broadband Upload Speed



Source: Ookla Net Index, Household Upload Index, April 6, 2014. Results were obtained by analyzing test data between March 8, 2014 and April 6, 2014.

In terms of broadband upload speed, Canada also ranks 17th among 25 industrialized countries.

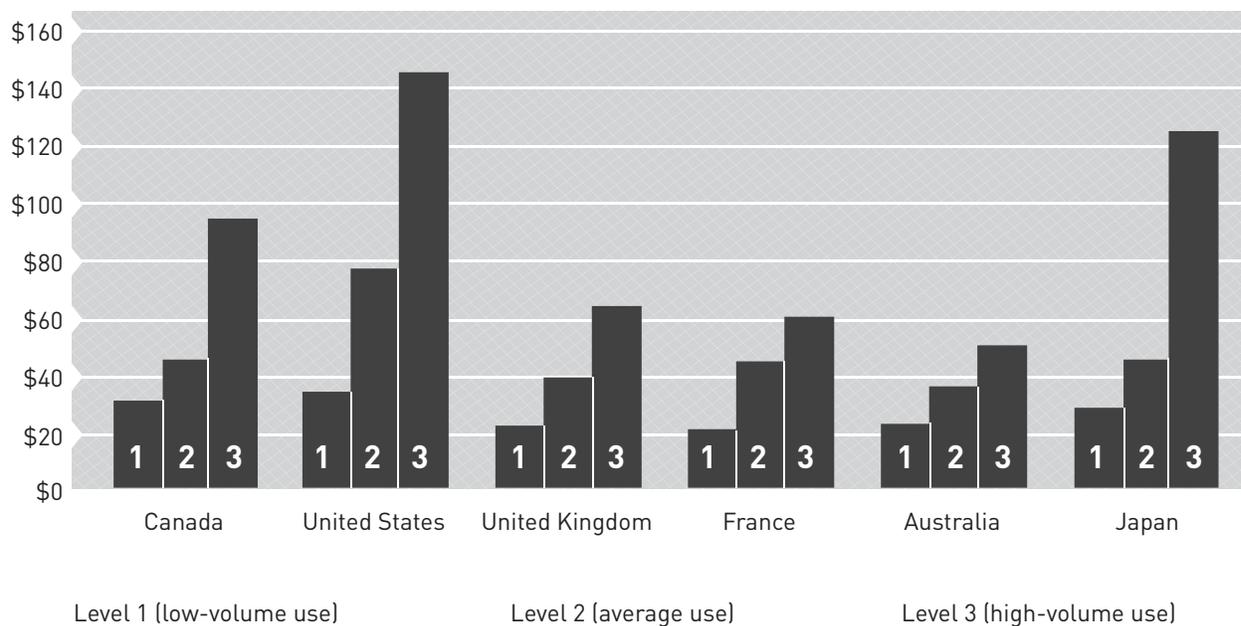
Figure 1-9
How LTE Download Speeds Compare



Source: OpenSignal, *Global State of LTE Report*, February 2014. The data are a sample of the 6 million app users who had an LTE (Long Term Evolution, or 4G) connection, and are from the second half of 2013.

Among the sampled countries, Canada ranks 6th with an LTE download speed of 19.3 Mbps (megabits per second), behind Australia (24.5 Mbps), Italy (22.2 Mbps), Brazil (21 Mbps), Hong Kong (21 Mbps) and Denmark (20.1 Mbps), and ahead of countries such as the United States, South Korea and Japan.

Figure 1-10
International Mobile Wireless Prices – Wall Communications



Source: Wall Communications, *Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions: 2013 Update*, prepared for the CRTC and Industry Canada, Table A3.2, April 2013.

Wall Communications has assembled different baskets of mobile wireless services in order to compare Canadian monthly rates with those of five other countries. Those baskets have been built on a usage basis, ranging from low to high-volume usage.

Canada ranks 5th for low-volume use, 5th for average use (although it is almost tied with France and Japan) and 4th for high-volume use, far ahead of the United States and Japan.

Table 1-1
International Mobile Wireless Prices - OECD

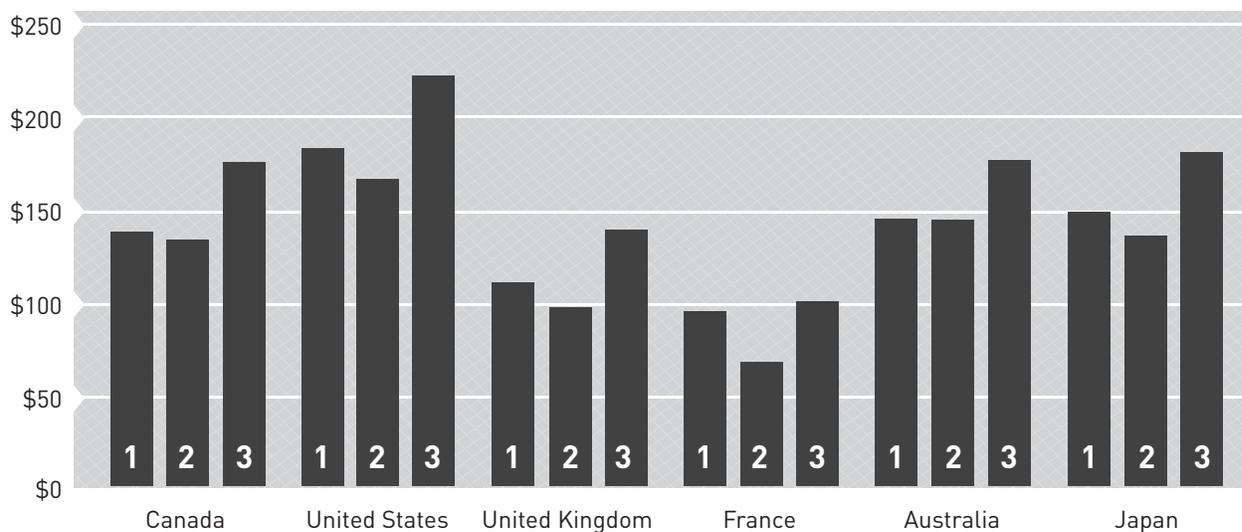
Canada's rank out of 34 OECD countries	Rank without data	Rank with 100 MB	Rank with 500 MB	Rank with 1 GB	Rank with 2 GB
30 Calls – 100 SMS	30	25*	-	-	-
100 Calls – 140 SMS	26	-	24*	-	22*
300 Calls – 225 SMS	24*	-	-	24	-
900 Calls – 350 SMS	18	-	-	-	21
(Prepaid)	23	-	-	-	-

Source: Organisation of Economic Co-operation and Development, *OECD Communications Outlook 2013*, July 2013, quoted in Jeffrey Church and Andrew Wilkins, "Wireless Competition in Canada: An Assessment," *SPP Research Papers*, Vol. 6, No. 27, Table 1, September 2013.

*Canadian total basket cost is lower than for the U.S.

The OECD also compares monthly mobile wireless prices. By looking at different baskets, we observe that Canada is average when it comes to high-volume use. Looking at the 900 calls – 350 SMS basket, Canada ranks 18th out of 34 countries without data and 21st with 2 GB. It must be noted that these comparisons do not consider the speed, coverage or reliability of services.

Figure 1-11
International Prices for Bundled Services

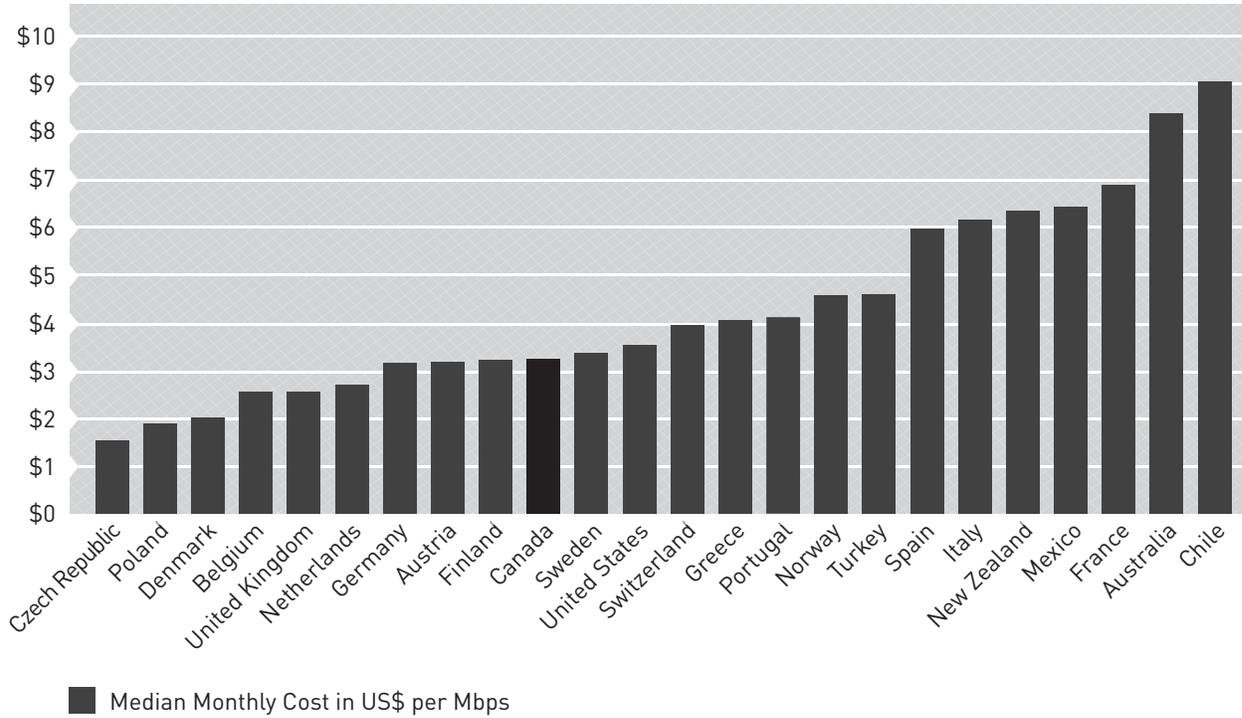


Source: Wall Communications, *Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions: 2013 Update*, prepared for the CRTC and Industry Canada, Table A3.5, April 2013.

Wall Communications has assembled different bundles of services in order to compare Canadian monthly rates with those of other countries. Bundle 1 includes wireline, broadband Internet and mobile wireless. Bundle 2 includes wireline, broadband Internet and digital TV. Bundle 3 includes wireline, broadband Internet, mobile wireless and digital TV.

Canada rank 3rd out of 6 for all three bundles. Canada's bundled services rates therefore rank in the middle of the selected countries. The indicated values are expressed in Canadian dollars, adjusted for purchasing power parity (PPP).

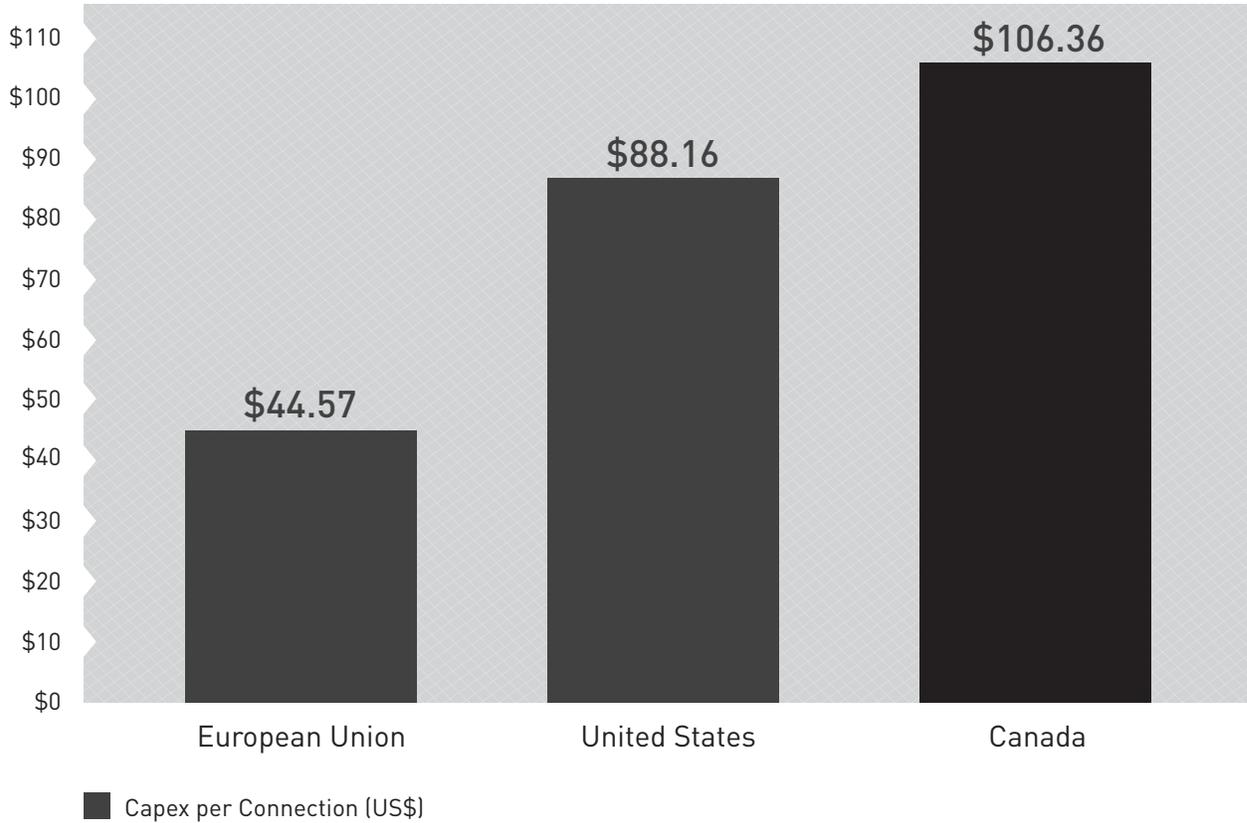
Figure 1-12
Cost of Bandwidth



Source: Ookla Net Index, Household Value Index, April 6, 2014. Results were obtained by analyzing survey data between October 6, 2013 and April 6, 2014.

Regarding the cost of bandwidth for broadband Internet connections, Canada is among the industrialized countries where it is the cheapest.

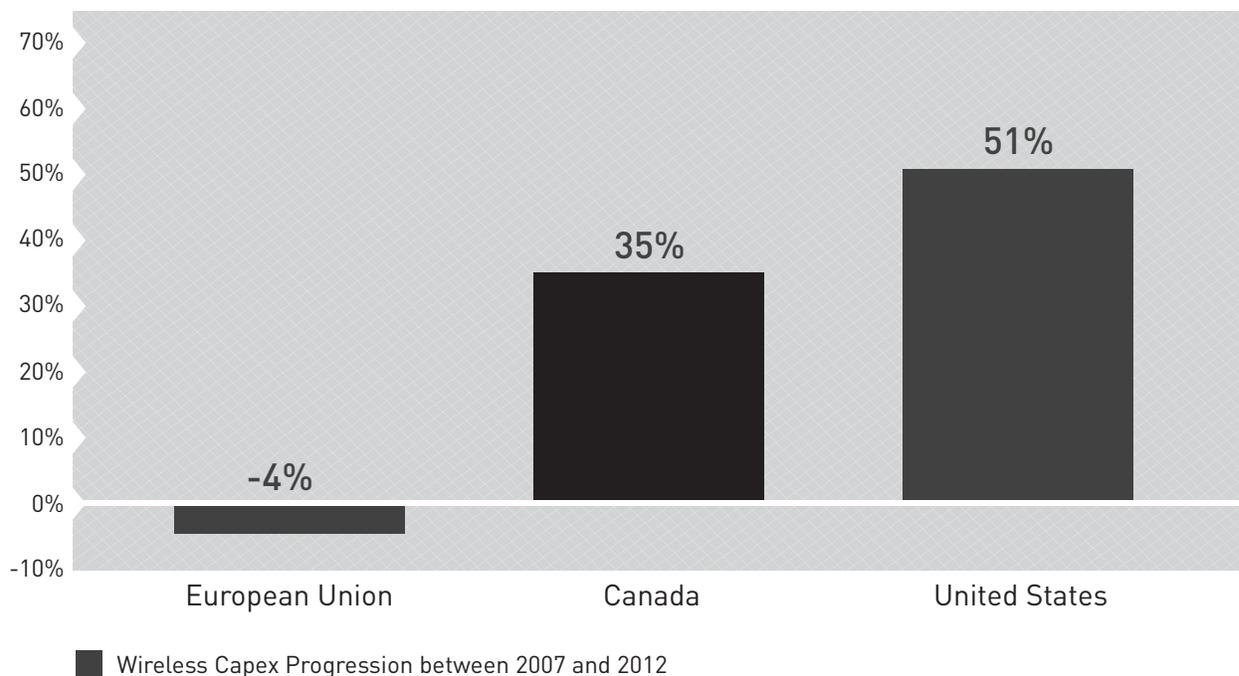
Figure 1-13
Capital Expenditure in the Wireless Sector



Source: Navigant Economics, *Mobile Wireless Market Performance in Canada: Lessons from the EU and the US*, Figure 9, 2012.

Canadian wireless providers invest more per connection than providers in the United States or the European Union. Capital expenditures in Canada are 139% higher than in the EU and 21% higher than in the U.S.

Figure 1-14
Progression of Capital Expenditure in the Wireless Sector



Source: Navigant Economics, *Mobile Wireless Market Performance in Canada: Lessons from the EU and the US*, Figure 7, 2012.

Regarding capex progression in the wireless sector, the European Union has been outpaced by the United States and Canada these past few years. Using 2007 as a base year, the data show that between 2007 and 2012, wireless capex grew by 51% in the U.S. and by 35% in Canada while European Union capital expenditure decreased by 4%. Data for Canada reflect capital expenditure by Rogers Wireless, TELUS Mobility and Bell Mobility, and exclude 2008 spectrum purchases.

CHAPTER 2

The Elusive Search for a Fourth Wireless Player

Since 2008, the federal government has intervened in various ways to foster the emergence of a fourth national wireless provider, or at the very least a fourth provider in each of Canada's regional markets, that would compete with the so-called “big three” players (Bell, TELUS and Rogers).

Despite evidence to the contrary (see Chapter 1), the government has long claimed that there is insufficient competition in the wireless sector and that, as a result, Canadian consumers have suffered from higher prices and less choice. The government has stated that it “will not hesitate to use any and every tool at its disposal to protect Canadian consumers and to promote competition.”¹⁶

The main policy tool used by the government to achieve this goal has been to set up rules governing the auction of new spectrum (see Box 2-1) in such a way that the large players are prevented from acquiring all of the available blocks of frequencies, thereby leaving some for smaller regional providers and new market entrants.

There have been two auctions of spectrum licences under the present government: one for frequencies in the 2 GHz range (usually referred to as “AWS,” or Advanced Wireless Services spectrum) in 2008; and another in January 2014 for 700 MHz frequencies formerly used by broadcasters to provide over-the-air television (for televisions with “rabbit ear” antennas) and repurposed for mobile broadband services.¹⁷

When the government talks about the establishment of a fourth wireless provider, it is actually referring to a “facilities-based” player—i.e., a competitor possessing its own infrastructure. However, small

regional providers or companies that have just entered the market typically possess spectrum licenses that cover only certain areas of the country and have deployed towers only in these areas. For their customers to be able to use their mobile devices outside the geographical coverage area of their specific networks, these small players must purchase additional coverage on the networks of the large players, which cover the entire country. This process is called “roaming.”

“When the government talks about the establishment of a fourth wireless provider, it is actually referring to a ‘facilities-based’ player—i.e., a competitor possessing its own infrastructure.”

Consequently, another policy tool used by the government to encourage the establishment of a fourth provider across the whole country is to make it easier and cheaper for the small players to enter into roaming and tower sharing agreements with the large ones.¹⁸

As explained below, these interventionist measures have not worked entirely according to the government's plan. And to the extent that they have, it can be argued that they were unnecessary.

The 2008 AWS Spectrum Auction

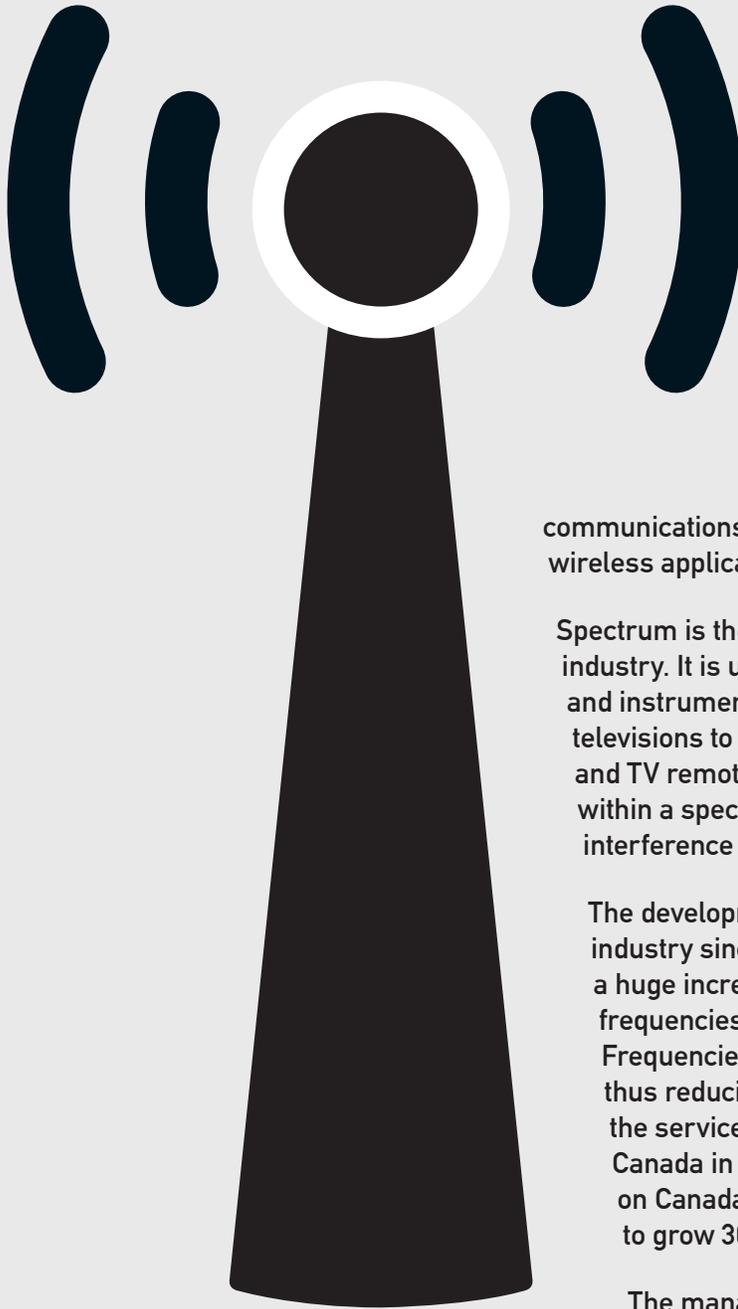
The rules for the 2008 AWS spectrum auction stipulated that 40 of the 105 MHz being auctioned off were to be set aside for new or small regional wireless players. The big three providers were not

16. News release, “Harper Government Releases Spectrum Licence Transfer Framework,” June 28, 2013.

17. For more information on spectrum use and management in Canada, see the Spectrum Management and Telecommunications section on Industry Canada's website at <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/home>.

18. Competition in the wireless sector also comes in the form of the resale of services. There are a number of so-called “mobile virtual network operators” (“MVNOs”) in Canada such as Virgin Mobile or PC Mobile that sell wireless services under their own brands but do not own any infrastructure. They simply lease the infrastructure of the major providers and route their calls through their networks. They are only distinguished by the way they package and market the services. Since MVNOs simply piggyback on others' networks and do not contribute to increasing the overall capacity or efficiency of wireless infrastructure, their impact on competition is quite limited. Therefore, MVNOs are not the subject of further discussion in this chapter.

Box 2-1 What is spectrum?



The spectrum is the whole range of electromagnetic radiation found in nature, including visible light, infrared radiation, X-rays and microwaves. Radio waves make up a portion of this spectrum. Depending on their frequency (measured in hertz), radio waves can pass through solid objects and travel long distances, which makes them useful for mobile communications, broadcasting and many other wireless applications.

Spectrum is the lifeblood of the wireless industry. It is used by a wide variety of services and instruments, from satellites, radios and televisions to cellphones, garage door openers and TV remote controls. Each user has to stay within a specific band of frequencies to avoid interference with other users.

The development of the commercial wireless industry since the 1980s has resulted in a huge increase in the use of spectrum frequencies. Spectrum is a finite resource. Frequencies can become too “crowded,” thus reducing the speed and efficiency of the service. A study released by Industry Canada in 2012 forecasted that data traffic on Canada’s wireless network is expected to grow 30 times between 2010 and 2015.*

The management and harmonization of spectrum use is governed by international agreements. The federal Industry Minister is responsible for the management of spectrum in Canada, and makes blocks of frequencies available on a regular basis (generally every few years).

* RedMobile Consulting, *Study of Future Demand for Radio Spectrum in Canada 2011-2015*, 2012, p. 44.

allowed to bid on these frequencies, which had the effect of lowering their price.

Proponents of this policy argued that if part of the spectrum were not set aside, then no new entrant would be able to outbid the large players, which would use their financial might to hoard all the available spectrum. They maintained that while both sides valued spectrum for its usefulness in providing wireless service, the large companies would always be willing to pay more than the commercial value in order to block the emergence of new competitors in the market. The government therefore had to level the playing field by setting spectrum aside for new entrants.¹⁹

“Proponents of this policy argued that if part of the spectrum were not set aside, then no new entrant would be able to outbid the large players, which would use their financial might to hoard all the available spectrum.”

There are, however, several reasons why this argument does not adequately reflect the incentives at play. For one thing, if one large player paid more than it had to for spectrum that it didn't really need in order to prevent a new competitor from entering the market, it would have spent hundreds of millions of dollars for an outcome that benefited its existing competitors (the other two large providers) as much as itself. Such an investment might simply not be worth it.²⁰

This argument also bizarrely assumes that the large players' incentives to deter the entry of competitors far outweigh the incentives of emerging competitors to buy spectrum.

Small regional telecommunications providers that were already offering wireless services to their customers, such as MTS in Manitoba and SaskTel in Saskatchewan, were certainly willing to pay the full market price for the spectrum required to upgrade their networks. Without it, they would have become uncompetitive and likely suffered significant customer losses.

New entrants such as Vidéotron (in Quebec) and EastLink (in Atlantic Canada), both of which were cable companies that offered wireline telephone, Internet and television services, also had a major incentive to bid aggressively for spectrum. At the time, Vidéotron was leasing Rogers's network to offer wireless services to its clients as an MVNO. Vidéotron's then-president, Robert Dépatie, conceded that the leasing model was “not at all viable in the middle and long term.”²¹ Indeed, in developed countries, the most successful telecommunications providers are those that can offer their clients a “quadruple play,” a marketing term that refers to the wide array of services that many cable and telecom providers now offer their customers, including broadband Internet, television, and wireline and wireless telephone. Maintaining one's viability as a telecom player is arguably at least as much of a motivation to pay for spectrum as is barring the entry of new competitors so as to maintain higher profit margins.

Vidéotron and EastLink went on to successfully deploy their wireless networks in the years following the 2008 AWS auction. These players already had loyal customer bases in their respective markets due to their legacy services, and benefited from adding wireless to their offerings. Today, Vidéotron and Eastlink, as well as MTS and SaskTel, are “fourth players” in their respective markets.²²

In addition to regional players that purchased spectrum to provide a wider array of services to their existing customer bases, the 2008 AWS spectrum auction also allowed for the emergence of

19. See for example “Submission by QUEBECOR MEDIA INC. to Industry Canada in response to Canada Gazette Notice DGTP-002-07, Consultation on a Framework to Auction Spectrum in the 2 GHz Range including Advanced Wireless Services,” May 25, 2007, pp. 37-38; and “Comments of MTS Allstream Inc., Consultation on a Framework to Auction Spectrum in the 2 GHz Range Including Advanced Wireless Services,” May 25, 2007, p. 33.

20. For a review of these arguments, see Steven Globberman, “An Assessment of Spectrum Auction Rules and Competition Policy,” Fraser Institute, August 2013, pp. 22-24.

21. Maxime Bergeron, “Dernière chance pour le sans-fil, dit le président de Vidéotron,” *La Presse*, September 4, 2007.

22. Shaw Communications Inc., a cable company offering services in Western Canada, also bought spectrum in the 2008 AWS spectrum auction. However, it concluded that deploying a wireless network was not worth the investment and has been sitting on its spectrum ever since.

three new market entrants: Public Mobile, Mobilicity and Wind Mobile. For several years following the auction, the government hoped that one or more of these would become additional facilities-based players in the areas where they had purchased spectrum (essentially in Ontario, Alberta and British Columbia). However, none of these players ended up being successful, gathering only very small market shares (see Table 2-1 for market shares by province).

All three new entrants focused their offerings on voice and texting, at a time when data had become the fastest growing component of the wireless market, with Canadians among the largest consumers of data in the world. Notably, none offered Apple's popular iPhone device. More importantly, none was able to offer service bundles, since they were only active in the wireless sector.²³

By 2014, one of the three new entrants, Public Mobile, had been bought by TELUS;²⁴ another one, Mobilicity, had filed for bankruptcy four months after Industry Canada prevented its sale to TELUS;²⁵ and the other one, Wind Mobile, was declared “all but dead” by industry observers after its European-based financial backer, VimpelCom, wrote off its \$768-million investment in the start-up.²⁶

Prior to spectrum auctions, spectrum licenses were distributed by Industry Canada bureaucrats pursuant to “beauty contests,” which were decided based on each firm's expertise and capability. Beauty contests were abandoned in the late 1990s and replaced by auctions, which were seen as a more efficient way of assigning spectrum licenses. Because auctions mimic a market process, it is possible to find out which actor values spectrum the most and is going to put it to the most productive use, thus enhancing consumer welfare.

However, there has to be a level playing field for the auction process to work. Rules such as set-asides distort the process and prevent the optimal allocation of resources. Some players which might not otherwise have entered the market will be enticed to do so when offered privileged access. Even a faulty business plan can become promising when it is enabled by subsidies in the hundreds of millions of dollars. The misallocation of resources only becomes evident further down the road, when the business venture hits a breaking point and cannot be artificially sustained any longer.

In the case of the AWS auction, the set-aside spectrum sold at a discount of about 30% compared with the spectrum open to bidding by all parties. A study by CIBC World Markets determined that this amounted to a \$617-million subsidy for new entrants.²⁷

“However, there has to be a level playing field for the auction process to work. Rules such as set-asides distort the process and prevent the optimal allocation of resources.”

Well-established telecom players such as Vidéotron, MTS, SaskTel and EastLink very likely did not need the subsidy created by the set-aside in order to launch or improve their wireless networks. As for the new entrants that failed (Public Mobile, Mobilicity and Wind), it is likely that they would not have entered the market without the subsidy. The frequencies they purchased could have been put to better use by established players, which would have benefitted Canadian consumers.

As Carleton University economist Donald McFetridge warned before the 2008 auction:

There are good reasons to believe that a fourth carrier induced by access to required inputs on concessionary terms to enter the market would not likely increase competition substantially. Indeed, it could well make competition less

23. For an analysis that quotes the present paper's two coauthors, see: Rita Trichur, Sean Silcoff and Boyd Erman, “How Ottawa's plan to foster wireless competition sank,” *The Globe and Mail*, May 18, 2013.

24. Press Release, “TELUS and Public Mobile announce client-focused transaction,” October 23, 2013.

25. Christine Dobby, “Mobilicity files for creditor protection,” *National Post*, September 30, 2013.

26. Howard Solomon, “Wind ‘all but dead’: Analyst,” *IT World Canada*, March 6, 2014.

27. Robert Bek and Michael Lee, “AWS Auction Finally Ends—\$4.25B Is A Big Tally,” CIBC World Markets, July 21, 2008.

Table 2-1
Wireless subscriber market share, by province, 2012 (%)

Province	Bell Group¹	TCC	Rogers	New entrants²	Other³
British Columbia	18	40	39	3	0
Alberta	23	50	24	3	0
Saskatchewan	10	10	9	0	71
Manitoba	5	9	33	0	53
Ontario	28	20	44	6	1
Quebec	33	28	29	10	0
New Brunswick	58	23	19	0	0
Nova Scotia	54	29	16	0	0
Prince Edward Island	58	27	15	0	0
Newfoundland and Labrador	73	25	2	0	0
The North⁴	90	0	0	0	10

1. "Bell Group" includes Bell Canada, Northwestel Mobility, Bell Mobility, Télébec, NorthernTel, SkyTerra, Virgin and Latitude Wireless.

2. "New entrants" refers to the new wireless entities that acquired spectrum in Industry Canada's 2008 AWS spectrum auction.

3. "Other" includes MTS Allstream, SaskTel and smaller WSPs.

4. "The North" includes Yukon, the Northwest Territories and Nunavut.

Source: Canadian Radio-television and Telecommunications Commission, *Communications Monitoring Report*, September 2013, p. 162.

Note: EastLink only launched its wireless network in 2013 and consequently had no market share in 2012.

intense, hurting rather than benefiting consumers. There is an adverse selection issue here. Firms lining up for subsidies are typically not the best competitors or potential competitors in the market. Indeed, their comparative advantage may be in government relations. Indeed, concessionary input prices are either a windfall for an entrant who would have been willing to pay the competitive price or they will attract a competitor who would not have entered if obliged to pay competitive prices for its input

[...] To the extent that it succeeds, a subsidized new entrant may crowd out or delay competition that would have emerged from new technologies or business models. If it fails, there are costs to consumers as well as costs to the economy in terms of employee dislocation and specialized investments written off.²⁸

As discussed below, although the spectrum set-aside failed to bring about sustainable competition in the wireless sector, this did not deter the federal government from making further attempts to artificially encourage wireless competition.

The 2014 Spectrum Auction

In 2012 and 2013, as the 700 MHz spectrum auction was approaching, it was already clear that the government's strategy was not functioning. Successive Industry Ministers announced a series of new measures aimed at achieving their policy objective

of fostering four facilities-based wireless players in all regions of the country.

First, the government introduced amendments to the *Telecommunications Act* that would lift foreign investment restrictions on companies holding less than a 10% share of the entire Canadian telecommunications market. This was done in the hopes that a better capitalized foreign investor might enter the market by way of acquisition of a smaller player or by acquiring spectrum in the upcoming 700 MHz auction, and then become Canada's fourth national wireless player. As further discussed in Chapter 4, however, although this partial liberalization was a welcome development, no foreign player has yet entered the Canadian market.

**“In 2012 and 2013, as the
700 MHz spectrum auction was
approaching, it was already
clear that the government's strategy
was not functioning.”**

Second, the government introduced numerous other measures aimed at strengthening the hands of small providers when negotiating with the large ones with respect to roaming and tower sharing agreements; preventing large providers from buying small ones, even after the five-year moratorium on transferring AWS spectrum licences have expired;²⁹ imposing new requirements on telecommunications companies to make it easier for customers to switch providers; and most importantly, favouring small players once again in the 2014 spectrum auction. (See Table 2-2 for a list of policy interventions.)

28. Donald G. McPetridge, “Competition in the Canadian Mobile Wireless Telecommunications Industry,” Department of Economics, Carleton University, May 24, 2007, p. 30. A review of spectrum auctions in the U.S., Canada and Europe by Analysis Group concludes that “restrictive and preferential participation rules disrupt the auction process, jeopardizing the benefits of releasing additional spectrum into the market. Restrictions also have reduced auction revenues, resulted in large amounts of fallow spectrum, and delayed or reduced a range of consumer benefits. Furthermore, these rules have proven ineffective—and counter-productive—as means to stimulate sustainable entry and/or alter the market structure in a way that enhances competition.” Robert Earle and David W. Sosa, “Spectrum Auctions Around the World: An Assessment of International Experiences with Auction Restrictions,” Analysis Group, July 2013, p. 22.

29. TELUS was allowed to buy Public Mobile because the spectrum bought by the latter during the 2008 auction was not part of the set-aside and is not used for the latest smartphones and data plans. Industry Canada therefore considers that the transaction does not affect competition in the wireless industry. See The Canadian Press, “Telus buys Public Mobile in surprise move,” *The Toronto Star*, October 23, 2013. However, the government rejected several attempts by TELUS to buy Mobicity, and effectively killed a deal whereby Shaw would sell its unused AWS spectrum to Rogers. See Rita Trichur, “Telus, Quebecor vie for takeover of Mobicity,” *The Globe and Mail*, January 28, 2014; David Ljunggren (Reuters), “Ottawa unhappy with Shaw's spectrum sale plan,” BNN, April 15, 2013.

Table 2-2
List of policy interventions by the Canadian government intended to bring more competition to the wireless industry, 2007-2014

DATE	POLICY	EFFECT
November 2007	Policy Framework for the Auction for Spectrum Licences for Advanced Wireless Services	40 MHz out of 105 MHz to be auctioned in 2008 are set aside for new or small regional wireless players.
February 2008	Mandatory Roaming and Antenna Tower and Site Sharing	Government adopts new rules to facilitate the completion of roaming agreements and site sharing agreements.
June 2012	Amendments to the <i>Telecommunications Act</i>	Government lifts foreign investment restrictions for companies holding less than a 10% share of the total Canadian telecommunications market.
March 2013	Licensing Framework for Mobile Broadband Services (MBS) — 700 MHz Band	Imposes a cap of one out of four prime spectrum blocks to be auctioned for all large providers, small ones can acquire two.
March 2013	Revised Frameworks for Mandatory Roaming and Antenna Tower and Site Sharing	Revised conditions to further facilitate roaming and tower sharing agreements.
June 2013	Spectrum Licence Transfer Framework	Government will review all spectrum transfer requests and block those (to the three major providers) that would increase concentration.
June 2013	CRTC Wireless Code	The CRTC establishes a series of new requirements for wireless service providers, including limiting the length of contracts to two years, with the goal of “making it easier for consumers to take advantage of competitive offers.”
December 2013	Cap on domestic wireless roaming rates	Industry Minister James Moore announces he will soon introduce legislation to cap rates charged to other companies. This measure will be in place until the Canadian Radio-television and Telecommunications Commission (CRTC), which is now investigating the issue, makes a decision on roaming rates.
December 2013	New monetary penalties	Industry Minister James Moore announces he will soon introduce legislation to give the CRTC and Industry Canada the option to impose monetary penalties on companies that violate established rules such as the Wireless Code and those related to the deployment of spectrum, services to rural areas and tower sharing.
January 2014	Licensing Framework for Broadband Radio Service (BRS) — 2500 MHz Band	Spectrum caps as well as strict provisions on transfers will be applied to the 2500 MHz wireless auction taking place in 2015.

This time however, instead of setting a portion of the frequencies aside as it had done in 2008, Industry Canada decided that out of four “prime” 700 MHz spectrum blocks that were to be auctioned off,³⁰ large providers were limited to acquiring only one. Assuming that TELUS, Bell and Rogers all bought one block, one would be left for the small providers in each region. This measure, called a “spectrum cap,” had a similar effect to the set-aside: It would prevent the large players from acquiring all of the available spectrum in order to protect their dominant positions and preclude competition. Crucially, the rules also allowed small providers to acquire not just one, but up to two of the prime blocks.

“Verizon is, all by itself, larger than the entire Canadian wireless industry, having about four times more revenues and subscribers than the three national players combined.”

It was always extremely unlikely that existing small players would be willing, and have the financial means, to acquire two blocks of prime spectrum. However, this changed when it was reported that Verizon, one of the largest American wireless service providers, was contemplating the acquisition of Wind Mobile.³¹ By buying out a small Canadian provider, or entering the Canadian market on its own, Verizon would be treated as a small player in the spectrum auction, with the privileges that go with this status.

The fact that Verizon would benefit from favourable auction rules intended for new entrants unsurprisingly raised eyebrows within the Canadian telecommunications industry. Verizon is, all by itself,

larger than the entire Canadian wireless industry, having about four times more revenues and subscribers than the three national players combined.³² The rationale for implementing a spectrum cap (preventing predatory bidding by the large players at the expense of new entrants that were not as well capitalized) could hardly apply to a new entrant like Verizon. And with the financial means at its disposal, Verizon would no doubt have been able to outbid the other players and acquire two of the four prime blocks, forcing the three large providers to share the remaining two.

As a new entrant, Verizon would also have benefited from the network sharing rules imposed on the large providers, and would have been in a position to acquire Wind Mobile and Mobilicity at depressed values, since large providers are not allowed to compete for their acquisition.

Moreover, the government’s willingness to lure a large foreign player into Canada and confer upon it a plethora of regulatory privileges would not only have impacted TELUS, Bell and Rogers. It would have completely destroyed the strategy the government had embraced since 2008, which aimed to strengthen regional fourth players across the country. Indeed, had Verizon bought two prime blocks of spectrum, and the large providers bought the two others, regional players such as MTS, SaskTel, Vidéotron and EastLink would have been left with no spectrum to acquire. Without those valuable 700 MHz frequencies, they would not have been able to introduce new and expanded services, and as a result their profitability and survival would have been jeopardized.

In the end, Verizon decided not to take part in the 700 MHz auction.³³ Mobilicity and Wind Mobile also did not participate due to their precarious financial situations.³⁴ MTS, SaskTel and EastLink predictably purchased licences in their respective regional markets, while the three large players acquired licences in all 10 provinces. Vidéotron

30. These blocks are considered prime because they are “paired,” which means that they allow for sending and receiving data; they are in a range where interference from adjacent frequencies is limited; and in the case of three of them, the same frequencies are being used in the U.S. by Verizon and AT&T, which means that handsets using these frequencies are already available. Three other blocks of frequencies that are seen as being of lesser value were also auctioned.

31. Industry Canada officials met with both Verizon and another American provider, AT&T, to inform them of the situation and opportunities in Canada ahead of the spectrum auction. See Simon Doyle, “Industry Canada lobbied AT&T, too,” *The Wire Report*, March 17, 2014.

32. Christine Dobby and Theresa Tedesco, “Verizon could be ‘game-changer’ that upends Canadian market,” *National Post*, June 26, 2013.

33. See Christine Dobby, “Verizon not interested in expanding into Canada, CEO says,” *National Post*, September 2, 2013.

34. See Rita Trichur, “Wind Mobile pulls out of wireless auction,” *The Globe and Mail*, January 13, 2014.

surprised observers by acquiring spectrum licenses not only in its home market of Quebec, but also in Ontario, Alberta and British Columbia, none of which has a solidly established fourth player.³⁵

This prompted Industry Minister James Moore to declare victory in the government's longstanding attempt to foster the emergence of a fourth player in every region of the country:

I think it's great that [Québecor is] looking beyond their traditional footprint in the province of Quebec to provide my home province of B.C., Alberta and the province of Ontario with a fourth player option. [...] The outcome of the auction supports more choice for Canadians by enabling a fourth wireless player in every region of the country. There are those who doubted whether or not this would be realized in this auction. Those doubters have now been silenced.³⁶

However, it is not obvious that the elusive search for a fourth wireless player will end here. Given the auction rules and the absence of any other important bidder, Vidéotron got its spectrum "at an advantageous price," as it claimed in a press release.³⁷ The company could decide to sell it later for a profit instead of using it to set up its own wireless network outside of Quebec. Robert Dépatie, up until recently CEO of Québecor (Vidéotron's parent company), said after the auction that "We took advantage of a great price [...] and as you know, spectrum is a great asset to own. So we could sit on it or do something with it."³⁸

At this stage, few analysts expect Vidéotron to develop a network outside of Quebec.³⁹ Even if it

did, there is no guarantee of success. Vidéotron has no cable network outside of Quebec and would not be able to offer quadruple play services to its clients in other provinces, leaving it in the same situation as the three failed new entrants that emerged after the 2008 AWS spectrum auction. As Mr. Dépatie acknowledged, "We are well aware that some have tried to compete in the past in the Canadian wireless business and have struggled. Repeating the history is not our plan. [...] All of our energy in the next months will be spent at determining whether the right conditions could be implemented before deploying additional resources in such a venture."⁴⁰

"If large players have to compete for customers with companies with which they are forced to share their networks at prices and conditions that are not commercially advantageous to them, they will have fewer incentives to continue to invest in their networks."

Among those "right conditions" is the extent to which the government and the CRTC will cap the roaming fees that the large national providers charge the smaller ones.⁴¹ The downsides of imposing artificially low roaming fees are well known. (See Chapter 3 for a discussion of the shortcomings of mandatory network access policies in the context of the wireline sector.) If large players have to compete for customers with companies with which they are forced to share their networks at prices and conditions that are not commercially advantageous to them, they will have fewer incentives to continue to invest in their networks. As for new entrants, why should they deploy their own infrastructure when they can obtain access to the infrastructure of others at artificially low prices? This type of policy does not encourage facilities-based competition among

35. For detailed results, see Government of Canada, 700 MHz Spectrum Auction—Process and Results.

36. Steven Chase, Rita Trichur and Sophie Cousineau, "Frenzied auction raises stakes in Canada's wireless war," *The Globe and Mail*, February 19, 2014.

37. "Québecor Media acquires seven operating licences in four provinces at an advantageous price," Press release, February 19, 2014.

38. Sophie Cousineau, "Québecor waiting on Ottawa before expanding out of Quebec," *The Globe and Mail*, March 13, 2014.

39. For an analysis of what Vidéotron could do with its spectrum, see LuAnn LaSalle, "Regional partners seen as best bet for Videotron's wireless spectrum buy," *The Canadian Press*, Feb 20, 2014; Christine Dobby, "How Québecor's national

wireless expansion could play out," *National Post*, February 24, 2014; Bertrand Marotte, "National Strategy no sure thing for Québecor," *The Globe and Mail*, February 20, 2014.

40. Sophie Cousineau, *op. cit.*, footnote 38.

41. Industry Minister James Moore announced in December 2013 that he will soon introduce legislation to cap roaming fees. This measure will be in place until the CRTC, which is now investigating the issue, makes its own decision.

strong firms, but rather results in diminished competition between weakened large firms and dependent new entrants.

Is There a Need for a Fourth Player?

The federal government has tried several policy approaches to ensure that there are at least four well established, facilities-based wireless providers in all regions of the country, to no avail. Three of the largest markets (Ontario, Alberta and British Columbia) still lack a fourth provider. Is this situation so detrimental to consumers' interests that it warrants yet more policy intervention?

Mainstream competition theory posits that the presence of more players in a market will generally enhance consumer welfare. This is the view espoused by the federal government, which asserts on the webpage advertising its wireless policy that it will bring "More choice. Lower prices. Better service."⁴²

No one disputes that in a context in which a former government monopoly has just been broken up, the arrival of new competitors will force the incumbent to lower its prices and to offer better services to retain its client base. More competition enhances consumer welfare so long as the existing players are so few in number that they can appropriate what economists call a "rent," i.e., surplus revenue that they can extract from captive consumers, above and beyond what this revenue would be in an optimally competitive market.

But if there is an optimal level of competitive intensity, then there must be a limit to how many new players there ought to be. Canada is the second-largest country in the world geographically, but its population is roughly the same as California's. The costs of building a wireless network from coast to coast are in the billions. Would we be better off with one more wireless network? What about three more, or ten more? Obviously, at some point, it becomes wasteful to add another network and it's better for society if these resources are used elsewhere.

Also, it may be preferable for financial resources in the telecommunications industry to be concentrated in the hands of a few strong players willing to invest in new technologies and services rather than scattered among several small and feeble competitors trying to survive by selling at prices barely above marginal costs. Such stronger players will then be able to compete more aggressively, not just on prices for basic voice and text services (which is what Wind, Public Mobile and Mobilicity focused on), but on a whole range of higher-end products in attractive bundles. This may sound antithetical, but more concentration may sometimes be in consumers' best interests.

"Just as an insufficiently competitive market can lead to a sclerotic industry extracting rents from consumers, a market with too much competition can have adverse consequences and ultimately harm consumers."

The wireless industry has been one of the fastest-growing and one of the most capital-intensive industries in advanced economies from the moment it was launched in the mid-1980s. Adequate revenues have to be generated for providers to be able to recoup their investments and make the further investments needed to keep up with technological developments and respond to consumers' ever-growing demand.

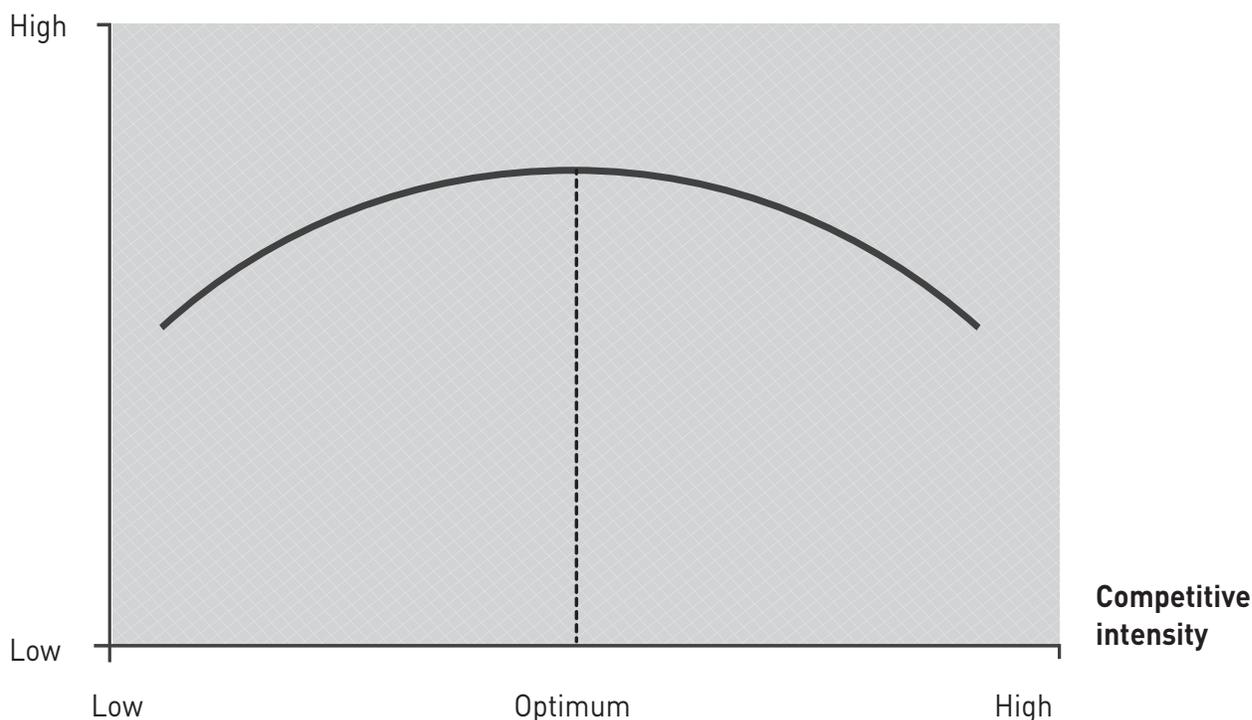
Government regulators often think they can implement policies that will lower prices, and hence the profitability of telecommunications companies, without affecting their willingness to innovate and invest in new technologies. However, as the saying goes, you can't have your cake and eat it, too. Indeed:

[p]olicies that sacrifice long-run dynamic efficiency for short-run gains in static efficiency [...] risk being penny-wise and pound foolish. Similarly, regulatory policies that prevent firms from achieving optimal scale, or result in below-market prices, can create the illusion of greater competition or enhanced consumer

42. http://www.ic.gc.ca/eic/site/icgc.nsf/eng/07389.html?Open&wtpromo=More_Choices.

Figure 2-1
Trade-off between competitive intensity and innovation

Investment incentives



Source: The Boston Consulting Group, “Reforming Europe’s Telecoms Regulation to Enable the Digital Single Market,” July 2013, based on Johannes M. Bauer, “Regulation, Public Policy, and Investment in Communications Infrastructure,” Figure 14, January 31, 2009.

welfare while in fact detracting from both objectives.⁴³

A more balanced and accurate view of competition is that, just as an insufficiently competitive market can lead to a sclerotic industry extracting rents from consumers, a market with too much competition can have adverse consequences and ultimately harm consumers. The trade-off between competitive intensity and the incentive to invest and to innovate resembles an inverted U-shape, with incentives being lowest at the two extremes (see Figure 2-1).

This trade-off can be observed in Europe, which used to be a leader in wireless technology and is still seen by many as a consumer paradise because prices tend to be lower than in North America. However, investments on that continent have fallen behind North America and Asia in recent years and European markets also lag considerably in terms of the deployment of 4G networks. Not only is Europe highly fragmented into national markets, but several of these markets also have four competitors, many of which are unable to cover their capital costs because of the level of competitive intensity.

Partly as a result of price wars, mobile revenue in Europe has fallen 12% between 2008 and 2012.⁴⁴ For its

43. Erik Bohlin, Kevin W. Caves and Jeffrey A. Eisenach, *Mobile Wireless Market Performance in Canada: Lessons from the EU and the US*, Navigant Economics, May 2013.

44. Sam Schechner and Sven Grundberg, “Europe’s Phone Firms Face Profit Hurdles With 4G: As High-Speed Technology

part, investment in telecommunications infrastructure has declined by approximately 2% a year over the last five years in Europe, whereas it has increased by about 2% a year over the same period in comparable international markets.⁴⁵

A study by the Boston Consulting Group is worth quoting at length:

The current approach to applying competition law in the mobile sector is based on the theory that more competitors lead to lower prices. When a significant percentage of companies are operating on an unsustainable basis, however, as is currently the case in mobile, too many competitors can have adverse consequences. Up to one-third of current mobile operators consistently fail to earn their cost of capital. The most significant of these adverse effects for mobile operators, from both an industry and a consumer perspective, is the lack of ability to invest sufficiently in technological advancement and new infrastructure—which would drive substantial marginal cost and marginal price decreases supporting the rapid take-up of mobile data usage.

Consolidation in a fragmented market can benefit consumers. Economies of scale and density mean that bigger and healthier companies can increase the rollout and coverage of new technologies such as LTE and make new investments in pan-European services and innovation. Instead of allowing healthy concentration, regulatory and competition authorities often sponsor additional entrants. These companies do not have the resources to invest in a broad NGA rollout. They cannot compete on network quality, so they price aggressively to gain ground, which drives down revenues, cash flows, and the ability to invest among all players. Consumers lose in the long term because companies do not invest in the innovations that could improve quality and

lead to lower marginal prices—faster speeds and higher network capacity, for example.⁴⁶

This analysis helps explain the current consolidation drive in several European countries. The number of players has recently gone from four to three in Austria. There are also ongoing corporate moves and regulatory approval procedures in several other countries, including Ireland (3 and O2 Ireland), France (Free and Bouygues), Germany (E-Plus and O2), Italy (Wind and 3 Italia), and the U.S. (Sprint and T-Mobile), that could result in a similar situation. Australia also saw its number of players go from four to three. And in Japan, the number of carriers went from five to three after the purchase by Softbank of Willcom in 2010 and eMobile in 2012.

With three national wireless players, and several regional ones, Canada is far from being an aberration among developed countries (see Table 2-3). If anything, due to the ongoing consolidation processes in many countries, the three-player model may well soon become the norm.⁴⁷

Canadian critics of the telecom industry, including the federal government, never point to the adverse consequences that can be brought about by an excess of competition. From their perspective, there are only benefits to having more competition, and no downsides. The European example shows that going too far in that direction can cause as much harm to the industry and to consumers as not going far enough.

One of the facts often mentioned as proof that the presence of four players is necessarily better for consumers is that wireless average revenue per user (ARPU) is lower in Quebec, where Vidéotron has brought more competition, than in provinces with only three providers.⁴⁸ This, however, should

Spreads, Price Wars Threaten Returns,” *The Wall Street Journal*, October 6, 2013.

45. The Boston Consulting Group, “Reforming Europe’s Telecoms Regulation to Enable the Digital Single Market,” July 2013, pp. 11-12.

46. *Ibid.*, pp. 25-28.

47. It must be noted that before the current government attempted to increase the number of wireless players, Canada had already been through a period of consolidation of wireless providers. After launching successfully in the late 1990s, Clearnet was bought out by TELUS in 2000. Another player, Microcell, had gained a respectable market share, but this was not sufficient to prevent it from filing for bankruptcy in 2003. It was shortly thereafter taken over by Rogers, with the market settling on three national carriers.

48. See for example Canadian Media Concentration Research Project, “Mobile Wireless in Canada: Recognizing the

Table 2-3
Number of wireless providers in developed countries

Australia	3	Italy	4
Japan	3	Netherlands	4
New Zealand	3	Norway	3
Austria	3	Portugal	3
Belgium	3	Spain	4
Denmark	4	Sweden	4
Finland	3	Switzerland	3
France	4	United Kingdom	4
Germany	4	Canada	5 (3)*
Greece	3	United States	4*

Source: Glen Campbell, *Global Wireless Matrix 4Q13, 2014: The Year Ahead*, Bank of America Merrill Lynch, January 8, 2014, p. 2.

*There are actually only three national carriers in Canada, but this source includes the two remaining entrants from the 2008 auction, Mobilicity and Wind Mobile, which do not have national networks and are in financial difficulty. Both Canada and the U.S. also have a number of regional networks.

not be attributed to differences in regulation or the level of competition, but rather to the particular context of Quebec's wireless market.⁴⁹ Among provinces, Quebec has by far the lowest level of wireless penetration,⁵⁰ and the lowest level of smartphone penetration.⁵¹ Given that data consumption on smartphones is the key driver of this market, it is not surprising that ARPU is lower in that province.

A better way to judge the situation is to look at the behaviour of market participants, whose decisions are a good indication of how resources should be allocated and what investments can be made profitably. If wireless prices were so high and services so bad in Canada, as many critics claim, and the opportunity for a new player to enter the market and make a profit were consequently so obvious, why did Verizon and Shaw pass up this opportunity?

“With three national wireless players, and several regional ones, Canada is far from being an aberration among developed countries.”

Both are well-established and financially solid companies with the means to invest in a network and compete. Shaw is a cable company already offering telephony, Internet and television services in the rich British Columbia and Alberta markets. Yet it did nothing with the subsidized frequencies it bought in the 2008 auction because it found the enterprise too risky.

Problems and Approaching Solutions,” December 2013, p. 24; Sophie Cousineau, “Quebec a model for wireless competition,” *The Globe and Mail*, April 17, 2013.

49. See Jeffrey Church and Andrew Wilkins, “Wireless Competition in Canada: An Assessment,” University of Calgary, *SPP Research Papers*, Vol. 6, Issue 27, September 2013, pp. 16-17.
50. In 2011, there were 70.4 subscribers per 100 households in Quebec, against 81.3 in Ontario, 88.5 in Alberta and 79.4 across Canada. Canadian Radio-television and Telecommunications Commission, *Communications Monitoring Report*, September 2013, p. 25.
51. In 2011, smartphone penetration stood at 27% in Quebec, versus 39% in Ontario, 47% in Alberta and 37% across Canada. Canadian Radio-television and Telecommunications Commission, *Communications Monitoring Report*, September 2012, p. 121.

A giant firm like Verizon, with its own network just across the border, would have benefitted from astounding regulatory privileges if it had decided to set up shop in Canada. Yet, its CEO said the company was looking at different countries around the world and there “are much better returns for our shareholders than going into Canada.”⁵²

Is this not a clear indication that Canada's wireless market may already be sufficiently competitive?

Conclusion

Industry Minister James Moore recently declared that “[i]t would be irresponsible for us to have a public policy that wasn't setting in place the parameters where more competition could emerge, if the market can support it. [...] Whatever dynamic emerges that the marketplace can support, the marketplace will decide that.” The problem with this seemingly pro-market declaration is that the first part contradicts the second one.

We don't know for sure if there is too much, too little or just enough competition in Canada's various regional markets, or how many players these markets can support. This is up to market participants to decide in an ongoing process of entrepreneurial risk-taking and resource allocation. However, there cannot be a properly functioning market if the government distorts it in one direction or another.

The government is not simply “setting in place the parameters where more competition could emerge,” as the minister claims. Rather, it has been actively supporting the emergence of new players through implicit subsidies and regulatory privileges. In concluding that Canada needs more wireless competition, the government ignores the negative consequences that may arise if there is in fact sufficient competition and if we end up with too many players.

The point of our analysis is not that having three national wireless players is preferable to having four. Rather, it is that when devising policies and

52. Rita Trichur, “Verizon ‘never seriously considered’ Canada: CEO,” *The Globe and Mail*, September 3, 2013.

regulatory frameworks, the government and the CRTC should ensure there is a level playing field among players and no regulatory privileges conferred on any particular class of market participant.

Although governments and regulators can help increase the number of competitors through regulatory measures, they cannot bring about real and sustainable competition beyond what the market can support. Artificially sustaining small new players and hampering the growth of larger ones does not lead to more sustainable competition. On the contrary, it leads to a waste of resources and delays the use of spectrum at a time when companies need more and more of it to meet growing consumer demand.

“When devising policies and regulatory frameworks, the government and the CRTC should ensure there is a level playing field among players and no regulatory privileges conferred on any particular class of market participant.”

The past seven years have seen the federal government multiply futile policy interventions in an attempt to achieve an elusive goal. The government would have spared itself all this trouble if it had fully opened the sector to foreign investors in 2008 and held the AWS auction without a set-aside. With no more restrictions on the entry of well capitalized foreign players, and no regulatory advantages conferred on new entrants, we could then have seen if market forces would support a fourth national carrier or fourth carriers in every region.⁵³ Instead of observing the behaviour of market participants to draw conclusions about the competitiveness of the market, the CRTC prefers launching proceedings to discuss the state of competition in the sector

and “whether greater regulatory oversight would be appropriate.”⁵⁴

A technological revolution hits the telecommunications industry every few years. The massive investments needed to stay ahead of the technological curve have done a lot more to change the way Canadians experience telecommunications than the appearance or disappearance of any one player. To paraphrase the Industry Minister, what would be irresponsible is for the government to remain fixated on the idea of adding players to the wireless telecommunications landscape, rather than setting in place the parameters where the Canadian wireless industry will be able to thrive in this fast-changing world.

53. Both of this paper's coauthors were working on the telecom file as policy advisors to then-Industry Minister Maxime Bernier in 2007. The consensus view in the Minister's office was to open the sector entirely to foreign investors and set up the coming spectrum auction so as to have a level playing field, without a set-aside for new entrants. Mr. Bernier was replaced by Jim Prentice as Industry Minister in August 2007, and a different policy was implemented.

54. Canadian Radio-television and Telecommunications Commission, “CRTC invites comments on the state of competition in the wholesale mobile wireless services market,” Press Release, February 20, 2014.

CHAPTER 3

Mandatory Network Sharing in the Wireline Sector: A Policy Whose Time Has Passed

Canada's telecommunications industry has been subject to deregulation, convergence and increasing competition since the early 1990s, which saw the introduction of competition in the provision of long distance telephony and the enactment of the *Telecommunications Act*. Since then, the federal government has actively promoted the emergence of wireline competitors using various regulatory interventions.

The cornerstone of the Canadian government's plan to liberalize the market for wireline services involved providing emerging competitors access to the networks of the incumbent telephone providers (i.e., the former monopolies) at low, regulated rates.⁵⁵ As discussed in further detail in this chapter, the Canadian experience shows that government attempts to induce additional competition in the wireline and broadband sectors via mandatory network sharing have failed, and have not benefited Canadian consumers. Rather than fostering competition, such measures have sheltered competitors from market forces and undermined the competitive process.

What is Mandatory Network Sharing?

When it allowed local competition in 1997, the CRTC imposed on incumbent telephone providers the obligation to share parts of their networks with competitors at regulated rates.⁵⁶ Such a policy,

known in regulatory terminology as “mandatory unbundling” or “mandatory wholesale access,” is not unique to Canada. It has been used as a tool of telecommunications regulatory policy across the developed world and has traditionally been considered necessary in allowing for a transition from monopoly to competition.

According to its proponents, mandatory network sharing is necessary because some elements of telecommunications networks are difficult to replicate, or cannot be replicated economically. Chief among these elements is the “local loop,” the physical copper wire connection that brings the telecommunications signal into customers' homes and offices from the telephone exchange (see Figure 3-1).⁵⁷

“The cornerstone of the Canadian government's plan to liberalize the market for wireline services involved providing emerging competitors access to the networks of the incumbent telephone providers (i.e., the former monopolies) at low, regulated rates.”

Virtually every unbundling regime grants emerging competitors access to the last mile local loop on an unbundled basis (i.e., without having to subscribe to a complete service), as replicating the local loop would require an extremely costly investment. Without such a regulatory intervention, it is believed that incumbents would suppress competition by denying competitors access to the local loop, or by charging them a prohibitive price. Mandatory network sharing is thus seen as an enabler of competition that leads to lower retail prices and increased product differentiation between competitors, and to more rapid innovation and increased investments in facilities-based competition.⁵⁸

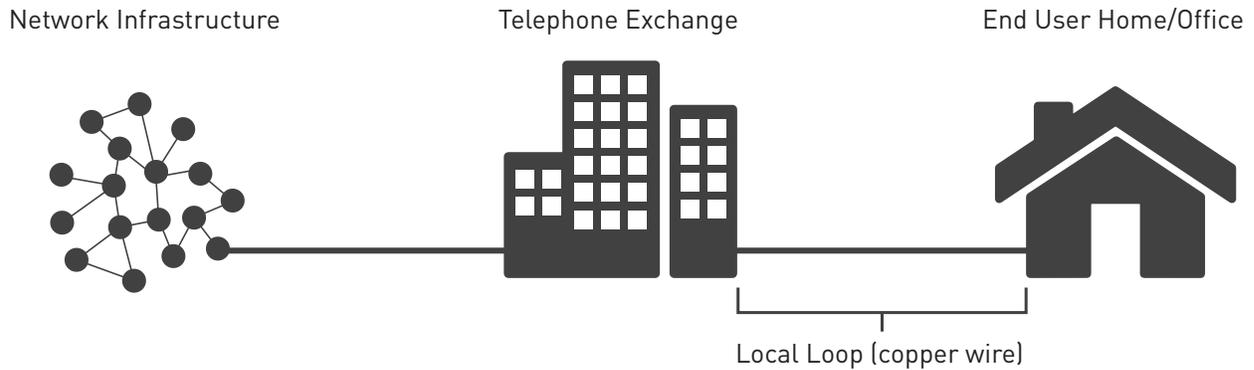
55. In regulatory terminology, the incumbents are referred to as incumbent local exchange carriers, or ILECs, whereas competitors are referred to as competitive local exchange carriers, or CLECs.

56. In doing so, Canada was harmonizing its approach to telecommunications policy with that of the United States, which opened its local markets to competition the year before with the passage of the *Telecommunications Act* of 1996.

57. A telephone exchange, also known as a “telephone switch,” consists of the electronic components that interconnect telephone subscriber lines or virtual circuits of digital systems to establish telephone calls between subscribers.

58. For clarity, “facilities-based competition” refers to a market structure in which entrants compete by building their own infrastructure.

Figure 3-1
Local Loop Unbundling



Local loop unbundling is the process by which the incumbent telephone provider makes its local network (the copper cables that run from customers' premises to the telephone exchange) available to competitors.

Mandatory unbundling policies were initially adopted to stimulate competition in wireline telephony through the sharing of traditional copper-based networks. However, they have since been used to enhance competition in so-called “new generation” services such as high-speed Internet. They are also being used to foster competition in the wireless sector via mandatory roaming and the sharing of antennas and tower sites. This chapter focuses on the application of mandatory unbundling policies to wireline and broadband networks.

Mandatory Unbundling in Canada

Until the 1990s, telecommunications services in Canada were being provided almost exclusively by a handful of telephone companies that operated within their serving territories in a monopoly environment. These companies were privately owned, yet regulated as public utilities. Competition existed, but only via resale. That is, an incumbent that chose to offer a retail telecommunications service had to permit the resale of that service in its original form by competitors.

However, the CRTC quickly came to realize that resale competition was not an ideal form of

competition, as it did not provide many incentives for innovation and efficiencies. (Resellers essentially “piggybacked” on the incumbents’ networks and technology and could only lower their costs through more efficient billing practices or better marketing strategies.) In 1997, the CRTC determined that it was in the public interest to remove restrictions on entry into local markets and chose to allow facilities-based competition. The CRTC found that:

[...] efficient and effective competition will be best achieved through facilities-based competitive service providers; otherwise, competition will only develop at the retail level with the [incumbents] retaining monopoly control of wholesale level distribution.⁵⁹

The CRTC argued that facilities-based competition would provide emerging competitors with more flexibility to develop their own services, as compared to resale competition:

[T]he Commission concluded that the unbundling of telephone company networks into discrete components would enable competitors to mix their own facilities with those of

59. CRTC, *Local Competition*, Telecom Decision CRTC 97-8, May 1, 1997, paragraph 73.

the telephone company in the most efficient manner, and thus stimulate the development of competition in telecommunications.⁶⁰

In its decision allowing facilities-based competition, the CRTC set the regulatory stage for local competitive entry. Among other things, it mandated interconnection between competing networks, which allowed communication between customers of different networks. The CRTC also imposed local number portability, which allowed customers of one telecommunications carrier to reassign their numbers to another carrier. Finally, in the hopes of driving competition, the CRTC imposed mandatory network sharing policies on incumbents.

The mandatory network sharing policies set out in the CRTC's landmark 1997 decision imposed on incumbents the obligation to make those parts of their network deemed to be "essential" available to competitors at regulated rates.⁶¹ To be considered essential, a facility had to meet the following three criteria:⁶²

- 1) it had to be monopoly controlled;
- 2) it had to be required by a competitor as an input to provide services; and
- 3) it could not be duplicated economically or technically.

Facilities that fit this description mostly consisted of local loops in small urban and rural areas. However, the CRTC went further by mandating access to facilities that it deemed "near-essential," which includes local loops in competitive urban markets (i.e., areas in which there is effective competition from cable companies offering telephony services). Even though the CRTC admitted that those loops could not, in any way, be deemed essential, it imposed mandatory access because it felt that competitors needed access to those loops to be able to compete

in the short term.⁶³ The CRTC contended that such regulations would only be necessary for a period of five years. However, in 2001, it extended mandatory unbundling indefinitely, because it considered that "competition [would] not evolve sufficiently prior to the end of the sunset period."⁶⁴

"Mandatory unbundling policies were initially adopted to stimulate competition in wireline telephony through the sharing of traditional copper-based networks."

The CRTC did not limit the scope of its network sharing policies to wireline telephone services. In 2006 and 2007, it extended them to the retail Internet service market by imposing on incumbents and cable companies the obligation to offer wholesale high-speed Internet access services to competitors at speeds matching their own service offerings.⁶⁵ These policies had not been necessary before the era of high-speed Internet, as retail Internet service providers offered their services on a dial-up basis, using a customer's telephone service. However, as the retail Internet service market transitioned from low-speed, dial-up connections to high-speed networks, the CRTC required that incumbents and cable companies make some of their high-speed access facilities available to competitors in order to ensure sufficient competition in the retail Internet services market.

In March 2008, the CRTC redefined the concept of "essential service" by establishing six new wholesale service categories, and assigning each wholesale service to one of those categories. The CRTC's new categorization included a "conditional essential" services category, which would remain "until

60. *Ibid.*, paragraph 66.

61. The initial CRTC decision establishing a mandatory unbundling regime, however, was issued in 1994.

62. CRTC, *op. cit.*, footnote 59, paragraph 74.

63. The CRTC did not impose any "duty to serve" obligations on the beneficiaries of mandatory network access, thus making it possible for emerging competitors to only offer service in the most profitable markets (that is, densely populated urban areas) and focus on the more profitable business telephony segment. Pursuant to "duty to serve" obligations, incumbents must provide basic wireline telephone service to any Canadian living within their operating area upon request.

64. CRTC, *Sunset clause for near-essential facilities*, Order 2001-184, March 1, 2001, paragraph 28.

65. The speed matching requirement was rescinded in 2007 and then reinstated in 2008. It was then confirmed by the CRTC in its now famous 2010 decision on "usage based billing."

it is demonstrated in an application that functionally equivalent wholesale alternatives are sufficiently present such that withdrawing mandated access would not likely result in a substantial lessening or prevention of competition in the relevant downstream market.⁶⁶ Unbundled local loops were labeled “conditional essential,” as was access to incumbents’ high-speed Internet access facilities (also known as asymmetric digital subscriber lines, or “ADSLs”). The CRTC also announced that mandated access for certain “non-essential” wholesale services, such as new generation networks, would be phased out of regulation over the next three to five years. Finally, the CRTC called for an omnibus review of the wholesale access regime within five years.

The Stepping Stone Theory

One of the key justifications for mandatory network sharing is that by obtaining access to incumbents’ networks at regulated prices, competitors will be in a position to amass the necessary capital to build their own facilities in the medium to long run, which will ultimately benefit consumers. This belief is referred to as the “stepping stone” or “ladder of investment” approach to facilities-based competition.

In order for the stepping stone theory to succeed, the regulator must be able to determine what parts of the network should be subject to mandatory unbundling and to set access prices at economically correct levels.⁶⁷ The regulator must not only take into account the advantages emerging competitors receive for avoiding the risks of making the investment themselves, but must also regularly adjust prices to reflect the entrant’s increasing ability to rely on its own facilities.⁶⁸ Proponents of the stepping stone theory assume that the regulator can set prices that are both:

- low enough to facilitate entrants’ ability to expand their networks and more quickly acquire the customer base that would justify construction of their own facilities; and
- high enough to provide entrants with sufficient incentives to build such facilities.⁶⁹

Furthermore, the regulator must set prices by considering the risks taken by the incumbents when they build or update their networks. In a dynamic sector such as the telecommunications industry, technology can quickly become obsolete. Competitors that rely on mandated access will not have to bear the costs of obsolescence or the costs of improving an existing network.

“The CRTC did not limit the scope of its network sharing policies to wireline telephone services. In 2006 and 2007, it extended them to the retail Internet service market.”

According to many of its proponents, mandatory unbundling is necessary because it allows end customers to choose from a wider array of service providers. Such an understanding of the market process is flawed because it focuses too heavily on rivalry within a given market structure. As noted earlier in this paper (see Introduction), this “static” view of competition, which focuses solely on the number of players in the industry at a particular point in time, does not take into account other competitive pressures that can exist in dynamic markets like the telecommunications market.

Proponents of generous mandatory unbundling regimes downplay the role of actual and future technological change as a cause of competitive tension in markets, and therefore understate the extent of actual competition in markets. A more “dynamic” concept of competition shows that competitive discipline and rivalry are not necessarily conditional on the presence of a multitude of players in the market;

66. CRTC, *Revised regulatory framework for wholesale services and definition of essential service*, Telecom Decision CRTC 2008-17, March 3, 2008, paragraph 57.

67. See Richard A. Epstein, “Takings, Commons and Associations: Why the *Telecommunications Act* of 1996 Misfired,” *Yale Journal on Regulation*, Vol. 22, 2005, p. 337.

68. Jeffrey A. Eisenach and Hal J. Singer, “Irrational expectations: can a regulator credibly commit to removing an unbundling obligation?” AEI-Brookings Joint Center for Regulatory Studies, 2007, p. 3.

69. Telecommunications Policy Review Panel (TPRP), *Final report*, 2006, p. 3-34.

they can also be generated by anticipation of new services in the future.⁷⁰

The shortcomings of the stepping stone theory are not only confined to the realm of theory. They have been substantiated in practice, both in Canada and in other jurisdictions.

Assessing Mandatory Network Sharing in Canada

The implementation of mandatory wholesale access policies has not led to additional facilities-based competition in Canada. Competitors relying extensively on mandated network access at artificially low rates have not built significant infrastructure. If anything, mandatory unbundling policies have undermined incentives to build alternative facilities.

The shortcomings of Canada's mandatory network sharing regime have been pointed out by several experts who have studied the issue over the years.

“One of the key justifications for mandatory network sharing is that by obtaining access to incumbents’ networks at regulated prices, competitors will be in a position to amass the necessary capital to build their own facilities in the medium to long run.”

In a 2005 paper, Professors Jerry Hausman and Gregory Sidak concluded that Canada's mandatory unbundling regime, though it did not completely discourage competitors from investing in their own facilities due to a less expansive approach than the U.S. regime, nevertheless created a competitor dependency on unbundled local loops.⁷¹

In its *Final Report* (2006), the Telecommunications Policy Review Panel (TPRP), a group of experts constituted by the Canadian government to review the Canadian telecommunications regulatory framework, acknowledged the failure of the stepping stone theory by recognizing that the scope of mandatory wholesale access was too broad and needed to be narrowed down. It went on to disapprove of the CRTC's policy of mandating access to non-essential facilities, because it undermined incentives for entrants to build alternative facilities.⁷²

More recently, economist Jeffrey Church stated:

The Commission's current regime requires minimal investment by new entrants. Minimal investment corresponds to minimal benefits from competition, and maximises the likelihood that the costs of access regulation exceed its benefits.⁷³

Despite these criticisms, it must be acknowledged that compared with other jurisdictions in Europe, for example, Canada has not relied heavily on network sharing to stimulate facilities-based competition in telecommunications and broadband. This is because the need for network sharing was short-circuited by the presence of cable and wireless competitors.

In the early 2000s, cable providers started offering telephone services, telephone service providers started offering satellite television services, and wireless providers started poaching wireline customers. In most Canadian markets, customers can choose between three types of facilities-based providers for their telecommunication services: the incumbent telephone company, the cable company and multiple wireless providers. Competition between the telecom companies and the cable companies, in particular, 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. At the end of 2012, the incumbents' share had fallen to 50% and

70. Neil Quigley, "Dynamic Competition in Telecommunications," C.D. Howe Institute, 2004, pp. 13-14.

71. Jerry A. Hausman and Gregory Sidak, "Did Mandatory Unbundling Achieve Its Purpose? Empirical Evidence from Five Countries," *Journal of Competition Law & Economics*, Vol. 1, No. 1, 2005, pp. 225-235.

72. TPRP, *op. cit.*, footnote 69, p. 3-36.

73. Jeffrey Church, "Expert Report," Bell Canada submission, *Review of Wholesale Services and Policies*, CRTC Public Notice 2013-551, January 31, 2014, paragraph 29.

the cable companies' share had risen to 32% of total communications revenues.⁷⁴

Over the past 10 years, the emergence of Voice over Internet Protocol (VoIP) telephony (where the phone signal uses the underlying Internet service provider's connection) has allowed consumers to forego traditional telephone service. Anybody with a high-speed Internet connection can now obtain VoIP telephone service from third party providers (such as Vonage or Skype) that do not need to obtain permission from the underlying Internet service provider to offer their services on its network.

When looking specifically at wireline telephony, in 2012, incumbent telephone companies controlled 68% of total access lines in Canada, with cable companies controlling 23%.⁷⁵ Other competitors (i.e., those that likely benefit or have benefited from mandated network sharing) controlled 9% of total access lines. Their share of residential lines only amounted to 6%.⁷⁶ As noted above, wireless now competes directly with wireline and cable. In 2011, 12.8% of Canadian households had decided to "cut the cord" and rely solely on mobile phone service.⁷⁷

"A more 'dynamic' concept of competition shows that competitive discipline and rivalry are not necessarily conditional on the presence of a multitude of players in the market; they can also be generated by anticipation of new services in the future."

Competition between incumbents and cable companies is also strong at the broadband level. Out of Canada's approximately 10.8 million broadband Internet subscribers in 2012, only 870,000 (8%) did not receive their Internet service from incumbents or cable companies.⁷⁸ DSL (i.e., the high-speed Internet service provided by incumbents) has increased

its market share of the residential broadband market from 8.2%⁷⁹ in 1998 to 37.1% in 2012.⁸⁰

In sum, the CRTC's best efforts to stimulate facilities-based competition through mandatory network sharing have failed. Canada's telecommunications and broadband markets have become increasingly dynamic and competitive over the last twenty years. However this has occurred despite—not because of—mandatory network sharing policies.

Assessing Mandatory Network Sharing in the U.S. and Europe

In determining the future of Canada's wholesale access regime, the CRTC should look at regulatory frameworks adopted by other jurisdictions in order to assess what types of regulatory regimes actually help enhance competition and innovation, and what types of regulatory regimes fail to do so. The United States and Europe are eloquent examples of jurisdictions that have opted to pursue different regulatory models, with very different results. While the U.S. model has emphasized the importance of competition between competing networks and technologies, Europe has opted for the opposite approach, encouraging resale-based competition between service providers using the legacy networks of incumbent telecommunications providers.

Unlike Canada, the United States has largely abandoned mandated network sharing. Following the adoption of the *Telecommunications Act of 1996*, the Federal Communications Commission put in place broad network sharing policies. However, contrary to the stepping stone theory, entrants increasingly relied on unbundled network elements and did not build out their own infrastructure. The FCC's network sharing policies were struck down by the courts in the early 2000s. They faulted the

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

75. Unlike incumbent telephone companies, cable companies' telephony services are limited to the residential segment.

76. CRTC, *op. cit.*, footnote 74, p. 137.

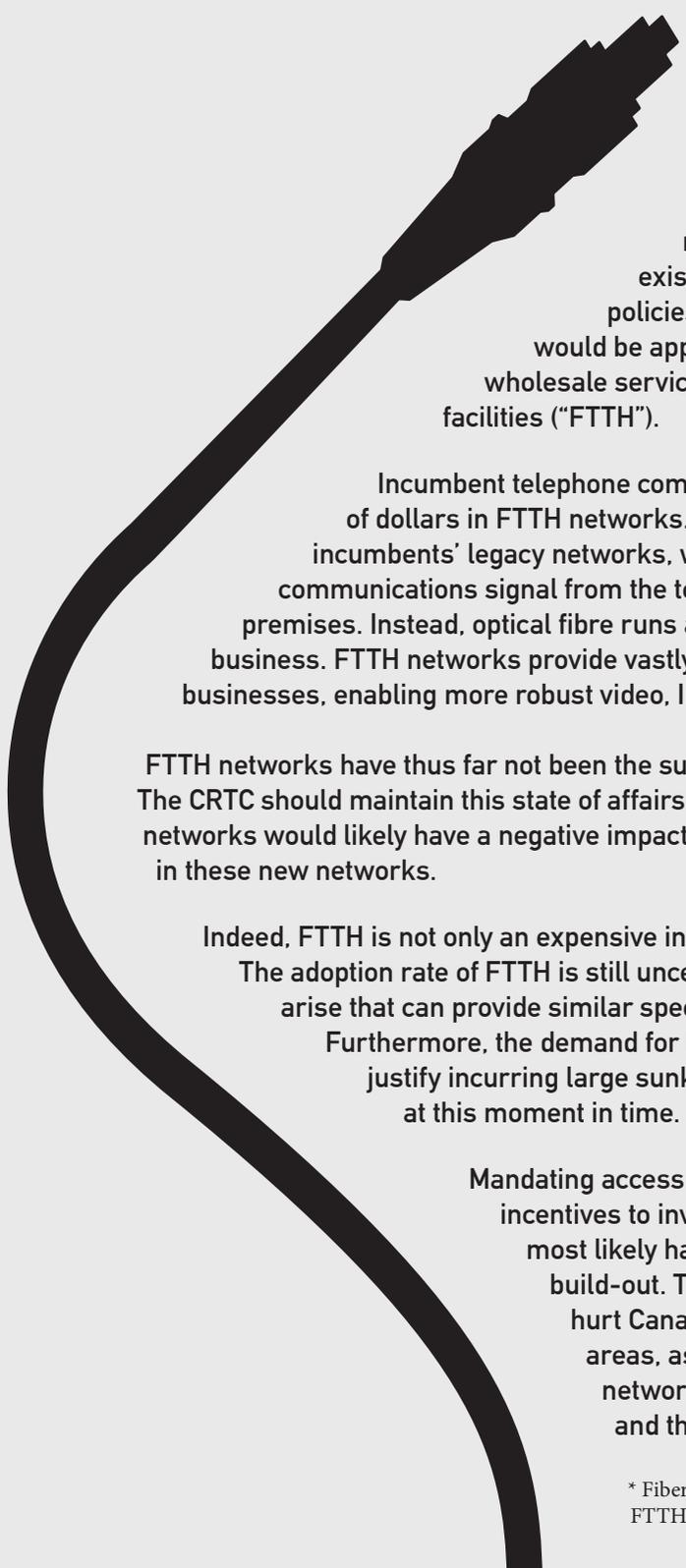
77. *Ibid.*, p. 157.

78. *Ibid.*, pp. 145-146.

79. CRTC, *Report to the Governor in Council: Status of Competition in Canadian Telecommunications Markets Deployment/Accessibility of Advanced Telecommunications Infrastructure and Services*, November 2003, Table 4.27, quoted in Jeffrey Church and Andrew Wilkins, *Residential Wireline Telecommunications Services in Canada: Primary Exchange Services and Broadband*, Working Paper, Department of Economics, University of Calgary, p. 39.

80. *Ibid.*

Box 3-1 Will the CRTC extend wholesale access policies to FTTH?



In October 2013, the CRTC issued a notice of consultation regarding the review of its wholesale service policies, which is currently underway. As part of its review, the CRTC will not only revisit the relevance of its existing mandatory wholesale access policies, but it will also assess whether it would be appropriate to mandate access to new wholesale services—namely fibre-to-the-home facilities (“FTTH”).

Incumbent telephone companies are currently investing billions of dollars in FTTH networks. These networks are distinct from the incumbents’ legacy networks, which use copper cables to deliver a communications signal from the telephone exchange to the customer’s premises. Instead, optical fibre runs all the way to the customer’s home or business. FTTH networks provide vastly higher bandwidth to consumers and businesses, enabling more robust video, Internet and voice services.*

FTTH networks have thus far not been the subject of mandatory access policies. The CRTC should maintain this state of affairs, as mandating the sharing of FTTH networks would likely have a negative impact on the incumbents’ decision to invest in these new networks.

Indeed, FTTH is not only an expensive investment, but also a risky one.

The adoption rate of FTTH is still uncertain today. Other technologies might arise that can provide similar speeds to consumers at a lower cost.

Furthermore, the demand for FTTH may not be strong enough to justify incurring large sunk costs to deploy these new networks at this moment in time.

Mandating access to FTTH networks would reduce the incentives to invest in those networks, and would most likely have the consequence of delaying their build-out. This would likely disproportionately hurt Canadians living in rural and remote areas, as the costs of building out a fibre network in those regions are the highest, and the payback periods, the longest.

* Fiber To The Home Council Americas, “What is FTTH?”

regulator for failing to take sufficient account of existing competition and found that those policies deterred investment.

Following the courts' decision, the FCC changed course. It recognized that when competing against cable companies and other competitors, the incumbent telephone companies were at a serious disadvantage and were quickly losing market share. As a result, the FCC drastically curtailed its network-sharing mandates—notably with respect to next-generation broadband networks. The FCC effectively abandoned the static model of competition and embraced the dynamic model:

American telecommunications policy is premised on the view that analysis of wholesale (and other) markets must be forward-looking—i.e., must consider not only where competition exists, but also where economic conditions would permit competition to arise.⁸¹

Since the implementation of the FCC's current policy framework about a decade ago, the United States has seen extensive investment in and deployment of next-generation fibre networks and similar network architecture. Tramont, Hanser and Gillen point to the broadband market as an example of how the FCC's old network access regime appears to have suppressed investment, while the new regime has corrected that situation:

[...] xDSL and cable modem service first developed at approximately the same time, but largely unregulated cable modem service initially dominated the emerging broadband market in the U.S. By the end of 1999, cable modem service had 1.4 million subscribers, while total DSL lines totaled 0.29 million. Cable's dominance continued into the early part of the next decade: through 2002, cable modem subscribers numbered 11.34 million, more than double the number of xDSL lines. By the late 2000s, following the decisions

discussed above, ILECs used their newfound regulatory flexibility to close the gap dramatically. For example, in December of 2008, wireline providers served about 30 million broadband residential customers (over xDSL, fiber, and other technologies), whereas cable served over 38 million.⁸²

The U.S. network access regime has been a success. Billions in investments have been made in next-generation networks, to the benefit of U.S. consumers. This has been achieved with a "light touch" access regime, which has emphasized the importance of facilities-based competition rather than network sharing.

"Canada's telecommunications and broadband markets have become increasingly dynamic and competitive over the last twenty years despite—not because of—mandatory network sharing policies."

In contrast to the United States, the European approach to network access regulation has not been successful. Once seen as a technology leader in the digital economy, Europe has lost ground against many Asian and North American markets in providing coverage for fast and ultra-fast broadband over the past decade. Strict wholesale access regulations are partly to blame for this state of affairs. As a recent report from the Boston Consulting Group points out:

Network owners are hindered in capturing the fair returns needed to fund investments, primarily because of over- and inconsistent regulation of competitive markets stemming from the lack of local assessment of relevant competing infrastructures and from preferential treatment of non-infrastructure players.⁸³

Although mandated access policies have helped reduce retail prices in most European jurisdictions,

81. Bryan N. Tramont, Russell P. Hanser and Bradley K. Gillen, "Telecommunications competition in the US: An assessment of wholesale regulatory policy and its consequences," Bell Canada submission, *Review of Wholesale Services and Policies*, CRTC Public Notice 2013-551, January 31, 2014, paragraph 17.

82. *Ibid*, paragraph 64.

83. The Boston Consulting Group, *op. cit.*, footnote 45, p. 6.

such policies have not resulted in long-term benefits for consumers. Indeed, mandated access policies have led to the erosion of incumbent profit margins and to an uncertain investment climate. As a result, incumbents have experienced a significant reduction in revenues and scaled back their capital expenditures. Boston Consulting Group estimates that an opportunity of up to 750 billion euros in GDP growth and as many as 5.5 million jobs will have been missed in the EU by 2020 because of the lack of investment in next-generation networks.⁸⁴

It appears that Europe's poor performance with respect to the deployment of high-quality next-generation networks has caught the eye of the political class. In August 2013, the European Commission issued a memorandum admitting that Europe was "losing the global race to build fast fixed broadband connections."⁸⁵ Its Vice President, Neelie Kroes, bemoaned the fact that the regulatory environment "just doesn't give businesses—old or new—the certainty they need to make investments" and stated that price regulation of high-speed networks needed to be lifted when not warranted.⁸⁶

"The U.S. network access regime has been a success. Billions in investments have been made in next-generation networks, to the benefit of U.S. consumers."

The European experience with access regulation shows that a market structure that favours the emergence of many competitors that lack the ability to make significant infrastructure investments is not desirable, and seriously inhibits investment in advanced technologies and new services. It also underscores the fact that affordable access—although a legitimate concern of regulators—should not be the only factor considered when assessing consumer welfare.

84. *Ibid.*

85. European Commission, "Regulatory mess hurting broadband investment: consumers and businesses stuck in slow lane," August 30, 2013.

86. *Ibid.*

Time to Phase Out Mandatory Access Policies

The CRTC has noted that in the context of its review of mandatory network sharing policies, it would take into consideration the Policy Direction⁸⁷ it had been issued by the federal Cabinet in 2006, in particular the following directives:

1(a)(i) rely on market forces to the maximum extent feasible as the means of achieving the telecommunications policy objectives;

1(a)(ii) ... use measures that are efficient and proportionate to their purpose and that interfere with the operation of competitive market forces to the minimum extent necessary to meet the policy objectives;

1(b)(ii) ... neither deter economically efficient competitive entry into the market nor promote economically inefficient entry; and

1(b)(iv)... ensure the technological and competitive neutrality of those arrangements or regimes, to the greatest extent possible, to enable competition from new technologies and not to artificially favour either Canadian carriers or resellers.

The CRTC should be consistent with the Policy Direction and recognize that Canada's telecommunications policy objectives can be attained without relying on outdated and inefficient mandatory network sharing rules in areas where there is effective competition from cable providers. Keeping the current mandatory network sharing policies in place without a clear phase-out strategy would send the wrong message to incumbents and cable companies, essentially telling them they have to share the rewards of their investments with their competitors, while making it clear to competitors that they will never need to make the investments necessary to build their own infrastructure, since their

87. Government of Canada, *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, December 14, 2006.

access to all future network improvements has been guaranteed.

Canada does not have a competition problem because the vast majority of its population has access to competitive telecommunications and broadband networks. The experiences with mandatory network sharing policies in the United States and Europe show that mandated network access policies tend to suppress investment in telecommunications and broadband infrastructure, and to create a business culture of regulatory dependency. There is no justification for maintaining Canada's current mandatory network sharing regime—or worse, extending it to next-generation services such as FTTH networks.

CHAPTER 4

Liberalizing the Transfer of Assets: Foreign Investment and Spectrum Ownership

The federal government has tried time and again to foster additional competition in the telecommunications industry by subsidizing spectrum for new entrants in the wireless sector, and by allowing smaller competitors to access the networks of large providers at regulated rates in the wireline sector. As noted in Chapters 2 and 3, these measures have largely failed.

The Canadian experience shows that markets work best when they are unhampered by regulations that strengthen the weak by weakening the strong. Additional competition in a market is desirable to the extent that it is sustainable. Fostering artificial competition through regulatory fiat leads to an inefficient allocation of financial resources, and ultimately hurts the consumer. Indeed, although it may appear counterintuitive, in a capital-intensive sector like telecommunications, consumer welfare may be enhanced by having financial resources concentrated in the hands of a few strong players capable of making significant investments in new technologies and services, rather than scattered among smaller providers that survive by keeping prices just above marginal costs.

Telecommunications carriers must be able to recoup the significant investments they make in upgrading their networks and developing new services, all of which ultimately benefit consumers. In order to do so, they must be able to generate adequate revenues. The government should not be blind to the fact that subsidizing competitors by setting preferential auction rules, capping prices and imposing a mandatory wholesale services regime causes resources to be misallocated, which will have detrimental effects on innovation and investment in the long term.

Instead of micromanaging competition in the telecommunications industry, the government should remove the barriers that prevent real, dynamic competition from taking place. Two such barriers prevent the transfer of assets, and thus a more efficient allocation of resources: (i) foreign ownership restrictions and (ii) restrictions regarding the transfer of spectrum licenses.

Foreign Ownership Restrictions

Before July 2012, Canada's legislative regime prohibited the ownership of facilities-based telecommunications carriers by non-Canadians. Canada's foreign ownership rules could be summarized as follows:⁸⁸

- at least 80% of the members of a carrier's board of directors had to be individual Canadians;
- non-Canadians could not beneficially own, directly or indirectly, more than 20% of a carrier's voting shares;
- non-Canadians could not beneficially own, directly or indirectly, more than 33 1/3% of the voting shares of a carrier's holding company; and
- neither a carrier nor its holding company could otherwise be controlled by persons who are not Canadians.

Canada's foreign ownership restrictions were first implemented in 1987 when the federal government introduced its *Policy Framework for Telecommunications in Canada*. At that time, Canada was in the midst of negotiating the Canada-U.S. Free Trade Agreement, and these rules were meant to ensure

88. *Telecommunications Act*, s. 16(3); *Canadian Telecommunications Common Carrier Ownership and Control Regulations*, s. 2(1)(a). The *Radiocommunication Regulations*, made pursuant to the *Radiocommunication Act* and introduced in 1996, contain Canadian ownership and control requirements that are virtually identical to those of the *Telecommunications Act* and associated regulations.

that Canadian telecommunications carriers would be “protected” once the free trade agreement was in force.⁸⁹

In 1993, the foreign investment restrictions set out in the 1987 policy framework were enshrined in the *Telecommunications Act*. When this law was enacted, ownership restrictions on telecommunications carriers were not particularly controversial. Indeed, many member states of the Organisation for Economic Cooperation and Development (OECD), including the United States, had similar restrictions.

“Fostering artificial competition through regulatory fiat leads to an inefficient allocation of financial resources, and ultimately hurts the consumer.”

Since 1993, however, things have changed considerably. The United States, and most OECD member states, have removed foreign ownership restrictions on their carriers and opened their telecommunications markets to foreign participation.⁹⁰ Until 2012, Canada stood almost alone within the OECD in retaining its foreign ownership restrictions. This was not lost on Canadian policy makers. From 2003 to 2010, various reports by parliamentarians and government-mandated expert panels urged the federal government to amend its telecommunications foreign investment regime:

- *House of Commons Standing Committee on Industry, Science and Technology (2003)*: At the Industry Minister’s request, this Committee undertook a study of Canada’s restrictions to foreign investment in telecommunications. In its final report, the Committee urged that foreign investment restrictions applicable to telecommunications carriers be removed entirely.⁹¹ The Committee also recommended that foreign investment restrictions applicable

to broadcasting distribution undertakings be repealed.⁹²

- *Telecommunications Policy Review Panel (2006)*: The TPRP proposed a multi-phased approach to changing Canada’s telecommunications foreign investment restrictions. During the first phase, a presumption would be made that investments in any new start-up telecommunications carrier, or in any existing telecommunications common carrier with less than 10 percent of the revenue in any telecommunications service market, would be in the public interest. The second phase would involve a broader liberalization of foreign ownership rules, but only after having conducted a review of Canada’s broadcasting policy, which would aim to develop a more consistent and competitively neutral regulatory approach to the rapidly converging broadcasting and telecommunications industries.⁹³
- *Competition Policy Review Panel (2008)*: The Panel, which had been appointed by the federal government to study how to raise Canada’s standard of living through greater competition and productivity, made recommendations to liberalize Canada’s telecommunications foreign ownership restrictions that were substantially the same as those of the TPRP.⁹⁴
- *House of Commons Standing Committee on Industry, Science and Technology (2010)*: In this report, the Committee was more timid than it had been in 2003, only recommending that foreign ownership restrictions be lifted on satellite ownership and operation in Canada.⁹⁵

These reports, in conjunction with other reasons, prompted the federal government to act. In

89. Industry Canada, *Opening Canada’s Doors to Foreign Investment in Telecommunications: Options for Reform*, Consultation Paper, June 2010, p. 4.

90. *Ibid.*, p. 6.

91. House of Commons Standing Committee on Industry, Science and Technology, *Opening Canadian Communications to the World*, April 2003, Chapter 3, Recommendation 2.

92. *Ibid.*, Chapter 4, Recommendation 3,

93. Telecommunications Policy Review Panel, *Final Report 2006*, p. 11-26.

94. Competition Policy Review Panel, *Compete to Win – Final Report*, June 2008, p. 49.

95. House of Commons Standing Committee on Industry, Science and Technology, *Canada’s Foreign Ownership Rules and Regulations in the Telecommunications Sector*, June 2010, Chapter 5, Recommendation 2.

July 2010, Parliament enacted legislation that removed foreign-ownership restrictions on Canadian satellite carriers.⁹⁶ This legislative reform was not particularly controversial, given that Canadian satellite companies already faced competition from foreign entities in the Canadian market.

“Until 2012, Canada stood almost alone within the OECD in retaining its foreign ownership restrictions.”

Two years later, however, the federal government announced a much more significant shift toward liberalization by introducing amendments to the *Telecommunications Act* that would lift foreign investment restrictions on companies with revenue representing less than 10 percent of the total Canadian telecommunications market, as recommended by the TPRP. Furthermore, foreign-controlled companies would remain exempt from these restrictions if they were successful in growing their market shares beyond 10 percent in ways other than through mergers and acquisitions. In practice, these new rules meant that foreign ownership restrictions would not be applicable to any telecommunication service providers in Canada, except for the three largest carriers (Bell, TELUS and Rogers).⁹⁷

This partial lifting of foreign restrictions in telecommunications was announced in March 2012, along with rules for the 700 MHz spectrum auction, which were intended to promote the government's stated objective of increasing competition and investment in the wireless sector. The government hoped that a better capitalized foreign investor might enter the Canadian market by the acquisition of a smaller player or by acquiring spectrum in the upcoming 700 MHz auction, and then become Canada's fourth national wireless player. As discussed in Chapter 2, despite this liberalization of foreign investment rules, no foreign entity has yet entered the Canadian market.

96. *Jobs and Economic Growth Act*, 3rd Session, 40th Parliament, 2010 (assented to July 12, 2010), S.C. 2010, c. 12, s. 2184.

97. *Jobs, Growth and Long-term Prosperity Act*, 1st Session, 41st Parliament, 2012 (assented to June 29, 2012), S.C. 2012, c. 19, s. 595.

Taking the Extra Step

In order to improve the competitiveness of the Canadian telecommunications industry, the government should take the extra step and lift foreign ownership restrictions on all telecommunications carriers. Despite having partially lifted its foreign ownership restrictions in 2012, Canada remains an anomaly among OECD countries by maintaining restrictions on the ownership of its three biggest telecommunications carriers.

Lifting all foreign ownership restrictions on telecommunications carriers could bring significant benefits to the Canadian economy. As pointed out in a report by the C.D. Howe Institute's Competition Policy Council, the gains from liberalization would likely not result in a change in the number of national competitors, but rather lead to better performance by telecommunications market participants:

Canadian telecom firms would become more integrated in a contiguous North American telecommunications market. Council members pointed out that cost savings in a network industry, like telecommunications, arise through reaping the benefits of scale and scope economies. An integrated North American market, whether achieved through entrance or acquisition by US or other firms, or Canadian firms acquiring a US network, would benefit Canadian consumers through lower costs from network economies, lower capital costs, and accelerated innovation and technology adoption.⁹⁸

Research has shown that multinational firms tend to outperform domestic firms in many respects, including investments in equipment, staff training and research, as well as the use of technology and processes.⁹⁹ Although to date, the partial lifting of

98. C.D. Howe Institute, *Abolish Ownership Restrictions in Telecommunications, Report of the Competition Policy Council*, June 23, 2011, p. 2. Interestingly, before the federal government had laid out its policy on a fourth wireless player, competition experts were already predicting that lifting foreign ownership restrictions altogether would likely not bring about additional national wireless providers in the Canadian market.

99. Leonard St-Aubin, *Submission to Industry Canada's Consultation on Foreign Investment in Telecommunications*, July 2010, pp. 7-8.

foreign ownership restrictions has not attracted a single foreign player to the Canadian market (which may be explained in part by the fact that foreign players are uninterested in acquiring small and inefficient competitors), this situation could change if Canada were to lift all of its foreign ownership restrictions, allowing its biggest carriers to be acquired by foreign entities.

“In order to improve the competitiveness of the Canadian telecommunications industry, the government should take the extra step and lift foreign ownership restrictions on all telecommunications carriers.”

One cannot broach the subject of foreign ownership restrictions in the telecommunications industry without addressing the issue of foreign ownership restrictions in the broadcasting sector.¹⁰⁰ Indeed, in the past decade, telecommunications and broadcasting have become so intertwined that it is difficult to make a clear distinction between them. These two industries no longer operate in isolation, and it makes little sense from a policy perspective to lift the foreign ownership restrictions applicable to one sector without also lifting those applicable to the other.

Cultural nationalists are often quick to point out that eliminating foreign ownership restrictions in the broadcasting sector would lead to the elimination of Canadian content requirements.¹⁰¹ Such fears are unjustified. There is no reason why Canadian content requirements could not survive in a liberalized broadcasting market. Foreign-owned firms operate in many other sectors of Canada's economy and must abide by the same laws and regulations as Canadian-owned firms. There is no evidence that foreign-owned firms are less likely to comply with Canadian laws and regulations than Canadian-owned firms.

In the same way, foreign-owned broadcasters operating in Canada would need to comply with Canadian content requirements as Canadian-owned broadcasters do, short of which they would jeopardize their broadcasting licenses. Furthermore, many other developed countries have eliminated foreign ownership restrictions in their broadcasting sectors, but retain local content requirements.¹⁰² Foreign ownership restrictions in the broadcasting sector are therefore not a *sine qua non* for a legislative and regulatory framework that addresses cultural concerns.

Spectrum Transfer Policy

In addition to setting up favourable spectrum auction conditions for new entrants and making it easier and cheaper for them to enter into roaming and tower-sharing agreements with larger telecommunications carriers, the federal government has made it essentially impossible for large carriers to acquire spectrum from smaller players.

This trend was initiated when the federal government blocked the takeover of Mobilicity by TELUS in June 2013. As noted in Chapter 2, Mobilicity was one of the new entrants that acquired spectrum in the 2008 wireless auction. Since it had started its operations in 2009, Mobilicity had been unprofitable, and an acquisition by TELUS was seen as its way out of bankruptcy.¹⁰³ Because it had agreed not to transfer its AWS spectrum for a period of five years as a condition of license, Mobilicity needed to obtain the approval of Industry Canada to proceed with the transaction.

In a statement announcing his decision to block the transaction, Industry Minister Christian Paradis said that spectrum that had been set aside for new entrants was not intended to be transferred to incumbents, and that no transfer of set-aside spectrum to an incumbent ahead of the five-year limit would be approved.¹⁰⁴ But Paradis went further.

100. Currently, foreigners may own up to 20 per cent of a broadcaster and up to 33.3 per cent of a holding company that owns a broadcaster.

101. Pursuant to the *Broadcasting Act*, the CRTC requires radio and television broadcasters to air a certain percentage of content that is at least partly written, produced, presented, or otherwise contributed to by Canadians.

102. Michael Geist, *Removing Telco Foreign Ownership Restrictions: My Appearance Before Senate Ctte on Transport & Comm*, June 5, 2012.

103. See “Telus agrees to take over Mobilicity for \$380M,” CBC news, May 16, 2013.

104. See Daniel Bader, “Industry Canada denies TELUS’ spectrum license transfer, Mobilicity deal not moving forward,”

The five-year limit for Mobilicity was to expire in early 2014, which made possible a future transaction with TELUS. Paradis quashed any hope of a future transaction taking place, however, when he implied that a spectrum transfer of this nature—from a new entrant to an incumbent—would be disallowed indefinitely. Four months after permission to go forward with the transaction was denied, Mobilicity filed for bankruptcy.¹⁰⁵

Shortly after blocking the TELUS/Mobilicity transaction, Industry Canada published its *Framework Relating to Transfers, Divisions and Subordinate Licensing of Spectrum Licences for Commercial Mobile Spectrum* (“Spectrum Licence Transfer Framework”), which essentially reiterated what the Minister had said in his TELUS decision: that spectrum transfers resulting in undue spectrum concentration—and that therefore diminish competition—would not be permitted.¹⁰⁶ In plain language, the Spectrum Transfer Framework established the following general rule: Large telecommunications carriers would not be permitted to acquire additional spectrum outside of public auctions.

There has since been a notable exception to this rule. In October 2013, Industry Canada approved TELUS's acquisition of Public Mobile, another failing new entrant. Public Mobile's spectrum was not part of the spectrum set aside in the 2008 auction and was of lower quality than Mobilicity's spectrum, as it could not be used for the latest smartphones and data plans. As a result, the government concluded that the transaction would not diminish competition in the wireless market.

mobilesyrup, June 4, 2013.

105. Since then, TELUS has made two additional attempts to acquire Mobilicity. The first attempt was rejected by the government in October 2013, while the second, announced in April 2014, is currently under review. Anonymous government sources have told *The Globe and Mail* that Industry Minister James Moore will reject the latest bid and that the government is prepared to exclude TELUS and other incumbents from the upcoming 2500 MHz wireless auction if the company persists in trying to acquire Mobilicity's spectrum. See Steven Chase, “Ottawa threatens to cut Telus out of wireless auction,” *The Globe and Mail*, April 25, 2014.

106. Government of Canada, “Harper Government Releases Spectrum Licence Transfer Framework,” News Release, June 28, 2013.

The government made it clear that it intended to follow its new policy when it prevented Inukshuk Wireless Partnership—a joint venture between Bell and Rogers—from purchasing 83 wireless spectrum licenses from NextWave in February 2014. According to Industry Minister James Moore, the transaction would have resulted in Bell and Rogers having “unacceptable levels of ... spectrum.”¹⁰⁷

“Foreign-owned broadcasters operating in Canada would need to comply with Canadian content requirements as Canadian-owned broadcasters do, short of which they would jeopardize their broadcasting licenses.”

The Spectrum Transfer Framework is yet another example of government meddling in the competitive process in the name of increasing competition in the wireless sector. Canada already has a competition regulator—the Competition Bureau—which has oversight over mergers and acquisitions, and can address concerns regarding the impact of increased spectrum concentration. The Spectrum Transfer Framework merely duplicates the Competition Bureau process and adds an additional layer of bureaucratic oversight on the telecommunications industry, which already suffers from overregulation.

But more importantly, the Spectrum Transfer Framework makes it clear that the government is willing to sacrifice innovation in the name of increased wireless competition. It is startling that, in its attempt to engineer additional competition, the government prevented TELUS from acquiring the spectrum of a failing firm and putting it to better use. The consequences of the government's short-sighted approach cannot be overlooked, particularly in an industry like telecommunications, where access to additional spectrum is directly linked to increased innovation and the development of new services.¹⁰⁸

107. Steven Chase, “Ottawa blocks spectrum sale to Rogers-Bell joint venture Inukshuk,” *The Globe and Mail*, February 27, 2014.

108. In addition to blocking transactions that would have allowed incumbents to acquire additional spectrum, the government has also prevented the acquisitions of telecommunications networks by foreign investors. In October 2013, the

In contrast, TELUS's acquisition of Public Mobile shows how a more liberal policy governing spectrum transfers can insure that spectrum is being put to its best use. In March 2014, TELUS announced it was preparing to shut down Public Mobile's outdated and small wireless network and migrate its customers to its 4G national network. Not only will this allow Public Mobile's customers to have access to a faster, more reliable and modern network that is national in scope; it will also allow TELUS to put the spectrum used by Public Mobile's legacy network to better use.¹⁰⁹

“The Spectrum Transfer Framework is yet another example of government meddling in the competitive process in the name of increasing competition in the wireless sector.”

In advocating for increased wireless competition in Canada, the government believed it would make the Canadian telecommunications market more attractive to foreign and domestic investors. However, the contrary has occurred. The government's micromanagement of the wireless sector has led to a climate of regulatory uncertainty, prompting Jeff Fan, an analyst with Scotia Capital, to comment that investment prospects in Canada's wireless sector were “unattractive to rational and professional

investors.”¹¹⁰ The failure of three of the 2008 auction's new entrants is living proof that a public policy agenda solely focused on adding a fourth wireless player was wrongheaded. Rather, the government should let the competitive process take place and adopt a “light-touch” regulatory regime, which would be more attractive to investors and more conducive to innovation.

government prevented Manitoba Telecom Services Inc. from selling its Allstream division to the Egyptian firm Accelero Capital Holdings due to unspecified national security concerns. Earlier that year, VimpelCom Ltd., a Dutch firm, had withdrawn its bid to acquire Wind Mobile. The regulatory approval process lasted almost eight months before VimpelCom withdrew its bid. National security concerns again appear to be responsible for the delay. Although distinct from the issue of spectrum aggregation by incumbents, the government's unwillingness to publicly disclose its concerns regarding these transactions has helped exacerbate the climate of uncertainty in Canada's telecommunications industry.

109. See: Rita Trichur and Steven Chase, “Telus's decision to shut Public Mobile angers consumers,” *The Globe and Mail*, March 27, 2014. Consumer advocates have decried the fact that the shutdown would force Public Mobile's customers to buy new cellphones in order to maintain service. However, the benefits of the transition—access to a better and more reliable network—vastly outweigh the costs. It must also be noted that in order to make the transition process easier, TELUS has offered affected customers discounts on new cellphones, as well as a month of free service.

110. Quoted in Terence Corcoran, “Wireless meddling hits new low with quashed Mobilicity deal,” *Financial Post*, June 4, 2013.

CONCLUSION

Encouraging Sustainable Competition

At the end of April 2014, senior government sources told *The Globe and Mail* that Industry Minister James Moore was going to reject TELUS's third bid to acquire Mobilicity. This company is one of the three small wireless service providers that benefited from the setting aside of spectrum for new entrants in the 2008 auction, but that never really managed to get off the ground.

The same government sources indicated that the government was considering various options for preventing the Big Three telecom companies from getting their hands on spectrum reserved for new players. The government is prepared to exclude TELUS from the upcoming spectrum auction for 2500 MHz frequencies if the company keeps trying to acquire Mobilicity's spectrum through the courts. It is even contemplating reviving the old "beauty contest" method whereby bureaucrats would distribute spectrum licences to companies based on a necessarily arbitrary evaluation of their business plans.¹¹¹

Such a decision would set us back 30 years, to when the wireless sector was in its infancy and monopolies still controlled the telephony sector. It would run counter to the consensus in the field and make Canada the laughing stock of the industrialized world in terms of the regulation of the telecommunications industry.

These statements show the extent to which the federal government, with its campaign to encourage the emergence of a fourth wireless carrier in each of Canada's regional markets, has lost sight of the ultimate goal of promoting the development of a dynamic, efficient industry. Such a campaign should hinge on the setting up of fair rules for all that would allow these fourth players to emerge if the market was able to support them. Instead, the government is encouraging artificial competition based on a static

vision of competition, as explained in the Introduction. It has in recent years multiplied the number of interventionist measures aiming to subsidize small, inefficient carriers while simultaneously interfering with the major players' development efforts.

As we saw in Chapter 1, the negative perception of the industry that justifies such measures, fed by the government's advertising campaigns,¹¹² is simply mistaken. Canadian consumers do not spend exorbitant amounts of money for poorer quality services than exist elsewhere. On the contrary, they benefit from one of the most advanced telecommunications networks in the world, are among the biggest users in the world, and generally pay prices that are about average with respect to other industrialized countries.

"These statements show the extent to which the federal government has lost sight of the ultimate goal of promoting the development of a dynamic, efficient industry."

Moreover, as was discussed in Chapter 2, these interventionist measures, including a controversial attempt to attract a large American provider by offering it extraordinary regulatory privileges, have not succeeded in ensuring the emergence of solid fourth wireless carriers in three of the largest Canadian markets, namely Ontario, British Columbia and Alberta. On the contrary, it can be argued that these measures merely led to a waste of resources, which the government is exacerbating by preventing their reallocation through such actions as blocking the transaction between TELUS and Mobilicity.

Relying on Market Forces

And yet, at the start of its mandate, the current government had adopted two frameworks that were meant to institute an entirely different approach. In

111. See Steven Chase, "Ottawa threatens to cut Telus out of wireless auction," *The Globe and Mail*, April 25, 2014.

112. The government admitted having spent \$9 million on an advertising campaign aiming to convince Canadians of the need to intervene in order to give rise to more competition in the wireless sector. See Christine Dobby, "Ottawa feared wireless 'failure,'" *National Post*, December 3, 2013.

an Order adopted in 2006 providing the CRTC with direction regarding the implementation of Canadian telecommunications policy, the government stated that the regulator should:

- rely on market forces to the maximum extent feasible as the means of achieving the telecommunications policy objectives; and
- when relying on regulation, use measures that are efficient and proportionate to their purpose and that interfere with the operation of competitive market forces to the minimum extent necessary to meet the policy objectives.¹¹³

Six months later, Industry Canada renewed its *Spectrum Policy Framework for Canada* along similar lines, by adopting the following enabling guidelines for spectrum management:

- market forces should be relied upon to the maximum extent feasible; and
- regulatory measures, where required, should be minimally intrusive, efficient and effective.¹¹⁴

This approach has been contradicted by practically every measure taken by the government over the past seven years.

With the CRTC getting ready to hold “hearings that basically review everything we regulate in one way or another [...] in the next 12 months,”¹¹⁵ the government should take inspiration once again from these two frameworks.

Instead of multiplying interventionist measures in order to achieve a useless and illusory objective,

it should gradually abandon mandatory access policies, both in the wireless sector and in the wireline sector, as we argued in Chapter 3. It should also adopt the two measures put forward in Chapter 4 to allow for a better allocation of resources in the telecommunications industry: open the industry completely to foreign investors, and liberalize its spectrum licence transfer policy.

“At the start of its mandate, the current government had adopted two frameworks that were meant to institute an entirely different approach.”

Such measures would have the effect of actually encouraging sustainable competition in Canada's telecommunications industry and consolidating the dynamism of this industry, to the great benefit of consumers across the country.

113. Government of Canada, *Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives*, December 14, 2006.

114. Industry Canada, *Spectrum Policy Framework for Canada*, June 2007.

115. Anja Karadeglija, “CRTC's consumer focus not at odds with industry: Blais,” *The Wire Report*, April 2, 2014.

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