

**Price Comparisons of
Wireline, Wireless and Internet Services in
Canada and with Foreign Jurisdictions**

2014 Update

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Wall Communications Inc.

NOTE: The views expressed in this document are solely those of Wall Communications Inc. and do not necessarily represent the views of the Canadian Radio-television and Telecommunications Commission or Industry Canada.

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OVERVIEW

This is the seventh update of Wall Communications' annual telecom services price comparison study. The individual services covered by the study include: wireline, mobile wireless, broadband Internet and mobile Internet services. In addition, bundles of these same services along with basic digital TV services are also included in the study.

For each individual service category, prices are measured for a series of defined "service baskets" which have been designed to reflect typical Canadian low to high telecom service usage levels and features. There are two to four service baskets or "levels" defined for each individual service covered by the study. The lowest available advertised prices, as offered by the surveyed service providers included in the study, are used to measure the prices of each of the defined service baskets.

For Canada, the surveyed service providers include the incumbent telephone companies (e.g., Bell and TELUS) and cable companies (e.g., Rogers, Shaw and Videotron), one reseller (i.e., Primus) and the wireless entrants (e.g., WIND, Mobilicity and Public Mobile). Prices are measured in five metropolitan areas: Halifax, Montreal, Toronto, Regina and Vancouver. Aggregate Canada-wide prices are determined on weighted average basis.

For international comparison purposes, prices have also been measured on the same basis and for the same set of service baskets for seven other countries: Australia, France, Germany, Italy, Japan, the United Kingdom (U.K.) and the United States (U.S.). Germany and Italy were added to the study for the first time this year; consequently, the study now includes all G7 countries as well as Australia.

There are several other new additions to this year's study, including:

- i) the addition of a fourth mobile wireless service basket, which includes "unlimited" nationwide talk & text and 2 GB of data;
- ii) a comparison of Canadian incumbent "flanker" brand and U.S. regional service provider mobile wireless service prices relative to incumbent mobile service prices in each of the two countries, respectively;
- iii) a comparison of international mobile roaming rates to and from the U.S. available to Canadian and American consumers; and
- iv) a comparison of broadband services and prices available in rural and remote areas using satellite and fixed wireless technologies in Canada and Australia, the U.K. and the U.S.

The highlights of this year's price comparison study update follow.

Wireline

Three service basket levels are considered in the case of wireline services: Level 1 includes low local and long distance call volumes, Level 2 includes average call volumes plus 2 features, and Level 3 high call volumes plus a full set of features.

- *Domestic Trends:* This year, the Canadian average Level 1 wireline service price increased by 10% relative to last year. In contrast, Canadian average Level 2 and 3 wireline service price declined relative to 2013 by 3% and 2%, respectively. Over the last five years, Level 1 and 2 wireline service prices have generally trended upwards, the former faster than the rate of inflation and the latter at roughly the annual average rate of inflation (i.e., just under 2%). On the other hand, the Level 3 price has declined slightly over the same period.
- *International Comparison:* As in previous years' studies, Canadian wireline service prices generally compare favourably with those in the surveyed foreign countries, generally falling in the middle of the range of prices measured for those countries.

Mobile Wireless

Four service basket levels are considered in the case of mobile wireless services: Level 1 includes low local and long distance call volumes; Level 2 includes average call volumes plus 2 features and 300 texts; Level 3 includes high call volumes plus a full set of features, 300 texts and 1 GB of data usage per month; and Level 4, which was added for the first time this year, includes unlimited nationwide talk and text along with 2 GB of data.

- *Domestic Trends:* This year, the Canadian average Level 1 mobile wireless price increased relative to 2013 by 16%, whereas the Level 2 price remained largely unchanged. In contrast, the Canadian average Level 3 price declined significantly, dropping from roughly \$94 to \$80 or by 15%. Over the last five years, Canadian Level 1 prices have increased slightly (roughly 5% overall), whereas both Level 2 and 3 prices have declined considerably – i.e., by roughly 15% and 27% in total, respectively. The Canadian average price of the Level 4 basket is roughly \$93; however, since it is new to the study this year, there is no means to compare its rate of change relative to previous years.
- *Entrants' Prices:* The wireless entrants continue to offer mobile wireless prices that are significantly lower than those of the incumbents – i.e., 28%, 10%, 44% and 49% lower for the four service basket levels, respectively. It should be noted that the monthly data allowances offered by the new wireless entrants (in the case of the Level 3 and 4 baskets), on average, exceed those of the incumbents.

- *Incumbent Flanker Brand Prices*¹: The incumbents' flanker brand prices are also priced at a considerable discount to the incumbent primary brand services – i.e., for the Levels 1 through 4 mobile wireless service baskets, prices are 21%, 29%, 31% and 34% lower, respectively. As noted, other than in the case of the Level 2 basket, the wireless entrants offer even greater discounts relative to the incumbents.
- *International Comparison*: Relative to the seven foreign jurisdictions surveyed for this study, Canada's Level 1 mobile wireless service basket price is the highest of the group. In the case of the Level 2 and 3 baskets as well as the new Level 4 service basket, Canada ranks on the high side of the average for the group of surveyed countries. Canada's mobile wireless service price ranking this year is similar to previous years' studies.
- *U.S. Regional Carrier Pricing*²: As part of this year's study, a comparison of U.S. regional carrier prices relative to U.S. incumbents was conducted. In this case, like the Canadian entrants and incumbent flanker brands, the U.S. regional carriers' average prices are below the U.S. incumbents – i.e., 11%, 20% and 37% in the case of Level 2, 3, 4 baskets. Otherwise, for the low-volume voice Level 1 service basket, the U.S. regional carriers' Level 1 average prices are considerably higher than those of the U.S. incumbents (i.e., over 40% higher).
- *Canada – U.S. Roaming Rates*: In addition, in this year's study, a comparison of Canadian and U.S. cross-border roaming rates was also conducted. In this respect, the U.S. incumbents' average base (pay-as-you-go) roaming call and text rates in Canada were found to be lower than the Canadian incumbents' comparable roaming rates in the U.S., whereas the reverse was found to apply in the case of data roaming rates. The incumbents in both countries also offer a variety of roaming add-on packages that provide lower call, text and data roaming rates. When these plans are taken into account, Canada compares more favourably to the U.S. in the case of text roaming rates, but less favourably for call and data roaming rates. On balance, a comparison of cross-border roaming rates offered by Canadian and U.S. incumbents suggests that consumers are no better off in either country as far as overall roaming charges are concerned. It is worth noting that the wireless entrants in Canada offer far lower roaming rates than the Canadian incumbents, whereas the U.S. regional carriers offer either no roaming services in Canada whatsoever or very limited roaming services at best.

¹ Bell Virgin, Bell Solo, Rogers Chatr, Rogers Fido and TELUS Koodo

² Cricket, C-Spire, MetroPCS and US Cellular

Broadband Internet

Four broadband Internet service baskets are included in the study, which are primarily defined on the basis of download speed: Level 1 covers service speeds of 3 Mbps or less, Level 2 covers 4 to 15 Mbps, Level 3 covers 16 to 40 Mbps and Level 4 covers services with speeds over 40 Mbps.

- *Domestic Trends:* This year, Canadian average Level 1, 2, 3 and 4 broadband Internet prices increased relative to 2013 by 29%, 8%, 5% and 4%, respectively. The large increase in the Level 1 price is partly a reflection of the steadily declining availability of broadband services at or below 3 Mbps. Over the last five years, Canadian broadband prices have generally trended upwards. Increases in Level 2 and 3 prices have been very limited, whereas the increases have been more pronounced in the case of the Level 1 and 4 baskets – although in the latter case, average service speeds have also increased significantly.
- *International Comparison:* Canadian broadband Internet service prices generally compare favourably with the other surveyed countries in the case of the lower-speed Level 1 and 2 broadband service baskets. However, in the case of the average higher-speed Level 3 and Level 4 baskets, Canadian prices are higher than those in the surveyed countries included in the study, with the exception of the U.S. Canada's broadband service price ranking in this respect is similar to previous years' studies.

Mobile Internet

Two mobile Internet service baskets are included in the study. Level 1 covers plans providing 2 GB and Level 2 covers plans providing 5 GB of data usage per month.

- *Domestic Trends:* This year, the Canadian average Level 1 and 2 mobile Internet service prices declined slightly relative to 2013, by 3% and 1%, respectively. Since 2010, the Level 1 price has declined by 20% in total, whereas relative to 2012, the first year the Level 2 mobile Internet service basket was included in the study, the Level 2 price has declined by 2% in total.
- *Entrants' Pricing:* The wireless entrants continue to offer mobile Internet prices that are significantly lower than those of the incumbents – i.e., 24% less for Level 1 and 38% less for Level 2. The Level 1 and 2 differentials are somewhat smaller this year compared to last.
- *International Comparison:* Canada's average Level 1 and 2 mobile Internet service prices fall on the high-side of the group of seven surveyed countries. On the other hand, Canadian advertised mobile Internet

download speeds are among the highest of the surveyed countries (due to the availability of 4G Long-Term Evolution (LTE) mobile wireless services in Canada).

Broadband Internet Services in Rural and Remote Areas

A comparison of residential rural and remote area broadband services available in Canada and the U.S., the U.K. and Australia is included in this study for the first time this year. In this respect, both satellite and fixed wireless broadband services have been taken into account. In both cases, the services were categorized according to the same Level 1 to 4 broadband service baskets, although there was only one instance of a surveyed service provider offering a broadband service satisfying the Level 4 speed requirements (i.e., by a fixed wireless service provider in the U.K.).

- *Satellite Services:* Based on the pricing information collected from surveyed satellite service providers, Canadian satellite broadband Internet services compare favourably with the services available in the other three countries, even in view of the fact that many of the surveyed Canadian satellite services were intended for residential customers located in Canada's far north.
- *Fixed Wireless Services:* Canadian fixed wireless broadband Internet services compare relatively less favourably with the services available in the other three countries. Based on the sample of surveyed fixed wireless service providers, on average, Canadian fixed wireless service speeds were found to be somewhat slower and prices higher than those of the other three surveyed jurisdictions.

Bundled Services

Three service bundles are considered in the study. Bundle 1 includes wireline, broadband Internet and mobile wireless services; Bundle 2 includes wireline, broadband Internet and basic digital TV services; and Bundle 3 includes all four of these services.

- Domestic Trends:* This year, the Canadian average Bundle 1, 2 and 3 prices increased slightly – i.e., by 4%, 3% and 3%, respectively. Over the course of the last five years, the average price for all three bundles has generally trended upwards. Bundles 1 and 3 have increased at roughly the rate of inflation over this period, whereas Bundle 2 has increased at twice that rate of inflation (i.e., close to 4% per year).
- International Comparison:* average Canadian bundled service prices fall in the mid- to high-side of the group of countries surveyed for this study. While differences across countries in the underlying services included in

the bundles (especially broadband and digital TV services) can make bundled service comparisons somewhat tenuous, it is noteworthy that Canadian bundled service rates continue to compare very favourably to those in the U.S., where service pricing and provisioning practices are similar to those in Canada.

The following table provides a summary of the 2014 price comparison results for Canada and the seven surveyed foreign jurisdictions. All reported prices for the surveyed foreign jurisdictions are expressed in purchasing power parity (PPP) adjusted Canadian dollars.

Summary of International Price Comparison 2014 Average Monthly Prices in PPP adjusted \$CDN

	Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Wireline Service								
Level 1 (low-volume use)	\$38.99	\$43.13	\$33.28	\$35.10	\$46.80	\$31.61	\$36.55	\$41.04
Level 2 (average use)	\$54.37	\$66.61	\$42.81	\$49.72	\$67.13	\$65.36	\$57.46	\$51.02
Level 3 (high-volume use)	\$60.29	\$71.88	\$56.48	\$52.39	\$74.54	\$101.90	\$60.89	\$67.85
Wireless Service								
Level 1 (low-volume use)	\$35.70	\$30.34	\$26.46	\$20.75	\$25.28	\$28.88	\$16.68	\$10.85
Level 2 (average use)	\$45.26	\$55.91	\$41.17	\$37.55	\$38.69	\$50.98	\$36.48	\$33.61
Level 3 (high-volume use)	\$79.69	\$91.52	\$72.14	\$63.68	\$72.10	\$139.90	\$71.15	\$67.06
Level 4 (unlimited talk & text, 2 GB data)	\$92.99	\$109.28	\$58.37	\$50.14	\$84.85	-	\$80.63	\$61.52
Broadband (Fixed Access)								
Level 1 (≤ 3 Mbps, 7.5 GB/month)	\$50.00	\$62.53	-	-	-	\$56.55	-	-
Level 2 (4 – 15 Mbps, 30 GB/month)	\$55.10	\$72.91	\$30.22	-	\$50.67	\$60.65	\$26.09	\$52.26
Level 3 (16 – 40 Mbps, 75 GB/month)	\$68.60	\$79.76	\$46.89	\$51.15	\$67.44	\$63.88	\$38.30	\$52.92
Level 4 (≥ 40 Mbps, 120 GB/month)	\$86.46	\$103.17	\$47.76	\$55.98	\$70.33	\$67.73	\$58.52	\$61.79
Mobile Internet (≥ 3G Technology)								
Level 1 (2 GB/month)	\$43.30	\$63.74	\$21.90	\$18.47	\$25.67	\$50.05	\$34.37	\$17.56
Level 2 (5 GB/month)	\$63.90	\$69.05	\$45.93	\$43.04	\$36.80	\$62.04	\$49.70	\$25.86
Bundled Services								
1) Wireline-Broadband-Wireless	\$143.95	\$163.11	\$105.40	\$70.56	\$150.32	\$161.38	\$111.52	\$107.94
2) Wireline-Broadband-DTV	\$137.51	\$172.07	\$70.32	\$69.91	\$142.49	\$149.72	\$110.38	\$93.79
3) Wireline-Broadband-Wireless-DTV	\$181.70	\$214.39	\$101.52	\$93.21	\$182.43	\$202.99	\$157.98	\$124.94

Latest available OECD PPP indexes were used to calculate PPP-adjusted exchange rates. Average market exchange rates for the month corresponding to the OECD PPPs were used to convert foreign prices to Canadian dollars.
Wall Communications Inc. 2014

1.0 INTRODUCTION

This study provides a 2014 update of the previous annual telecommunications price comparison studies conducted over the period 2008 to 2013 by Wall Communications Inc. (Wall Communications) for the Canadian Radio-television and Telecommunications Commission (the CRTC or Commission) and Industry Canada.

As in previous years, the consumer telecom services covered in this year's study include the following stand-alone and bundled services:

- i) wireline,
- ii) mobile wireless,
- iii) broadband Internet access (using wireline technology),
- iv) mobile Internet access (using 3G or higher wireless technology), and
- v) bundled combinations of the first three services and basic digital TV (DTV).

A series of service baskets reflecting different service usage levels has been established for each of these service categories. For Canada, the study provides a comparison of prices for each defined service basket for each of the following five major cities: Halifax, Montreal, Toronto, Regina and Vancouver. As well, an aggregate Canada-wide price is determined based on the weighted average prices measured in these five cities. Historical Canadian service basket and bundle prices are provided for the period 2008 to 2014.

The study also measures prices for the same set of service baskets for Australia, France, Japan, the U.K., the U.S. and, for the first time, Germany and Italy. Consequently, the study now covers all G7 countries plus Australia. Service basket prices in the seven foreign jurisdictions are compared with those measured for Canada. As well, historical international service basket and bundle prices are provided for the period 2008 to 2014, with the exception of Germany and Italy where pricing information is limited to the current year.

There are several other new additions to this year's study, including:

- i) the addition of a fourth mobile wireless service basket, which includes "unlimited" nationwide talk & text and 2 GB of data;
- ii) a comparison of Canadian incumbent "flanker" brand and U.S. regional service provider mobile wireless service pricing relative to incumbent mobile service pricing in each of the two countries, respectively;
- iii) a comparison of international mobile roaming rates to and from the U.S. available to Canadian and American consumers; and
- iv) a comparison of broadband services and prices available in rural and remote areas using satellite and fixed wireless technologies in Canada, Australia, the U.K. and the U.S.

In terms of layout of this report, the next section provides a brief review of the methodology used to measure and compare stand-alone and bundled service prices, and describes in more detail all changes made in this year's study relative to last year's study. Sections 3 through 7 provide Canadian and international price comparison results for wireline, mobile wireless, broadband Internet access, mobile Internet access and bundled services, respectively. A detailed summary of all service baskets and bundles included in the study is provided in Attachment 1. Detailed historical summary results for the period 2008 to 2014 are provided in Attachments 2 and 3.

2.0 METHODOLOGY

2.1 Service Basket Design

This study relies on the service basket-based price comparison methodology described in detail in Wall Communications' 2008 methodology report.³ Various modifications to the 2008 methodology have been made in successive studies primarily to reflect changes in service usage patterns over time. All such changes have been carried over into this year's study. All additional changes in methodology introduced this year are described below.

The price comparison methodology used is based on a "service basket" approach where separate telecom service baskets are defined on the basis of service usage levels, service features and characteristics:

- **Level 1:** entry level or low-volume service usage
- **Level 2:** average or mid-level service usage
- **Level 3:** premium level or high-volume service usage
- **Level 4:** unlimited or very high-volume usage

Two to four service basket levels have been defined for each of the four stand-alone telecom services considered in this study:

- i) **Wireline:** three service baskets defined, Levels 1 to 3.
- ii) **Mobile Wireless:** four service baskets defined, Levels 1 to 4 (the Level 4 basket was added for the first time in the present study).
- iii) **Broadband Internet Access:** four service baskets defined, Levels 1 to 4 (the Level 4 basket was introduced in the 2012 study).
- iv) **Mobile Internet Access:** two service baskets defined, Levels 1 and 2 (the second mobile basket was introduced in the 2012 study).

Each of the service baskets has been designed to reflect typical low, mid/average, high-volume and, where applicable, very high-volume Canadian telecom service consumption levels and/or service feature subscription rates.

Three service bundles are also included in the study:

- **Bundle 1:** wireline, broadband Internet and mobile wireless
- **Bundle 2:** wireline, broadband Internet and digital TV
- **Bundle 3:** wireline, broadband Internet, mobile wireless and digital TV

³ Wall Communications, *An Examination of Alternative Approaches for Conducting Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions*, prepared for the CRTC and Industry Canada, 5 May 2008.

Level 2 or "average-user" stand-alone service baskets are generally used in each of the bundles. In some cases, however, advertised bundling options restrict the available choice of specific service elements that are eligible for bundling discounts. In such cases, eligible service elements are included instead (which typically involve including a Level 3 or 4 rather than Level 2 service element). For the digital TV service component, a "basic" digital television service package option is selected for inclusion in the applicable bundles.

The specific service elements included in each service basket are described in detail in the following sections and the associated service elements and usage assumptions in each case are also summarized in Attachment 1.

2.2 Canadian Price Data

The Canadian price data included in the study has been collected from a variety of telecom service providers (TSPs), including incumbent telephone companies (such as Bell and TELUS) and incumbent cable companies (such as Rogers, Shaw and Videotron). Prices offered by reseller Primus are also taken into account. For mobile services, new entrant wireless service providers WIND, Mobilicity and Public Mobile⁴ are also taken into account. In terms of geographic coverage, price data is collected for each of the following five Canadian cities: Halifax, Montreal, Toronto, Regina and Vancouver. Table 1 provides a list of the surveyed service providers in this year's study broken out by city and by service basket.

Table 1
Selected Canadian Cities and Service Providers

City	Service Baskets	Service Providers
Halifax	Wireline Broadband Internet Mobile Wireless Mobile Internet Bundles	Bell Aliant, EastLink Bell Aliant, EastLink Bell, TELUS, Rogers Bell, TELUS, Rogers Bell Aliant, EastLink
Montreal	Wireline Broadband Internet Mobile Wireless Mobile Internet Bundles	Bell, Videotron, Primus Bell, Videotron, Primus Bell, TELUS, Rogers, Primus, Videotron, Public Mobile Bell, TELUS, Rogers, Videotron Bell, Videotron, Primus (as applicable)
Toronto	Wireline Broadband Internet Mobile Wireless Mobile Internet Bundles	Bell, Rogers, Primus Bell, Rogers, Primus Bell, TELUS, Rogers, Primus, WIND, Mobilicity, Public Mobile Bell, TELUS, Rogers, WIND, Mobilicity Bell, Rogers, Primus (as applicable)

⁴ Note that Public Mobile was acquired by TELUS in late 2013. For consistency with previous years' studies, it is treated in the study as a new entrant.

Table 1
Selected Canadian Cities and Service Providers

City	Service Baskets	Service Providers
Regina	Wireline Broadband Internet Mobile Wireless Mobile Internet Bundles	SaskTel, Access Communications SaskTel, Access Communications SaskTel, TELUS, Rogers SaskTel, TELUS, Rogers SaskTel, Access Communications
Vancouver	Wireline Broadband Internet Mobile Wireless Mobile Internet Bundles	TELUS, Shaw, Primus TELUS, Shaw, Primus Bell, TELUS, Rogers, Primus, WIND, Mobilicity Bell, TELUS, Rogers, WIND, Mobilicity TELUS, Shaw, Primus (as applicable)

The measured prices for each of the stand-alone and bundled service baskets offered by the TSPs listed in Table 1 were aggregated, by city, using each service provider's respective estimated subscriber-based market share as weights.⁵ In addition, to determine a Canada-wide market price for each stand-alone and bundled service basket, city-specific prices were aggregated using corresponding city population levels as weights.

In addition, for this year's study, prices offered by the incumbents' flanker brand services – i.e., Bell Virgin, Bell Solo,⁶ Rogers Fido and Rogers Chatr, and TELUS Koodo – have also been collected for each of the four defined mobile wireless service baskets. To maintain consistency with previous years' studies, the incumbents' flanker brand service prices are not included in the calculation of the above-noted city-specific or national aggregate prices. However, the incumbents' flanker brand prices are compared with incumbents' and entrants' mobile wireless prices as a separate analysis that is provided in Section 4.2 below.

The price primary data collected for this study is drawn from the surveyed TSPs' websites and, where necessary, supplemented with further clarifications from customer service representatives (CSRs).⁷ The price data reflects currently advertised prices that are generally available to new customers or existing customers changing service plans. For each service basket, the lowest available currently advertised stand-alone prices are used to determine the total price of

⁵ The estimated market shares are drawn from the CRTC's annual Communications Monitoring Report (CMR). In the case of wireline services, estimated market shares are city-specific; in the case of mobile wireless services, estimated market shares are province-specific; and in the case of broadband services the estimated market shares are national in scope. Mobile Internet market shares are based on mobile wireless market shares and the service bundle are based on the combination of the wireline, mobile wireless and broadband market shares.

⁶ Bell Solo is no longer accepting new activations. Nevertheless, since it continues to provide mobile services, it is included in the study.

⁷ The 2014 Canadian price data was primarily collected in February 2014.

each service basket. For this purpose, regular or standard prices are used – i.e., short term promotions or price discounts for which new customers may be eligible are not taken into account.⁸

Overall, the Canadian price comparisons included in this year's study are based on the measurement of the prices of roughly 300 separate Canadian telecom service baskets, covering five cities, two to seven service providers by city and up to fifteen stand-alone and bundled service baskets for each service provider. The incumbents' flanker brand mobile wireless service baskets, roaming service price analysis, and rural and remote broadband service baskets adds over 100 additional Canadian telecom service baskets to the study, which brings the overall domestic service basket total to over 400.

2.3 International Price Data

Seven foreign jurisdictions are included in the study for price comparison purposes: the U.S., the U.K., France, Germany, Italy, Australia, and Japan. As noted, Italy and Germany have been included in the study for the first time this year. The cities and service providers surveyed in each of these countries are summarized in Table 2.⁹

Table 2
Selected Foreign Jurisdictions and Service Providers

City	Basket	Service Providers
United States Boston, MA	Wireline	Verizon, Comcast
	Broadband Internet	Verizon, Comcast
	Mobile Wireless	AT&T, Verizon, Sprint
	Mobile Internet	AT&T, Verizon, Sprint
	Bundles	Verizon, Comcast
Kansas City, MO	Wireline	AT&T, Time Warner
	Broadband Internet	AT&T, Time Warner
	Mobile Wireless	AT&T, Verizon, Sprint
	Mobile Internet	AT&T, Verizon, Sprint
	Bundles	AT&T, Time Warner
Seattle, WA	Wireline	Qwest, Comcast
	Broadband Internet	Qwest, Comcast
	Mobile Wireless	AT&T, Verizon, Sprint
	Mobile Internet	AT&T, Verizon, Sprint
	Bundles	Qwest/Verizon, Comcast

⁸ Note that current advertised prices are not necessarily reflective of the average price levels paid by a service provider's customer base as a whole since a significant number of existing customers are on pre-established price plans.

⁹ The 2014 international price data was primarily collected in March 2014.

Table 2
Selected Foreign Jurisdictions and Service Providers

City	Basket	Service Providers
United Kingdom London	Wireline Internet Mobile Wireless Mobile Internet Bundles	BT, Virgin, Talk Talk BT, Virgin, Orange, AOL Broadband EE*, Virgin, Vodafone EE, Virgin, Vodafone Virgin, BT (EE)**
France Paris	All baskets	Orange (France Telecom), SFR (Neuf Cegetel), Numericable
Germany Berlin	Wireline Broadband Internet Mobile Wireless Mobile Internet Bundles	Deutsche Telekom (DT), Kabel Deutschland (KD)*** DT, KD, Vodaphone DT, KD, Vodaphone, E-Plus DT, KD, Vodaphone, E-Plus DT, KD
Italy Rome	Wireline Broadband Internet Mobile Wireless Mobile Internet Bundles	Telecom Italia, FastWeb Telecom Italia, FastWeb Telecom Italia (TIM), Vodafone, WIND, FastWeb Telecom Italia (TIM), Vodafone, WIND, FastWeb Telecom Italia, FastWeb
Australia Sydney	All baskets	Telstra, Optus
Japan Tokyo	Wireline Broadband Internet Mobile Wireless Mobile Internet Bundles	NTT, J:Com NTT, J:Com, KDDI, Yahoo! BB NTT DoCoMo, J:Com (Willcom), KDDI, eMobile NTT DoCoMo, J:Com (Willcom), KDDI, eMobile NTT, J:Com (Willcom****)

* Orange was included in previous studies; however, Orange UK along with T-Mobile U.K. now falls under the EE brand in the UK.

** BT discontinued marketing mobile wireless services in 2008. For the purposes of the U.K. bundles, EE's mobile wireless service was included along with BT's wireline, Internet and digital TV services.

*** KD was acquired by Vodafone in 2013.

**** Willcom was acquired by SoftBank in 2010.

This year, mobile wireless service prices for each of the four defined mobile wireless service baskets have also been collected for several regional mobile service providers in the U.S. These include Cricket Wireless, MetroPCS, US Cellular and C-Spire Wireless.¹⁰ As in the case of the Canadian flanker brand

¹⁰ Note that Cricket Wireless (Leap) was recently acquired by AT&T, and MetroPCS was recently acquired by T-Mobile.

price information, to ensure consistency with previous years' studies, the U.S. regional brand service prices are not included in the calculation of U.S. national aggregate prices. Comparisons of U.S. incumbent and regional brand prices are provided as a separate price analysis in Section 4.3 below.

For international price comparison purposes, foreign currency prices have been converted to Canadian dollars using currency market exchange rates adjusted for PPP differences between countries. The OECD's latest available PPP comparative price level indexes for February 2014 were used for this purpose in conjunction with average market exchange rates for the same one-month period.¹¹

Canadian dollar-based price comparisons between Canada and other countries can be affected significantly by year-over-year currency exchange rate fluctuations. PPP-adjusted exchange rates take into account both changes in exchange rates and PPP adjustment factors between countries and, therefore, generally provide a more appropriate economic basis for comparing price levels between countries. For this reason, all of the international price comparison results shown in the main body of this report are based on PPP-adjusted Canadian dollars.

Nevertheless, it should be noted that fluctuations in both exchange rates and PPP adjustment factors can affect international price comparisons over time. This caveat is particularly relevant in the case of this study given the significant changes in both exchange rates and PPP adjustment factors over the course of the seven year period covered by the study.

It should also be noted that service prices in the U.K., France, Germany, Italy, Australia and Japan are typically quoted inclusive of retail value added taxes (VAT) or goods and services taxes (GST). In each case, we have excluded applicable VAT or GST charges to allow cross-country comparisons of service prices excluding government sales taxes.¹² On the other hand, other industry-specific regulatory fees and surcharges are included for price comparison purposes (e.g., 9-1-1 fees, universal service fees and other regulatory and licence fees).

Overall, the international price comparisons included in this year's study are based on the measurement of the prices of roughly 410 separate stand-alone and bundled service baskets, which includes the new additions to this year's study. Adding the Canadian and international service baskets together, the prices

¹¹ See the OECD's main economic indicators at: http://www.oecd.org/document/47/0,3343,en_2649_34357_36202863_1_1_1_1,00.html

¹² Currency exchange rates were obtained from: <http://www.xe.com>
The VAT rates in the U.K., France, Germany and Italy are 20%, 19.6%, 19% and 22%, respectively. The VAT rate in Japan is scheduled to increase from 5% to 8% as of April 2014. The GST in Australia is 10%.

of over 800 service baskets were measured to generate the price comparison results presented in this report.

2.4 Summary of New Additions and Updates

As noted at the outset, there are several new additions to this year's study. These include:

- i) *Level 4 Mobile Wireless Service Basket:* A new higher-end mobile wireless service basket has been included to capture the increased availability of "unlimited" talk & text plans in Canada. In addition, with higher mobile data usage levels becoming more common, 2 GB of data are included in this new service basket as well.
- ii) *Canadian Flanker and U.S. Regional Mobile Service Brands:* Pricing data for each of the four mobile service baskets has also been collected for the five Canadian incumbent flanker brands and four selected U.S. regional mobile service providers noted above. As mentioned, to maintain consistency with previous years' study results, prices for these mobile service providers have not been included in the Canadian and U.S. national price aggregates, but are treated in a separate analysis.
- iii) *Canada/U.S. Roaming Rates:* Information on the rates for voice, text and data roaming to and from the U.S. available to Canadian and American consumers has been collected and the roaming rates are compared in Section 4.4 below.
- iv) *Broadband Data Usage Levels:* Given the ongoing increases in average usage levels by Canadians,¹³ the assumed data usage requirements for the four broadband Internet service baskets have been increased by 50% or more compared to last year – i.e., as shown in the table below:

Broadband Basket	Last Year	This Year
Level 1	5 GB	7.5 GB
Level 2	20 GB	30 GB
Level 3	50 GB	75 GB
Level 4	75 GB	120 GB

- v) *Rural and Remote Area Broadband Internet:* A sample of satellite and fixed wireless broadband service options available to consumers in rural and remote areas in Canada as well as in the U.S., U.K. and Australia have also be examined for this year's study. The sampled

¹³ As reflected in the CRTC's CMR, Section 5.3.

service providers are described and the pricing and service feature comparison results are provided in Section 5.4.

- vi) *Additional Countries:* As noted, Germany and Italy have been included in this year's study. The surveyed service providers in each case are shown in Table 2 above.
- vii) *Other Updates:* Updates to the market share information have been used to determine aggregate Canadian and international weighted average prices.¹⁴

Since first conducted in 2008, each successive price comparison study update has incorporated a number of generally minor methodological and measurement changes (such as those just mentioned). One exception in this respect applies in the case of the more substantive changes to the broadband Internet service basket definitions introduced in the 2012 study, which significantly affect comparisons of measured broadband prices in 2012, 2013 and 2014 with earlier years. They also affect comparisons of bundled service prices between the same two periods given that broadband Internet service is one of the service elements included in all three defined service bundles. In general, given the ongoing methodological and measurement modifications to the study on a year-to-year basis, caution should be exercised when considering price trends over the seven year period for which price data is now available.

¹⁴ For Canada, the latest CRTC CMR was relied on for this purpose. For the U.S., FCC market share and industry reports were used. In other cases, regulatory agency market reports, company financial and market analyst reports were also relied on, where necessary.

3.0 WIRELINE SERVICE

3.1 Wireline Service Baskets

As in previous studies, the following service element charges are considered for wireline service price comparison purposes:

- i) access line charges (including, as applicable, free calling allowances);
- ii) local usage/calling charges (where applicable);
- iii) long distance charges for both domestic and international calls;
- iv) optional feature charges (e.g., voice mail, call display & other features); and
- v) other recurring charges, where applicable, such as 9-1-1, network access fees and/or other surcharges or regulatory fees.

One-time service charges, such as installation and activation fees, are excluded.

Three wireline service baskets are included in the study. They consist of the following main elements:

- **Level 1:** 400 incoming & outgoing minutes per month, with 10% of outgoing minutes treated as long distance, and no optional features
- **Level 2:** 1,000 incoming & outgoing minutes per month, with 20% of outgoing minutes treated as long distance, and two optional features (voice mail and call display)
- **Level 3:** 1,600 incoming & outgoing minutes per month, with 30% of outgoing minutes treated as long distance, and a full set of optional features

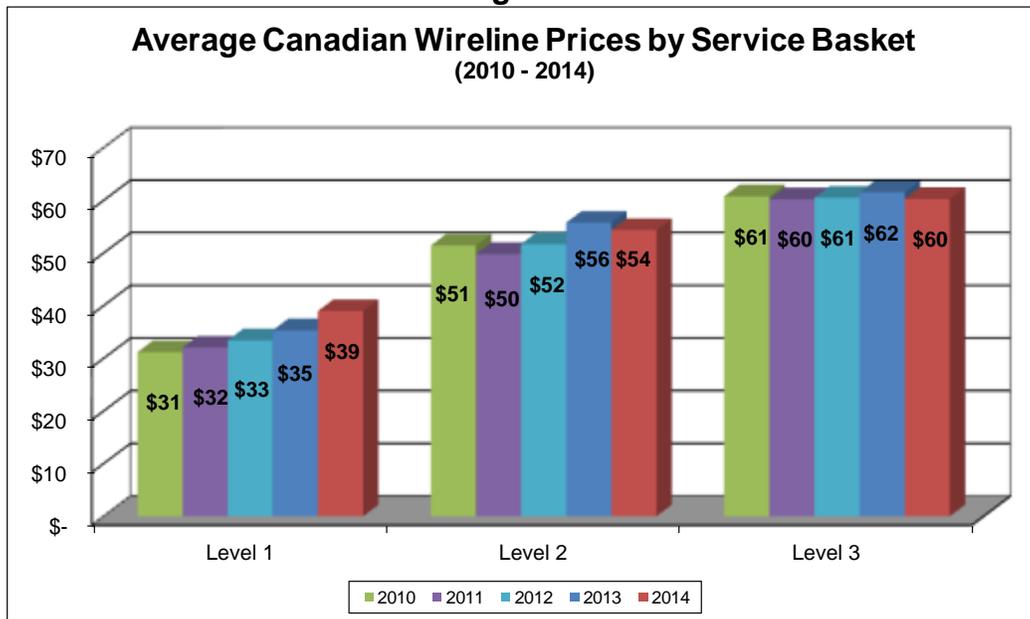
Table A1.1 in Attachment 1 provides a detailed summary of the service elements and usage assumptions for each of the three wireline service baskets included in this study. No changes to the wireline service basket definitions have been made in this year's study relative to previous studies.

3.2 Canadian Wireline Service Price Comparisons

Figure 1 below provides a summary of Canadian average monthly prices for each of the three wireline service baskets for the five-year period 2010 to 2014. The Level 1 service basket price increased from roughly \$35 in 2013 to \$39 in 2014, an increase by just over 10%. Higher long distance charges in the case of some of the incumbent telephone companies explain much of this increase. In contrast, the Level 2 and 3 service basket prices declined in 2014 relative to 2013 by roughly 2.5% and 2.0%, respectively.

Over the last five years, on average, the price of the Level 1 wireline service basket has increased at a rate of about 5.8% per year. The Level 2 wireline basket has increased at a considerably lower rate of about 1.4%. On the other hand, the price of the high usage Level 3 basket has remained relatively stable at or slightly above \$60 per month over the last five years.

Figure 1



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Table A2.1 in Attachment 2 provides more detailed average wireline prices by service basket and by surveyed city (Halifax, Montreal, Toronto, Regina and Vancouver) for the seven-year period 2008 to 2014.

3.3 International Wireline Service Price Comparisons

In the case of wireline services, there are a variety of important pricing differences to be taken into account when comparing international prices:

- *Regulatory Fees:* In the U.S., there are a number of unique regulatory and government fees and surcharges (other than sales taxes). These include, among other things, federal subscriber line charges (SLC) and universal service fund (USF) charges. Collectively, these charges can add up to as much as \$8 to \$12 per month over and above a service provider's local, long distance and feature charges. The range and magnitude of these charges, however, varies by state and, indeed, municipality.¹⁵ For this year's study, the principal surcharges wireline customers face in the U.S., namely the SLC and USF, have been updated.
- *Price Structure:* Wireline rate structures in the U.K., France, Germany, Italy, Australia and Japan differ significantly compared to Canada (as well as the U.S.). Local phone service rates in these countries are often set on a usage sensitive basis. In the case of local calls, per minute charges apply along with a per call set-up or connection fee, both of which can vary depending on the selected service plan.¹⁶ Charges also vary depending on whether a call is made to a landline or mobile number (and can also vary by mobile service provider). Local and national per minute and per call rates are generally the same; as a result, there is typically no price difference between local and domestic long distance calling rates.¹⁷

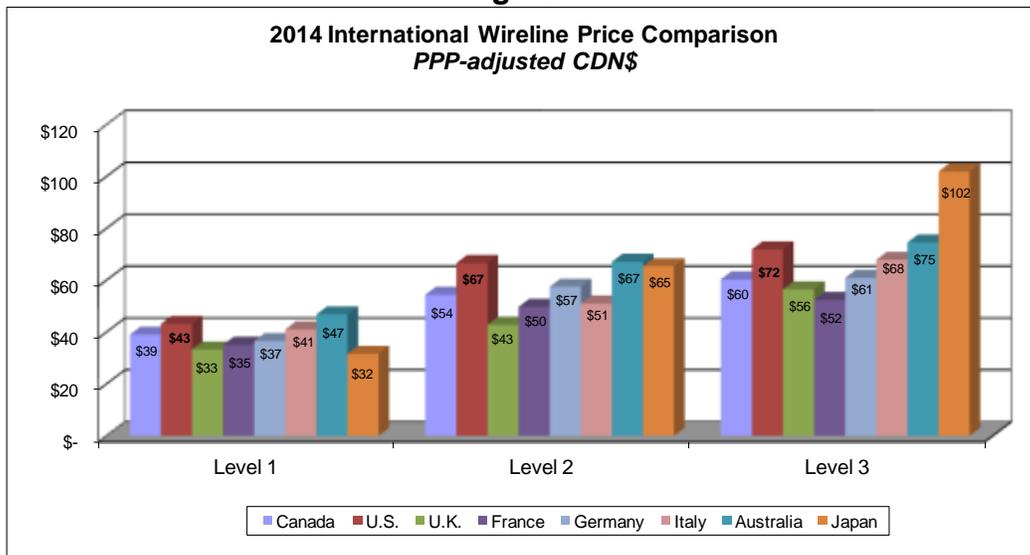
Figure 2 below provides a comparison of current average wireline prices for Canada and the surveyed foreign jurisdictions for each of the three wireline service baskets. All prices are expressed in PPP-adjusted Canadian dollars. All service rates exclude sales taxes (e.g., VAT or GST).

¹⁵ As noted in previous studies, obtaining precise information on these fees and surcharges is extremely difficult and even company CSRs are unable to provide complete information with regard to these surcharges given they vary so widely by location. As a result, in some cases, estimated surcharges have been used.

¹⁶ Australia is unique among the three countries in that local calls to landlines are charged on a per call basis with no additional per minute charges.

¹⁷ Australia differs somewhat in this respect. Under some home phone service plans different per minute rates can apply depending on the distance of a domestic call.

Figure 2



As shown in Figure 2, in the case of the Level 1 wireline service basket, at roughly \$39 per month, Canada falls roughly in the middle of the group of the surveyed countries. Canada's Level 1 wireline service basket price is slightly higher than the corresponding prices in the U.K., France, Germany and Japan, but otherwise below the U.S., Italy and Australia.

For the Level 2 wireline service basket, at \$54 per month, Canada sits in a similar position. In this case, corresponding prices in the U.K., France and Italy are lower, whereas prices in the U.S., Germany, Japan and Australia are higher – and in most cases, considerably higher.

Canada falls into the low end of prices in the case of the Level 3 wireline service basket. The Canadian price of \$60 is above the U.K. and France, and very close to Germany, but otherwise well below the prices in the four remaining countries.

Table A3.1 and Figures A3.1a, b and c in Attachment 3 provide detailed historical wireline service basket information for the period 2008 to 2014. Over this period, Canada's wireline service basket price rankings have remained relatively stable in the case of the Level 2 and 3 baskets relative to the countries included in previous years' studies, whereas it has slipped somewhat in the case of the Level 1 basket. Overall wireline prices in Canada have remained generally within the mid-range of the group of surveyed countries. The same is true this year as well even with the expanded set of foreign countries which now also includes Germany and Italy.

In sum, as in previous years' studies, Canadian wireline service rates compare favourably with those of the surveyed foreign jurisdictions, generally falling into the middle of the range of wireline prices measured for those countries.

4.0 MOBILE WIRELESS SERVICE

4.1 Mobile Wireless Service Baskets

As in previous studies, the following mobile wireless service element charges are considered for price comparison purposes:

- i) network access/airtime charges (taking into account defined amounts of daytime, evening and weekend minute volumes where applicable);
- ii) optional feature charges (e.g., voice mail, call display and others);
- iii) long distance charges for both domestic and international calls;
- iv) short message service (SMS) or texting charges;
- v) data service charges (e.g., e-mail, browsing and video); and
- vi) other monthly recurring service fees, where applicable, such as 9-1-1 service charges, universal service fees and other regulatory fees or surcharges.

There are several notable service fee or cost exclusions which include: one-time charges (such as activation fees), roaming charges and handset costs. The latter two items have been excluded to reduce the complexity of the analysis and provide more straightforward international price comparisons. However, a separate analysis of Canadian and U.S. roaming charges is provided in Section 4.4 below.

Four mobile wireless service baskets are included in the study, with the fourth basket being added to the study for the first time this year. They consist of the following main elements:

- **Level 1:** 150 incoming & outgoing minutes per month, with 10% of outgoing minutes treated as long distance, and no optional features.
- **Level 2:** 450 incoming & outgoing minutes per month, with 10% of outgoing minutes treated as long distance, two optional features (voice mail and call display), and 300 text messages per month.¹⁸

¹⁸ This figure is consistent with the current number of monthly text messages sent by the average Canadian wireless service subscriber; see <http://cwta.ca/facts-figures/>.

- **Level 3:** 1,200 incoming & outgoing minutes per month, with 15% of outgoing minutes treated as long distance, full set of optional features, 300 text messages and 1 GB data usage per month.
- **Level 4:** Unlimited nationwide talk and text (no international calling included), voice mail and call display, and 2 GB data usage per month.

Table A1.2 in Attachment 1 provides a summary of each of the service elements and usage assumptions included in all four mobile wireless service baskets.

In the case of the Level 1 mobile wireless service basket, both “pre-paid” and “post-paid” service options are considered. The less expensive of the two options is used to determine the service basket price. In the case of the other mobile wireless service baskets, post-paid plans are generally the lowest price option.

The implementation of the CRTC's Wireless Code in December 2013¹⁹ has had a significant impact on the terms of wireless service plans available in Canada this year relative to early 2013 when last year's price comparison study was conducted. Under the Wireless Code, contract cancellation fees must be reduced to \$0 after a period of 24 months. Canadian incumbents' standard contract term had previously been 36 months. With the implementation of the Wireless Code, the incumbents reduced their contract-based service plans from 36 to 24 month terms. Multi-year contract service plans typically include an implicit handset subsidy recovery component. The reduction of contract terms placed upward pressure on service plan prices given there is now a shorter period available to recover the handset subsidies. At the same time, the incumbents introduced alternative no-term, bring-your-own-device (BYOD) plans which offer customers discounted rates relative to their standard two-year contract plans. For instance, no-term/BYOD discounts can range from \$10 to \$20 or can otherwise be in the order of 10% off the standard monthly rate depending on the plan in question. The change in contract terms did not affect the new entrants, since they typically have and continue to offer plans on a no-term, month-to-month basis.

For consistency with previous years' studies, prices for each of the mobile wireless service baskets are based on a TSP's standard mobile service plan rates. In the case of the incumbent mobile service providers, therefore, their current two-year contract plan rates have been used in this year's study, whereas their three-year contract plan rates have been used in previous years' studies.²⁰

¹⁹ Telecom Regulatory Policy CRTC 2013-271, *The Wireless Code*, June 3, 2013. See: http://www.crtc.gc.ca/eng/info_sht/t14.htm

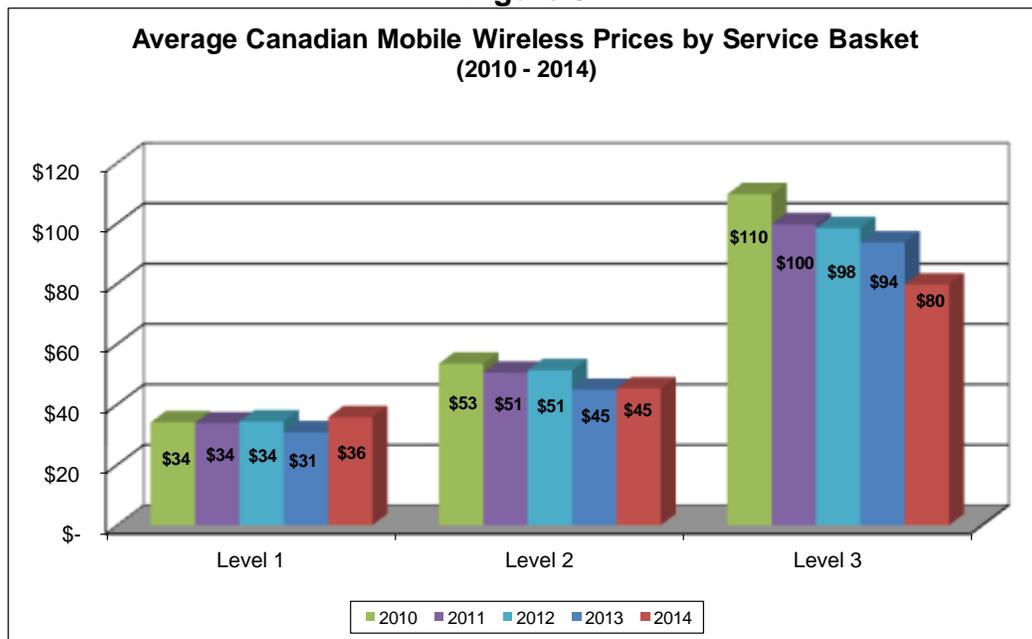
²⁰ It should also be noted that we have focussed on contract plans covering the most popular and current handset models as opposed to discounted contract plans, where available, featuring previous generation or discontinued handsets.

4.2 Canadian Mobile Wireless Price Comparisons

Figure 3 provides a summary of Canadian weighted average mobile wireless prices for each of the Level 1, 2 and 3 service baskets for the five-year period 2010 to 2014. There is no historical price information available for the Level 4 basket as it has been included in the study for the first time this year. The changes in prices this year compared to 2013 vary considerably by service basket. The price of the Level 1 basket increased by roughly 16% compared to last year, increasing from roughly \$31 to \$36. The Level 2 service basket price remained relatively steady at \$45. In contrast, the price of the Level 3 service basket declined by roughly 15%, dropping from roughly \$94 to \$80.

As noted, one of the most significant factors affecting prices this year compared to last is the incumbent's introduction of new two-year rather than three-year contract term service plans. This factor alone would normally have been expected to place upward pressure on their prices, which seems to be the case for the low-end Level 1 service basket. However, the introduction of unlimited talk and text plans combined with lower data rates appears to have more than offset this upward rate pressure in the case of the Level 3 service basket.

Figure 3



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The trend in mobile prices over the last five years has generally been downward, other than in the case of the Level 1 service basket (which is essentially due to the price increase occurring this year). Otherwise, the Level 2 service basket price has declined by roughly 15% and the Level 3 service basket price has declined by just over 27% in total since 2010.

As noted, the Level 4 mobile wireless service basket was included for the first time in this year's study. The Level 4 service basket covers unlimited nationwide talk and text plans along with 2 GB of data per month. While the incumbents have introduced unlimited nationwide talk and text plans over the course of the last year or two, the new entrants have offered such plans for years.

Figure 4 provides a comparison of 2014 prices for all four mobile wireless service baskets. As shown in the table, the weighted average national Level 4 service basket price is \$93.

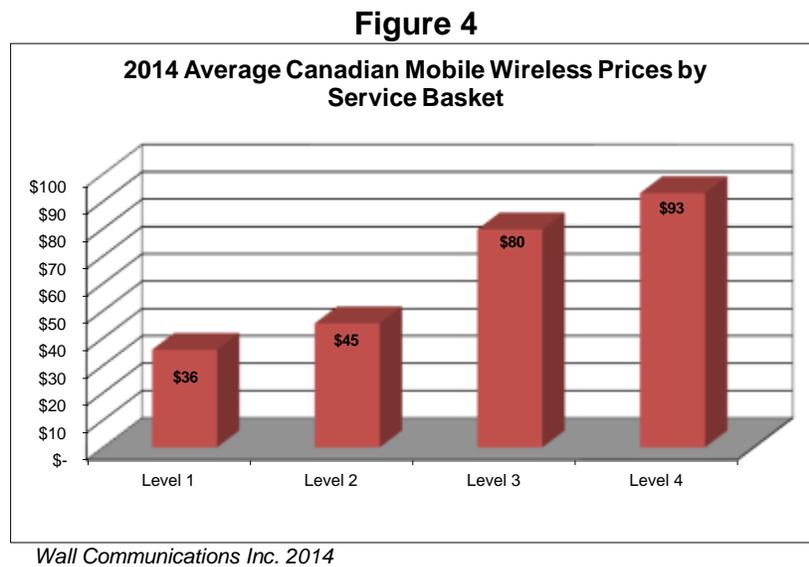


Table A2.2 in Attachment 2, provides detailed historical mobile wireless price information by city and by service basket for the period 2008 to 2014.

Comparison of Incumbent and New Entrant Prices

A comparison of average mobile wireless rates for the incumbent carriers and the new entrants is provided in Table 3 below. The comparison is provided for three cities: Vancouver (where WIND and Mobilicity operate), Toronto (where WIND, Mobilicity and Public Mobile operate) and Montreal (where Videotron and Public Mobile operate). For each of the three cities, the incumbent carriers include Rogers, Bell and TELUS.

As can be seen from the table, for the Level 1 mobile wireless service basket, the mobile wireless prices offered by new entrants are between 8% and 39% lower than those of the incumbents and, on average, 28% lower for the three cities combined. The relative price discounts available from the new entrants are not as great in the case of the Level 2 service basket, where new entrants' prices are

between 1% to 16% lower by city, and 10% lower on average. The differences are greater however in the case of the Level 3 service basket, where the price discounts offered by new entrants relative to the incumbents' services are 26% to 54% lower by city, and 44% lower on average. Similar results are found in the case of the new Level 4 service basket, where the new entrants' prices are 49% lower than the incumbents' on average. The somewhat lower new entrant discounts in the case of Montreal are largely due to Videotron's pricing strategy which appears to be based on providing greater discounts when its mobile wireless service is bundled with other Videotron services rather than purchased on a stand-alone basis.

Table 3
2014 Canadian Mobile Wireless Service Rates
Incumbents versus New Entrants

Baskets	Vancouver	Toronto	Montreal	Average
Level 1 Basket (150 min./month)				
Incumbents	\$36.32	\$36.32	\$36.28	\$36.30
New Entrants	\$22.09	\$22.72	\$33.33	\$26.04
<i>Percentage Differential</i>	-39%	-37%	-8%	-28%
Level 2 Basket (450 min. and 300 text per month)				
Incumbents	\$46.77	\$45.10	\$45.50	\$45.79
New Entrants	\$39.15	\$39.43	\$45.18	\$41.25
<i>Percentage Differential</i>	-16%	-13%	-1%	-10%
Level 3 Basket (1200 min., 300 text and 1 GB data per month)				
Incumbents	\$87.04	\$83.71	\$74.90	\$81.88
New Entrants	\$40.00	\$41.67	\$55.18	\$45.61
<i>Percentage Differential</i>	-54%	-50%	-26%	-44%
Level 4 Basket (unlimited Canada-wide talk & text and 2 GB data per month)				
Incumbents	\$95.00	\$95.00	\$95.40	\$95.13
New Entrants	\$40.00	\$41.67	\$62.68	\$48.11
<i>Percentage Differential</i>	-58%	-56%	-34%	-49%

*Unweighted averages used in all cases.
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Compared to last year's study, the differentials between the incumbents' and new entrants' mobile wireless prices have increased in the case of the Level 1 and 3 service baskets, but otherwise narrowed somewhat in the case of the Level 2 service basket. A similar differential exists in the case of the new Level 4 service basket. It is worth noting that the WIND and Mobilicity service plans included in both the Level 3 and 4 service baskets provide unlimited data, whereas the incumbents' data plans are capped, as are the plans offered by Videotron and Public Mobile.

Incumbent Flanker Brand Prices

For this year's study, prices offered by the incumbent flanker brand service providers were also collected for each of the four defined mobile wireless service baskets. These included Bell Virgin and Solo, Rogers Fido and Chatr, and TELUS Koodo. Bell Solo²¹ and Rogers Chatr offer zone-based mobile services similar to WIND, Mobilicity and Public Mobile. Consequently, for the five Canadian cities included in this study, Bell Solo and Rogers Chatr are available in Montreal, Toronto and Vancouver, but not Halifax or Regina. The other three incumbent flanker brands are available nationally.

Table 4 below provides a summary of incumbent, incumbent flanker brand and new entrant prices for 2014 in Montreal, Toronto and Vancouver for each of the four mobile wireless service baskets. It also provides percentage rate differentials between the incumbents' primary and flanker brands as well as the incumbents' flanker brands and the new entrants. As the table shows, the incumbents' flanker brand prices are consistently and considerably lower than those of the incumbents' primary service brands. The Level 1 service basket price is 21% lower on average for the three cities combined. The Level 2 basket price is 29% lower on average. The Level 3 and 4 basket prices are even lower still at 31% and 34% less on average, respectively.

Table 4 also includes the new entrants' average prices for the same three cities and provides percentage price differentials between the new entrants' and incumbents' flanker brand prices. In this case, the new entrants' prices are generally lower than the incumbents' flanker brand prices, but there are a number of cases where the reverse is true. For the Level 1 service basket, the new entrants' prices are 20% or more lower than the incumbents' flanker brand prices in Vancouver and Toronto, but higher in Montreal (i.e., where Videotron operates as a new entrant). For the Level 2 basket, the new entrants' prices are consistently higher than the incumbents' flanker brand prices in all three cities and by 28% on average overall. This result appears to be due to the fact that the incumbents' flanker brand service offerings better target the mid-level talk and text requirements included in the Level 2 service basket compared to the new entrants' service plans. On the other hand, for the Level 3 and 4 service baskets, the new entrants' prices are generally considerably lower than those of the incumbents' flanker brand prices in Vancouver and Toronto (by roughly 30% to 40%), but once again slightly higher in Montreal. The fact that WIND and Mobilicity offer much cheaper data rates largely explains the price differentials in the cases of the Level 3 and 4 service baskets.

²¹ As noted, Bell Solo is no longer accepting new activations. Nevertheless, since it continues to offer mobile services, it has been included in the study.

Table 4
2014 Canadian Mobile Wireless Service Rates
Incumbents, Incumbent Flanker Brands and New Entrants

Baskets	Vancouver	Toronto	Montreal	Average
Level 1 Basket (150 min./month)				
Incumbents	\$36.32	\$36.32	\$36.28	\$36.30
Incumbent Flanker Brands	\$28.65	\$28.55	\$28.84	\$28.68
New Entrants	\$22.09	\$22.72	\$33.33	\$26.04
<i>Percentage Differential 2 vs 1</i>	<i>-21%</i>	<i>-21%</i>	<i>-20%</i>	<i>-21%</i>
<i>Percentage Differential 3 vs 2</i>	<i>-23%</i>	<i>-20%</i>	<i>16%</i>	<i>-9%</i>
Level 2 Basket (450 min. and 300 text per month)				
Incumbents	\$46.77	\$45.10	\$45.50	\$45.79
Incumbent Flanker Brands	\$32.15	\$32.17	\$32.55	\$32.29
New Entrants	\$39.15	\$39.43	\$45.18	\$41.25
<i>Percentage Differential 2 vs 1</i>	<i>-31%</i>	<i>-29%</i>	<i>-28%</i>	<i>-29%</i>
<i>Percentage Differential 3 vs 2</i>	<i>22%</i>	<i>23%</i>	<i>39%</i>	<i>28%</i>
Level 3 Basket (1200 min., 300 text and 1 GB data per month)				
Incumbents	\$87.04	\$83.71	\$74.90	\$81.88
Incumbent Flanker Brands	\$58.61	\$58.75	\$53.36	\$56.91
New Entrants	\$40.00	\$41.67	\$55.18	\$45.61
<i>Percentage Differential 2 vs 1</i>	<i>-33%</i>	<i>-30%</i>	<i>-29%</i>	<i>-31%</i>
<i>Percentage Differential 3 vs 2</i>	<i>-32%</i>	<i>-29%</i>	<i>3%</i>	<i>-20%</i>
Level 4 Basket (unlimited Canada-wide talk & text and 2 GB data per month)				
Incumbents	\$95.00	\$95.00	\$95.40	\$95.13
Incumbent Flanker Brands	\$64.31	\$64.31	\$58.73	\$62.45
New Entrants	\$40.00	\$41.67	\$62.68	\$48.11
<i>Percentage Differential 2 vs 1</i>	<i>-32%</i>	<i>-32%</i>	<i>-38%</i>	<i>-34%</i>
<i>Percentage Differential 3 vs 2</i>	<i>-38%</i>	<i>-35%</i>	<i>7%</i>	<i>-23%</i>

Unweighted averages used for incumbents and new entrants. Incumbent flanker brands given equal weight, i.e., Bell Virgin and Solo, Rogers Fido and Chatr, TELUS Koodo given 1/3 weight each (although both Bell Solo and Rogers Chatr assumed to have relatively limited market comparable to new entrants).

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A comparison of the incumbent's primary and flanker brand prices for all five cities included in the study is provided in Table A2.3 in Appendix 2.

4.3 International Mobile Wireless Service Price Comparisons

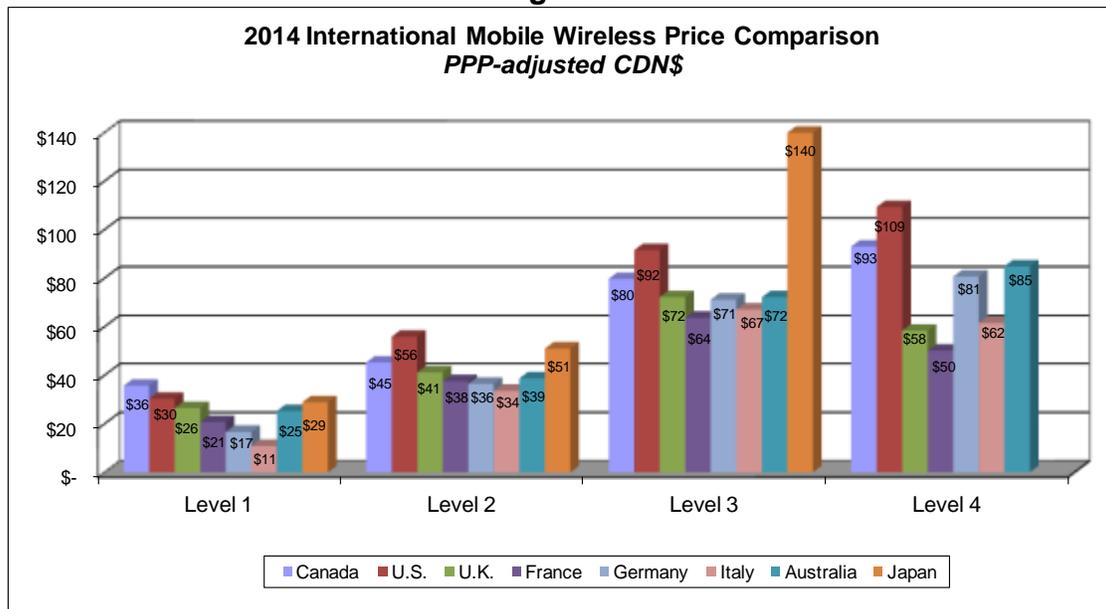
As noted in previous studies, there are a number of important pricing differences that should be borne in mind when comparing Canadian and foreign mobile wireless prices.

- *Regulatory Fees:* Regulatory fees of one form or another apply in the cases of Canada, Japan and the U.S. In Canada, there is typically an explicit emergency 9-1-1 fee as well as an implicit high-cost serving area contribution fee which does not appear as a line item on a customer's bill. In Japan, there is a universal service fee. In the U.S., however, there are a variety of applicable regulatory fees, federal and state USF surcharges and other fees.²² For this year's study, we have estimated these charges based on information collected in previous pricing studies and, where applicable, updated USF fees and carrier-specific regulatory cost recovery charges.
- *Price Structure:* The pricing of mobile wireless service plans in the U.K., Germany, Italy, France, Australia and Japan differs significantly compared to Canada (as well as the U.S.). Mobile wireless prices in Europe, Australia and Japan are set on a "calling party pays" basis, under which mobile customers pay only for outgoing calls. In contrast, Canadian and U.S. pricing plans are based on a "receiving party pays" approach, under which customers pay for incoming and outgoing calls. Unlike Canada and the U.S., some mobile wireless service plans in Europe, Australia and Japan also include per call setup charges and/or different per minute call rates to landline versus mobile customers, as well as potentially different per minute rates for on-net versus off-net mobile calls.

Figure 5 below provides a comparison of current mobile wireless prices for Canada and the surveyed foreign jurisdictions for each of the four wireless service baskets. All prices exclude retail sales taxes (e.g., VAT or GST) and are expressed in PPP-adjusted Canadian dollars.

²² See, for instance, <http://www.fcc.gov/cgb/phonebills/WirelessPhonebill.html>

Figure 5



In the case of the Level 1 mobile wireless service basket, the Canadian average price of \$36 is the highest in the group of surveyed countries. Prices in all of the other countries are considerably lower, especially in the case of France, Germany and Italy. It is worth noting that Italy's ranking as the lowest priced country in the group is due to the availability of exceptionally low priced prepaid voice services in that country.

In the case of the Level 2 service basket, the Canadian average monthly price of \$45 falls above the average for the group of surveyed foreign jurisdictions. The Canadian price falls below the U.S. and Japan, but otherwise above all four surveyed European countries as well as Australia.

In the case of the Level 3 wireless service basket, the average Canadian monthly rate of roughly \$80 again falls on the high-side of the average for the group of surveyed foreign jurisdictions as a whole. In this case, while the Canadian price is well below the prices in the U.S. and Japan, it is still considerably above the prices in the four surveyed European countries as well as Australia.

The Level 4 basket, which is included in the study for the first time this year, includes unlimited nationwide talk and text along with 2 GB of monthly data usage. Plans meeting this specification were not offered by any of the surveyed wireless service providers in Japan, but were otherwise offered by all surveyed service providers in the other countries included in the study.

As shown in Figure 5 above, the Canadian Level 4 average price of roughly \$93 is lower than the U.S., but otherwise higher than Germany and Australia, and

considerably higher than the U.K., France and Italy. Canada's ranking with respect to the new Level 4 basket is similar to that of the Level 3 basket.

Table A3.2 and Figures A3.2 a, b and c in Attachment 3 provide more detailed historical international mobile wireless price information for the period 2008 to 2014 (for the Level 1, 2 and 3 baskets). As the information in Attachment 3 shows, Canada's relative mobile wireless service price ranking has not changed significantly between 2008 and 2014, with respect to the five surveyed foreign jurisdictions included in previous studies. Canada's Level 1 rates have tended to be at the higher end of the group of surveyed countries, while Level 2 and 3 rates have been above the group average. As in the latter two cases, the same relative ranking for Canada applies in the case for the new Level 4 basket.

In sum, Canada's Level 1 (low usage) mobile wireless service basket price is the highest of the group of foreign jurisdictions included in this study. In the case of the Level 2 (average usage), Level 3 (high usage including data) and Level 4 (unlimited nationwide talk & text and 2 GB of data) service baskets, Canada ranks on the high side of the average for the group of surveyed countries.

4.4 Canada-U.S. Roaming Rate Comparisons

Rate information on voice, text and data roaming services available to Canadian and American mobile wireless service consumers when traveling to the U.S. and Canada, respectively, has been collected as part of this year's price comparison study for the first time. In this respect, U.S. roaming services offered by Canadian incumbent, incumbent flanker brand and new entrant wireless service providers have been taken into account. As well, Canadian roaming services offered by U.S. incumbent and regional wireless service providers have also been taken into account.

The wireless service providers surveyed for this study generally offer two types of international roaming services. The first is a "pay-as-you-go" roaming service option under which users pay base rates for any voice, text or data usage they incur while traveling abroad. The second is a travel or roaming add-on package option under which users can choose to pay a fixed fee for defined amounts of call minutes, texts, and/or data. Generally, roaming add-on packages remain in effect for a 30 day period of time. With an add-on package, per unit usage rates are typically discounted significantly relative to base rates. When the usage allowance under an add-on plan is consumed, then either specific overage rates or base rates apply for any additional usage. Alternatively, the add-on plan could be renewed for another 30 days.

Canadian incumbent and, to a somewhat lesser degree, incumbent flanker brand wireless service providers offer a wide range of stand-alone U.S.-specific voice, text or data roaming add-on packages as well as bundled talk & text and talk, text

& data roaming add-on packages. On the other hand, the new entrants offer far fewer U.S.-specific roaming add-on packages and, instead, focus more on offering low base “pay-as-you-go” roaming rates.

In the U.S., the large incumbent wireless service providers (i.e., AT&T, Sprint and Verizon) offer a variety of Canada-specific stand-alone voice, text or data roaming add-on packages, but no bundled talk & text or data roaming add-on packages. In contrast, the surveyed U.S. regional wireless service providers (i.e., Cricket, C-Spire, MetroPCS, and U.S. Cellular) offer very limited roaming services in Canada. For instance, C-Spire only offers pay-as-you-go Canadian roaming services. U.S. Cellular offers a single daily roaming plan for Canada,²³ but only covering voice calls, not texting or data. Cricket and MetroPCS do not offer any roaming services in Canada.

Table 5 provides a comparison of Canadian and U.S. base roaming rates for Canadians traveling to the U.S. and conversely Americans traveling to Canada. The Canadian wireless service providers' rates are shown in Canadian dollars and the U.S. rates are shown in PPP-adjusted Canadian dollars. The numbers are unweighted since information on the number of subscribers from each carrier that use roaming services, along with the average pre-subscriber volumes used, is not available.

In the case of the Canadian carriers, the average incumbent and incumbent flanker brand base roaming rates are relatively similar at between \$1.25 and \$1.50 per call minute, roughly \$0.60 per text and close to \$6.00 per MB of data usage.²⁴ In contrast, the average base roaming rates offered by the new entrants are significantly lower at \$0.23 per call minute, \$0.14 per text and roughly \$1.00 per MB of data.

The U.S. incumbent average voice and text roaming rates are lower than the Canadian incumbents at \$1.05 and \$0.38, respectively. On the other hand, the average base data roaming rate is considerably higher, at \$8.25 per MB. As noted, the surveyed U.S. regional wireless service providers provide very limited roaming services in Canada. In fact, the average rates shown in Table 5 are those of C-Spire Wireless alone, since it was the only U.S. regional wireless service provider of the four surveyed that currently has base roaming rates in effect. In its case, the base roaming rates are \$1.26 per call minute and roughly \$2.50 per MB of data. Texts are free.

²³ At USD\$3.00 per day and USD\$0.99 per minute

²⁴ Note that Rogers does not offer a base “pay as you go” U.S. roaming data usage rate, but rather a daily plan for \$7.99 which includes any data usage up to 50 MB per day. The Rogers plan is not included in the average base data rate shown in Table 5. Note as well that SaskTel offers a variable base “pay as you go” U.S. roaming data usage rate (of \$3 to \$10/MB) which depends on the user's Canadian data plan. In the case of a user with a 1 GB data plan, the base U.S. roaming data usage rate is \$6/MB (which is the rate used to calculate the incumbent average in Table 5).

Table 5
2014 Comparison of Average Canadian and U.S. Roaming Rates
Base (Pay-As-You-Go) Rates

Services	Canadian Carriers			U.S. Carriers	
	Incumbents	Flankers	New Entrants	Incumbents	Regionals
	Roaming Rates while in the U.S.			Roaming Rates while in Canada	
		(CDN\$)		(PPP-Adj CDN\$)	
Voice (per minute)	\$1.48	\$1.27	\$0.23	\$1.05	\$1.26
Text (per text)	\$0.58	\$0.60	\$0.14	\$0.38	\$0.00
Data (per MB)	\$5.67	\$5.80	\$1.04	\$8.24	\$2.53

*Unweighted averages used in all cases.
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As noted, there are a wide variety of stand-alone and bundled add-on packages available in Canada and the U.S. To keep add-on package rate comparisons manageable, Table 6 below focuses on average prices and implicit usage rates for lower-cost stand-alone voice, text and data roaming add-on packages – i.e., add-ons that cost in the range of \$5 to \$20 per month. The comparison is also limited to stand-alone add-on packages since bundled add-on packages are only available in Canada, not the U.S. Note that implicit usage rates are calculated by dividing the add-on package price by the corresponding usage allowance²⁵ or, where the plan simply offers a discounted usage rate, the implicit usage rate is calculated based on the overall cost of the add-on (including an assumed monthly usage quantity) divided by the assumed usage quantity.²⁶

As shown in Table 6, the average price of lower-cost stand-alone voice, text and data roaming add-on packages offered by the incumbents and the incumbents' flanker brands are similar and fall between roughly \$14 to \$20. The implicit usage rates for these plans are considerably lower than corresponding base rates. For instance, average implicit voice rates are between \$0.38 and \$0.58 per minute, average implicit messaging rates are between \$0.06 and \$0.15 per text, and average implicit data rates are between \$0.76 and \$0.80 per MB. The new entrants' average stand-alone voice and text add-on package rates are lower at between \$5 and \$10. None of the entrants offers a stand-alone data add-on at this time. In the new entrants' case, the average implicit voice rate is \$0.17 per minute and the average implicit messaging rate is \$0.03 per text, both of which are well below the corresponding incumbents' rates.

²⁵ For example, the implicit price of a \$10 voice roaming add-on package which provides up to 50 minutes is calculated as $\$10/50 = \0.20 per minute.

²⁶ For example, the implicit price of a \$3 voice roaming add-on package which provides a discounted calling rate of \$0.20 per minute, assuming 50 minutes of usage, is $(\$3 + 50 * \$0.20)/50 = \$0.26$ per minute.

The U.S. incumbents' average add-on package prices shown in Table 6 vary considerably in comparison to the Canadian incumbents. They are similar in the case of voice add-ons, less expensive for text add-ons and more expensive for data add-ons. That said, the U.S. incumbents' average implicit prices for voice add-ons (\$0.26 per minute) are considerably lower than those of the Canadian incumbents and the same is true for the U.S. incumbents' average implicit prices for data add-ons (\$0.44 per MB). On the other hand, the U.S. incumbents' average implicit prices for messaging add-ons are more expensive (\$0.25 per text).

As mentioned, Table 6 focuses on lower-cost stand-alone voice, text and data roaming add-on packages. However, there is a variety of more expensive stand-alone and various bundled roaming add-on packages offered by the Canadian incumbents (i.e., ranging in price from \$25 to \$80 per month) that offer progressively cheaper implicit voice, text and data roaming prices. Under alternative add-on packages, voice rates can be as low as \$0.07 per minute, some add-ons provide unlimited texting, and data rates can be as low as \$0.05 per MB. Among the new entrants, only WIND offers even lower implicit roaming rates, for example, with its \$15 per month unlimited talk, text and data U.S. roaming add-on.

In the case of the U.S. incumbents, the lowest implicit voice roaming rate is currently \$0.025 per minute, which is considerably lower than the lowest Canadian rate. On the other hand, there are no unlimited text add-ons currently available from the surveyed U.S. wireless service providers and the least expensive implicit messaging rate is about US\$0.125 per text. The least expensive implicit data roaming rate, which is offered by AT&T, is currently just under \$0.20 per MB. However, the cost of the data add-on to receive that rate is well over \$100 per month.

Table 6
2014 Comparison of Average Canadian and U.S. Roaming Rates
Lowest Cost Stand-alone Add-on Package Rates

Services	Canadian Carriers			U.S. Carriers	
	Incumbents	Flankers	New Entrants	Incumbents	Regionals
	Roaming Rates while in the U.S. (CDN\$)			Roaming Rates while in Canada (PPP-Adj CDN\$)	
Average Add-on Package Price					
Stand-alone Voice Add-on	\$15.00	\$16.67	\$5.00	\$20.33	-
Stand-alone Text Add-on	\$17.50	\$13.75	\$10.00	\$12.71	-
Stand-alone Data Add-on	\$20.00	\$20.00	-	\$36.00	-
Implicit Usage Price*					
Voice (per minute)	\$0.38	\$0.58	\$0.17	\$0.26	-
Text (per text)	\$0.06	\$0.15	\$0.03	\$0.25	-
Data (per MB)	\$0.80	\$0.76	-	\$0.44	-

* Implicit price determined by dividing the cost of the add-on by the corresponding usage allowance or, where the add-on provides a discounted usage rate, by dividing the cost of the add-on plus an assumed quantity of monthly usage by the assumed usage quantity.

Unweighted averages used in all cases.

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In summary, the U.S. incumbents' average base (pay-as-you-go) roaming call and text rates in Canada were found to be lower than the Canadian incumbents' comparable roaming rates in the U.S., whereas the reverse was found in the case of data roaming rates. The incumbents in both countries also offer a variety of roaming add-on packages that provide lower call, text and data roaming rates. When these plans are taken into account, Canada compares more favourably to the U.S. in the case of text roaming rates, but less favourably for call and data roaming rates. On balance, therefore, a comparison of cross-border roaming rates offered by Canadian and U.S. incumbents suggests that consumers are no better off in either country as far as overall roaming charges are concerned. In addition, while the wireless entrants in Canada offer far lower roaming rates than the Canadian incumbents, the U.S. regional carriers offer either no roaming services in Canada whatsoever or very limited roaming services at best.

4.5 Comparison of U.S. Incumbent and Regional Service Provider Prices

In Section 4.2 above, comparisons of incumbent, incumbent flanker brand and new entrant mobile wireless services prices are provided. For this year's study, prices offered by U.S. regional mobile wireless service providers were also collected. As noted these included Cricket, C-Spire, MetroPCS, and U.S. Cellular. Table 7 provides a comparison of U.S. incumbent and regional brand prices for each of the four mobile wireless service baskets.

Table 7
2014 U.S. Mobile Wireless Price Comparison
Incumbents versus Regional Brands
National Averages in \$USD

Baskets	Level 1	Level 2	Level 3	Level 4
U.S. Incumbents	\$23.88	\$44.00	\$72.02	\$86.00
U.S. Regionals	\$34.24	\$39.29	\$57.51	\$53.82
<i>Percentage Differential</i>	<i>43%</i>	<i>-11%</i>	<i>-20%</i>	<i>-37%</i>

Incumbents include Verizon, AT&T, Sprint

Regional brands include Cricket, MetroPCS, US Cellular and C Spire

U.S. national averages are market share and population weighted.

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As shown in Table 7, while the average U.S. regional brand price for the Level 1 basket is higher than the U.S. incumbents' average price, the average prices for the other three mobile wireless service baskets are consistently lower. Moreover, the discount available from the U.S. regional service providers is greatest for the Level 4 basket which includes unlimited talk and text along with 2 GB of data.

In contrast, in Canada, incumbent flanker and new entrant prices were found to be lower than the incumbents across the board for all four mobile wireless service baskets, although the largest differentials were found in the case of the Level 3 and 4 baskets which include talk, text, calling features and data.

It is worth noting that relative to the U.S. incumbents (i.e., in this case Verizon, AT&T and Sprint) the total number of subscribers currently served by the four U.S. regional brands included in the study is very small (i.e., over 280 million versus about 20 million, respectively). Consequently, the U.S. regional brands account for a very small share of the U.S. market.

In sum, like the Canadian wireless entrants and incumbent flanker brands, the U.S. regional carrier average prices are also generally considerably below the U.S. incumbents but, in marked contrast, otherwise much higher in the case of the Level 1 (low use voice services) basket.

5.0 BROADBAND INTERNET SERVICE

5.1 Broadband Internet Service Baskets

The four broadband service baskets included in the study are defined in terms of broadband service speed and monthly data usage:

- **Level 1:** *Speed:* "basic" Internet service with advertised²⁷ download speed of up to **3.0 Mbps** (targeted speed in the upper end of the range).

Data usage per month: 7.5 GB.

- **Level 2:** *Speed:* "average" (Canadian) high-speed Internet service with advertised download speed of **4.0 to 15 Mbps** (targeted speed in the upper end of the range).²⁸

*Data usage per month: 30 GB.*²⁹

- **Level 3:** *Speed:* high-speed Internet service with advertised download speed of **16 to 40 Mbps** (targeted speed in the upper end of the range).

Data usage per month: 75 GB.

- **Level 4:** *Speed:* high-speed Internet service with advertised download speed of **over 40 Mbps** (targeted speed in the 41 to 100 Mbps range).

Data usage per month: 120 GB.

Modem rental fees are also taken into account since they are mandatory in some instances. In other cases, where the modem is not included but must be purchased by the customer, the cost of the required equipment is amortized over 24 months. Otherwise, one-time installation or activation fees are excluded.

²⁷ It should be noted that "advertised" speeds can differ from "actual" speeds for a variety of reasons and that the range of any such differences can vary by technology and geographic location. For the purpose of this study, any such variations are assumed to be roughly equal on a relative basis across the broadband services included in this study.

²⁸ CRTC 2013 CMR, Section 5.3, indicates that roughly 52% of Canadian broadband users subscribe to broadband services with speeds of between 5 and 15 Mbps.

²⁹ According to the CRTC 2013 CMR, Section 5.3, the average Canadian broadband user uploads and downloads roughly 34 GB of data per month.

Some Internet service providers (ISPs) apply monthly data usage caps to their broadband service plans. Where they are applied, they are typically set on the basis of a monthly data allowance (GB/month), with overage fees applied when the data allowance is exceeded.³⁰ Applicable usage caps are taken into account in the study, including any overage fees that may apply once assumed usage levels are exceeded. However, most of the surveyed ISPs either have no usage caps or, where they do apply, they are high enough that no overage fees would be incurred given the data usage assumptions adopted for the defined broadband service baskets.

There was one exception in this latter respect in this year's survey. At the time the broadband price data was collected, Rogers offered a broadband service plan which satisfies the speed requirements of the Level 2 service basket (i.e., 6 Mbps); however, the data cap on the plan was 20 GB which is 10 GB less than the Level 2 monthly data usage requirement of 30 GB per month. The overage fee Rogers charges under the plan is \$4 per GB. Applying the monthly overage charge in this case would add an additional \$40/month to the cost of the plan and would make the plan uneconomic for the purpose of the Level 2 service basket (e.g., a Rogers' broadband plan meeting the Level 3 basket requirements would be cheaper and offer a faster service with a much higher data cap). Therefore, the plan was not included in the study.

5.2 Canadian Broadband Service Price Comparisons

At the outset, it is important to note that the changes in broadband service basket definitions introduced in the 2012 edition of this study significantly affect comparisons of the 2012, 2013 and 2014 price levels with those reported for earlier years. Generally, the changes in service basket definitions (which included increasing service speed ranges and monthly data usage levels) have had the effect of raising reported prices for each service basket post 2012.

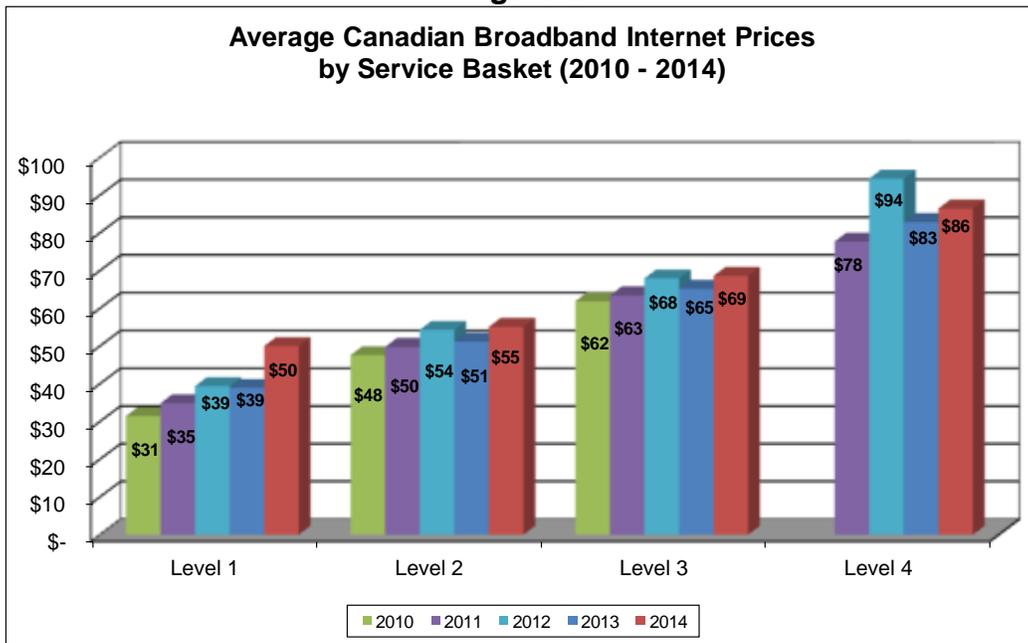
Not all of the surveyed ISPs offer broadband services that satisfy the criteria of all four defined broadband service baskets. Indeed, many no longer provide a broadband service at the Level 1 service speed of 3 Mbps or lower. On the other hand, most provide services that satisfy the Level 2 and 3 service basket requirements. As well, all surveyed ISPs, other than Primus, now offer a Level 4 (40+ Mbps) broadband service. This represents significant improvement compared to the 2012 edition of this study when the Level 4 basket was included for the first time.

Figure 6 below provides a summary of Canadian weighted average broadband Internet access service prices for the Levels 1 to 3 service baskets for the period 2010 to 2014 and for the Level 4 broadband service basket for the period 2011

³⁰ In some cases, as in Australia, rather than excess data charges applying, service speed is throttled significantly (i.e., to 256 kbps).

and 2014. As shown in the figure, prices for all four broadband service baskets increased in 2014 relative to last year. The increase was greatest in the case of the Level 1 service basket, which jumped from roughly \$39 to \$50, an increase of 29%. In large part, this increase can be attributed to the reduced and relatively limited availability of services at 3 Mbps or less. Otherwise, the increases in the prices of the Level 2, 3 and 4 service baskets were less pronounced – i.e., roughly 8%, 5% and 4%, respectively. *It is worth noting that while prices increased for these three service baskets, so did the average download and upload speeds offered by the surveyed broadband service providers (with the exception that the average Level 4 upload speed remained virtually unchanged).*

Figure 6



NOTE that broadband service basket definitions were revised in 2012 to reflect the general availability of faster broadband service speeds; consequently, price comparisons between 2012, 2013 and 2014 and earlier years should be made with caution.
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Table A2.4 in Attachment 2, provides more detailed historical information on Canadian broadband Internet service prices by city and by year for each of the four broadband service baskets.

Roughly half of the surveyed Level 1 and 2 Canadian broadband service plans include data usage caps, whereas the vast majority of the higher speed Level 3 and 4 broadband service plans include data usage caps. Table 8 provides a summary of the range (low to high-end) and average data caps that apply in the case of broadband service plans with explicit monthly data restrictions.

Table 8
2014 Canadian Broadband Internet Service Plans with Data Caps

Basket	Percentage of Surveyed Plans with a Data Cap	Range of Data Caps (low to high in GB)	Average of Data Capped Plans
Level 1	40%	30 to 50 GB	40 GB
Level 2	45%	60 to 150 GB	106 GB
Level 3	90%	100 to 250 GB	181 GB
Level 4	80%	150 to 500 GB	309 GB

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5.3 International Broadband Service Price Comparisons

As with the other service categories, there are a number of notable differences in the way in which broadband services are provisioned in some of the surveyed countries compared to Canada:

- In some of the surveyed European countries, to obtain a DSL broadband Internet service on a stand-alone basis, the customer must in some cases also lease a landline connection (adding an additional access line charge).
- Fibre and/or DSL-based broadband services offered in the U.K., France, Germany and Italy generally include IPTV and/or VoIP services for a single bundled price. The option of a pure stand-alone broadband Internet service is not available in some cases.
- In Japan, broadband Internet service typically consists of two separate service elements: (i) a network access facility (fibre or ADSL), often obtained from NTT directly or indirectly and (ii) Internet access service through a third-party ISP. Therefore, there are two fees involved: the broadband access fee and ISP fee.

Table 9 below provides a summary of the unweighted average "advertised" download and upload service speeds of the surveyed broadband services included in each of the four specified broadband service baskets for Canada and the surveyed foreign jurisdictions.³¹ The table also includes average monthly data usage caps for those plans that include data caps (as noted, most plans do not include data caps).

³¹ While advertised download speeds are readily available, the same is not true for upload speeds. Consequently, the average upload speeds shown in Table 4 are based on a somewhat lower number of observations compared to average download speeds.

Table 9
2014 International Broadband Internet Services
Average Advertised Speeds and Applicable Data Caps

Baskets	Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Level 1 Basket (≤ 3 Mbps, 7.5 GB/month)								
Download Speed (Mbps)	2.1	2.8	-	-	-	1.3	-	-
Upload Speed (Mbps)	0.6	0.8	-	-	-	0.5	-	-
Data Caps, as applicable (GB)	40	-	-	-	-	-	-	-
Level 2 Basket (4 – 15 Mbps, 30 GB/month)								
Download Speed (Mbps)	11.5	10.0	8.0	-	10.0	12.0	10.0	7.0
Upload Speed (Mbps)	3.4	1.5	0.4	-	0.7	1.3	0.6	0.4
Data Caps, as applicable (GB)	106	-	-	-	40	-	-	-
Level 3 Basket (16 – 40 Mbps, 75 GB/month)								
Download Speed (Mbps)	27.8	23.6	38.0	32.5	22.5	36.5	19.0	26.7
Upload Speed (Mbps)	5.3	3.5	9.5	8.0	10.0	1.3	0.9	2.3
Data Caps, as applicable (GB)	181	-	-	-	200	-	-	-
Level 4 Basket (> 40 Mbps, 120 GB/month)								
Download Speed (Mbps)	71.5	51.7	84.0	100.0	100.0	115.1	66.7	100.0
Upload Speed (Mbps)	11.2	9.5	14.5	27.5	21.0	31.9	8.7	13.3
Data Caps, as applicable (GB)	309	-	-	100	200	-	-	-

Average data caps calculated based on surveyed plans with applicable data caps.

“-“ means no broadband service available from the surveyed service providers and/or no data cap applicable on the surveyed broadband plans.

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As indicated in Table 9, Level 1 broadband services are not offered by the surveyed TSPs in the U.K., France, Germany, Italy or Australia. As well, the same applies in the case of Level 2 broadband services in France. In fact, whereas in previous years, a number of the surveyed companies did not provide Level 4 broadband services, now virtually all do. At the same time, many no longer provide slower speed services that fall into the Level 1 and 2 basket speed ranges. As the table also shows, average download speeds at the Level 4 vary somewhat due to the different underlying technologies offered by the surveyed companies (e.g., cable, VDSL and fibre). The targeted Level 4 basket download speed range is between 41 and 100 Mbps; however, in Japan, even higher speed services were included in the study (i.e., 200 Mbps service for NTT and a 160 Mbps service for J:Com) since services in the 41 and 100 Mbps range were not available, which explains the average download of over 100 Mbps in this case.³² The Level 4 download speeds of the Canadian broadband services included in the study ranged from 45 to 100 Mbps, which compares favourably with the other surveyed countries.

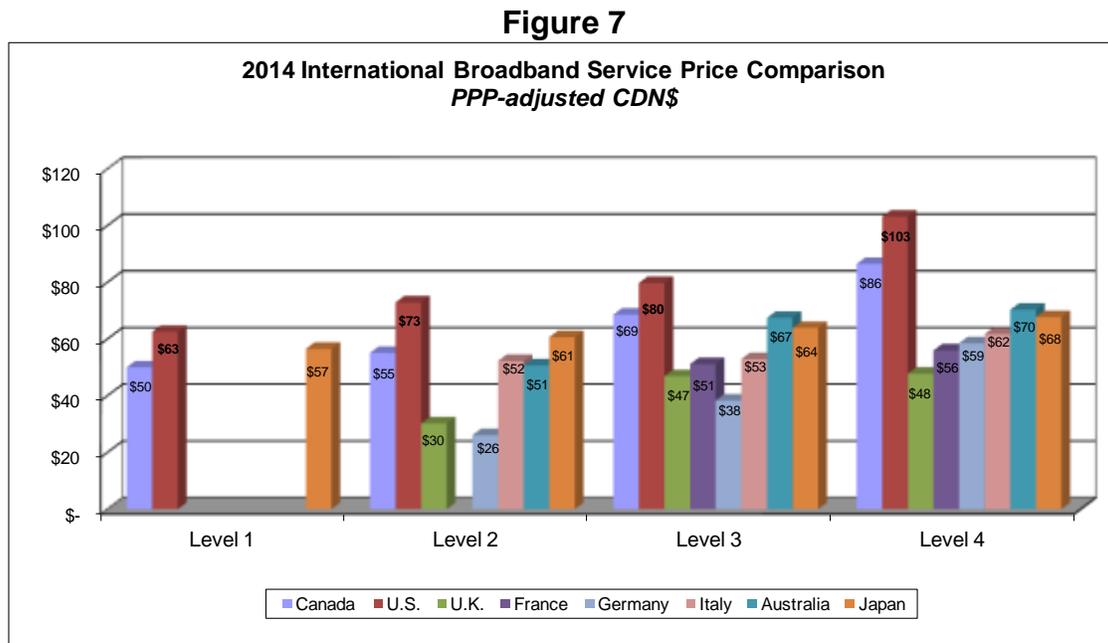
Advertised upload speeds vary significantly. The most significant differences are associated with fibre-based broadband services included in the Level 3 and 4 baskets where upload speeds range from 2 Mbps in the case of Telstra's 100

³² Note that the two other companies surveyed in Japan, KDDI and Yahoo! BB, offer 50 Mbps services, which were included in the Japanese Level 4 Basket category.

Mbps fibre service to 100 Mbps in the case of NTT's 200 Mbps broadband service. The Level 4 upload speeds of the Canadian broadband services included in the study ranged from 4 to 30 Mbps, which compares favourably with the other surveyed countries.

Aside from Canada, Australia was the only surveyed country with data usage caps on most broadband services. In addition, one of the surveyed ISPs in France (i.e., cable operator Numericable) applied data caps in the case of its 100 Mbps service. Otherwise, all of the other surveyed foreign ISPs' broadband service plans had no data cap.

Figure 7 provides a comparison of current weighted average broadband service prices for Canada and the seven surveyed foreign jurisdictions for each of the four broadband service level baskets. Again, reported prices exclude taxes and are expressed in PPP-adjusted Canadian dollars.



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As shown in Figure 7, Level 1 broadband services were only available from surveyed TSPs in three of the eight countries included in the study. This group includes Canada. In this case, Canada's average monthly price of \$50 is considerably lower than the two other countries in the group, namely the U.S. and Japan.

In the case of the Level 2 basket, Canada's average monthly price of \$55 falls just above the average of the group of surveyed countries, but is generally comparable to Japan, Italy and Australia. Prices in the U.S. and Japan are higher, whereas prices in Italy and Australia are slightly lower and the prices in

the U.K. and Germany are considerably lower. There was no Level 2 service plan offered by the surveyed service providers in France. As noted earlier, download and upload speeds were slightly higher in Canada than other countries for the Level 2 service basket (other than Japan).

For the Level 3 basket, Canada's average monthly price of \$69 again falls on the high side of the range of rates for the surveyed countries. While it is considerably lower than the average price in the U.S., it is somewhat higher than in Australia and Japan, and considerably higher than the prices in all four surveyed European countries. Download and upload speeds for Canada fell in the middle range compared to other countries.

A similar ranking is found for the Level 4 basket. Canada's average monthly price of \$86 in this case is only lower than the U.S. Otherwise, it is considerably higher than the measured rates in the remaining countries. It is worth noting in this respect that all of the countries with lower Level 4 prices also have higher average advertised download speeds compared to Canada (see Table 8 above).

Table A3.3 and Figures A3.3 a, b and c in Attachment 3 provide more detailed historical broadband Internet service price results for the period 2008 to 2014 for each of the four broadband service baskets. As the data in Attachment 3 shows, relative to countries included in previous years' studies, Canada's ranking has not changed significantly over the last five years.

In sum, Canadian broadband Internet service prices compare favourably with the other surveyed countries in the case of the Level 1 (≤ 3.0 Mbps download speeds) and Level 2 (4 – 15 Mbps) broadband service baskets. However, Canadian Level 3 (16 – 40 Mbps) and Level 4 (> 40 Mbps) prices are higher than the prices measured in the surveyed countries included in the study, with the exception of the U.S.

5.4 International Rural & Remote Broadband Service Price Comparisons

A comparison of residential rural and remote area broadband services available in Canada and a selected number of international jurisdictions is being included in this study for the first time this year. In this respect, both satellite and fixed wireless broadband services have been taken into account. In addition to Canada, satellite and fixed wireless broadband services available in the U.S., the U.K. and Australia are included for international comparison purposes.

The principal broadband service information collected for each surveyed satellite and fixed wireless ISP includes the following:

- *Technology*: satellite and fixed wireless technology generation, where applicable (e.g., 4G or other);

- *Download and Upload Speeds*: range of service speeds in Mbps;
- *Data Caps*: range of monthly usage allowances (GB/month);
- *One-time Costs*: including any applicable up-front installation fees and/or equipment costs;
- *Service Prices*: monthly service fees, equipment rental fees and overage fees, as applicable; and
- *Contract Term*: where applicable.

While the number of satellite-based ISPs serving rural and remote areas is generally not extensive, the same is not true for fixed wireless ISPs. In the latter case, there can be a large number of small scale fixed wireless service providers serving different geographic areas scattered across rural and remote areas of a country.³³ Some fixed wireless ISPs may serve no more than a single community. Consequently, selecting a representative sample of ISPs serving rural and remote areas for each country considered is not straightforward. This segment of the broadband market is typically not dominated by a few large scale ISPs as in the case of urban markets. Recognizing this fact, we have attempted as best as possible to include the largest scale ISPs in Canada and the selected international jurisdictions that specialize in serving rural and remote areas.

Table 10 provides a list of the satellite and fixed wireless ISPs included in the study.

Table 10
List of Surveyed Satellite and Fixed Wireless ISPs

Country	Satellite ISPs	Fixed Wireless ISPs
Canada	Xplornet, SSI, Netcaster	Xplornet, Storm, YourLink, Ruralwave
U.S.	Exede Internet, HughesNet, Dish	Skybeam, Digis, Digitalpath
Australia	Westnet, SkyMesh, Active8me	SkyMesh, Active8me, Aussie Broadband
U.K.	Bentley Walker, EuropaSat, Ethnet	Vispa, WiSpire, eXwavia

As in the case of cable, DSL and fibre broadband services presented above, the data on satellite and fixed wireless broadband services are categorized according to the same Level 1 to 4 broadband service baskets. However, in this case, the monthly data usage levels are not applied, since in many cases satellite and fixed wireless broadband services have relatively low monthly data allowances.

³³ For instance, there are close to 1,200 fixed wireless broadband service providers in the U.S., see <http://broadbandnow.com/Fixed-Wireless-Providers>.

Satellite Broadband Services

As noted in Table 10, three satellite ISPs were surveyed in Canada's case: Xplornet, SSi and NetKaster. In Xplornet's case, service plan prices and details were collected for its service offerings in both southern and northern Canada.³⁴ SSi serves the northern territories and NetKaster also serves more northerly locations in Canada. The speeds and prices of services provided in far northern parts of Canada tend to be slower (i.e., under 3 Mbps downstream) and more expensive than in the south. In contrast, Xplornet offers 4G satellite Internet services in southern parts of Canada where service speeds are higher (i.e., up to 10 Mbps downstream) and service plan costs are lower.

The surveyed satellite Internet services in Australia are somewhat slower than those in Canada. The surveyed satellite ISPs, which mostly rely on interim Australian National Broadband Network (NBN Co) satellite capacity to provision service, currently offer advertised download speeds of 0.5 Mbps to 6 Mbps. However, greater speeds and capacity are expected in 2015 when NBN Co launches its own satellites.³⁵

Otherwise, the surveyed satellite Internet services in the U.S. and U.K. were all 4G-based and, consequently, provided considerably higher speeds compared to Canada and Australia – i.e., up to 15 Mbps in the U.S. and up to 20 Mbps in the U.K.

Table 11 provides a summary of average satellite Internet service speeds and, where applicable, data caps for each of the four broadband service baskets. As shown in the table, Canada and Australia were the only countries of the group with satellite services in the Level 1 speed range. In this case, the average advertised speeds of the surveyed Canadian services (which range between 0.4 and 3.0 Mbps downstream) were generally higher than those in Australia (which range between 0.5 and 1.0 Mbps downstream). For the Level 2 basket, Australia again has the lowest average speed. As noted, download speeds of 6 Mbps were the fastest available among the surveyed plans in Australia. Canada ranked ahead of Australia with an average Level 2 download speed of 7.5 Mbps. As noted above, in both the U.S. and U.K., faster services were available with speeds up to 15 Mbps in the former case and 12 Mbps in the latter for the Level 2 service basket. The U.K. was the only country in the group with surveyed satellite Internet service plans qualifying for the Level 3 basket; in this case the average surveyed service speed was 20 Mbps.

³⁴ Calabogie, Ontario in the first case and Timmins, Ontario in the second case

³⁵ See: <http://www.nbnco.com.au/get-an-nbn-connection/connect-interim-satellite.html>

Table 11
Comparison of Satellite Broadband Service Provider
Average Advertised Download Speeds and Monthly Data Caps

Broadband Baskets	Canada		U.S.		U.K.		Australia	
	Download Speed (Mbps)	Data Cap (GB)						
Level 1 (Up to 3 Mbps)	1.9	37	-	-	-	-	0.7	7
Level 2 (4 to 15 Mbps)	7.5	20	10.3	21	8.0	29	6.0	20
Level 3 (16 to 40 Mbps)	-	-	-	-	20.0	28	-	-
Level 4 (Over 40 Mbps)	-	-	-	-	-	-	-	-

Note: “-” means no service provided by the surveyed ISPs.
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Satellite ISPs follow a variety of approaches with respect to applying data usage restrictions to their services. Some apply a single data cap (in terms of GBs/month), others apply peak and off-peak data caps, and still others apply hourly downstream and upstream data use allowances. Only one of the close to 60 surveyed satellite service plans included in the study provided unlimited data usage; however, it was subject to a fair use policy involving an unspecified form of traffic shaping and throttling.

The average data caps reported in Table 11 reflect the average monthly data caps (total or peak and off-peak combined) applying to the surveyed satellite Internet services by service basket. For the Level 1 basket, the average data cap is much higher in Canada relative to Australia (at 37 GB versus 7 GB/ month respectively). The average data caps in the case of the Level 2 basket are relatively similar for all four countries – i.e., falling between 20 GB in Canada and Australia and 29 GB in the U.K. The average data cap for the U.K.'s Level 3 surveyed satellite services is very similar at 28 GB.

Table 12 below provides a summary of average prices for the surveyed satellite broadband Internet services expressed in PPP-adjusted Canadian dollars and excluding taxes. It should also be noted that some plans include equipment rental fees while others require up front, one-time equipment payments (which may vary depending on contract term). For consistency, the average prices reported in Table 12 include applicable rental fees or, in the alternative, amortized equipment costs (where any such costs are spread over a 24 month period which corresponds to the typical contract term for the services).

Table 12
Comparison of Satellite Broadband Service Prices
*(including amortized equipment cost where applicable)**
 PPP-Adjusted CDN\$

Broadband Baskets	Canada**	U.S.	U.K.	Australia
Level 1 (Up to 3 Mbps)	\$76.92	-	-	\$36.67
Level 2 (4 to 15 Mbps)	\$69.99	\$109.15	\$46.36	\$59.98
Level 3 (16 to 40 Mbps)	-	-	\$77.81	-
Level 4 (Over 40 Mbps)	-	-	-	-

* Any applicable equipment costs were amortized over a 24-month time frame.

** Note that the Canadian Level 2 price is less than the Level 1 price because the surveyed Level 2 services are mainly available in southern Canada where service speeds are higher and service plan prices are lower.

“-“ means no service provided by the surveyed ISPs.

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As shown in Table 12, in the case of the Level 1 satellite service basket, the average Canadian price of roughly \$77 is roughly double the average price in Australia of \$37. However, as noted above, the average Canadian Level 1 service speed and data cap is considerably higher compared to Australia, which in large part may explain the price difference.

In the case of the Level 2 basket, the average Canadian price of \$70 is higher than the average Australian price; but here again the average service speed and data cap is higher in Canada. On the other hand, the average Level 2 price in the U.K., at roughly \$46, is considerably lower than the Canadian rate and average service speed and data allowance is higher in the U.K. On the other hand, the average price in the U.S., at roughly \$109, is the highest of the four countries.

The U.K. is the only country of the surveyed group with Level 3 satellite broadband Internet services. In this case, the average price of the surveyed services is roughly \$77.

On balance, Canadian satellite broadband Internet services compare favourably with the services available in the other three countries, even in view of the fact that many of the surveyed Canadian satellite services were intended for residential customers located in Canada's far north.

Fixed Wireless Broadband Services

All of the surveyed fixed wireless services included in the study are based on 4G technologies. In Canada's case, the surveyed fixed wireless services are provided in locations in southern Canada – i.e., New Brunswick, Ontario and Saskatchewan. Similarly, the surveyed fixed wireless services for the U.S., U.K. and Australia are provided in locations scattered across each of those countries.

Table 13 provides a summary of the average advertised download speeds and, where applicable, data caps for the surveyed fixed wireless broadband services by service basket.

Table 13
Comparison of Fixed Wireless Broadband Service Provider
Average Advertised Download Speeds and Monthly Data Caps

Broadband Baskets	Canada		U.S.		U.K.		Australia	
	Download Speed (Mbps)	Data Cap (GB)						
Level 1 (Up to 3 Mbps)	1.8	38	2.1	unlimited	-	-	-	-
Level 2 (4 to 15 Mbps)	7.1	76	9.4	200	8.0	27	12.0	219
Level 3 (16 to 40 Mbps)	-	-	20.0	unlimited	20.0	70	25.0	373
Level 4 (Over 40 Mbps)	-	-	-	-	60.0	350	-	-

*Note: “-” means no service provided by the surveyed ISPs.
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As can be seen from Table 13, Level 1 service plans were only provided by the surveyed fixed wireless ISPs in Canada and the U.S. In these two cases, average download speeds were similar at close to 2 Mbps. In the case of the Level 2 service basket, the average download service speed in Canada, at 7.5 Mbps, was the lowest of the group of four surveyed countries. The U.K. was slightly higher at 8 Mbps, and the U.S. and Australia were higher still at 9.4 and 12.0 Mbps, respectively. The surveyed Canadian ISPs offered no fixed wireless services that meet the Level 3 service basket speed requirements. In contrast, the ISPs in all three of the other jurisdictions offered Level 3 fixed wireless services. The average download speed of these surveyed services was 20 Mbps in the cases of the U.S. and U.K., and higher still in the case of Australia at 25 Mbps. The U.K. was the only country with the surveyed ISP offering a Level 4 fixed wireless service, which provided advertised download speeds of 60 Mbps.

Many of the surveyed fixed wireless service plans were subject to data caps, while for many others, primarily in Canada and the U.S., no data caps were applied. On the other hand, in Australia, all surveyed service plans were subject to data caps. Where data caps are used, typically overage fees applied to excess

data usage. However, in the case of the surveyed plans in Australia, service speeds were more commonly throttled when data caps are reached. As shown in Table 13, in the case of the Level 1 service baskets, the surveyed Canadian plans were capped at 38 GB per month, whereas the comparable U.S. plans included no restrictions on data use. At Level 2, average applicable data caps vary considerably. The average Canadian data cap of 76 GB per month falls near the middle of the group of surveyed countries in this case. The average applicable data caps are mostly higher still or even unlimited in the case of the Level 3 and 4 service baskets.

Table 14 below provides a summary of average prices for the surveyed fixed wireless broadband Internet services expressed in PPP-adjusted Canadian dollars and excluding taxes. As in the case of the satellite services, the average prices reported in Table 14 include applicable rental fees or, in the alternative, amortized equipment costs (where any such costs are spread over a 24 month period which corresponds to the typical contract term for the services).

Table 14
Comparison of Fixed Wireless Broadband Service Prices
*(including amortized equipment cost where applicable)**
 PPP-Adjusted CDN\$

Broadband Baskets	Canada	U.S.	U.K.	Australia
Level 1 (Up to 3 Mbps)	\$61.04	\$49.98	-	-
Level 2 (4 to 15 Mbps)	\$71.28	\$67.74	\$14.00	\$61.98
Level 3 (16 to 40 Mbps)	-	\$99.95	\$22.80	\$71.16
Level 4 (Over 40 Mbps)	-	-	\$27.99	-

* Any applicable equipment costs were amortized over a 24-month time frame.
 "-" means no service provided by the surveyed ISPs.
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In the case of the Level 1 basket, Canadian fixed wireless service prices are noticeably higher than those in the U.S., despite the fact that the Level 1 surveyed plans in the U.S. have a slightly higher average download speed and provide unlimited data usage compared to Canada's capped plans. In the case of the Level 2 basket, at roughly \$71 per month, Canadian prices are the highest of the group of four countries. While average Level 2 fixed wireless prices are comparable in the cases of Canada, the U.S. and Australia, the average price in the U.K. is much lower at roughly \$14. For the Level 3 basket, the average price in the U.K. is once again much lower than the U.S. and Australia. None of the surveyed Canadian ISPs provided a fixed wireless service at either Level 3 or 4 broadband service basket speeds.

On balance, Canadian fixed wireless broadband Internet services compare relatively less favourably with the services available in the other three countries. Based on the sample of surveyed ISPs, on average, Canadian fixed wireless

service speeds are somewhat slower and prices are higher than those of the other three surveyed jurisdictions.

6.0 MOBILE INTERNET SERVICE

6.1 Mobile Internet Service Baskets

There are two mobile Internet service levels included in the study, which consist of the following usage-based service elements and characteristics:

- Technology: Third Generation (3G) or better (including 3G+, 4G and 4G LTE)
- Service speed: Advertised download speed of 1.5 Mbps or faster³⁶
- Equipment: USB modem stick (rental or purchase)
- Data usage: **Level 1:** 2 GB per month
Level 2: 5 GB per month

Once again, one-time charges (such as activation fees) are excluded.

6.2 Canadian Mobile Internet Service Price Comparisons

Figure 8 below provides a summary of Canadian Level 1 mobile Internet service basket prices for the period 2010 to 2014 and the Level 2 prices for the period 2012 to 2014. The Level 1 price declined from \$45 in 2013 to \$43 in 2014 or by roughly 3%. Most of the service plans used to measure the average Level 1 price included up to 2 or 3 GB of data allowance per month, although several included greater data levels of 4 GB to 6 GB (i.e., SaskTel and Mobilicity, respectively). The average data allowance for all surveyed Level 1 plans was 2.9 GB per month. The Level 2 mobile Internet service basket price also declined slightly from \$65 in 2013 to \$64 in 2014 or by roughly 1%. The surveyed Level 2 plans mostly included data allowances of 5 or 6 GB per month, with some as high as 8 or 10 GB (i.e., SaskTel and WIND, respectively). The average Level 2 data allowance for all surveyed Level 2 plans was 6.5 GB per month.

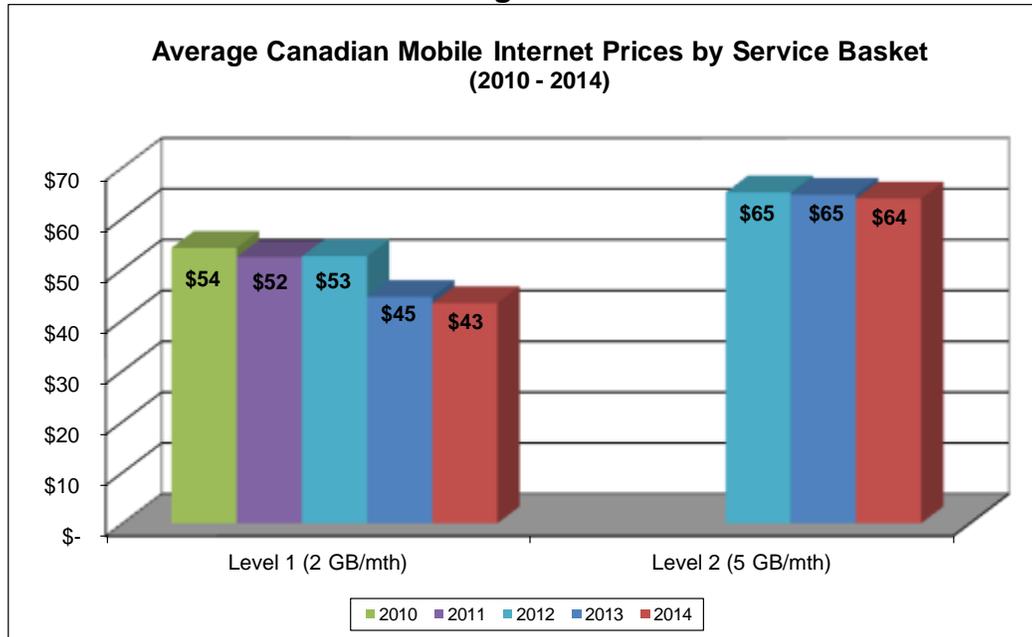
The average advertised download speed of the mobile Internet services included in this year's study is roughly 67 Mbps (which is very close to the advertised speed last year). The relatively high average advertised speed reflects the fact that the incumbent wireless carriers, Rogers, Bell and TELUS, have all launched 4G LTE mobile Internet access services.³⁷ Rogers, for instance, advertises that

³⁶ Actual and advertised speeds can vary significantly, especially in the case of wireless services which can be sensitive to network usage levels and a user's location.

³⁷ The comparable average advertised mobile Internet download speed noted in the 2012 price comparison study was 72 Mbps, while that of the 2011 price comparison study was 18 Mbps.

their 4G LTE networks allow download speeds of up to 100 Mbps, whereas Bell and TELUS advertise download speeds of up to 75 Mbps. New entrants such as WIND and Mobilicity advertise 3G+ speeds of up to 21 Mbps.

Figure 8



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A comparison of the mobile Internet service rates offered by the incumbents (Rogers, Bell and TELUS) and new entrants (Mobilicity, WIND and Videotron), as applicable, in the cities of Vancouver, Toronto, and Montreal is provided in Table 15 below. For the Level 1 mobile Internet service basket, the new entrants' rates are roughly 24% less expensive than the incumbents' average rates. For the Level 2 service basket, the differential is considerably larger at roughly 38%. As in the case of mobile wireless services, the differentials are largest in Vancouver and Toronto where Mobilicity and WIND are offering Level 2 price discounts of roughly 44% relative to the incumbents.

Compared to last year, the new entrants' mobile Internet price discounts relative to the incumbents declined slightly in the case of the Level 1 service basket (i.e., from 30% last year to 24% this year) as well as the Level 2 service basket (i.e., from 41% last year to 38% this year).

Table 15
2014 Canadian Mobile Internet Service Rates
Incumbents versus New Entrants

Baskets	Vancouver	Toronto	Montreal	Average
Level 1 Basket (2 GB/month)				
Incumbents	\$43.75	\$43.75	\$43.75	\$43.75
New Entrants	\$32.46	\$32.46	\$34.95	\$33.29
<i>Percentage Differential</i>	-26%	-26%	-20%	-24%
Level 2 Basket (5 GB/month)				
Incumbents	\$67.08	\$67.08	\$60.42	\$64.86
New Entrants	\$37.46	\$37.46	\$44.95	\$39.96
<i>Percentage Differential</i>	-44%	-44%	-26%	-38%

*Unweighted averages used in all cases.
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6.3 International Mobile Internet Service Price Comparisons

Table 16 provides a summary of the average Level 1 and 2 advertised download speeds and data allowances for Canada and the surveyed foreign jurisdictions. Upload speeds are often not advertised by wireless service providers and, therefore, are not included in the table below.

Table 16
2014 International Mobile Internet Services
Average Advertised Speeds and Data Caps

Baskets	Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Level 1 Basket (2 GB/month)								
Download Speed (Mbps)	67.2	12.8	32.2	82.2	40.0	76.8	23.2	37.1
Data Cap	2.9	5.0	3.3	3.0	4.0	2.8	3.3	2.5
Level 2 Basket (5 GB/month)								
Download Speed (Mbps)	67.2	12.8	32.2	82.2	40.0	88.3	28.3	37.1
Data Cap	6.5	5.7	6.7	6.0	7.5	7.0	6.5	9.3

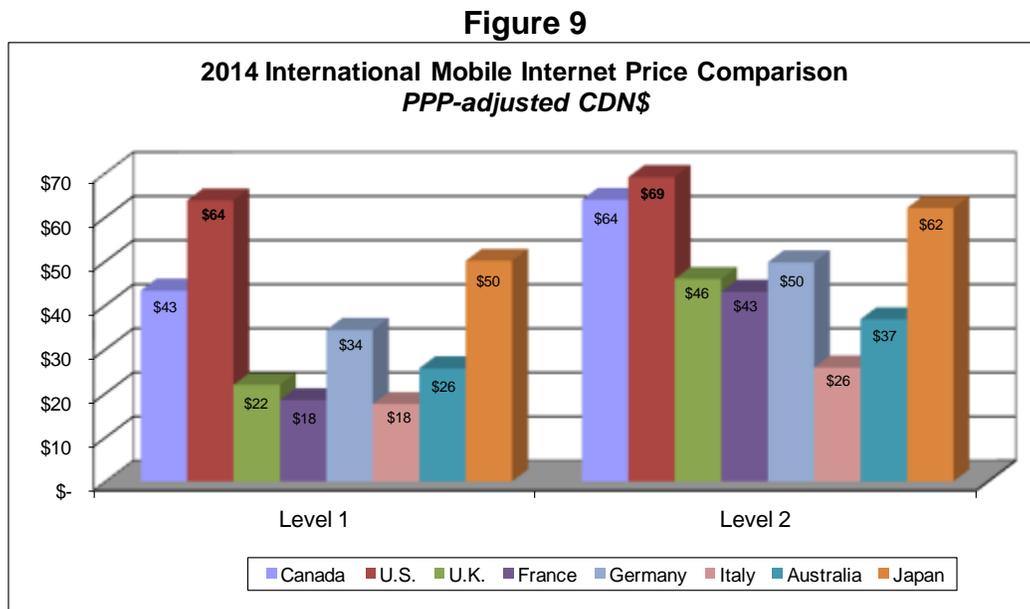
*Simple averages calculated based on surveyed plans in each country.
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As shown in the table above, advertised download speeds for mobile Internet service plans vary significantly. The average advertised download speed of the surveyed Canadian mobile Internet services is roughly 67 Mbps. Higher advertised speeds were found in France and Japan (i.e., 82 and 88 Mbps, respectively). Otherwise, considerably lower average advertised download speeds were found in the other surveyed foreign jurisdictions. Of the group, the U.S. has the lowest average advertised speed at 12.8 Mbps.

However, individual service provider's policies on advertised mobile Internet service speeds can vary considerably. Verizon and AT&T, for instance, provide mobile Internet services in the U.S. using 4G LTE technology, yet the information on their websites (which is very limited)³⁸ suggests that their 4G LTE actual average download speeds are currently in the range of 14.4 Mbps. In contrast, Rogers advertise 4G LTE download speeds of up to 100 Mbps, and Bell and TELUS advertise rates of up to 75 Mbps. NTT in Japan and Orange in France also advertise 4G LTE download speeds of up to 150 Mbps. Consequently, differences in advertised speeds for the same technology can be significant.

In terms of wireless technology, surveyed service providers in Canada, the U.S., the U.K., France, Germany and Japan currently offer 4G LTE mobile Internet services. Otherwise, the surveyed service providers in the remaining countries generally offer 4G services with lower advertised download speeds of up to 42 Mbps.

Figure 9 below provides a comparison of 2014 Level 1 and 2 mobile Internet service basket prices for Canada and the seven surveyed foreign jurisdictions.



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As shown in the figure above, the average Canadian Level 1 mobile Internet price of \$43 is lower than rates in the U.S. and Japan, but considerably higher than those in all four surveyed European countries as well as Australia. While the Canadian rate is lower than the U.S., as noted, the surveyed plans in the U.S. provide a significantly higher average monthly data allowance compared to the

³⁸ As well, CSRs are unable to provide service speed information.

Canadian service plans (i.e., 2.9 GB versus 5.0 GB per month as shown in Table 16).

For the Level 2 service basket, the average Canadian mobile Internet price of \$64 is slightly lower than the U.S. and very similar to Japan. Otherwise, prices in the other surveyed countries are considerably lower than Canada.

Table A3.4 and Figures A3.4 a, b and c in Attachment 3 provide detailed historical mobile Internet price results for the period 2010 to 2014 for the Level 1 mobile Internet service basket and 2012 to 2014 for the Level 2 basket. As the data in Attachment 3 shows, relative to previous years' studies, Canada's Level 1 mobile Internet service basket ranking has remained relatively stable, while its Level 2 ranking has improved.

On balance, Canada's average Level 1 (2 GB/month) and Level 2 (5 GB/month) mobile Internet service prices fall on the high-side of the group of surveyed countries. On the other hand, Canadian advertised mobile Internet download speeds are among the highest of the surveyed countries (due to the availability of 4G LTE mobile wireless services in Canada).

7.0 BUNDLED SERVICES

7.1 Bundled Service Baskets

The following three bundled service baskets are included in the study:

- **Bundle 1:** wireline, broadband Internet and mobile wireless
- **Bundle 2:** wireline, broadband Internet and digital TV
- **Bundle 3:** wireline, broadband Internet, mobile wireless and digital TV

For the wireline, Internet and wireless mobile service elements in each bundle, Level 2 stand-alone service options are used. For the digital TV service element, a "basic" digital TV service option is included in the bundle. In a limited number of cases where Level 2 service options were not available or eligible for bundling discounts, higher level service options (e.g., Level 3 or 4) have been included.

7.2 Canadian Bundled Service Price Comparisons

All of the Canadian incumbent telephone companies included in this study are capable of offering all three defined service bundles. In the case of the surveyed cable companies, Rogers, Videotron and EastLink can provide all three service bundles.³⁹ Access Communications and Shaw, on the other hand, do not provide wireless services either directly or indirectly through a third party. Consequently, they are only able to provide Bundle 2. In Primus' case, it is only able to provide Bundle 1 since it does not offer digital TV services.

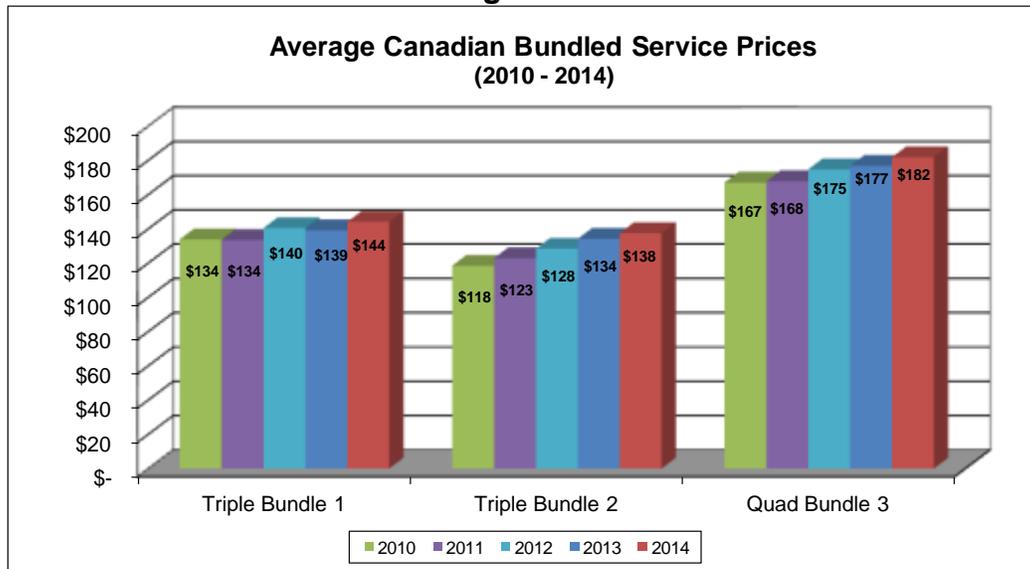
Basic digital TV packages can vary considerably across service providers in terms of TV channel inclusions and package prices. Based on the Canadian service offerings surveyed for the study, basic cable and IPTV service packages include between 30 and 70 channels, whereas basic satellite service packages include roughly 150 or more channels (of which many are time-shifted channels). Stand-alone prices vary considerably as well, ranging between \$30 and \$60, and averaging just over \$40 (excluding equipment fees). Consequently, differences in basic digital TV service prices can introduce a fair degree of variation in Bundle 2 and 3 prices.

Figure 10 provides a summary of Canadian average monthly prices for each of the three defined service bundles for the five year period 2010 to 2014. As the figure shows, the average prices for all three bundles increased in 2014 relative

³⁹ EastLink launched its own mobile wireless service in early 2013, which is included in its service bundles for the purpose of this study.

to last year. The average Bundle 1 price increased by roughly \$5 or 3.5%; the average Bundle 2 price increased by roughly \$4 or 2.5%; and lastly, the average Bundle 3 price increased by roughly \$5 or 2.8%. Consequently, all three bundle prices have trended upwards over the course of the last five years. However, it should be noted that the rates for all three bundles increased in 2012 relative to earlier years due to the changes in the definition of the broadband service basket component included in each bundle in that year.

Figure 10



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The available bundling discounts available to Canadian consumers vary considerably across the surveyed service provider bundling plans. For the three bundles included in the study, the average bundling discount amounted to 9% to 11%. This represents a monthly bundling savings of \$14 to \$18 compared to stand-alone prices. These discounts have on average increased slightly relative to last year.

Table A2.6 in Attachment 2 provides average bundled service prices by city and by bundle for the period 2008 to 2014.

7.3 International Bundled Service Price Comparisons

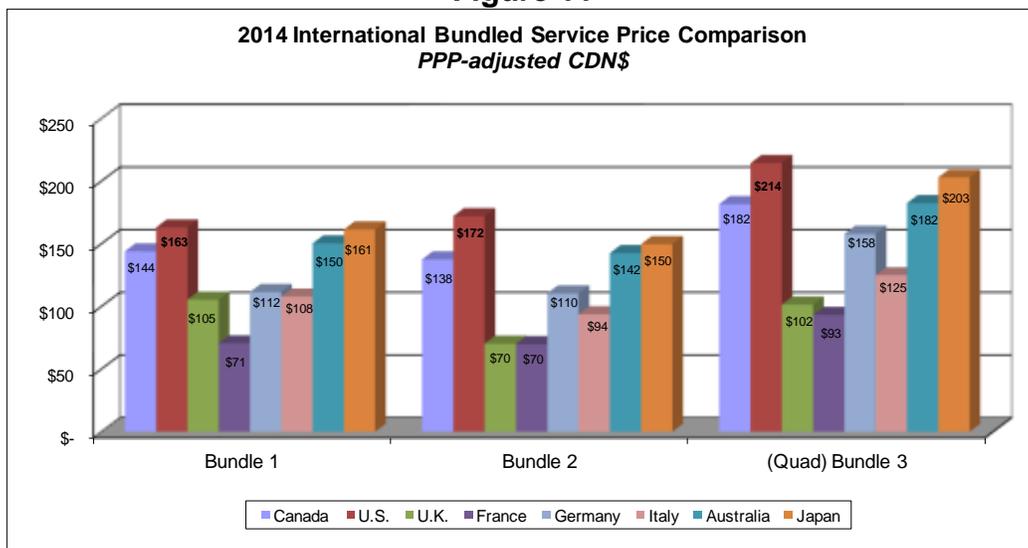
Surveyed foreign service providers capable of providing all three bundles include the incumbent telecom carriers in the U.S., France, Germany, Italy, Australia and Japan. In the U.K., BT had for some time provided wireless service (on a resale basis), but discontinued doing so in 2009. Consequently, Orange's Level 2 mobile wireless service (at stand-alone rates) has been included in BT's Bundles 1 and 3.

Some cable companies are also capable of providing all three bundles such as Virgin in the U.K., Numericable in France and Kabel Deutschland in Germany. In Japan, J:COM had for some time provided wireless service (on a resale basis via Willcom) but no longer does so. In this case, Willcom's mobile wireless service has been left as part of J:COM's bundles; however, there is no longer a bundling discount available for this service element. Otherwise, the U.S. cable companies included in the study, Comcast and Time Warner, do not provide wireless services and, therefore, do not offer packages that meet the Bundle 1 and 3 requirements.

As already noted, basic digital TV service packages can vary significantly by service provider in terms of the number of TV channels and prices, which complicates the comparison of bundles that include this service. Basic TV packages in the U.S., for instance, tend to offer a large number of TV channels (well over 100 on average), but at prices that are relatively expensive (i.e., roughly USD\$50 on average) compared to the surveyed service providers in the other countries included in the study. In contrast, in the U.K., France, Germany and Italy, basic digital TV services are included with broadband services for little or no additional cost. The basic digital TV service packages in these two cases are by far the least expensive of the surveyed jurisdictions included in the study. They also include among the highest number of TV channels (e.g., in the case of France, well over 100). The surveyed basic digital TV service packages in Canada's case fall in the middle ground between these two extremes in terms of average prices and number of basic-tier channels.

Figure 11 below provides a comparison of current average monthly prices for each of the three service bundles.

Figure 11



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As shown in the figure above, in the case of Bundle 1, the average monthly price in Canada of roughly \$144 is on the high side of the prices measured for surveyed group countries. Canada's average Bundle 1 price is lower than the U.S., Australia and Japan. On the other hand, it is well above the European rates available in the U.K., France, Germany and Italy. A similar result occurs in the case of Bundle 2 where the Canadian average monthly price is \$138. Once again, measured rates for this bundle are lower in Europe. Lastly, a similar relative ranking applies in the case of Bundle 3. In this case, the average Bundle 3 price in Canada is \$182.

More detailed historical bundled price information for the period 2008 to 2014 is provided in Table A3.5 and Figures A3.5 a, b and c in Attachment 3. As information in Attachment 3 shows, relative to the countries included in previous years' studies, Canada's middle to higher end ranking with respect to bundled services has changed little over the last few years.

In sum, average Canadian bundled service rates fall in the middle to high side of the group of countries surveyed for this study. While differences across countries in the underlying services included in the bundles (especially broadband and digital TV services) can make bundled service comparisons somewhat tenuous, it is noteworthy that Canadian bundled service rates continue to compare very favourably to those in the U.S., where service pricing and provisioning practices are similar to those in Canada.

ATTACHMENT 1 – SERVICE BASKETS

**TABLE A1.1
WIRELINE SERVICE BASKETS**

Local Minutes of Use	Level 1	Level 2	Level 3
Outgoing (55%)	220	550	880
Incoming (45%)	180	450	720
Total Minutes	400	1,000	1,600
Outgoing by Time of Day/Week			
Peak (40%)	88	220	352
Off-Peak (60%)	132	330	528
Outgoing LD	10% of total	20% of total	30% of total
National Minutes	16	70	150
U.S. Minutes	6	30	80
Other Int'l Minutes	-	10	34
Total	22	110	264
Outgoing to Mobile	15% of total	15% of total	15% of total
Local	33	60	100
National	-	22.5	32
International	-	-	-
Total	33	82.5	132
Average Call Length	3 min.	3 min.	3 min.
Optional Features			
Voice Mail		Yes	Yes
Caller ID		Yes	Yes
Other			Yes (bundled, if available)

**TABLE A1.2
MOBILE WIRELESS SERVICE BASKETS**

Minutes of Use / Month	Level 1	Level 2	Level 3	Level 4
Outgoing (60%)	90	270	720	Unlimited
Incoming (40%)	60	180	480	Nationwide
Total	150	450	1,200	(to fixed and mobile)
Time of Day/Week				
Peak (40%)	60	180	480	N/A
Off-Peak (60%)	90	270	720	
Outgoing LD	10% of total	10% of total	15% of total	
National	9	21	90	N/A
US	-	6	18	(Zero international calling)
Other	-	-	-	
Total	9	27	108	
Outgoing to Mobile	50% of total	50% of total	50% of total	
On-net (2/3)	30	90	240	N/A
Off-net (1/3)	15	45	120	
Total	45	135	360	

**TABLE A1.2
MOBILE WIRELESS SERVICE BASKETS**

Minutes of Use / Month	Level 1	Level 2	Level 3	Level 4
Average Call Length	3 min.	3 min.	3 min.	N/A
Features				
Voice Mail		Yes	Yes	Yes
Caller ID		Yes	Yes	Yes
Other			Yes	
Data				
SMS		300	300	Unlimited
Data Service			1 GB	2 GB

**TABLE A1.3
BROADBAND INTERNET SERVICE BASKETS**

Elements	Level 1	Level 2	Level 3	Level 4
Transmission Speed	Basic Services ≤ 3.0 Mbps	4 – 15 Mbps (highest available)	16 – 40 Mbps (highest available)	> 40 Mbps (highest available in target range of 41 to 100 Mbps)
Monthly Usage	7.5 GB	30 GB	75 GB	120 GB
Modem	No cost with contract or rental / 24 month amortization			

**TABLE A1.4
MOBILE INTERNET SERVICE BASKETS**

Elements	Level 1	Level 2
Monthly Usage	2 GB	5 GB
Transmission Speed	≥ 1.5 Mbps download (3G technology or higher)	
USB Modem	No cost with contract or rental / 24 month amortization	

**TABLE A1.5
BUNDLED SERVICE BASKETS**

Elements	Bundle 1 Triple-play	Bundle 2 Triple-play	Bundle 3 Quad-Play
Wireline	Wireline Level 2	Wireline Level 2	Wireline Level 2
Wireless	Wireless Level 2		Wireless Level 2
Broadband Internet	Broadband Level 2	Broadband Level 2	Broadband Level 2
Television		Basic Digital TV Package	Basic Digital TV Package

Note that where Level 2 service options are not eligible for bundling discounts, higher level services (i.e., Level 3 or 4) may be included in a bundle as long as the resulting bundled price is lower than the sum of the corresponding stand-alone Level 2 service component prices.

ATTACHMENT 2 – CANADIAN PRICE COMPARISONS

Table A2.1 – Canadian Wireline Prices

Baskets	Halifax	Montreal	Toronto	Regina	Vancouver	Average
Level 1 Basket (low-volume use, 400 min/month)						
2008	\$31.73	\$30.27	\$31.61	\$28.16	\$30.90	\$30.88
2009	\$32.23	\$28.92	\$32.51	\$28.16	\$25.92	\$29.80
2010	\$30.08	\$29.39	\$33.88	\$26.49	\$28.27	\$31.16
2011	\$31.79	\$27.33	\$34.63	\$26.52	\$34.52	\$32.06
2012	\$31.89	\$31.31	\$35.30	\$26.76	\$33.16	\$33.42
2013	\$32.04	\$32.85	\$38.45	\$26.86	\$33.12	\$35.33
2014	\$33.06	\$37.10	\$44.24	\$27.17	\$31.45	\$38.99
CAGR	0.7%	3.5%	5.8%	-0.6%	0.3%	4.0%
Level 2 Basket (average use, 1,000 min/month)						
2008	\$48.93	\$45.44	\$48.96	\$41.39	\$48.67	\$47.91
2009	\$53.61	\$52.01	\$57.78	\$41.39	\$34.68	\$50.05
2010	\$50.78	\$46.81	\$58.09	\$41.50	\$44.18	\$51.42
2011	\$47.34	\$46.72	\$54.66	\$41.52	\$44.62	\$49.81
2012	\$49.05	\$48.55	\$57.08	\$41.71	\$45.19	\$51.71
2013	\$51.56	\$54.58	\$62.50	\$39.94	\$43.63	\$55.77
2014	\$55.19	\$52.26	\$61.77	\$39.97	\$41.11	\$54.37
CAGR	2.0%	2.4%	3.9%	-0.6%	-2.8%	2.1%
Level 3 Basket (high-volume use, 1,600 min/month)						
2008	\$60.63	\$59.36	\$63.02	\$49.81	\$57.45	\$60.27
2009	\$66.34	\$61.68	\$67.59	\$49.56	\$51.51	\$61.55
2010	\$67.02	\$61.15	\$64.19	\$48.96	\$51.79	\$60.78
2011	\$58.35	\$60.97	\$61.36	\$48.99	\$57.59	\$60.22
2012	\$60.33	\$59.08	\$65.97	\$49.66	\$50.62	\$60.52
2013	\$64.58	\$60.94	\$65.84	\$49.11	\$52.69	\$61.53
2014	\$67.85	\$58.95	\$65.80	\$49.03	\$48.91	\$60.29
CAGR	1.9%	-0.1%	0.7%	-0.3%	-2.6%	0.0%

*Note that some generally minor changes in methodology apply year-to-year.
Averages calculated on a market share and population weighted basis.
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Table A2.2 – Canadian Mobile Wireless Prices

Baskets	Halifax	Montreal	Toronto	Regina	Vancouver	Average
Level 1 Basket (low-volume use, 150 min/month)						
2008	\$33.25	\$31.96	\$33.55	\$30.16	\$32.90	\$32.73
2009	\$32.48	\$33.24	\$33.34	\$29.44	\$33.32	\$33.03
2010	\$29.23	\$34.38	\$34.33	\$28.64	\$34.10	\$34.03
2011	\$29.24	\$34.47	\$34.45	\$29.59	\$31.94	\$33.73
2012	\$29.75	\$34.72	\$34.44	\$29.66	\$34.58	\$34.32
2013	\$30.76	\$30.63	\$31.09	\$28.88	\$30.06	\$30.71
2014	\$36.50	\$36.28	\$35.04	\$35.05	\$36.29	\$35.70
CAGR	1.6%	2.1%	0.7%	2.5%	1.6%	1.5%
Level 2 Basket (average use, 450 min and 300 text per month)						
2008	\$53.14	\$62.62	\$63.37	\$61.20	\$58.34	\$60.81
2009	\$48.73	\$59.17	\$59.20	\$44.44	\$59.30	\$57.78
2010	\$48.05	\$54.34	\$53.56	\$44.77	\$53.74	\$53.49
2011	\$47.39	\$51.50	\$49.99	\$48.19	\$50.86	\$50.51
2012	\$47.22	\$51.04	\$51.97	\$42.54	\$51.61	\$51.31
2013	\$43.44	\$44.78	\$45.40	\$44.86	\$43.93	\$44.86
2014	\$45.40	\$45.59	\$44.29	\$54.29	\$46.20	\$45.26
CAGR	-2.6%	-5.2%	-5.8%	-2.0%	-3.8%	-4.8%
Level 3 Basket (high-volume use, 1,200 min, 300 text and 1 GB data per month)						
2008	\$121.04	\$113.21	\$111.51	\$113.67	\$109.68	\$112.34
2009	\$105.61	\$104.38	\$102.20	\$94.64	\$101.24	\$103.24
2010	\$101.44	\$108.37	\$112.63	\$94.97	\$107.27	\$109.59
2011	\$96.73	\$98.73	\$100.76	\$96.69	\$99.61	\$99.69
2012	\$96.44	\$98.92	\$98.26	\$96.42	\$98.22	\$98.37
2013	\$94.40	\$93.78	\$93.89	\$77.07	\$93.96	\$93.59
2014	\$86.91	\$73.59	\$81.00	\$65.33	\$86.46	\$79.69
CAGR	-5.4%	-6.9%	-5.2%	-8.8%	-3.9%	-5.6%
Level 4 Basket (unlimited Canada-wide talk & text and 2 GB data per month)						
2014	\$89.23	\$92.29	\$92.81	\$65.62	\$97.69	\$92.99

Note that some generally minor changes in methodology apply year-to-year.
Averages calculated on a market share and population weighted basis.
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**Table A2.3 – 2014 Canadian Mobile Wireless Prices
Incumbents Primary versus Flanker Brands**

Baskets	Halifax	Montreal	Toronto	Regina	Vancouver	Average
Level 1 Basket (low-volume use, 150 min/month)						
Incumbents	\$36.50	\$36.28	\$35.04	\$35.05	\$36.29	\$35.70
Incumbent Flanker Brands	\$29.43	\$28.84	\$28.55	\$29.62	\$28.65	\$28.70
Percentage Differential	-19%	-21%	-19%	-15%	-21%	-20%
Level 2 Basket (average use, 450 min and 300 text per month)						
Incumbents	\$45.40	\$45.59	\$44.29	\$54.29	\$46.20	\$45.26
Incumbent Flanker Brands	\$32.63	\$32.55	\$32.17	\$32.82	\$32.15	\$32.31
Percentage Differential	-28%	-29%	-27%	-40%	-30%	-29%
Level 3 Basket (high-volume use, 1,200 min, 300 text and 1 GB data per month)						
Incumbents	\$86.91	\$73.59	\$81.00	\$65.33	\$86.46	\$79.69
Incumbent Flanker Brands	\$59.03	\$53.36	\$58.75	\$59.22	\$58.61	\$57.10
Percentage Differential	-32%	-27%	-27%	-9%	-32%	-28%
Level 4 Basket (unlimited Canada-wide talk & text and 2 GB data per month)						
Incumbents	\$89.23	\$92.29	\$92.81	\$65.62	\$97.69	\$92.99
Incumbent Flanker Brands	\$65.09	\$58.73	\$64.31	\$58.95	\$64.31	\$62.55
Percentage Differential	-27%	-36%	-31%	-10%	-34%	-33%

Incumbent prices based on market share and population-based weighted averages.

Incumbent flanker brands given equal weight – i.e., Bell Virgin and Solo, Rogers Fido and Chatr, TELUS Koodo given 1/3 weight each (although both Bell Solo and Rogers Chatr assumed to have relatively limited market share comparable to new entrants).

National averages are population weighted.

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Table A2.4 – Canadian Broadband Internet Service Prices

Baskets	Halifax	Montreal	Toronto	Regina	Vancouver	Average
Level 1 (speed, usage/mth)						
(i) ≤ 1.5 Mbps, 2 GB for 2008-11 and (ii) ≤ 3 Mbps, 5 GB for 2012-13, 7.5 GB in 2014						
2008	\$34.95	\$32.45	\$38.95	\$30.45	\$23.45	\$32.88
2009	\$35.95	\$28.43	\$35.45	\$30.45	\$24.95	\$30.98
2010	\$36.95	\$29.43	\$33.45	\$30.95	\$29.00	\$31.44
2011	\$36.15	\$36.90	\$34.15	\$32.52	\$33.00	\$34.85
2012	\$39.15	\$33.35	\$45.37	\$31.95	\$35.40	\$39.37
2013	\$42.15	-	-	\$31.95	\$39.00	\$38.91
2014	\$40.15	-	\$50.95	\$42.95	-	\$50.00
CAGR	<i>2.3%</i>	-	<i>4.6%</i>	<i>5.9%</i>	-	<i>7.2%</i>
Level 2 (speed, usage/mth)						
(i) 1.5 – 9 Mbps, 15 GB for 2008-11 and (ii) 4 - 15 Mbps, 20 GB for 2012-13, 30 GB in 2014						
2008	\$47.45	\$48.95	\$48.95	\$45.45	\$40.95	\$46.58
2009	\$48.45	\$50.43	\$50.95	\$45.45	\$38.45	\$47.26
2010	\$49.45	\$51.43	\$47.95	\$45.95	\$40.00	\$47.60
2011	\$50.75	\$52.83	\$49.33	\$48.52	\$45.65	\$49.79
2012	\$57.75	\$60.92	\$52.79	\$54.95	\$46.40	\$54.31
2013	\$51.15	\$55.60	\$47.18	\$54.95	\$53.51	\$51.20
2014	\$54.95	\$53.91	\$55.25	\$54.95	\$56.68	\$55.10
CAGR	<i>2.5%</i>	<i>1.6%</i>	<i>2.0%</i>	<i>3.2%</i>	<i>5.6%</i>	<i>2.8%</i>
Level 3 (speed, usage/mth)						
(i) 10 – 19 Mbps, 30 GB for 2008-11 and (ii) 16 - 40 Mbps, 50 GB for 2012-13, 75 GB in 2014						
2008	\$57.45	\$83.45	\$73.95	\$55.95	\$50.95	\$68.74
2009	\$58.45	\$64.40	\$62.45	\$55.95	\$53.45	\$60.08
2010	\$59.45	\$65.40	\$62.45	\$56.45	\$55.48	\$61.88
2011	\$60.75	\$66.33	\$65.35	\$56.75	\$55.00	\$63.44
2012	\$88.95	\$66.95	\$72.17	\$79.95	\$54.60	\$67.94
2013	\$77.95	\$67.05	\$64.35	\$79.95	\$60.69	\$65.18
2014	\$87.95	\$67.15	\$70.87	\$70.95	\$62.00	\$68.60
CAGR	<i>7.4%</i>	<i>-3.6%</i>	<i>-0.7%</i>	<i>4.0%</i>	<i>3.3%</i>	<i>0.0%</i>
Level 4 (speed, usage/mth)						
(i) > 20 Mbps, 50 GB for 2011 and (ii) > 40 Mbps, 75 GB for 2012-13, 120 GB in 2014						
2011	\$84.75	\$73.30	\$73.75	\$99.95	\$91.40	\$77.71
2012	\$138.95	\$82.95	\$106.98	-	\$74.90	\$94.39
2013	\$102.75	\$82.95	\$80.57	\$99.95	\$85.00	\$82.88
2014	\$99.55	\$84.75	\$86.87	\$105.95	\$86.00	\$86.46
CAGR	<i>5.5%</i>	<i>5.0%</i>	<i>5.6%</i>	<i>2.0%</i>	<i>-2.0%</i>	<i>3.6%</i>

Note that some generally minor changes in methodology apply year-to-year.

Averages calculated on a market share and population weighted basis.

“-“ means no surveyed service provider offer broadband service within the specified speed range.

Note that speed ranges and data usage per month has been increased as of 2012 for all four service levels which has had the effect of increasing prices in 2012 relative to 2011 in some cases.

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Table A2.5 – Canadian Mobile Internet Prices

Baskets	Halifax	Montreal	Toronto	Regina	Vancouver	Average
Level 1 Basket (2 GB usage per month)						
2010	\$54.15	\$54.15	\$54.15	\$56.23	\$54.16	\$54.19
2011	\$52.32	\$52.76	\$52.17	\$53.98	\$52.22	\$52.41
2012	\$53.05	\$52.56	\$52.51	\$53.05	\$52.51	\$52.55
2013	\$45.12	\$44.52	\$44.37	\$48.99	\$44.52	\$44.55
2014	\$43.75	\$43.22	\$43.19	\$47.08	\$43.30	\$43.30
CAGR	-5.2%	-5.5%	-5.5%	-4.3%	-5.4%	-5.5%
Level 2 Basket (average use, 450 min and 300 text per month)						
2012	\$66.38	\$60.94	\$65.59	\$69.55	\$70.22	\$65.11
2013	\$66.79	\$59.22	\$65.21	\$70.11	\$71.28	\$64.67
2014	\$67.08	\$59.49	\$65.60	\$68.75	\$65.90	\$63.90
CAGR	0.5%	-1.2%	0.0%	-0.6%	-3.1%	-0.9%

Averages calculated on a market share and population weighted basis.
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Table A2.6 – Canadian Bundled Service Prices

Baskets	Halifax	Montreal	Toronto	Regina	Vancouver	Average
Bundle 1 (Wireline, Broadband, Mobile)						
2008	\$139.86	\$141.61	\$152.20	\$140.02	\$152.47	\$146.96
2009	\$135.63	\$141.37	\$152.65	\$120.12	\$122.22	\$139.86
2010	\$132.23	\$135.16	\$139.75	\$125.12	\$118.30	\$133.83
2011	\$132.10	\$131.72	\$138.69	\$130.36	\$124.54	\$133.50
2012	\$134.44	\$140.06	\$146.09	\$133.85	\$129.11	\$140.47
2013	\$131.27	\$142.46	\$144.41	\$141.80	\$122.25	\$139.15
2014	\$130.02	\$147.46	\$147.28	\$143.80	\$133.21	\$144.06
CAGR	<i>-1.2%</i>	<i>0.7%</i>	<i>-0.5%</i>	<i>0.4%</i>	<i>-2.2%</i>	<i>-0.3%</i>
Bundle 2 (Wireline, Broadband, TV)						
2008	\$124.71	\$118.68	\$126.54	\$112.13	\$111.40	\$119.93
2009	\$121.14	\$123.46	\$129.71	\$115.13	\$110.31	\$122.43
2010	\$120.37	\$116.94	\$123.39	\$119.47	\$108.36	\$118.41
2011	\$121.46	\$119.09	\$129.92	\$127.52	\$112.05	\$122.87
2012	\$124.19	\$127.91	\$135.81	\$131.56	\$111.81	\$128.44
2013	\$127.95	\$139.67	\$140.25	\$133.57	\$111.87	\$134.19
2014	\$144.34	\$134.74	\$145.16	\$124.63	\$123.57	\$137.51
CAGR	<i>2.5%</i>	<i>2.1%</i>	<i>2.3%</i>	<i>1.8%</i>	<i>1.7%</i>	<i>2.3%</i>
Bundle 3 (Wireline, Broadband, Mobile, TV)						
2008	\$178.86	\$182.13	\$183.94	\$148.97	\$186.47	\$181.31
2009	\$169.03	\$181.24	\$182.81	\$142.07	\$151.22	\$172.68
2010	\$169.19	\$168.65	\$169.82	\$145.81	\$158.98	\$167.01
2011	\$170.01	\$164.24	\$177.48	\$160.04	\$150.77	\$167.81
2012	\$171.85	\$171.99	\$179.85	\$181.58	\$166.61	\$174.71
2013	\$165.50	\$179.99	\$183.73	\$186.56	\$155.97	\$176.80
2014	\$180.02	\$179.87	\$186.56	\$173.70	\$174.55	\$181.81
CAGR	<i>0.1%</i>	<i>-0.2%</i>	<i>0.2%</i>	<i>2.6%</i>	<i>-1.1%</i>	<i>0.0%</i>

Note that some generally minor changes in methodology apply year-to-year.

Averages calculated on a market share and population weighted basis.

Note that bundle prices in 2012 have increased relative to 2011, in some cases, due to the changes in the broadband service speed ranges introduced in that year's study.

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ATTACHMENT 3 – INTERNATIONAL PRICE COMPARISONS

Table A3.1 - International Wireline Prices

Baskets		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Own Currency									
Wireline Level 1	2008	\$30.88	\$31.68	£17.14	€ 22.43	\$53.84			
	2009	\$29.80	\$31.56	£18.57	€ 22.95	\$54.91			
	2010	\$31.16	\$32.63	£19.35	€ 23.29	\$54.35	¥2,767		
	2011	\$32.06	\$34.23	£20.58	€ 26.71	\$55.81	¥2,766		
	2012	\$33.42	\$35.77	£18.04	€ 22.45	\$56.60	¥2,766		
	2013	\$35.33	\$35.85	£18.21	€ 23.27	\$57.87	¥2,741		
	2014	\$38.99	\$33.94	£20.10	€ 23.88	\$57.35	¥2,737	€ 23.43	€ 26.56
	CAGR	4.0%	1.2%	2.7%	1.1%	1.1%	-0.3%		
Wireline Level 2	2008	\$47.91	\$56.64	£24.24	€ 41.25	\$104.43			
	2009	\$50.05	\$56.92	£26.19	€ 41.22	\$105.95			
	2010	\$51.42	\$56.76	£26.15	€ 41.10	\$105.28	¥5,416		
	2011	\$49.81	\$56.77	£27.66	€ 38.68	\$88.87	¥5,555		
	2012	\$51.71	\$57.09	£25.30	€ 36.98	\$91.81	¥5,561		
	2013	\$55.77	\$55.36	£24.33	€ 36.04	\$96.30	¥5,554		
	2014	\$54.37	\$52.41	£25.85	€ 33.83	\$82.27	¥5,659	€ 36.82	€ 33.02
	CAGR	2.1%	-1.3%	1.1%	-3.3%	-3.9%	1.1%		
Wireline Level 3	2008	\$60.27	\$66.21	£32.87	€ 48.20	\$117.00			
	2009	\$61.55	\$65.33	£36.11	€ 49.48	\$117.00			
	2010	\$60.78	\$63.69	£36.17	€ 47.76	\$116.14	¥8,430		
	2011	\$60.22	\$60.76	£36.45	€ 48.12	\$99.51	¥8,578		
	2012	\$60.52	\$60.49	£35.54	€ 44.94	\$109.14	¥8,587		
	2013	\$61.53	\$59.45	£35.25	€ 38.19	\$120.00	¥8,746		
	2014	\$60.29	\$56.56	£34.11	€ 35.65	\$91.35	¥8,822	€ 39.02	€ 43.91
	CAGR	0.0%	-2.6%	0.6%	-4.9%	-4.0%	1.1%		
CDN\$ - PPP									
Wireline Level 1	2008	\$30.88	\$37.82	\$32.32	\$28.73	\$43.35			
	2009	\$29.80	\$39.45	\$35.24	\$31.24	\$45.20			
	2010	\$31.16	\$39.75	\$35.32	\$31.53	\$44.45	\$27.23		
	2011	\$32.06	\$44.84	\$34.35	\$37.86	\$45.86	\$29.55		
	2012	\$33.42	\$46.84	\$28.22	\$32.34	\$46.57	\$29.84		
	2013	\$35.33	\$45.88	\$31.68	\$33.53	\$46.30	\$30.45		
	2014	\$38.99	\$43.13	\$33.28	\$35.10	\$46.80	\$31.61	\$36.55	\$41.04
	CAGR	4.0%	2.2%	0.5%	3.4%	1.3%	3.8%		
Wireline Level 2	2008	\$47.91	\$67.63	\$45.71	\$52.84	\$84.09			
	2009	\$50.05	\$71.15	\$49.68	\$56.10	\$87.22			

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	2010	\$51.42	\$69.13	\$47.74	\$55.63	\$86.10	\$53.30		
	2011	\$49.81	\$74.37	\$46.18	\$54.83	\$73.02	\$59.33		
	2012	\$51.71	\$74.75	\$39.57	\$53.29	\$75.55	\$60.00		
	2013	\$55.77	\$70.85	\$42.35	\$51.93	\$77.05	\$61.70		
	2014	\$54.37	\$66.61	\$42.81	\$49.72	\$67.13	\$65.36	\$57.46	\$51.02
	CAGR	2.1%	-0.3%	-1.1%	-1.0%	-3.7%	5.2%		
Wireline Level 3	2008	\$60.27	\$79.05	\$61.99	\$61.74	\$94.21			
	2009	\$61.55	\$81.66	\$68.51	\$67.35	\$96.32			
	2010	\$60.78	\$77.58	\$66.03	\$64.65	\$94.98	\$82.95		
	2011	\$60.22	\$79.59	\$60.86	\$68.20	\$81.77	\$91.61		
	2012	\$60.52	\$79.21	\$55.60	\$64.76	\$89.81	\$92.65		
	2013	\$61.53	\$76.08	\$61.35	\$55.03	\$96.00	\$97.17		
	2014	\$60.29	\$71.88	\$56.48	\$52.39	\$74.54	\$101.90	\$60.89	\$67.85
	CAGR	0.0%	-1.6%	-1.5%	-2.7%	-3.8%	5.3%		
CDN\$ - Exchange Rate									
		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Wireline Level 1	2008	\$30.88	\$31.52	\$34.02	\$34.21	\$49.26			
	2009	\$29.80	\$39.45	\$33.25	\$37.64	\$46.12			
	2010	\$31.16	\$34.27	\$31.54	\$33.54	\$51.09	\$33.21		
	2011	\$32.06	\$33.71	\$32.72	\$36.06	\$55.25	\$33.20		
	2012	\$33.42	\$36.31	\$28.50	\$29.40	\$59.71	\$35.95		
	2013	\$35.33	\$35.57	\$28.80	\$30.76	\$60.13	\$30.15		
	2014	\$38.99	\$37.50	\$36.98	\$36.18	\$57.07	\$30.11	\$35.49	\$40.24
	CAGR	4.0%	2.9%	1.4%	0.9%	2.5%	-2.4%		
Wireline Level 2	2008	\$47.91	\$56.36	\$48.11	\$62.91	\$95.55			
	2009	\$50.05	\$71.15	\$46.87	\$67.59	\$89.00			
	2010	\$51.42	\$59.59	\$42.62	\$59.18	\$98.96	\$65.00		
	2011	\$49.81	\$55.92	\$43.98	\$52.22	\$87.98	\$66.67		
	2012	\$51.71	\$57.95	\$39.97	\$48.45	\$96.86	\$72.30		
	2013	\$55.77	\$54.92	\$38.50	\$47.64	\$100.06	\$61.09		
	2014	\$54.37	\$57.92	\$47.57	\$51.26	\$81.86	\$62.25	\$55.79	\$50.02
	CAGR	2.1%	0.5%	-0.2%	-3.4%	-2.5%	-1.1%		
Wireline Level 3	2008	\$60.27	\$65.88	\$65.25	\$73.50	\$107.06			
	2009	\$61.55	\$81.66	\$64.63	\$81.15	\$98.28			
	2010	\$60.78	\$66.88	\$58.96	\$68.78	\$109.17	\$101.16		
	2011	\$60.22	\$59.85	\$57.96	\$64.96	\$98.52	\$102.93		
	2012	\$60.52	\$61.40	\$56.16	\$58.88	\$115.14	\$111.63		
	2013	\$61.53	\$58.98	\$55.77	\$50.49	\$124.68	\$96.21		
	2014	\$60.29	\$62.50	\$62.76	\$54.01	\$90.90	\$97.04	\$59.12	\$66.52
	CAGR	0.0%	-0.9%	-0.6%	-5.0%	-2.7%	-1.0%		

Canadian and International Price Comparisons – 2014 Update

Note that some generally minor changes in methodology apply year-to-year.

For each year, the latest available OECD Purchasing Power Parity (PPP) indexes along with corresponding market exchange rates were used to convert foreign prices into PPP-adjusted and unadjusted Canadian dollars.

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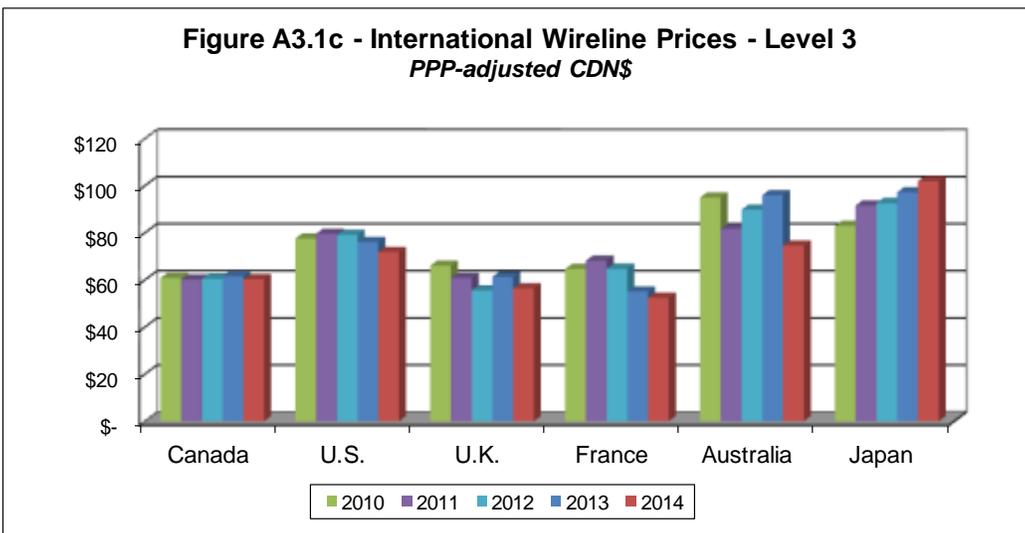
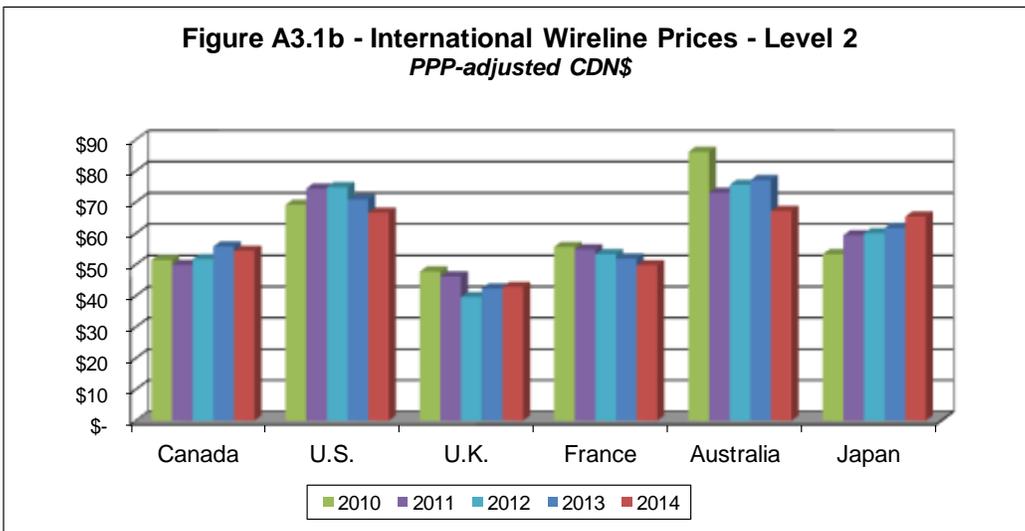
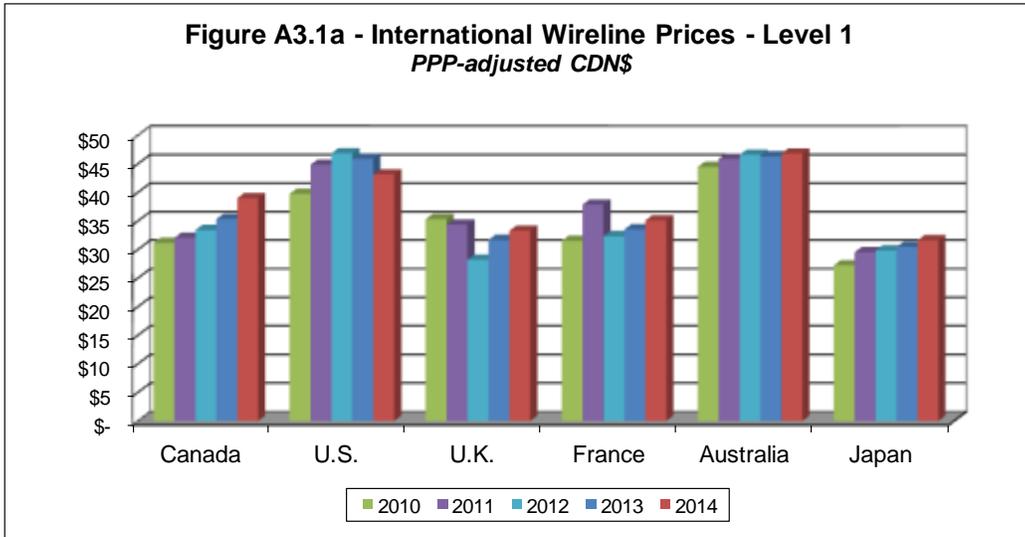


Table A3.2 - International Mobile Wireless Prices

Baskets		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Own Currency									
Wireless Level 1	2008	\$32.73	\$34.27	£14.09	€ 18.39	\$27.27			
	2009	\$33.03	\$34.01	£12.82	€ 18.64	\$24.27			
	2010	\$34.03	\$33.20	£12.77	€ 19.61	\$23.18	¥2,459		
	2011	\$33.73	\$25.48	£11.17	€ 18.44	\$25.50	¥2,368		
	2012	\$34.32	\$25.80	£11.00	€ 16.72	\$27.27	¥2,366		
	2013	\$30.71	\$25.85	£12.63	€ 14.04	\$27.27	¥2,528		
	2014	\$35.70	\$23.88	£15.98	€ 14.12	\$30.99	¥2,501	€ 10.69	€ 7.02
	CAGR		1.5%	-5.8%	2.1%	-4.3%	2.2%	0.4%	
Wireless Level 2	2008	\$60.81	\$54.06	£28.63	€ 43.95	\$40.86			
	2009	\$57.78	\$53.10	£23.57	€ 45.19	\$44.55			
	2010	\$53.49	\$49.75	£20.41	€ 50.76	\$43.60	¥4,506		
	2011	\$50.51	\$52.43	£19.62	€ 52.81	\$44.99	¥4,601		
	2012	\$51.31	\$55.71	£24.57	€ 42.42	\$42.00	¥4,567		
	2013	\$44.86	\$59.50	£22.33	€ 30.59	\$43.79	¥3,993		
	2014	\$45.26	\$44.00	£24.86	€ 25.55	\$47.42	¥4,414	€ 23.37	€ 21.75
	CAGR		-4.8%	-3.4%	-2.3%	-8.6%	2.5%	-0.5%	
Wireless Level 3	2008	\$112.34	\$113.67	£47.85	€ 86.23	\$120.16			
	2009	\$103.24	\$106.06	£40.25	€ 80.13	\$113.14			
	2010	\$109.59	\$101.81	£38.06	€ 80.80	\$112.41	¥11,909		
	2011	\$99.69	\$106.12	£38.50	€ 71.08	\$89.90	¥11,256		
	2012	\$98.37	\$108.30	£44.30	€ 58.83	\$63.61	¥10,984		
	2013	\$93.59	\$113.93	£36.50	€ 40.87	\$61.92	¥11,273		
	2014	\$79.69	\$72.02	£43.56	€ 43.33	\$88.37	¥12,112	€ 45.59	€ 43.40
	CAGR		-5.6%	-7.3%	-1.6%	-10.8%	-5.0%	0.4%	
Wireless Level 4	2014	\$92.99	\$86.00	£35.25	€ 34.12	\$104.00		€ 51.67	€ 39.81
CDN\$ - PPP									
Wireless Level 1	2008	\$32.73	\$40.92	\$26.57	\$23.55	\$21.96			
	2009	\$33.03	\$42.51	\$24.33	\$25.37	\$19.98			
	2010	\$34.03	\$40.43	\$23.31	\$26.54	\$18.96	\$24.20		
	2011	\$33.73	\$33.38	\$18.64	\$26.13	\$20.95	\$25.29		
	2012	\$34.32	\$33.78	\$17.21	\$24.09	\$22.44	\$25.53		
	2013	\$30.71	\$33.08	\$21.97	\$20.24	\$21.82	\$28.09		
	2014	\$35.70	\$30.34	\$26.46	\$20.75	\$25.28	\$28.88	\$16.68	\$10.85
	CAGR		1.5%	-4.9%	-0.1%	-2.1%	2.4%	4.5%	
Wireless Level 2	2008	\$60.81	\$64.54	\$53.98	\$56.30	\$32.90			
	2009	\$57.78	\$66.38	\$44.73	\$61.51	\$36.67			

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	2010	\$53.49	\$60.60	\$37.27	\$68.70	\$35.65	\$44.34		
	2011	\$50.51	\$68.69	\$32.75	\$74.86	\$36.97	\$49.14		
	2012	\$51.31	\$72.94	\$38.43	\$61.13	\$34.56	\$49.28		
	2013	\$44.86	\$76.14	\$38.85	\$44.08	\$35.04	\$44.36		
	2014	\$45.26	\$55.91	\$41.17	\$37.55	\$38.69	\$50.98	\$36.48	\$33.61
	CAGR	<i>-4.8%</i>	<i>-2.4%</i>	<i>-4.4%</i>	<i>-6.5%</i>	<i>2.7%</i>	<i>3.6%</i>		
Wireless Level 3	2008	\$112.34	\$135.72	\$90.23	\$110.46	\$96.75			
	2009	\$103.24	\$132.58	\$76.36	\$109.08	\$93.13			
	2010	\$109.59	\$124.01	\$69.49	\$109.37	\$91.93	\$117.19		
	2011	\$99.69	\$139.03	\$64.27	\$100.75	\$73.87	\$120.21		
	2012	\$98.37	\$141.80	\$69.30	\$84.77	\$52.35	\$118.51		
	2013	\$93.59	\$145.79	\$63.52	\$58.90	\$49.54	\$125.24		
	2014	\$79.69	\$91.52	\$72.14	\$63.68	\$72.10	\$139.90	\$71.15	\$67.06
	CAGR	<i>-5.6%</i>	<i>-6.4%</i>	<i>-3.7%</i>	<i>-8.8%</i>	<i>-4.8%</i>	<i>4.5%</i>		
Wireless Level 4	2014	\$92.99	\$109.28	\$58.37	\$50.14	\$84.85		\$80.63	\$61.52
CDN\$ - Exchange Rate									
		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Wireless Level 1	2008	\$32.73	\$34.10	\$27.97	\$28.04	\$24.95			
	2009	\$33.03	\$42.51	\$22.96	\$30.56	\$20.39			
	2010	\$34.03	\$34.86	\$20.81	\$28.23	\$21.79	\$29.51		
	2011	\$33.73	\$25.10	\$17.76	\$24.89	\$25.25	\$28.42		
	2012	\$34.32	\$26.19	\$17.38	\$21.90	\$28.77	\$30.76		
	2013	\$30.71	\$25.64	\$19.98	\$18.57	\$28.34	\$27.81		
	2014	\$35.70	\$26.38	\$29.40	\$21.39	\$30.83	\$27.51	\$16.19	\$10.64
	CAGR	<i>1.5%</i>	<i>-4.2%</i>	<i>0.8%</i>	<i>-4.4%</i>	<i>3.6%</i>	<i>-1.7%</i>		
Wireless Level 2	2008	\$60.81	\$53.79	\$56.83	\$67.03	\$37.39			
	2009	\$57.78	\$66.38	\$42.19	\$74.11	\$37.42			
	2010	\$53.49	\$52.24	\$33.27	\$73.09	\$40.98	\$40.98		
	2011	\$50.51	\$51.64	\$31.19	\$71.30	\$44.54	\$55.21		
	2012	\$51.31	\$56.54	\$38.82	\$55.58	\$44.31	\$59.38		
	2013	\$44.86	\$59.03	\$35.32	\$40.44	\$45.50	\$43.92		
	2014	\$45.26	\$48.62	\$45.74	\$38.71	\$47.18	\$48.56	\$35.41	\$32.95
	CAGR	<i>-4.8%</i>	<i>-1.7%</i>	<i>-3.6%</i>	<i>-8.7%</i>	<i>4.0%</i>	<i>4.3%</i>		
Wireless Level 3	2008	\$112.34	\$113.10	\$94.98	\$131.50	\$109.95			
	2009	\$103.24	\$132.58	\$72.04	\$131.42	\$95.03			
	2010	\$109.59	\$106.90	\$62.04	\$116.35	\$105.67	\$105.67		
	2011	\$99.69	\$104.53	\$61.21	\$95.96	\$89.00	\$135.07		
	2012	\$98.37	\$109.92	\$70.00	\$77.07	\$67.11	\$142.79		
	2013	\$93.59	\$113.02	\$57.74	\$54.03	\$64.34	\$124.00		
	2014	\$79.69	\$79.58	\$80.16	\$65.65	\$87.92	\$133.24	\$69.08	\$65.75

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	CAGR	-5.6%	-5.7%	-2.8%	-10.9%	-3.7%	6.0%		
Wireless Level 4	2014	\$92.99	\$95.03	\$64.86	\$51.69	\$103.48		\$78.28	\$60.32

*Note that some generally minor changes in methodology apply year-to-year.
For each year, the latest available OECD Purchasing Power Parity (PPP) indexes along with corresponding market exchange rates were used to convert foreign prices into PPP-adjusted and unadjusted Canadian dollars.
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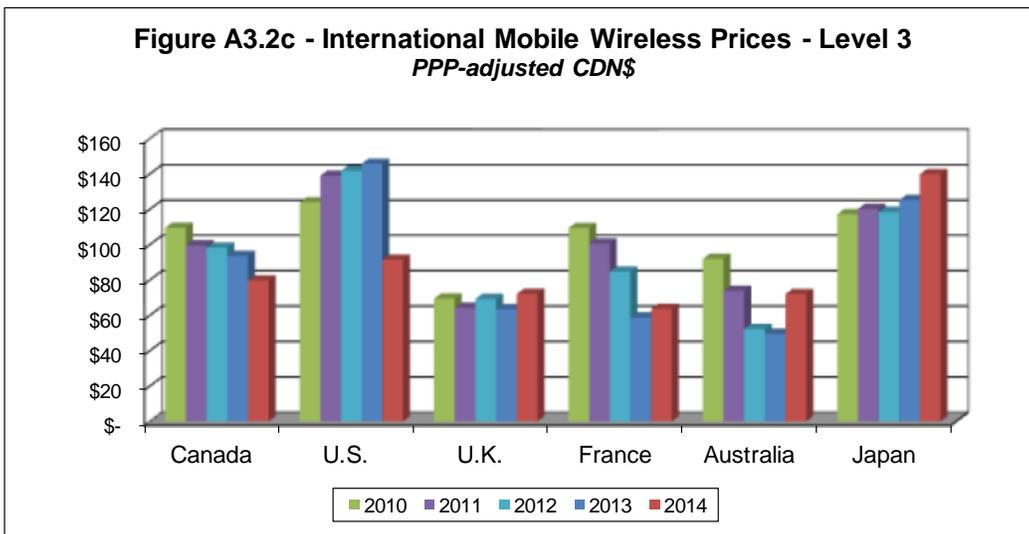
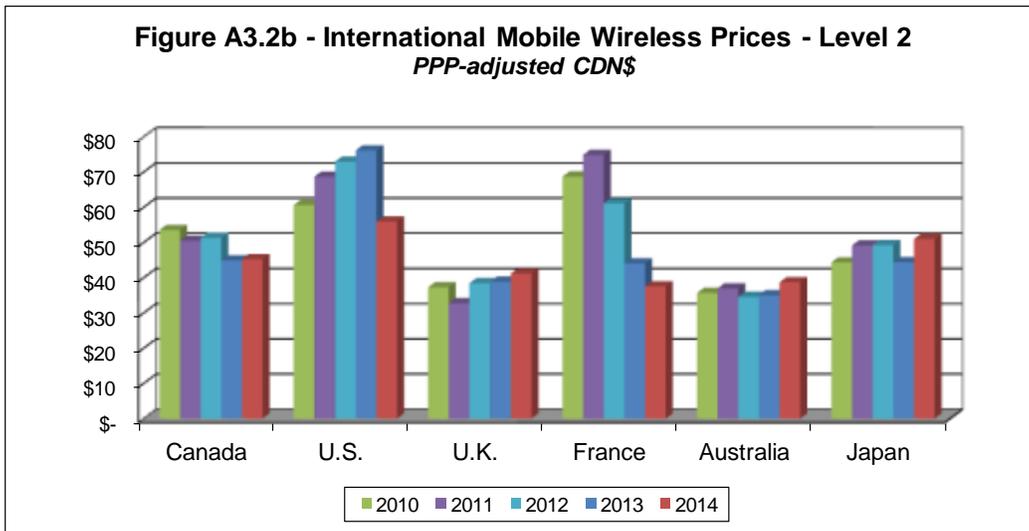
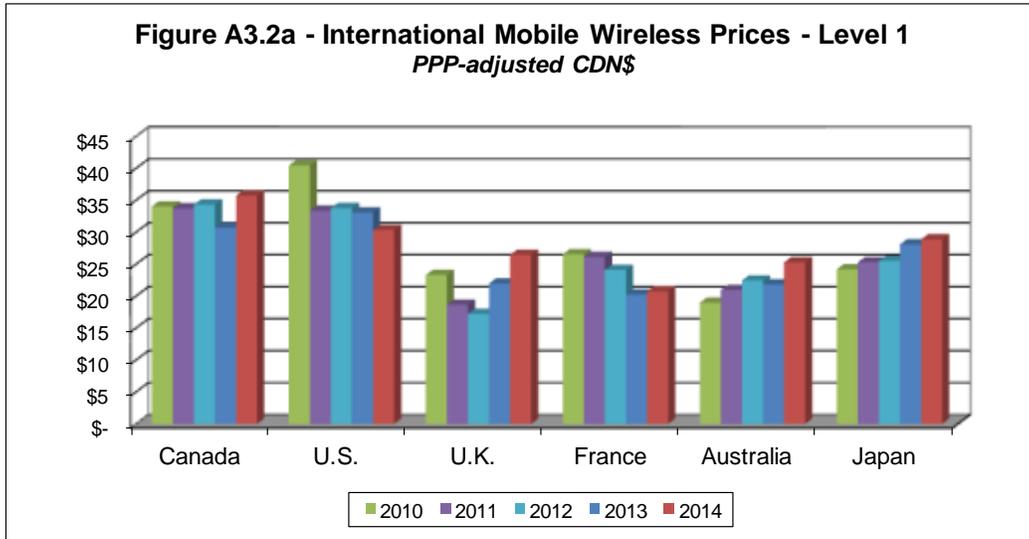


Table A3.3 - International Broadband Internet Service Prices

Baskets		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Own Currency									
Broadband Level 1	2008	\$32.88	\$28.28	£15.87	€ 32.97	\$53.15			
	2009	\$30.98	\$32.15	N.A.	€ 32.97	\$50.18			
	2010	\$31.44	\$32.52	N.A.	N.A.	\$42.69	¥4,038		
	2011	\$34.85	\$38.97	N.A.	€ 19.98	\$36.32	¥4,038		
	2012	\$39.37	\$43.72	N.A.	N.A.	N.A.	¥4,678		
	2013	\$38.91	\$40.93	N.A.	N.A.	N.A.	¥4,100		
	2014	\$50.00	\$49.20	N.A.	N.A.	N.A.	¥4,896	N.A.	N.A.
	CAGR	<i>7.2%</i>	<i>9.7%</i>				<i>4.9%</i>		
Broadband Level 2	2008	\$46.58	\$46.88	£23.36	€ 35.77	\$77.69			
	2009	\$47.26	\$46.34	£15.93	€ 35.77	\$77.45			
	2010	\$47.60	\$48.41	£22.22	€ 32.53	\$63.60	¥5,036		
	2011	\$49.79	\$49.72	£24.39	€ 33.44	\$69.05	¥5,036		
	2012	\$54.31	\$60.21	£19.50	€ 32.60	\$72.68	¥5,162		
	2013	\$51.20	\$63.62	£18.88	N.A.	\$72.68	¥4,728		
	2014	\$55.10	\$57.38	£18.25	N.A.	\$62.11	¥5,251	€ 16.72	€ 33.82
	CAGR	<i>2.8%</i>	<i>3.4%</i>	<i>-4.0%</i>		<i>-3.7%</i>	<i>1.0%</i>		
Broadband Level 3	2008	\$68.74	\$56.45	£27.96	€ 38.57	\$94.97			
	2009	\$60.08	\$56.33	£18.94	€ 35.07	\$94.73			
	2010	\$61.88	\$61.79	£25.33	€ 42.44	\$90.87	¥7,332		
	2011	\$63.44	\$60.76	£24.01	€ 46.82	\$72.68	¥5,104		
	2012	\$67.94	\$74.08	£26.14	€ 31.97	\$74.96	¥5,503		
	2013	\$65.18	\$77.44	£24.71	€ 34.24	\$71.38	¥5,537		
	2014	\$68.60	\$62.77	£28.31	€ 34.80	\$82.65	¥5,531	€ 24.55	€ 34.25
	CAGR	<i>0.0%</i>	<i>1.8%</i>	<i>0.2%</i>	<i>-1.7%</i>	<i>-2.3%</i>	<i>-6.8%</i>		
Broadband Level 4	2011	\$77.71	\$72.57	£29.99	€ 35.12	\$81.77	¥5,595		
	2012	\$94.39	\$122.94	£37.50	€ 43.28	\$99.95	¥5,806		
	2013	\$82.88	\$96.33	£30.64	€ 37.88	\$90.86	¥5,841		
	2014	\$86.46	\$81.19	£28.84	€ 38.09	\$86.20	¥5,864	€ 37.50	€ 39.98
	CAGR	<i>3.6%</i>	<i>3.8%</i>	<i>-1.3%</i>	<i>2.7%</i>	<i>1.8%</i>	<i>1.6%</i>		
CDN\$ - PPP									
Broadband Level 1	2008	\$32.88	\$33.77	\$29.93	\$42.23	\$42.79			
	2009	\$30.98	\$40.19	N.A.	\$44.87	\$41.31			
	2010	\$31.44	\$39.61	N.A.	N.A.	\$34.91	\$39.73		
	2011	\$34.85	\$51.06	N.A.	\$28.33	\$29.84	\$43.13		
	2012	\$39.37	\$57.24	N.A.	N.A.	N.A.	\$50.48		
	2013	\$38.91	\$52.38	N.A.	N.A.	N.A.	\$45.55		
	2014	\$50.00	\$62.53	N.A.	N.A.	N.A.	\$56.55	N.A.	N.A.

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	CAGR	<i>7.2%</i>	<i>10.8%</i>				<i>9.2%</i>		
Broadband Level 2	2008	\$46.58	\$55.97	\$44.05	\$45.82	\$62.56			
	2009	\$47.26	\$57.92	\$30.22	\$48.69	\$63.76			
	2010	\$47.60	\$58.97	\$40.57	\$44.03	\$52.01	\$49.55		
	2011	\$49.79	\$65.14	\$40.72	\$47.41	\$56.74	\$53.79		
	2012	\$54.31	\$78.84	\$30.50	\$46.97	\$59.81	\$55.70		
	2013	\$51.20	\$81.42	\$32.85	N.A.	\$58.15	\$52.53		
	2014	\$55.10	\$72.91	\$30.22	N.A.	\$50.67	\$60.65	\$26.09	\$52.26
	CAGR	<i>2.8%</i>	<i>4.5%</i>	<i>-6.1%</i>		<i>-3.5%</i>	<i>5.2%</i>		
Broadband Level 3	2008	\$68.74	\$67.40	\$52.72	\$49.41	\$76.47			
	2009	\$60.08	\$70.41	\$35.93	\$47.73	\$77.98			
	2010	\$61.88	\$75.26	\$46.24	\$57.45	\$74.32	\$72.15		
	2011	\$63.44	\$79.60	\$40.09	\$66.37	\$59.72	\$54.52		
	2012	\$67.94	\$97.00	\$40.88	\$46.07	\$61.69	\$59.37		
	2013	\$65.18	\$99.10	\$43.01	\$49.34	\$57.10	\$61.52		
	2014	\$68.60	\$79.76	\$46.89	\$51.15	\$67.44	\$63.88	\$38.30	\$52.92
	CAGR	<i>0.0%</i>	<i>2.8%</i>	<i>-1.9%</i>	<i>0.6%</i>	<i>-2.1%</i>	<i>-3.0%</i>		
Broadband Level 4	2011	\$77.71	\$95.07	\$50.07	\$49.79	\$67.19	\$59.76		
	2012	\$94.39	\$160.97	\$58.66	\$62.36	\$82.25	\$62.65		
	2013	\$82.88	\$123.27	\$53.31	\$54.58	\$72.69	\$64.89		
	2014	\$86.46	\$103.17	\$47.76	\$55.98	\$70.33	\$67.73	\$58.52	\$61.79
	CAGR	<i>3.6%</i>	<i>2.8%</i>	<i>-1.6%</i>	<i>4.0%</i>	<i>1.5%</i>	<i>4.3%</i>		
CDN\$ - Exchange Rate									
		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Broadband Level 1	2008	\$32.88	\$28.14	\$31.51	\$50.27	\$48.63			
	2009	\$30.98	\$40.19	N.A.	\$54.06	\$42.15			
	2010	\$31.44	\$34.15	N.A.	N.A.	\$40.13	\$48.46		
	2011	\$34.85	\$38.39	N.A.	\$26.98	\$35.96	\$48.46		
	2012	\$39.37	\$44.37	N.A.	N.A.	N.A.	\$60.82		
	2013	\$38.91	\$40.60	N.A.	N.A.	N.A.	\$45.10		
	2014	\$50.00	\$54.37	N.A.	N.A.	N.A.	\$53.86	N.A.	N.A.
	CAGR	<i>7.2%</i>	<i>11.6%</i>				<i>2.7%</i>		
Broadband Level 2	2008	\$46.58	\$46.64	\$46.37	\$54.54	\$71.09			
	2009	\$47.26	\$57.92	\$28.51	\$58.66	\$65.06			
	2010	\$47.60	\$50.83	\$36.22	\$46.84	\$59.79	\$60.43		
	2011	\$49.79	\$48.98	\$38.78	\$45.15	\$68.36	\$60.43		
	2012	\$54.31	\$61.12	\$30.81	\$42.70	\$76.68	\$67.10		
	2013	\$51.20	\$63.11	\$29.87	N.A.	\$75.52	\$52.01		
	2014	\$55.10	\$63.40	\$33.58	N.A.	\$61.80	\$57.76	\$25.33	\$51.24
	CAGR	<i>2.8%</i>	<i>5.2%</i>	<i>-5.2%</i>		<i>-2.3%</i>	<i>-1.1%</i>		

Canadian and International Price Comparisons – 2014 Update

Broadband Level 3	2008	\$68.74	\$56.17	\$55.50	\$58.82	\$86.89			
	2009	\$60.08	\$70.41	\$33.90	\$57.51	\$79.57			
	2010	\$61.88	\$64.88	\$41.29	\$61.12	\$85.42	\$87.99		
	2011	\$63.44	\$59.85	\$38.18	\$63.21	\$71.96	\$61.25		
	2012	\$67.94	\$75.19	\$41.29	\$41.88	\$79.09	\$71.54		
	2013	\$65.18	\$76.82	\$39.10	\$45.27	\$74.16	\$60.91		
	2014	\$68.60	\$69.36	\$52.10	\$52.73	\$82.24	\$60.84	\$37.19	\$51.88
	CAGR	0.0%	3.6%	-1.0%	-1.8%	-0.9%	-8.8%		
Broadband Level 4	2011	\$77.71	\$71.48	\$47.69	\$47.41	\$80.96	\$67.15		
	2012	\$94.39	\$124.78	\$59.25	\$56.69	\$105.45	\$75.48		
	2013	\$82.88	\$95.56	\$48.47	\$50.08	\$94.41	\$64.25		
	2014	\$86.46	\$89.71	\$53.07	\$57.71	\$85.77	\$64.51	\$56.82	\$60.58
		CAGR	3.6%	7.9%	3.6%	6.8%	1.9%	-1.3%	

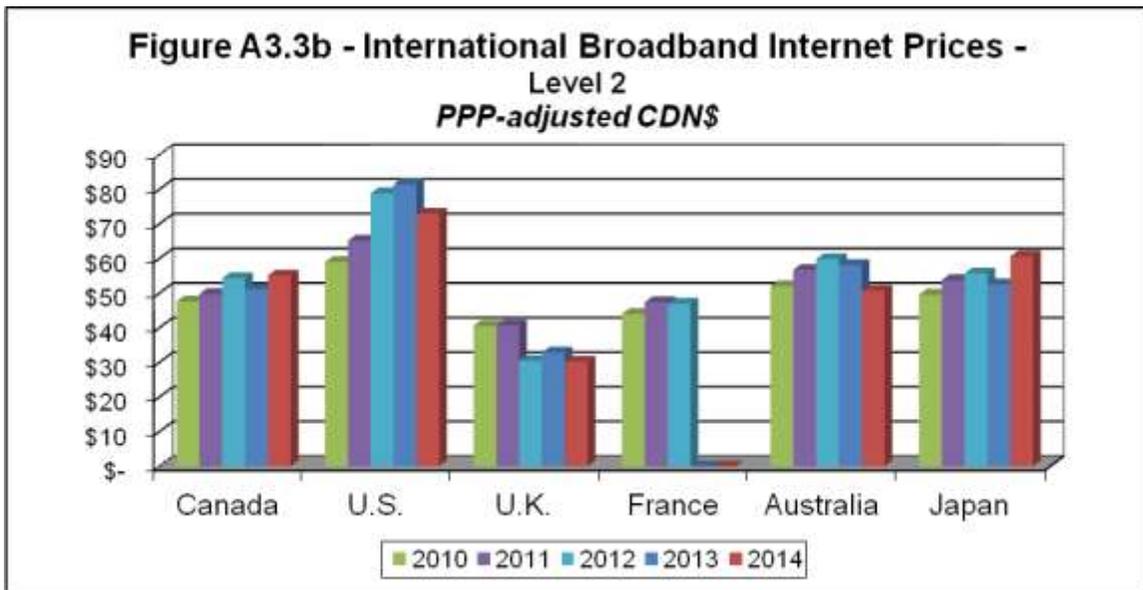
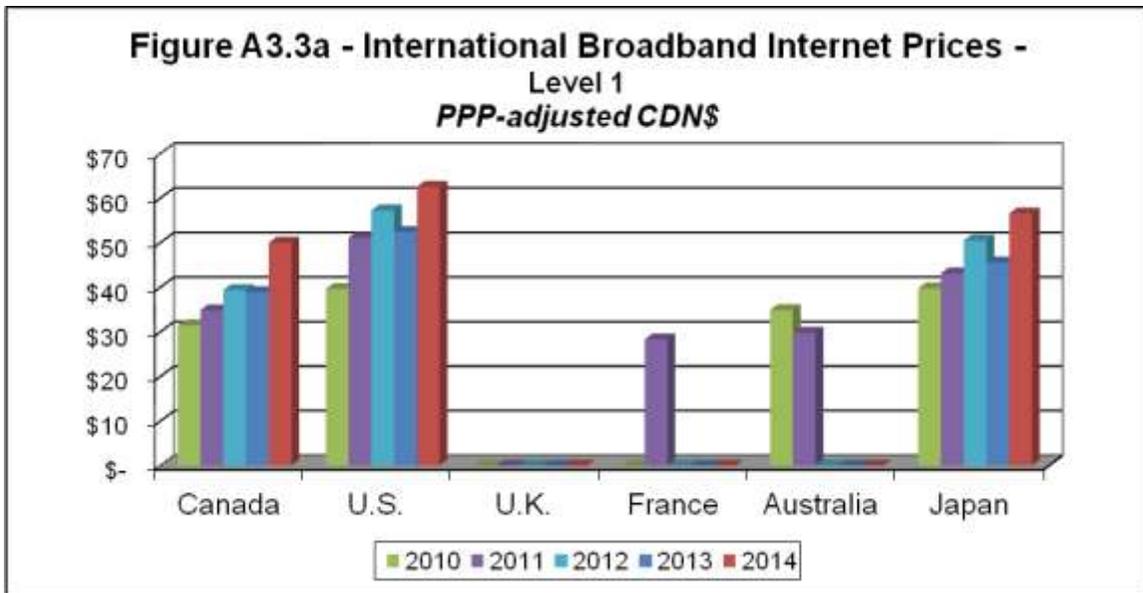
Note that some generally minor changes in methodology apply year-to-year.

"N.A." implies that no service currently marketed by the surveyed companies in the defined speed range.

For each year, the latest available OECD Purchasing Power Parity (PPP) indexes along with corresponding market exchange rates were used to convert foreign prices into PPP-adjusted and unadjusted Canadian dollars.

Note that speed ranges and monthly data usage levels were increased in 2012 for all four service levels, which had the effect of increasing prices in 2012 and later relative to earlier years in some cases.

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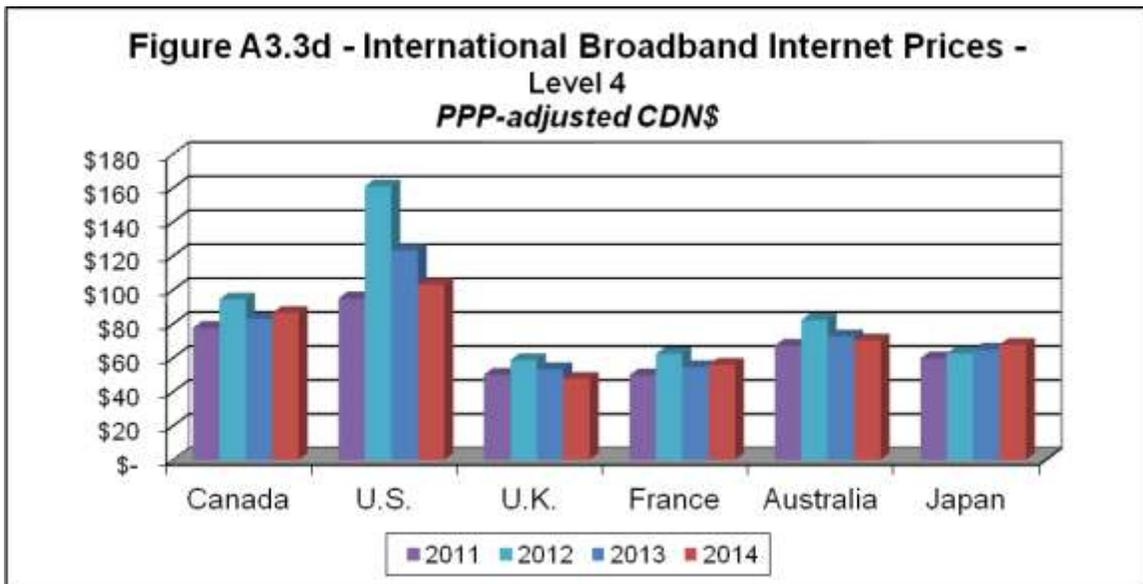
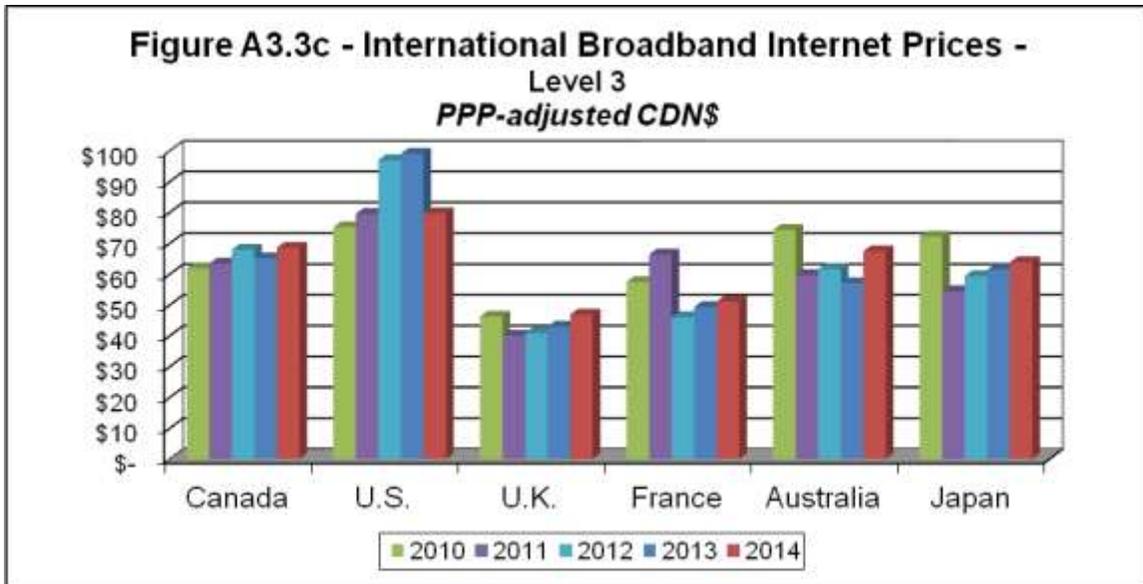


Table A3.4 - International Mobile Internet Prices

Baskets		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Own Currency									
Level 1 (2 GB/ month)	2010	\$54.19	\$60.15	£13.62	€ 34.20	\$41.44	¥7,724		
	2011	\$52.41	\$54.58	£14.08	€ 30.54	\$33.08	¥6,497		
	2012	\$52.55	\$39.94	£17.53	€ 27.31	\$38.14	¥5,087		
	2013	\$44.55	\$42.68	£13.63	€ 24.27	\$36.00	¥5,179		
	2014	\$43.30	\$50.16	£13.23	€ 12.57	\$31.46	¥4,333	€ 22.03	€ 11.36
	CAGR		-5.5%	-4.4%	-0.7%	-22.1%	-6.7%	-13.5%	
Level 2 (5 GB/ month)	2012	\$65.11	\$53.09	£25.00	€ 69.50	\$54.50	¥5,261		
	2013	\$64.67	\$46.75	£35.63	€ 30.99	\$43.91	¥5,242		
	2014	\$63.90	\$54.34	£27.74	€ 29.29	\$45.10	¥5,372	€ 31.85	€ 16.73
	CAGR		-0.9%	1.2%	5.3%	-35.1%	-9.0%	1.0%	
CDN\$ - PPP									
Level 1 (2 GB/ month)	2010	\$54.19	\$73.26	\$24.86	\$46.29	\$33.89	\$76.00		
	2011	\$52.41	\$71.50	\$23.51	\$43.30	\$27.18	\$69.38		
	2012	\$52.55	\$52.29	\$27.42	\$39.36	\$31.38	\$54.89		
	2013	\$44.55	\$54.61	\$23.71	\$34.98	\$28.80	\$57.54		
	2014	\$43.30	\$63.74	\$21.90	\$18.47	\$25.67	\$50.05	\$34.37	\$17.56
	CAGR		-5.5%	-3.4%	-3.1%	-20.5%	-6.7%	-9.9%	
Level 2 (5 GB/ month)	2012	\$65.11	\$69.51	\$39.11	\$100.15	\$44.85	\$56.77		
	2013	\$64.67	\$59.82	\$62.01	\$44.65	\$35.13	\$58.24		
	2014	\$63.90	\$69.05	\$45.93	\$43.04	\$36.80	\$62.04	\$49.70	\$25.86
	CAGR		-0.9%	-0.3%	8.4%	-34.4%	-9.4%	4.5%	
CDN\$ - Exchange Rate									
Level 1 (2 GB/ month)	2010	\$54.19	\$63.16	\$22.20	\$49.24	\$38.95	\$92.69		
	2011	\$52.41	\$53.76	\$22.39	\$41.23	\$32.75	\$77.96		
	2012	\$52.55	\$40.53	\$27.69	\$35.78	\$40.23	\$66.14		
	2013	\$44.55	\$42.34	\$21.56	\$32.09	\$37.40	\$56.97		
	2014	\$43.30	\$55.43	\$24.33	\$19.04	\$31.31	\$47.67	\$33.37	\$17.21
	CAGR		-5.5%	-3.2%	2.3%	-21.1%	-5.3%	-15.3%	

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Level 2 (5 GB/ month)	2012	\$65.11	\$53.88	\$39.50	\$91.05	\$57.50	\$68.39		
	2013	\$64.67	\$46.38	\$56.37	\$40.97	\$45.62	\$57.66		
	2014	\$63.90	\$60.04	\$51.04	\$44.38	\$44.87	\$59.09	\$48.25	\$25.35
	CAGR	<i>-0.9%</i>	<i>5.6%</i>	<i>13.7%</i>	<i>-30.2%</i>	<i>-11.7%</i>	<i>-7.1%</i>		

Note that some generally minor changes in methodology apply year-to-year.

For each year, the latest available OECD Purchasing Power Parity (PPP) indexes along with corresponding market exchange rates were used to convert foreign prices into PPP-adjusted and unadjusted Canadian dollars.

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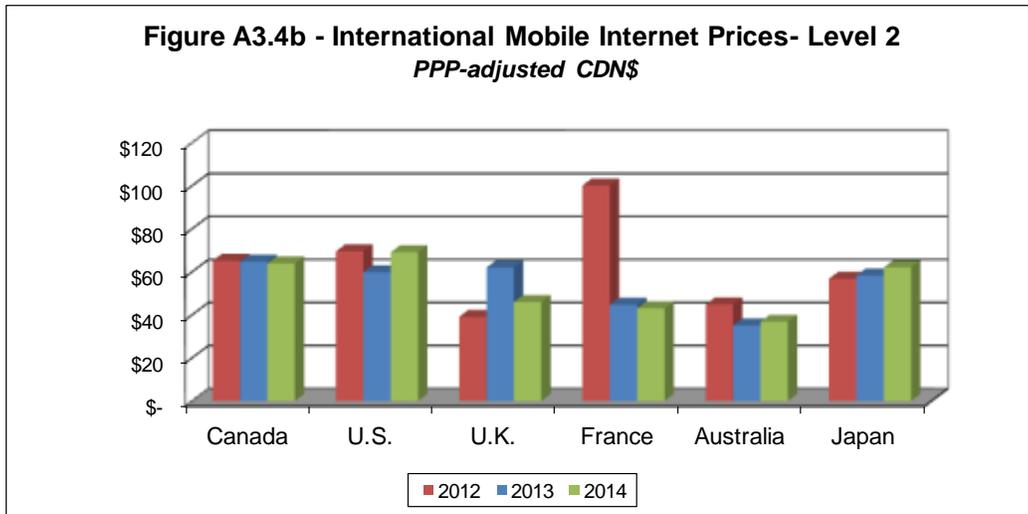
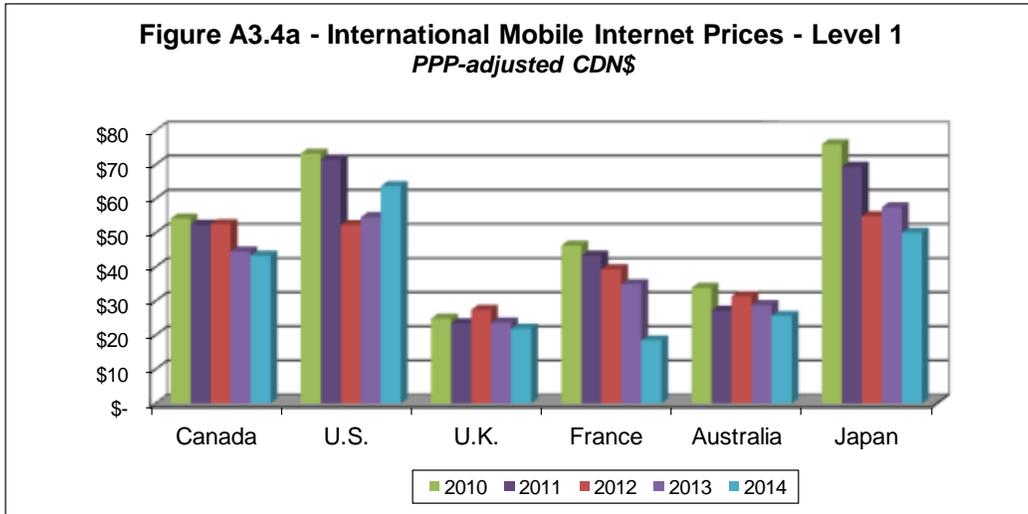


Table A3.5 - International Bundled Service Prices

Baskets		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Own Currency									
Bundle 1 (Fixed-BB-Mobile)	2008	\$146.96	\$147.40	£73.11	€ 107.87	\$191.03			
	2009	\$139.86	\$142.19	£66.65	€ 110.12	\$193.53			
	2010	\$133.83	\$135.15	£57.95	€ 105.77	\$161.75	¥13,931		
	2011	\$133.50	\$139.42	£57.12	€ 98.87	\$176.81	¥14,037		
	2012	\$140.47	\$142.88	£63.02	€ 84.62	\$185.28	¥14,618		
	2013	\$139.15	\$144.57	£64.01	€ 66.36	\$183.05	¥13,468		
	2014	\$143.95	\$128.36	£63.65	€ 48.01	\$184.23	¥13,972	€ 71.47	€ 69.85
	CAGR		-0.3%	-2.3%	-2.3%	-12.6%	-0.6%	0.1%	
Bundle 2 (Fixed-BB-TV)	2008	\$119.93	\$129.89	£47.13	€ 67.46	\$181.41			
	2009	\$122.43	\$131.05	£48.07	€ 67.42	\$183.26			
	2010	\$118.41	\$135.43	£50.79	€ 70.44	\$160.18	¥12,906		
	2011	\$122.87	\$132.73	£49.24	€ 52.01	\$169.76	¥12,896		
	2012	\$128.44	\$135.30	£44.74	€ 47.35	\$180.92	¥13,482		
	2013	\$134.19	\$131.22	£46.29	€ 48.00	\$181.59	¥12,352		
	2014	\$137.51	\$135.41	£42.46	€ 47.57	\$174.64	¥12,963	€ 70.73	€ 60.69
	CAGR		2.3%	0.7%	-1.7%	-5.7%	-0.6%	0.1%	
Bundle 3 (All four services)	2008	\$181.31	\$180.17	£74.57	€ 110.40	\$225.53			
	2009	\$172.68	\$170.58	£60.71	€ 112.65	\$231.24			
	2010	\$167.01	\$172.84	£64.11	€ 120.26	\$201.30	¥17,533		
	2011	\$167.81	\$181.88	£69.19	€ 103.39	\$218.17	¥18,043		
	2012	\$174.71	\$183.79	£72.44	€ 87.71	\$226.19	¥18,723		
	2013	\$176.80	\$175.12	£70.67	€ 70.33	\$222.79	¥16,437		
	2014	\$181.70	\$168.71	£61.31	€ 63.43	\$223.60	¥17,575	€ 101.24	€ 80.85
	CAGR		0.0%	-1.1%	-3.2%	-8.8%	-0.1%	0.1%	
CDN\$ - PPP									
Bundle 1 (Fixed-BB-Mobile)	2008	\$146.96	\$175.99	\$137.87	\$138.18	\$153.82			
	2009	\$139.86	\$177.74	\$126.45	\$149.89	\$159.31			
	2010	\$133.83	\$164.61	\$105.80	\$143.16	\$132.28	\$137.08		
	2011	\$133.50	\$182.65	\$95.36	\$140.15	\$145.28	\$149.91		
	2012	\$140.47	\$187.07	\$98.57	\$121.94	\$152.47	\$157.73		
	2013	\$139.15	\$185.00	\$111.39	\$95.62	\$146.45	\$149.63		
	2014	\$143.95	\$163.11	\$105.40	\$70.56	\$150.32	\$161.38	\$111.52	\$107.94
	CAGR		-0.3%	-1.3%	-4.4%	-10.6%	-0.4%	4.2%	

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Bundle 2 (Fixed-BB-TV)	2008	\$119.93	\$155.09	\$88.88	\$86.41	\$146.07			
	2009	\$122.43	\$163.81	\$91.21	\$91.78	\$150.86			
	2010	\$118.41	\$164.95	\$92.72	\$95.34	\$131.00	\$126.99		
	2011	\$122.87	\$173.88	\$82.21	\$73.72	\$139.49	\$137.73		
	2012	\$128.44	\$177.15	\$69.98	\$68.23	\$148.88	\$145.47		
	2013	\$134.19	\$167.92	\$80.55	\$69.17	\$145.27	\$137.23		
	2014	\$137.51	\$172.07	\$70.32	\$69.91	\$142.49	\$149.72	\$110.38	\$93.79
CAGR		2.3%	1.7%	-3.8%	-3.5%	-0.4%	4.2%		
Bundle 3 (All four services)	2008	\$181.31	\$215.13	\$140.62	\$141.43	\$181.60			
	2009	\$172.68	\$213.23	\$115.19	\$153.35	\$190.36			
	2010	\$167.01	\$210.52	\$117.04	\$162.78	\$164.62	\$172.52		
	2011	\$167.81	\$238.27	\$115.51	\$146.56	\$179.27	\$192.70		
	2012	\$174.71	\$240.65	\$113.31	\$126.39	\$186.13	\$202.02		
	2013	\$176.80	\$224.09	\$122.98	\$101.35	\$178.24	\$182.62		
	2014	\$181.70	\$214.39	\$101.52	\$93.21	\$182.43	\$202.99	\$157.98	\$124.94
CAGR		0.0%	-0.1%	-5.3%	-6.7%	0.1%	4.1%		
CDN\$ - Exchange Rate									
		Canada	U.S.	U.K.	France	Australia	Japan	Germany	Italy
Bundle 1 (Fixed-BB-Mobile)	2008	\$146.96	\$146.66	\$145.12	\$164.50	\$174.80			
	2009	\$139.86	\$177.74	\$119.29	\$180.59	\$162.56			
	2010	\$133.83	\$141.91	\$94.46	\$152.30	\$152.05	\$167.17		
	2011	\$133.50	\$137.33	\$90.82	\$133.48	\$175.04	\$168.44		
	2012	\$140.47	\$145.02	\$99.56	\$110.85	\$195.47	\$190.04		
	2013	\$139.15	\$143.41	\$101.26	\$87.73	\$190.19	\$148.15		
	2014	\$143.95	\$141.83	\$117.12	\$72.74	\$183.31	\$153.70	\$108.27	\$105.82
CAGR		-0.3%	-0.6%	-3.5%	-12.7%	0.8%	-2.1%		
Bundle 2 (Fixed-BB-TV)	2008	\$119.93	\$129.24	\$93.55	\$102.87	\$165.99			
	2009	\$122.43	\$163.81	\$86.05	\$110.57	\$153.94			
	2010	\$118.41	\$142.20	\$82.79	\$101.43	\$150.57	\$154.87		
	2011	\$122.87	\$130.74	\$78.29	\$70.21	\$168.06	\$154.75		
	2012	\$128.44	\$137.33	\$70.69	\$62.03	\$190.87	\$175.27		
	2013	\$134.19	\$130.17	\$73.23	\$63.46	\$188.67	\$135.88		
	2014	\$137.51	\$149.63	\$78.13	\$72.07	\$173.77	\$142.59	\$107.16	\$91.95
CAGR		2.3%	2.5%	-3.0%	-5.8%	0.8%	-2.0%		
Bundle 3 (All four services)	2008	\$181.31	\$179.27	\$148.02	\$168.36	\$206.36			
	2009	\$172.68	\$213.23	\$108.67	\$184.75	\$194.24			
	2010	\$167.01	\$181.48	\$104.50	\$173.17	\$189.22	\$189.22		
	2011	\$167.81	\$179.15	\$110.01	\$139.58	\$215.99	\$216.52		
	2012	\$174.71	\$186.55	\$114.46	\$114.90	\$238.63	\$243.40		
	2013	\$176.80	\$173.72	\$111.80	\$92.98	\$231.48	\$180.81		

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2014	\$181.70	\$186.42	\$112.80	\$96.09	\$222.48	\$193.33	\$153.38	\$122.49
CAGR	0.0%	0.7%	-4.4%	-8.9%	1.3%	0.5%		

Notes:

- 1) Some generally minor changes in methodology apply year-to-year.
- 2) For each year, the latest available OECD Purchasing Power Parity (PPP) indexes along with corresponding market exchange rates were used to convert foreign prices into PPP-adjusted and unadjusted Canadian dollars.
- 3) Speed ranges and monthly data usage levels were increased in 2012 for all four service levels, which had the effect of increasing prices in 2012 and later relative to earlier years in some cases.
- 4) UK Bundles 2 and 3 have been revised to exclude TV Licence Fees in all years; consequently, relative to previous years' results, prices have been reduced for these two bundles.

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