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

2023 Edition

Prepared for Innovation, Science and Economic Development Canada

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 Innovation, Science and Economic Development Canada or any other person or agency. Statistics Canada provided the raw price data used in this Study.

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EXECUTIVE SUMMARY

This is the sixteenth (2023) edition of ISED's annual telecom services price comparison study. The purpose of this Study is to provide a detailed comparative price analysis of telecommunications services in Canada both regionally and relative to G7 peer countries and Australia. The individual service categories and related topics covered by the Study are:

- 1) Mobile Wireless; and
- 2) Fixed Line Broadband Internet.

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 eight service baskets or "levels" defined for mobile wireless and seven baskets for fixed broadband. The lowest available advertised regular 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. If a provider's price is advertised as changing during a two year contract period, an average over the 24 month period is used.

For Canada, the surveyed service providers include the incumbent telephone companies (e.g., Bell and TELUS), cable companies (e.g., Rogers), mobile virtual network operators (MVNOs) (e.g., PC Mobile and 7-11), wholesale-based competitors (e.g. Distributel and TekSavvy), and regional wireless market providers (e.g., Freedom, SaskTel, Videotron and Eastlink). In addition, the primary Flanker brands (offered by the national mobile wireless providers or incumbent fixed broadband providers) are included and used for separate comparisons. Prices are measured in six metropolitan areas of Halifax, Montreal, Toronto, Winnipeg, Regina and Vancouver as well as for three communities in the Far North. Aggregate Canada-wide prices are determined on a subscriber market share weighted average basis.

There has been significant industry consolidation in the last few years. Key amongst recent company mergers/acquisitions are Rogers purchase of Shaw, Bell's purchase of Distributel (and Primus by extension), and Videotron's purchase of VMedia and Freedom Mobile.

For international comparison purposes, prices have also been measured using the same methodology for the same set of service baskets for seven other countries: Australia (Sydney), France (Paris), Germany (Berlin), Italy (Rome), Japan (Tokyo), the United Kingdom (London) and the United States (Boston, Kansas City, Minneapolis and Seattle).

The key addition to this year's Study is a Spotlight section on mobile wireless and fixed broadband focusing on regional price competition in Quebec, Ontario,

Alberta and British Columbia over the period between February 2023 and October 2023. As well further detail is provided on pricing by independent (i.e. independent of incumbent providers) wholesale based competitors in the fixed broadband market. Finally, the data for this year's study was collected by Statistics Canada.

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

Mobile Wireless

The 2023 eight mobile wireless baskets levels are:

- Level 1: 450 voice minutes and 300 SMS (texts);
- Level 2: 1 GB of data usage per month (no talk or text);
- Level 3: unlimited nationwide talk and text along with 2-4 GB of data;
- Level 4: unlimited nationwide talk and text along with 5-6 GB of data;
- Level 5: unlimited nationwide talk and text along with 7-9 GB of data;
- Level 6: unlimited nationwide talk and text along with 10-19 GB of data;
- Level 7: unlimited nationwide talk and text along with 20-49 GB of data;
 and
- Level 8: unlimited nationwide talk and text along with 50-99 GB of data.

Mobile Wireless Trends:

Domestic Trends: Prices in lowest tier basket (L1 – simply a talk and text service with no data) jumped dramatically by almost 35%. The seven other baskets all saw price declines – with three baskets also posting dramatic decreases between 27% and just over 32%. Overall, prices continue to generally decline over time with an unweighted average decrease of 11.6% relative to 2022 across all baskets. Excluding the L1 basket, the overall average price of mobile service declined by 18.2%.

Price uniformity across regions continues to characterize the industry, with the province of Saskatchewan appearing as an outlier in L1, L2, L6 and L7. Price uniformity across regions became a more pronounced industry characteristic beginning in 2020.

As noted last year, L1 - defined as 450 minutes of talk and 300 text messages - has become a rare service offering as most low level plans now offer much more talk and text. Talk and text packages typically begin with unlimited minutes and texts (sometimes restricted by time of day or day of week, but also sometimes including data). Therefore, we have surveyed service offerings that essentially offer unlimited talk and text in the L1 category.

The offering of a standalone 1 GB (data only) plan (L2) is also rarely seen. Only two providers (one a regional player and one an MVNO competitor) offer a 1 GB plan.

Regional Provider Prices: 1 Last year (2022), average Canadian prices were lower from the regionals (compared to the incumbents) in three baskets (L3, L7 and L8) while average prices were higher in two baskets (L1 and L4). This year, average regional prices were lower in every category where both incumbents and regionals offered service. In three of the four baskets where they competed, regional prices were between 12% and 18% lower than incumbent prices.

Freedom offered substantially lower prices than incumbents in both baskets where they competed: L1 and L8 (by 31.4% and 28.6% respectively). Eastlink offered lower prices than the incumbents in L8. Videotron (in Quebec) generally offered lower prices than the incumbents. The Fizz (Flanker brand of Videotron) price was often considerably lower than the incumbent average price. SaskTel had higher prices than incumbent prices in L1.

Unlike the case in previous years, regional providers now typically provide a Level 8 (50-99 GB) basket. Incumbent average prices in L8 are generally higher than regional provider prices (with the exception of Saskatchewan where prices are the same).

There was a considerable amount of price variability by the regionals in every basket (that is, the price offered by a regional provider for a given basket in its serving area could differ noticeably from the same basket price offered by the regional provider in another territory). By contrast, the incumbents displayed greater price uniformity across the country.

Incumbent Main Flanker Brand Prices:² Incumbent Flanker brand prices were generally uniform across the country with the exception of Flanker brand prices in Quebec in L6, L7 and L8 – where Flanker prices were noticeably lower than in other regions.

As has been the case previously, Flanker prices tend to be lower, in some cases significantly lower, than the Incumbents' prices. In baskets where

The regional mobile wireless providers include SaskTel, Eastlink, Freedom and Videotron.
 The main Flanker brands include Bell Virgin, Rogers Fido and TELUS Koodo, The incumber

² The main Flanker brands include Bell Virgin, Rogers Fido and TELUS Koodo. The incumbents also have secondary Flanker brands (often offering prepaid service) that tend to target specific market niches. The secondary Flanker brands of Lucky, Chatr and Public Mobile are surveyed but not included in price calculations due to a lack of market share (e.g. weighting) data. We also note that Videotron, the Quebec regional facilities-based provider, has its own Flanker brand (Fizz) and is included in the data and calculations.

both a Flanker and an incumbent plan is offered, the average national Flanker price is between about 8% and 16% lower than the average incumbent national price. Flankers this year began to offer an L8 service.

Flanker prices relative to regional provider prices vary – sometimes higher and sometimes lower. Flanker prices in Ontario and BC were generally much higher (i.e. up to almost 29% higher) than the regional price.

Mobile Virtual Network Operator (MVNO) Prices: MVNOs only offer service baskets up to the L6 level (while incumbent main brands do not offer plans below L7 – with the exception of L1). In the only basket where both MVNOs and incumbents offer plans (L1), the MVNO average Canadian price is much lower (41%) than the average national incumbent price.

MVNO prices remain highly uniform across the country.

Market Observations: The lowest priced plans within any given region are most often offered by secondary Flankers (i.e. Chatr, Lucky or Public). The lowest Canadian price is most often found in Quebec.

International Comparison: Canada, the U.S. and Japan tend to have the highest prices internationally, although Germany joins them in a few baskets. Canada generally performs favorably in comparison to both the U.S. and Japan. Japan has the highest (PPP adjusted) price in all baskets where comparisons can be made.

A European country (the U.K., France, Germany or Italy) has the lowest prices in each basket. The lowest price found internationally is much lower than the Canadian price – often less than half the Canadian price.

Fixed Broadband Internet

Seven broadband Internet service baskets are included in the study, which are primarily defined on the basis of download speed:

- Level 1: speeds of 3 to 9 Mbps;
- Level 2: speeds of 10 to 15 Mbps:
- Level 3: speeds of 16 to 40 Mbps;
- Level 4: speeds of 41 to 100 Mbps;
- Level 5: speeds of 101 to 250 Mbps;
- Level 6: speeds of 251 to 500 Mbps; and

Level 7: speeds greater than 500 Mbps.³

Trends in fixed broadband service:

Domestic National Trends: Canadian fixed broadband prices continued to fall in all baskets in 2023. The largest price declines occurred in the lower level baskets (L1 to L4) while price declines in higher baskets were more modest. The largest decrease of 22.3% occurred in L1 (3–6 Mbps) while decreases in L5 to L7 varied between 1% and just over 2%.

Regional Trends: Average prices in Quebec are usually the lowest in the country. Prices in Ontario are often higher than other regions in the upper level baskets (L5 to L7). Unlike mobile wireless prices (which have gravitated towards uniformity over the past few years) average broadband prices can vary considerably by region. For example, the L6 price varies between \$64.54 in Quebec to \$110.63 in Ontario. Substantial price variance between regions occurs in every basket.

Wholesale-based Competitor (WBC) and Flanker Brand Prices: WBC providers are active in all baskets and typically offer lower prices than the incumbents except in the highest basket (L7). In L2 to L6 baskets, WBC prices are between 7.7% and 31.5% lower than incumbent prices.

WBC plans can have considerable price variability across regions (likely due in part to the variability of wholesale prices WBC's can face in different regions).

Broadband incumbent Flanker brands have very limited availability in Canada, offered only in Ontario and Quebec. Bell's "Virgin" is provided in both Ontario and Quebec while Rogers' "Fido" is offered in Ontario. The regional provider Videotron offers a broadband Flanker service in Quebec with "Fizz".

Incumbent Flanker brand fixed broadband services are only offered in a handful of cases where the incumbent also offers a service. In those cases (L3, L4 and L6 in Quebec and L4 and L6 in Ontario) the Flanker prices are lower (varying between 7% to 37% lower).

• International Comparison: Lower level baskets (i.e. L1 and L2) have become rare on the international stage. Only Canada continues to offer those baskets. In both baskets, the Canadian price fell relative to 2022.

³ We note that in 33 of the total 38 observations in this category (domestic and international combined) the advertised download speed was 1 Gbps.

International participation at the L3 level remains at six countries out of eight. Canadian prices are lower than Australia but higher than all other countries offering the service. The U.S. price of \$24.49 was less than half the Canadian price of \$54.03.

In L4, L5, L6 and L7 Canada has the highest prices of the surveyed countries except for Australia.⁴ European and U.S. prices are generally considerably lower than Canadian prices. While Canada's prices in most baskets have fallen relative to 2022, Canada's broadband service relative international price ranking has remained fairly consistent since the study was first conducted in 2008.

Summary Data Tables

The following table provides a summary of the 2023 price comparison results for Canada and the seven surveyed foreign jurisdictions included in the study. All reported prices for the surveyed foreign jurisdictions exclude sales taxes and are expressed in purchasing power parity (PPP) adjusted Canadian dollars.

Summary of International Price Comparisons 2023 Average Monthly Price in PPP adjusted \$CDN

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
Wireless Service								
Level 1 (Talk and Text)	\$35.29	n/a	n/a	n/a	\$10.45	\$14.61	n/a	\$37.06
Level 2 (1 GB)	\$25.96	n/a	n/a	n/a	n/a	n/a	\$12.28	\$28.42
Level 3 (2-4 GB data)	\$35.25	\$84.82	n/a	\$23.51	n/a	n/a	\$16.78	\$100.46
Level 4 (5-6 GB data)	\$45.46	\$53.73	n/a	\$29.76	\$32.56	n/a	\$21.86	n/a
Level 5 (7-9 GB data)	\$39.28	n/a	n/a	\$17.99	n/a	n/a	\$25.20	n/a
Level 6 (10-19 GB data)	\$45.43	\$72.85	n/a	\$19.08	n/a	n/a	\$37.90	n/a
Level 7 (20-49 GB data)	\$49.27	n/a	\$29.33	\$31.41	\$34.94	n/a	\$54.49	\$90.81
Level 8 (50-99 GB data)	\$69.19	\$79.63	\$47.30	\$35.98	n/a	\$19.58	\$67.06	\$132.08
Broadband Service								
Level 1 (3-9 Mbps)	\$36.99	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Level 2 (10-15 Mbps)	\$45.59	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Level 3 (16-40 Mbps)	\$54.03	\$24.49	\$62.76	\$34.07	\$41.54	n/a	\$48.16	n/a
Level 4 (41-100Mbps)	\$68.77	\$17.32	\$72.65	\$35.04	n/a	\$30.91	\$50.06	n/a
Level 5 (100-249 Mbps)	\$90.39	\$36.75	\$105.88	\$35.94	n/a	n/a	\$64.17	\$62.92
Level 6 (250-500 Mbps)	\$95.75	\$62.58	n/a	\$39.46	\$45.43	n/a	\$63.43	n/a
Level 7 (500 Mbps+)	\$102.52	\$83.44	\$116.90	\$52.95	\$54.76	\$32.45	\$63.43	\$66.05
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⁴ Australia did not offer an L6 service in 2023 but did have plans in L4, L5 and L7.

The year over year price changes for each basket are provided below.

Summary of Canadian Prices 2023 Average Monthly Price \$CDN (and YOY)

			YoY%
	2023	2022	2023/22
Wireless Service			
Level 1 (Talk and Text)	\$35.29	\$26.19	34.74%
Level 2 (1 GB)	\$25.96	\$28.14	-7.73%
Level 3 (2-4 GB data)	\$35.25	\$39.15	-9.96%
Level 4 (5-6 GB data)	\$45.46	\$45.47	-0.03%
Level 5 (7-9 GB data)	\$39.28	\$54.01	-27.27%
Level 6 (10-19 GB data)	\$45.43	\$55.42	-18.02%
Level 7 (20-49 GB data)	\$49.27	\$72.81	-32.33%
Level 8 (50-99 GB data)	\$69.19	\$101.74	-31.99%
Broadband Service			
Level 1 (3-9 Mbps)	\$36.99	\$47.61	-22.31%
Level 2 (10-15 Mbps)	\$45.59	\$50.42	-9.58%
Level 3 (16-40 Mbps)	\$54.03	\$59.01	-8.44%
Level 4 (41-100Mbps)	\$68.76	\$75.38	-8.79%
Level 5 (100-249 Mbps)	\$90.39	\$91.50	-1.21%
Level 6 (250-500 Mbps)	\$95.75	\$96.97	-1.26%
Level 7 (500+ Mbps)	\$102.52	\$104.75	-2.13%

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1.0 INTRODUCTION

This study provides a 2023 (data year collection) update of the previous annual telecommunications price comparison studies conducted since 2008.5

The consumer telecom services covered in this study include the following categories:⁶

- i) Mobile wireless telephony; and
- ii) Fixed line broadband Internet.

A series of baskets reflecting different service usage and feature levels was established for each service category in the first Study of 2008. Consistency in category characteristics over time is sought to the extent possible. However, key market changes may lead to some category revisions. Service category revisions and additions have occurred in past years and are noted where relevant. In short, these Studies attempt to balance maintaining consistent categories over time (to allow for inter-temporal comparisons) while recognizing that key technological and market changes should be reflected in the plan prices being tracked.

The objective of these studies is to capture what a new customer would need to pay for a chosen level – or target level within a basket range – of service. As such, the service range allows us to capture the non-uniform offerings of providers while still spanning the very wide variance in plans offered domestically and internationally. Moreover, this "consumer-centric" approach allows us to collect the lowest regular price available to a consumer for service within a well-defined series of ranges.

For Canada, the study provides a comparison of prices for each defined basket in each service category for the following cities: Halifax, Montreal, Toronto, Winnipeg, Regina, Vancouver and the Far North (added in 2023). Service prices for Canada as a whole are derived as the weighted averages (according to provincial subscriber market share and population weights) of the prices measured for each of the surveyed regions. For mobile wireless, the prices of national service providers (i.e. national MNOs), regional providers, Flanker brands and MVNOs are reported. For fixed broadband, prices from cable

⁵ Wall Communications Inc. prepared the studies from 2008 to 2015 while the 2016 and 2017 studies were prepared by Nordicity. Wall Communications Inc. conducted the 2018 to 2023 Telecom Price Comparison Studies.

⁶ The categories of wireline telephone services, bundled services and mobile internet (data) have been examined in previous years.

companies, telephone companies, Flankers and wholesale-based competitors (WBCs) are reported.⁷

The study also measures prices for the same set of service category baskets for Australia, France, Germany, Italy, Japan, the United Kingdom (U.K.) and the United States (U.S.). As a result, the study covers all G7 countries along with Australia. Major service providers in each country are surveyed. Service basket prices in these seven foreign jurisdictions are compared with those measured for Canada.

As noted, this year's Study includes mobile and fixed broadband pricing for the Canadian Far North. In addition, the 2023 study includes a joint mobile wireless and fixed broadband spotlight section focusing on regional pricing trends in selected regions over the period between February 2023 and October 2023.⁸

As was done in past Studies, MVNO pricing and comparisons to incumbent and Flanker pricing in Canada has been included. For fixed broadband, pricing from WBCs has been gathered and is compared to incumbent and Flanker brand pricing.

We note that the construction of price indices is not an exact science and there are multiple methodologies that can be employed. However, the general data collection and indexing methodology used in all the annual Canadian Telecom Pricing Studies has been adopted by other agencies around the world (including the OECD) and provides a proven and useful snapshot of the listed prices available to consumers for various levels of telecom services.⁹

The basic methodological philosophy adopted in this Study is to identify what a consumer would have to pay for that consumer's chosen level of service. Since the number of service options available to a consumer can be extremely large, we group service levels (or service baskets) into ranges and then identify the lowest cost plan from a given provider within that service level range.

In terms of layout, the next section of this report, Section 2, provides a brief review of the methodology used to measure and compare service basket prices. The remaining two sections of the report, Sections 3 through 4, provide Canadian and international price comparison results for mobile wireless and fixed

⁷ The cable and telephone classifications are legacy terms. A more complete description of the current industry structure is provided in the Fixed Broadband section (Section 4).

⁸ Some less significant additions and modifications also occur in the international data as companies merge, gain market prominence or otherwise alter their status relative to past years. These changes are noted in the following pages where appropriate.

⁹ We note that other telecom pricing Studies have different objectives, such as attempting to explain differences in domestic versus international telecom prices using regression and/or related techniques. We acknowledge and encourage the pursuit of different objectives, perspectives and approaches to examining telecom pricing while recognizing the unique challenges that all methodologies face.

broadband Internet. A detailed summary of all service baskets and bundles included in the study is provided in Attachment 1. Historical domestic price levels for various services and baskets are provided in Attachment 2. International historical price series are provided in Attachment 3.

2.0 METHODOLOGY

2.1 Service Basket Design

As in previous studies, this study relies on the service basket-based price comparison methodology described in Wall Communications' 2008 methodology report. Various modifications to the 2008 methodology have been made in successive studies primarily to reflect changes in service usage patterns or market characteristics over time.

The price comparison methodology used in this study is based on a "service basket" approach where separate telecom service baskets are defined on the basis of increasing "levels" of service usage, features and, where applicable, performance. A service basket typically has a range of plan characteristics or main elements designed to reflect an increasing quality (or value) of the plans within the basket. The number of defined service basket levels for each of the stand-alone telecom services considered in this study varies from seven to eight in total:

i) Mobile Wireless: Basket Levels 1 to 8ii) Broadband Internet Access: Basket Levels 1 to 7

Each of the service baskets has been designed to reflect, as applicable, a range of service volumes or levels, that are generally intended to capture a broad range of typical Canadian consumer usage levels, including mid-level or an "average" consumption basket for a typical Canadian consumer.

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

2.2 Canadian Price Data Collection: Detailed Methodology

The Canadian price data included in the study has been collected from a variety of telecom service providers (TSPs), including incumbent telephone companies (i.e., Bell Aliant, Bell Canada and TELUS) and incumbent cable companies (i.e., Eastlink, Videotron, Rogers, Access and Shaw/Rogers). The primary Flanker brands of the incumbent service providers are examined, as well as "Fizz" (the Flanker brand of Videotron). Service prices from mobile wireless MVNOs Cityfone, 7-11 and PC Mobile as well as wholesale-based competitors in fixed

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Wall Communications Inc., 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.

broadband (Distributel, TekSavvy, VMedia) are also collected for the study. In addition, mobile wireless services offered by regional wireless service providers Freedom, Eastlink, Videotron and SaskTel are also taken into account. In terms of geographic coverage, price data is collected for each of the following six Canadian cities: Halifax, Montreal, Toronto, Winnipeg, Regina and Vancouver. Data is also collected for three population centers in the Far North (Whitehorse, Yellowknife and Iqaluit). Table 1 provides a list of the surveyed Canadian service providers in this year's study broken out by city and by service basket.¹¹

Table 1
Selected Canadian Cities and Service Providers

City	Service Baskets	Service Providers
Halifax	Fixed Broadband Internet Mobile Wireless	Bell Aliant, Eastlink, TekSavvy and VMedia Bell, TELUS, Rogers, Eastlink, PC Mobile, Cityfone, 7-11, Incumbent Flanker Brands
Montreal	Fixed Broadband Internet Mobile Wireless	Bell, Videotron, Distributel, TekSavvy, Virgin and Fizz Bell, TELUS, Rogers, Videotron, PC Mobile, Cityfone, 7-11, Incumbent Flanker Brands, Fizz
Toronto	Fixed Broadband Internet Mobile Wireless	Bell, Rogers, Distributel, TekSavvy, Virgin, Fido Bell, TELUS, Rogers, Freedom, Cityfone, PC Mobile, 7-11, Incumbent Flanker Brands
Winnipeg	Fixed Broadband Internet Mobile Wireless	Bell, Rogers, TekSavvy, VMedia Bell, TELUS, Rogers, PC Mobile, Cityfone, 7-11, Incumbent Flanker Brands
Regina	Fixed Broadband Internet Mobile Wireless	SaskTel, Access Communications, TekSavvy, VMedia SaskTel, Bell, TELUS, Rogers, PC Mobile, Cityfone, 7-11, Incumbent Flanker Brands
Vancouver	Fixed Broadband Internet Mobile Wireless	TELUS, Rogers, Distributel, TekSavvy Bell, TELUS, Rogers, Freedom, PC Mobile, Cityfone, 7-11, Incumbent Flanker Brands
Far North	Fixed Broadband Internet Mobile Wireless	NWTel, Xplore, SSi Bell, TELUS, Rogers, Ice Wireless, Virgin, Koodo

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City-specific prices for each of the stand-alone service baskets offered by the TSPs listed in Table 1 are determined using each service provider's respective estimated subscriber-based market share as weights. ¹² In addition, to determine Canada-wide market prices, city-specific prices are aggregated using corresponding relative provincial population levels as weights. Weighted average

¹¹ At the time of this Report's preparation, Bell had acquired Distributel, Rogers had acquired Shaw and Freedom was acquired by Videotron. VMedia was also acquired by Videotron in the summer of 2022. As all companies were still providing their own distinct service offerings at the time of data collection, they are reported as such, except where noted.

¹² The estimated market shares are drawn from the CRTC (the CRTC Communications Monitoring Report or CMR) supplemented by corporate reports, StatsCan data and related documents and research. Estimated market shares are province-specific.

prices for each surveyed city and for Canada are provided in Attachment 2 for each of the service baskets included in this study.

In addition, for the mobile wireless service baskets, services offered by the incumbents' main Flanker brand services – i.e., Bell Virgin, Rogers Fido and TELUS Koodo – are also taken into account. The incumbents' Flanker brand service prices are included in the calculation of the above-noted city-specific and national aggregate prices. ¹³ In Section 3.2 below, the incumbents' Flanker brand prices are compared with incumbents' and regionals' mobile wireless prices as a separate analysis.

The price data used in this study was collected by Statistics Canada. ¹⁴ The price data reflects currently advertised prices that are generally available to new customers or existing customers changing service plans for a 2 year contract period. The lowest available currently advertised price is used to determine the total price of each service basket. For this purpose, regular or "basic" prices are used – short-term promotional discounts available to new customers are not taken into account. ¹⁵ If a provider's price is advertised as changing during the 24 month period, an average over the 24 month period is used.

2.3 International Price Data Collection: Detailed Methodology

Seven foreign jurisdictions are included in the study: Australia, France, Germany, Italy, Japan, the U.K. and the U.S. With the exception of the U.S., in each case, price data was collected for the services available in each country's largest city. For the U.S., four cities of varying size distributed across that country were used – i.e., Boston, Kansas City, Minneapolis and Seattle. The service providers surveyed by country and, as applicable by city, are summarized in Table 2.¹⁶

Table 2
Selected Foreign Jurisdictions and Service Providers

City	Basket	Service Providers
United States		
Boston, MA	Fixed Broadband Internet	Verizon, Comcast/Xfinity
	Mobile Wireless	AT&T, Verizon, T-Mobile
1		
Kansas City, MO	Fixed Broadband Internet	AT&T, Time Warner
	Mobile Wireless	AT&T, Verizon, T-Mobile

¹³ Previous editions of the Study prior to 2018 did not include Flanker prices in domestic averages. Secondary flanker brands (Lucky, Chatr and Public) are not included.

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¹⁴ The 2023 Canadian price data used in the Study was collected in October 2023.

¹⁵ 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 some existing customers may be on pre-established or legacy service price plans or promotional plans.

¹⁶ The 2023 foreign jurisdiction price data was collected in October 2023.

City	Basket	Service Providers
Minneapolis, MN	Fixed Broadband Internet Mobile Wireless	Quantum Fiber, Comcast/Xfinity AT&T, Verizon, T-Mobile
Seattle, WA	Fixed Broadband Internet Mobile Wireless	Quantum Fiber, Comcast/Xfinity AT&T, Verizon, T-Mobile
United Kingdom	Fixed Broadband Internet	BT, Virgin, EE, Talk Talk
London	Mobile Wireless	EE, Vodafone, O2, "3"
Australia	Fixed Broadband	Telstra and Optus
Sydney	Mobile Wireless	Telstra, Optus, Vodafone
France Paris	Fixed Broadband Internet Mobile Wireless	Orange (France Telecom), SFR (Neuf Cegetel) Orange, SFR, Free, Bouygues Telecom
Germany	Fixed Broadband Internet	DT, KD/Vodafone
Berlin	Mobile Wireless	DT, KD/Vodafone, O2
Italy	Fixed Broadband Internet	Telecom Italia, FastWeb
Rome	Mobile Wireless	Telecom Italia (TIM), Vodafone, WINDTRE, Iliad
Japan	Fixed Broadband Internet	NTT, J:Com, KDDI, Yahoo! BB
Tokyo	Mobile Wireless	NTT DoCoMo, Softbank, au KDDI, Y!Mobile

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For international price comparison purposes, foreign currency prices have been converted to Canadian dollars using currency market exchange rates adjusted for purchasing power parity (PPP) differences between countries. The OECD's latest available PPP comparative price level indexes were used for this purpose.¹⁷

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 exchange rate Canadian dollars.

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¹⁷ See the OECD's main economic indicators at: https://data.oecd.org/conversion/purchasing-power-parities-ppp.htm#indicator-chart.

It should be noted that fluctuations in both exchange rates and PPP adjustment factors could affect international price comparisons over time. This caveat is particularly relevant to inter-temporal comparisons given the significant changes in both exchange rates and PPP adjustment factors that can occur over time.

As well, 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). Where appropriate, we have excluded applicable VAT or GST charges to improve cross-country comparisons of service prices. ¹⁸ On the other hand, where applicable, 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 fees).

Small rounding errors may occur on occasion in the Report but do not affect key Report findings. Reported percentages are accurate relative to the worksheet data.

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¹⁸ The VAT rates in the U.K., France, Germany and Italy are 20%, 19.6%, 19% and 22%, respectively. The VAT rate in Japan increased from 5% to 8% as of 2014. The GST in Australia is 10%.

3.0 MOBILE WIRELESS SERVICE

3.1 Mobile Wireless Service Baskets

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

- Network access/airtime charges (taking into account defined amounts of daytime, evening and weekend minute volumes as appropriate);
- ii) Service feature charges as appropriate (e.g., voice mail, call display and others);
- iii) All mandatory fixed fees (i.e. system access, E911);
- iv) SIM charges as appropriate;
- v) Short message service (SMS) or text message charges; and
- vi) Data service charges.

As a general point, we note that several service elements have diminished in importance as service plan differentiators over the past ten years. These include distinctions in time of day or week minutes, optional features and long distance versus local minutes. On the other hand, data allotment has grown in prominence – in most cases being the key service characteristic that is marketed today.

There are several notable charges or costs that are excluded from the calculation of mobile service prices in this study, including: certain one-time charges (such as waiveable activation fees) and roaming charges. Device or handset costs are also excluded.

Eight mobile wireless service baskets are included in the study. Each basket consists of the following main elements:

- Level 1: 450 voice minutes and 300 SMS (texts) at a minimum but typically lowest T&T plans are unlimited and those are recorded;
- Level 2: 1 GB of data usage per month (no talk or text);
- Level 3: unlimited nationwide talk and text along with 2-4 GB of data;
- Level 4: unlimited nationwide talk and text along with 5-6 GB of data;

- Level 5: unlimited nationwide talk and text along with 7-9 GB of data;
- Level 6: unlimited nationwide talk and text along with 10-19 GB of data;
- Level 7: unlimited nationwide talk and text along with 20-49 GB of data;
 and
- Level 8: unlimited nationwide talk and text along with 50-99 GB of data.

Attachment 1 provides a more detailed summary of each of the service elements and usage parameters included in all eight mobile wireless service baskets.

Prices are measured for each of the mobile wireless service baskets based on a TSP's standard mobile service plan rates. Where applicable, both "pre-paid" and "post-paid" service options are considered with the less expensive of the two options used. The speed of plans can vary from 3G to 5G.

3.2 Canadian Mobile Wireless Prices

Figure 1 provides a summary of 2023 Canadian prices for all eight mobile wireless service baskets. Weighted average prices range from \$35.29 per month for a Level 1 plan to \$69.19 per month for a Level 8 Canada-wide unlimited talk and text plan with 50-99 GB of data. Level 2 (1GB of data standalone) is offered by very few providers (i.e. nationally by one provider and in one province by a regional provider), unlike the situation a few years ago. Therefore, the average price of \$25.96 should be viewed with that in mind.

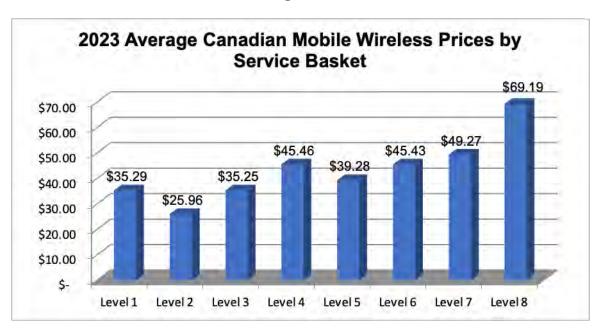


Figure 1

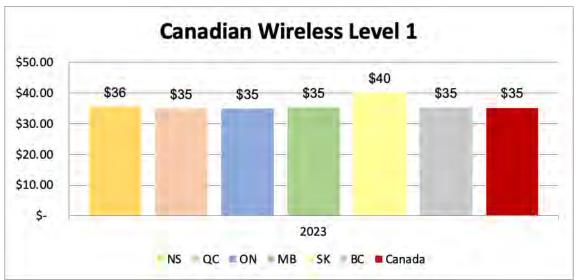
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Relative to 2022, the average unweighted decrease in prices across all baskets was 11.6%. Seven baskets (other than L1) all saw price declines – with three baskets also posting dramatic decreases between 27% and just over 32%. Overall, prices continue to generally decline over time with an unweighted average decrease of 11.6% relative to 2022 across all baskets. Excluding the L1 basket, the overall average price of mobile service declined by 18.2%.

The revamping of service basket definitions in 2020 makes direct comparisons with most pre-2020 baskets inappropriate. Historical data can be found in the Attachments, with the caveat that basket definitions have changed over time.

Chart prices are rounded to the nearest dollar. Far North prices are provided in Section 5¹⁹.

 The Level 1 mobile wireless service basket price was \$35.29, much higher than last year's average of \$26.19. Average 2023 Level 1 prices varied by city, from a low of \$34.97 in Ontario to a high of \$40.24 in Regina.
 Average prices were very uniform across the country, with the exception of Saskatchewan.

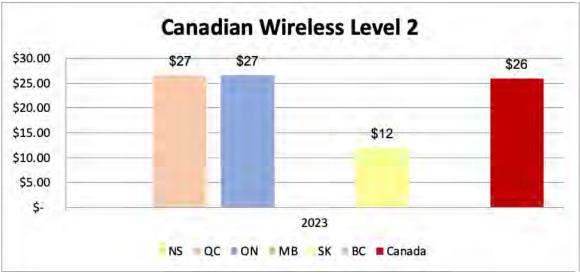


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 The Level 2 average Canadian price was \$25.96 – as the basket is defined, this is essentially the cost of purchasing 1 GB of stand-alone data on a mobile wireless smartphone plan. Unlike a few years ago, very few providers currently have a stand-alone 1 GB plan. No incumbent offers this service, only one regional provider (SaskTel) offers this type of plan

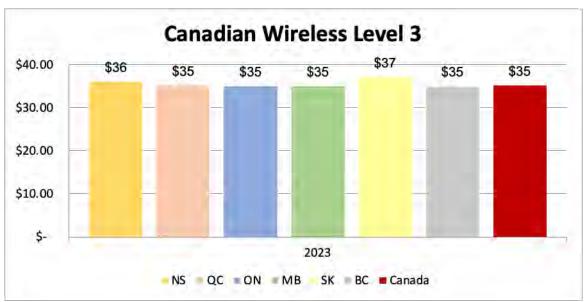
¹⁹ Future editions of this study will integrate the Far North results and potentially other regional results into the main report body.

and only one WC (7 11) offers a 1 GB plan. The SaskTel price of \$12.08 is much lower than any other provider.



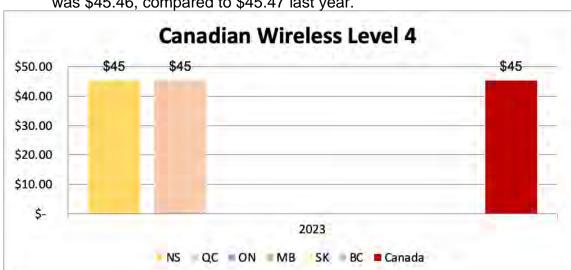
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• The Level 3 service basket average price was \$35.25. Again, prices across the country were very uniform, with a low of \$35.02 in Vancouver to a high of \$37.15 in Regina.



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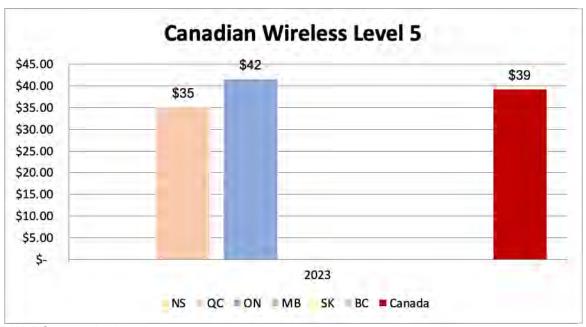
 The Level 4 service plans were very limited across the country, only cropping up in Halifax and Montreal. Prices were virtually the same in



each city at \$45.43 in Halifax and \$45.46 in Montreal. The average price was \$45.46, compared to \$45.47 last year.

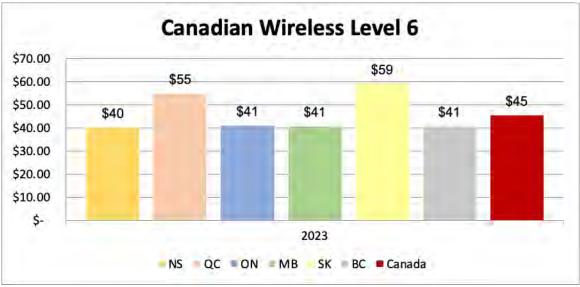
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 Level 5 plans were also limited across the country, only offered in Quebec and Ontario. Prices varied from \$35.17 in Montreal to \$41.67 in Toronto. The national average price was \$39.28, much lower than the \$54.01 of 2022.



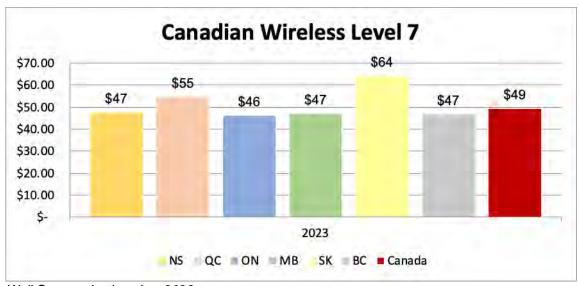
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• Level 6 prices were less uniform across the country, ranging from a high price of highest price of \$59.14 in Regina to a low of \$40.23 in Halifax. The average national price was down from \$55.42 in 2022 to \$45.43 in 2023.



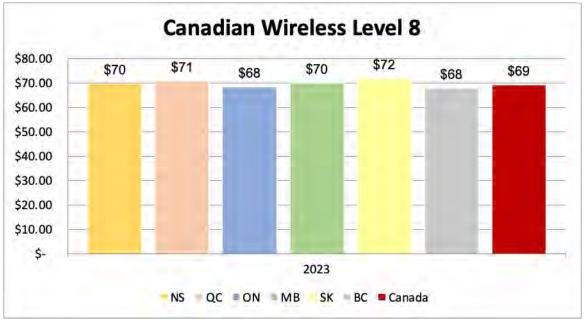
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 Regional price variability characterized Level 7 prices. Average prices ranged from a low of \$46.10 in Toronto to a high of \$64.31 in Regina. The average Canadian price was \$49.27 – a dramatic decrease from the 2022 average price of \$72.81.



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• Level 8 prices averaged \$69.19, much lower than the 2022 average price of \$101.74. There was limited regional price variability, with a low of \$67.93 in Vancouver and a high of \$71.86 in Regina.



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The general trend of falling Canadian mobile wireless prices continued in 2023 for most baskets. Prices fell an (unweighted) average of 11.6% this year across all baskets. By comparison, average (unweighted) prices across all baskets fell just 2.6% last year. No one region consistently exhibited the lowest price across all baskets. Saskatchewan had the highest average price in five of the six baskets where they offered a plan.

Comparison of Incumbent and Regional Providers Prices

A comparison of average mobile wireless rates for the incumbent carriers and the regional carriers is provided in Table 3 below. The comparison is provided for five cities: Vancouver and Toronto (where Freedom operates), Montreal (where Videotron operates), Regina (SaskTel) and Halifax (where Eastlink operates). For each of the cities, the incumbent carriers include national MNOs Rogers, Bell and TELUS. Incumbent Flankers are not included. A separate analysis of Far North prices is provided in Section 5.

Table 3: 2023 Canadian Mobile Wireless Service Rates (Incumbent vs. Regionals)

	NS	QC	ON	MB	SK	ВС	Canada
Level 1							
Incumbents	\$35.43	\$35.13	\$35.00	\$35.00	\$37.08	\$35.00	\$35.44
Regionals	\$35.43	\$30.22	\$24.00	N/A	\$42.08	\$24.00	\$31.15
Difference R/I	0.00%	-13.97%	-31.43%	N/A	13.48%	-31.43%	-12.11%
Level 2							
Incumbents	N/A						
Regionals	N/A	N/A	N/A	N/A	\$12.08	N/A	\$12.08
Difference R/I	N/A						
Level 3							
Incumbents	N/A						
Regionals	\$40.43	\$32.46	\$34.00	N/A	N/A	\$34.00	\$35.22
Difference R/I	N/A						
Level 4							
Incumbents	N/A	\$45.46	N/A	N/A	N/A	N/A	<i>\$45.46</i>
Regionals	\$45.43	\$45.46	N/A	N/A	N/A	N/A	<i>\$45.45</i>
Difference R/I	N/A	0.00%	N/A	N/A	N/A	N/A	-0.03%
Level 5							
Incumbents	N/A						
Regionals	N/A	\$34.46	N/A	N/A	N/A	N/A	\$34.46
Difference R/I	N/A						
Level 6							
Incumbents	N/A						
Regionals	\$40.43	\$55.46	\$39.00	N/A	\$62.08	\$39.00	\$47.19
Difference R/I	N/A						
Level 7							
Incumbents	N/A	\$60.46	N/A	N/A	N/A	N/A	\$60.46
Regionals	\$55.43	\$48.90	\$39.00	N/A	\$67.08	\$39.00	\$49.88
Difference R/I	N/A	-19.12%	N/A	N/A	N/A	N/A	-17.50%
Level 8							
Incumbents	\$70.43	\$73.79	\$70.00	\$70.00	\$72.08	\$70.00	\$71.05
Regionals	\$65.43	\$70.46	\$50.00	N/A	\$72.08	\$50.00	\$61.59
Difference R/I	-7.10%	-4.52%	-28.57%	N/A	0.00%	-28.57%	-13.31%

Unweighted averages used for incumbents and regionals within a region. Unweighted prices can vary significantly from the weighted prices used in calculating national averages but can be suitable for comparing incumbents and regionals within a region. National averages use population weighting. Wall Communications Inc. 2023

We note that providers do not always offer a plan within a given basket range and, as such, the comparisons between provider categories should be interpreted with that in mind. For example, incumbents generally only offer plans in the L1 and L8 categories (with the exception of Quebec where incumbents also offer plans in L4 and L7).

As shown in Table 3, the prices offered by regional carriers are lower than incumbent prices when averaged across the country. Conditions do vary from province to province and from plan to plan. However, we note that regional provider prices in Ontario and BC are consistently lower than incumbent prices.

Incumbent Flanker Brand Prices

Incumbent Flanker brand services Bell Virgin, Rogers Fido, and TELUS Koodo are available across the country.²⁰

Table 4 below provides a summary of incumbent primary brand, incumbent Flanker brand and regional provider mobile wireless service prices for 2023 in Halifax, Montreal, Toronto, Winnipeg, Regina and Vancouver for each of the 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 regionals.

Flanker prices are uniformly lower than incumbent prices – a repeat performance from last year. Regions where incumbents and Flankers both offer a plan in the same basket tend to be the exception rather than the rule. In two instances the national average incumbent price is derived solely from one region (i.e. Quebec). Quebec Flanker prices are considerably lower than incumbent prices where they both offer plans (and notably 48% lower in L7) in contrast to other regions.

Table 4:
2023 Canadian Mobile Wireless Service Rates
Incumbents, Incumbent Flanker Brands and Regionals

	NS	QC	ON	MB	SK	BC	Canada
Level 1							
Flankers	\$32.51	\$32.54	\$32.17	\$32.17	\$33.83	\$32.17	\$32.56
Incumbents	\$35.43	\$35.13	\$35.00	\$35.00	\$37.08	\$35.00	\$35.44
Regionals	\$35.43	\$30.22	\$24.00	N/A	\$42.08	\$24.00	\$31.15
Diff I/F	8.98%	7.96%	8.80%	8.80%	9.60%	8.80%	8.83%
Diff R/F	8.98%	-7.12%	-25.39%	N/A	24.38%	-25.39%	-4.35%
Level 2							
Flankers	N/A						
Incumbents	N/A						
Regionals	N/A	N/A	N/A	N/A	\$12.08	N/A	\$12.08
Diff I/F	N/A						
Diff R/F	N/A						

Level 3

²⁰ The incumbents also have secondary Flanker brands (often offering prepaid service) that tend to target specific market niches. The secondary Flanker brands of Lucky, Chatr and Public Mobile have an indeterminate (and likely relatively small) market share and have not been included in the analysis. Fizz, the Flanker brand of regional provider Videotron, is included in the unweighted comparison tables (i.e. Tables 3 and 4).

Flankers	\$35.47	\$33.49	\$35.25	\$35.13	\$36.79	\$35.13	\$35.21
Incumbents	N/A						
Regionals	\$40.43	\$32.46	\$34.00	N/A	N/A	\$34.00	\$35.22
Diff I/F	N/A						
Diff R/F	13.98%	-3.09%	-3.55%	N/A	N/A	-3.21%	0.04%
Level 4							
Flankers	\$40.43	N/A	\$40.21	\$40.21	\$41.25	\$40.21	\$40.46
Incumbents	N/A	\$45.46	N/A	N/A	N/A	N/A	\$45.46
Regionals	\$45.43	\$45.46	N/A	N/A	N/A	N/A	<i>\$45.45</i>
Diff I/F	N/A	N/A	N/A	N/A	N/A	N/A	12.36%
Diff R/F	12.38%	N/A	N/A	N/A	N/A	N/A	12.32%
Level 5							_
Flankers	N/A	\$35.00	N/A	N/A	N/A	N/A	\$35.00
Incumbents	N/A						
Regionals	N/A	\$34.46	N/A	N/A	N/A	N/A	\$34.46
Diff I/F	N/A						
Diff R/F	N/A	-1.54%	N/A	N/A	N/A	N/A	-1.54%
Level 6							
Flankers	\$44.91	\$38.94	\$44.57	\$44.57	\$46.23	\$44.57	\$43.96
Incumbents	N/A						
Regionals	\$40.43	\$55.46	\$39.00	N/A	\$62.08	\$39.00	\$47.19
Diff I/F	N/A						
Diff R/F	-9.98%	42.42%	-12.49%	N/A	34.28%	-12.49%	7.35%
Level 7							
Flankers	\$54.43	\$40.52	\$54.22	\$54.29	\$55.87	\$54.22	\$52.26
Incumbents	N/A	\$60.46	N/A	N/A	N/A	N/A	\$60.46
Regionals	\$55.43	\$48.90	\$39.00	N/A	\$67.08	\$39.00	\$49.88
Diff I/F	N/A	49.20%	N/A	N/A	N/A	N/A	15.70%
Diff R/F	1.84%	20.67%	-28.07%	N/A	20.06%	-28.07%	-4.55%
Level 8							_
Flankers	\$62.24	\$55.59	\$61.81	\$61.81	\$63.89	\$70.00	\$61.19
Incumbents	\$70.43	\$73.79	\$70.00	\$70.00	\$72.08	\$70.00	\$71.05
Regionals	\$65.43	\$70.46	\$50.00	N/A	\$72.08	\$50.00	\$61.59
Diff I/F	13.16%	32.75%	13.26%	13.26%	12.82%	0.00%	16.12%
		0=070		. 00,0		0.0070	1011270
Diff R/F	5.13%	26.75%	-19.10%	N/A	12.82%	-28.57%	0.66%

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Table 4 also includes the regionals' average prices for the same cities and provides percentage-based price differentials between the regionals' and incumbents' Flanker brand prices. The regionals' prices are lower than the incumbents' Flanker brand prices in Ontario and BC but often higher in other regions. The relationship between Flanker prices and regional operator prices varies widely across regions and basket levels with no clear pattern, other than as mentioned above.

MVNO Prices

Mobile wireless service prices offered by three mobile virtual network operators (MVNOs) – i.e., Cityfone (owned by Rogers), PC Mobile (owned by Bell) and 7-11 (non-affiliated) – were also collected. Table 5 provides a summary of the

national-level price differentials between the incumbents' primary brands and MVNOs for each of the mobile service baskets. MVNOs and incumbents only offer common plans in basket L1. MVNOs offer lower prices than incumbents in the L1 basket. We note that MVNOs do not offer higher level baskets (L7 and L8).

Table 5: 2023 Canadian Incumbent vs. MVNO Mobile Prices

	NS	QC	ON	MB	SK	ВС	Canada
Level 1							
Incumbents	\$35.43	\$35.13	\$35.00	\$35.00	\$37.08	\$35.00	\$35.44
MVNOs	\$20.85	\$20.88	\$20.42	\$20.42	\$22.50	\$20.42	\$20.92
Difference M/I	-41.15%	-40.56%	-41.66%	-41.66%	-39.32%	-41.66%	-40.98%
Level 2							
Incumbents	N/A						
MVNOs	\$26.67	\$26.67	\$26.67	\$26.67	\$26.67	\$26.67	\$26.67
Difference	N/A						
Level 3							
Incumbents	N/A						
MVNOs	\$35.85	\$37.67	\$37.36	\$35.42	\$37.50	\$35.42	\$36.54
Difference	N/A						
Level 4							
Incumbents	N/A	\$45.46	N/A	N/A	N/A	N/A	\$45.46
MVNOs	N/A						
Difference	N/A						
Level 5							
Incumbents	N/A						
MVNOs	N/A	\$41.67	\$41.67	N/A	N/A	N/A	\$41.67
Difference	N/A						
Level 6							
Incumbents	N/A						
MVNOs	\$40.85	\$40.88	\$40.42	\$40.42	\$42.50	\$40.42	\$40.92
Difference	N/A						
Level 7							
Incumbents	N/A	\$60.46	N/A	N/A	N/A	N/A	\$60.46
MVNOs	N/A						
Difference	N/A						
Level 8							
Incumbents	\$70.43	\$73.79	\$70.00	\$70.00	\$72.08	\$70.00	\$71.05
MVNOs	N/A						
Difference	N/A						

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Finally, we note that MVNO prices tend to be highly uniform across the country. As noted, incumbents generally only offer plans in two service baskets (with the exception of the Quebec market), showing uniformity in both.

High and Low Prices

For Canada, the highest and lowest prices (offered by specific providers) are provided in Table 6 below. We would note that secondary Flanker brands (Chatr, Lucky or Public) offered the lowest price in six baskets. An incumbent had the highest (or equal to the highest) price in three baskets.

Table 6

Canada Wireless Plans 2023										
Lowest and Highest Canadian Prices										
Baskets		Canada	Canada	Canada						
		low	high	average						
1) Talk and Text	Price	\$20.42	\$42.08	\$35.29						
	WSP	PC Mobile (multi)	FIDO, SaskTel (SK)							
2) 1 GB, data only	Price	\$12.08	\$26.67	\$25.96						
	WSP	SaskTel (SK)	7 11 (multi)							
3) 2-4 GB data	Price	\$30.00	\$40.46	\$35.25						
	WSP	Chatr (QC)	Cityfone (QC)							
4) 5-6 GB data	Price	\$40.00	\$45.46	\$45.46						
	WSP	Chatr (multi)	Bell, Telus, Videotron (QC)							
5) 7-9 GB data	Price	\$34.46	\$41.67	\$39.28						
	WSP	Fizz (QC)	7 11 (multi)							
6) 10-19 GB data	Price	\$37.88	\$62.08	\$45.43						
	WSP	Lucky (QC)	SaskTel (SK)							
7) 20-49 GB data	Price	\$34.46	\$75.00	\$49.27						
	WSP	Virgin (QC)	Chatr (multi)							
8) 50-99 GB data	Price	\$45.46	\$90.46	\$69.19						
Wall Communications	WSP	Public Mobile (QC)	Rogers (QC)							

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We would note that an individual vendor price that is considerably lower than the national average can be found in all baskets and in most regions. The lowest individual plan price is found most often in Quebec.

3.3 International Mobile Wireless Service Prices

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.²¹

- 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 typically 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. However, as in Canada, unlimited national calling plans and service addons that cover calls to both fixed and mobile and both on and off-net mobile lines are now commonly available. In addition, several European vendors offer plans that include calling to other European countries at no additional charge.
- 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 and, in some cases, universal service fees
 (as in the case of Japan). In the U.S., there are a variety of regulatory
 fees, federal and state USF surcharges and other fees.²² We have
 collected these, where applicable, updated USF fees and carrier-specific
 regulatory cost recovery charges.

The charts below provide a comparison of current mobile wireless prices for Canada and the surveyed foreign jurisdictions for each of the eight wireless service baskets. All prices are expressed in PPP-adjusted Canadian dollars and exclude retail sales taxes. Attachment 3 provides more detailed international mobile wireless price information for each country and basket. It should be noted

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²¹ We would also point out that certain countries (e.g. France, Italy and Australia) offer very few mobile wireless plans with data at less than 10 MB.

²² See, for instance, http://www.fcc.gov/cgb/phonebills/WirelessPhonebill.html. Telecom specific state or local taxes are not included.

that the resizing of baskets in 2020 makes historical comparisons with earlier years inappropriate.

As a general observation, we note that Australia, France and Italy offer very few plans lower than L7. Australia in fact doesn't offer any plans below L7. The growing absence of lower-level plans from international providers is a trend we have noticed over the last few years. Canada and Germany are the only countries that have plans in every basket.

We also note that Level 8 was redefined in 2021 as 50-99 GB (vs. 50 GB+ in 2020) and that definition has been carried over in 2022 and 2023. There are numerous plans available internationally that offer 100 GB to unlimited data at various prices. These plans are partially tracked but are not included in the comparisons since they fall outside the specified range. In some cases, an international vendor's price for a 100 GB (or higher) plan is priced comparably (or even lower) than Canadian plans in the 50-99 GB range.

Additionally, we note that some of the lowest priced U.S. high-end plans are true unlimited plans and therefore fall outside the basket definition (i.e. 50-99 GB).

Japan has the highest prices at all levels except L1. Japan, Canada and the U.S. consistently have higher prices than the other surveyed countries.²³

Table 7: Summary of International Mobile Wireless Prices

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
Level 1	\$35.29	n/a	n/a	n/a	\$10.45	\$14.61	n/a	\$37.06
Level 2	\$25.96	n/a	n/a	n/a	n/a	n/a	\$12.28	\$28.42
Level 3	\$35.25	\$84.82	n/a	\$23.51	n/a	n/a	\$16.78	\$100.46
Level 4	\$45.46	\$53.73	n/a	\$29.76	\$32.56	n/a	\$21.86	n/a
Level 5	\$39.28	n/a	n/a	\$17.99	n/a	n/a	\$25.20	n/a
Level 6	\$45.43	\$72.85	n/a	\$19.08	n/a	n/a	\$37.90	n/a
Level 7	\$49.27	n/a	\$29.33	\$31.41	\$34.94	n/a	\$54.49	\$90.81
Level 8	\$69.19	\$79.63	\$47.30	\$35.98	n/a	\$19.58	\$67.06	\$132.08

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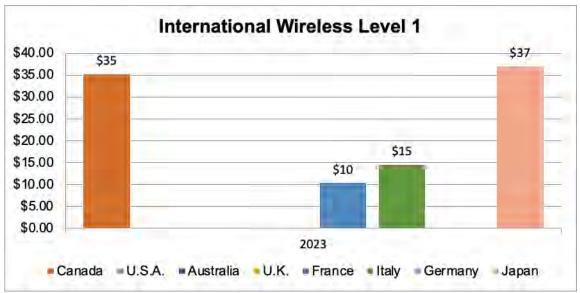
Individual basket level results are discussed below.²⁴

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²³ It is worth noting that many of the surveyed U.S. plans include roaming to Canada (and Mexico).

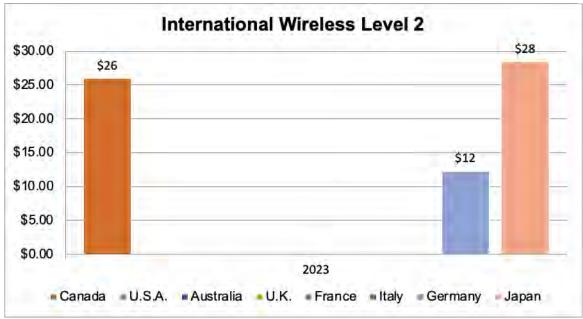
²⁴ A few relevant facts should be noted: 1) the U.S. currently has a very high USF charge (34.5%) of the retail price of a service plan; 2) Japan, U.S. and the U.K. do not have continuous plan price increases as basket size increases, in large part due to the limited number of providers (e.g. sometimes just a single "higher -priced" provider) in the low to mid-basket ranges; and 3) the surveyed US providers do not include MVNOs which often offer lower level plans at lower prices.

- In the case of the Level 1 mobile wireless service basket, the Canadian average price of \$35.29 is surpassed by Japan at \$37.06 but remains much higher than the lowest prices of \$10.45 (France) and Italy (\$14.61). This basket uses a minimum of 450 talk minutes and 300 texts but most plans (Japan excepted) are offered with an unlimited number of talk minutes and texts for a flat price.
- In our view, this evolution in plans demonstrates the now dominant importance of data allowances relative to talking (and texting). In fact, there are relatively few offerings of just talk and text – the vast majority of mobile wireless plans offered today include at least some data.



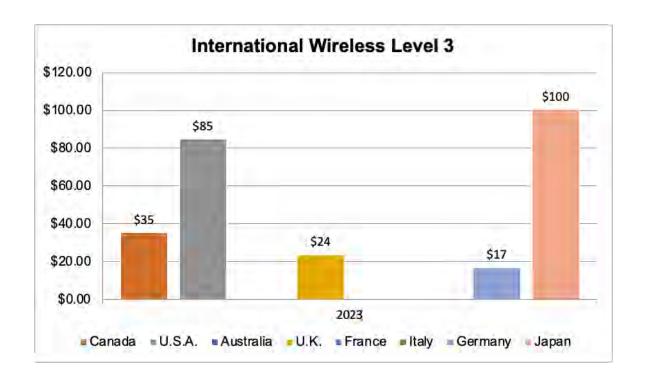
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 For the Level 2 service basket – simply 1 GB of data – only three countries had L2 offers: Canada, Germany and Japan. The Japanese price of \$28.42 is higher than the Canadian price (\$25.96) while the German price (\$12.28) is lower.



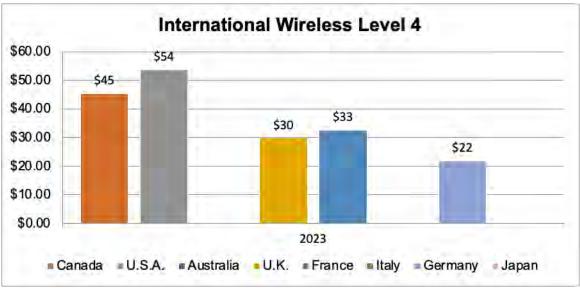
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 Only four countries had vendors that offered a plan in this range, one less than last year. For the Level 3 wireless service basket, the average Canadian monthly rate of \$35.25 is in the middle of surveyed countries, but is well below the highest price of \$100.46 found in Japan and in the next highest price of \$84.82 found in the U.S. Notably, the Canadian price is higher than the prices in the U.K. and Germany (\$23.51 and \$16.78 respectively).



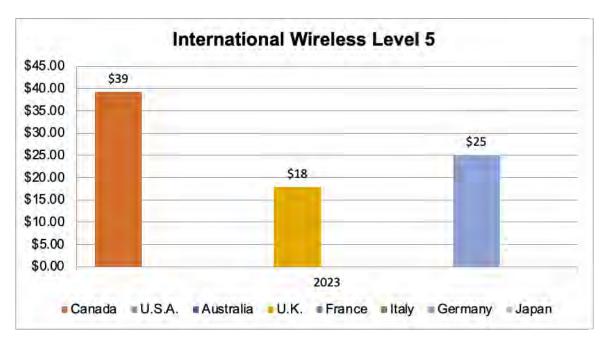
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 In the case of the Level 4 basket with 5-6 GB of monthly data allowance, the Canadian average price of \$45.46 is lower than the U.S. price of \$53.73 but is considerably higher than the prices found in the U.K., France and Germany.



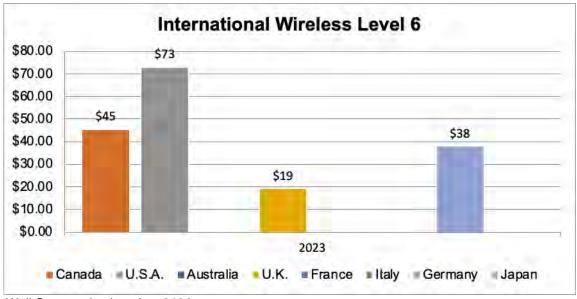
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 The Level 5 price in Canada of \$39.28 is considerably higher than either the price in the U.K. or Germany (\$17.99 and \$25.20 respectively). As previously noted, the dearth of low to mid-level plans is an increasing characteristic of the international landscape.



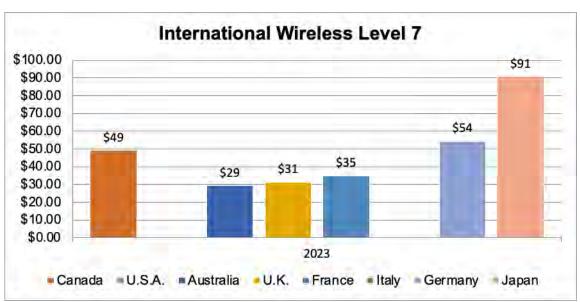
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 The Level 6 price in Canada of \$45.43 is lower than the \$72.85 price in the U.S. but higher than the prices in the U.K. (\$19.08) and Germany (\$37.90).



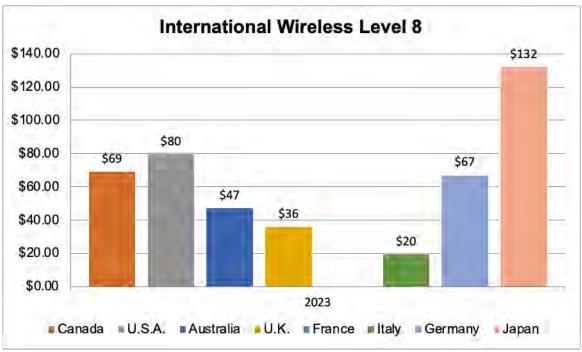
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• The Level 7 (20 to 49 GB) price in Canada is \$49.27, below the \$54.55 price found in Germany and well below Japan (\$90.81). The lowest prices are found in Australia (\$29.33), the U.K. (\$31.41) and France (\$34.94).



Wall Communications Inc. 2023

It is worth noting that L8 is the only basket where there is an offering (or offerings) in every country (except for France). The Level 8 (50-99 GB) price in Canada is \$69.19, less than the average prices found in the U.S. (\$79.63) and Japan (\$132.08). The prices found in Australia (\$47.30), the U.K. (\$35.98) and Italy (\$19.58) are all considerably lower than the Canadian price.



4.0 FIXED BROADBAND INTERNET SERVICE

4.1 Broadband Internet Service Baskets

In the 2023 study, we continue to use a provider classification system that identifies vendors as cable, telephone, Flankers or wholesale-based competitors (WBCs). The reality is somewhat more complicated. For example, cable TV providers now commonly offer fixed line telephone service while conventional telephone companies offer TV services.

As noted earlier, Bell (a "telephone" company) recently purchased and operates Primus – a WBC. Primus had earlier acquired Distributel – another large WBC. Videotron (a "cable" company) purchased and operates VMedia – also a WBC. Fido – originally a mobile wireless flanker brand owned by Rogers – now offers a fixed broadband service in Ontario. Virgin (owned by Bell) provides a similar broadband flanker service in Ontario and Quebec. Fizz – a mobile flanker brand of Videotron – now also offers a fixed broadband service in Quebec (and eastern Ontario).

For the 2023 Study, we retain the seven broadband Internet service baskets, which are primarily defined on the basis of download speed:

- Level 1: speeds of 3-9 Mbps;
- Level 2: speeds of 10 to 15 Mbps;
- Level 3: speeds of 16 to 40 Mbps;
- Level 4: speeds of 41 to 100 Mbps:
- Level 5: speeds of 101 to 250 Mbps;
- Level 6: speeds of 251 to 500 Mbps; and
- Level 7: speeds greater than 500 Mbps.²⁵
 - **Level 1**: Speed: Internet service with advertised²⁶ download speed of up to **3 to 9 Mbps**.

Data usage per month: 10 GB.

• Level 2: Speed: Internet service with advertised download speed of 10 to 15 Mbps.

²⁵ We note that in 28 of the total 38 observations in this category (domestic and international combined) the advertised download speed was close to 1 Gbps or higher.

²⁶ 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. The CRTC 2022 CMR noted that the average weighted download speed for Canadians was 258.8 Mbps in 2021.

Data usage per month: **50 GB**.

 Level 3: Speed: Internet service with advertised download speed of 16 to 40 Mbps.
 Data usage per month: 100 GB.

 Level 4: Speed: Internet service with advertised download speed of 41 to 100 Mbps.
 Data usage per month: 150 GB.

 Level 5: Speed: Internet service with advertised download speed of 101 to 250 Mbps.
 Data usage per month: 500 GB

Level 6: Speed: Internet service with advertised download speed of 251 to 500 Mbps.
 Data usage per month: 500 GB or higher (including Unlimited)

Level 7: Speed: Internet service with advertised download speed of greater than 500 Mbps.
 Data usage per month: 500 GB or higher (including Unlimited)

It should be noted that broadband speeds have increased dramatically over the past decade and the baskets used in the Telecom Pricing Reports have accordingly been adjusted.

 Table 9: Changes to Broadband Baskets Criteria 2010 to 2022

Basket	2010	2011	2012 - 2015	2016-2017	2018-2019	2020-2022
Level 1	< 1.5	< 1.5 Mbps	< 3 <i>Mbps</i>	3 - 9 Mbps	3 - 9 Mbps	3 - 9 Mbps
	Mbps					
Level 2	2 – 9	2 – 9 Mbps	4 – 15 Mbps	10 – 15 Mbps	10 – 15 Mbps	10 – 15 Mbps
	Mbps					
Level 3	10 – 19	10 – 19	16 – 40	16 – 40 Mbps	16 – 40 Mbps	16 – 40 Mbps
	Mbps	Mbps	Mbps			
Level 4	-	> 20 Mbps	> 40 Mbps	41– 100	41- 100	41- 100 Mbps
				Mbps	Mbps	
Level 5	-	-	-	> 100 Mbps	101-250	101-250
				•	Mbps	Mbps
Level 6					251-500	251-500
					Mbps	Mbps
Level 7					•	500 Mbps>

Modem rental fees are not taken into account since they are typically not mandatory in today's markets— they are either included in a plan or the customer can provide their own modem. This methodology change has been implemented this year to reflect current market behaviour. One-time installation or activation fees are not included unless they are clearly required by the provider.

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 sometimes applied when the data allowance is exceeded. More recently, providers tend to reduce transmission speed once a data threshold has been reached. In virtually all cases, the applicable data caps were high enough that no overage fees are incurred given the data usage assumptions adopted for the defined broadband service baskets.

Table 10: Canadian Broadband Download/Upload Mbps Speeds (Cap if not unlimited) Canada 2023

	L1	L2	L3	L4	L5	L6	L7
Halifax							
Bell						500/500	1.5G /940
Eastlink						350/10	940/15
TekSavvy	7/.6			100/10			
VMedia	7/1	15/1		100/10	150/10	300/10	
Montreal							
Bell			25/10	50/30		500/500	1.5G/ 940
Videotron			30/10	60/30		400/50	
Distributel			25/25	50/50	150/150	500/500	1G/1G
TekSavvy	5/1 (200)		30/10	60/10	120/20		
Fizz		10/1.5	30/10	60/10	200/30	400/50	
Virgin		15/10	30/10	60/10		300/100	
Toronto							
Bell		10/1 (100)		50/10	150/150	500/500	1.5G/ 940
Rogers		10/1 (100)		50/10	150/15	500/20	1.5G/50
Distributel			25/25	50/50	150/150	500/500	1G/940
TekSavvy	6/1 (200)	10/1	30/5	100/10		300/30	1G/50
Virgin				50/10		300/100	
Fido				50/10			
CIK			30/5	75/7.5	150/10	300/15	750/20
Winnipeg							
Bell		10/10	25/25	50/50		500/500	940/940
Rogers				75/ 75	250/100	500/100	1G/100
TekSavvy	5/.5 (400)	10/1	30/5	60/6		500/100	1G/100
VMedia			25/2.5	75/7.5	150/10	300/15	750/100
Regina							
SaskTel	5/1	10/1	20/10	60/30	150/75	300/150	600/300
Access			25/3	75/7	175/15	350/20	700/25
TekSavvy	5/.5 (400)	10/1	30/5	60/6		500/100	1G/100

VMedia			25/2.5	75/7.5	150/10	300/300	1G/100
Vancouver							
TELUS			25/10		250/250	500/500	940/940
Rogers				75/75	250/100	500/100	1G/100
Distributel	6/1	15/1	25/2	50/10	250/15		
TekSavvy	5/.5 (400)	10/1	30/5	60/6		500/100	1G/100
Can. Ave. Download	5.1	11.25	27.1	64.6	166.9	416.0	1034.0

4.2 Canadian Broadband Service Prices

Figure 2 below provides a summary of Canadian weighted average fixed broadband Internet access service prices for the Levels 1 to 7 service baskets for the period 2021 to 2023. More detailed historical broadband price information by city is provided in Table A2.2 in Attachment 2. Table 11 displays average regional broadband prices.

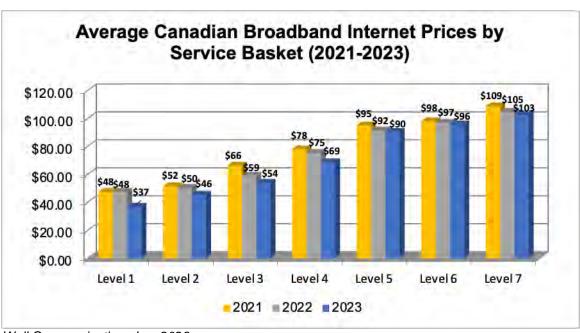
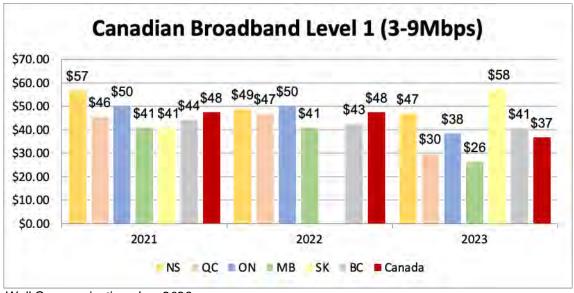


Figure 2

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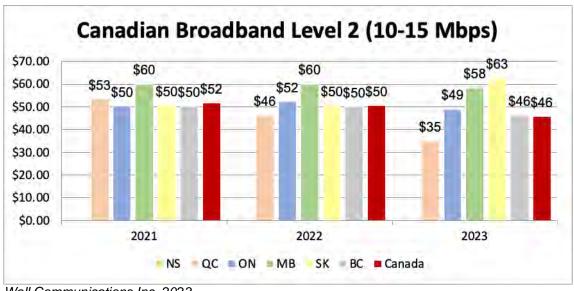
We note that fixed broadband average prices decreased in every basket between 2022 and 2023. This widespread decline has occurred for two years in a row. Prices declined between 1.2% (L5) and 22.3% (L1).

• The Level 1 national average broadband price fell to \$36.99 from \$47.61 in 2023. Average 2023 Level 1 prices varied from \$26.45 in Winnipeg to \$57.54 in Regina. We note that Winnipeg has exhibited the lowest L1 price over the last six years. The Level 1 average Canadian price is the lowest it has been since 2019. As noted, our criterion for Level 1 has evolved over time such that the "quality" of the basket has also been improving as speeds have increased (see Table 9).



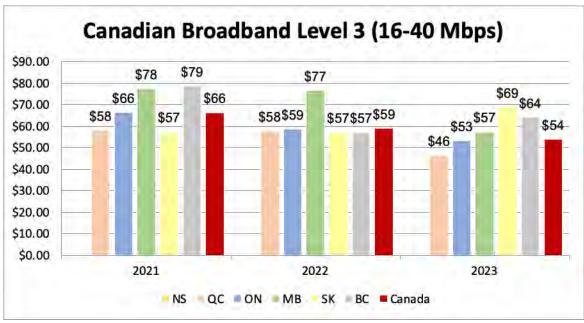
Wall Communications Inc. 2023

The 2023 Level 2 basket price decreased from \$50.42 in 2022 to \$45.59.
 Average 2023 Level 2 prices varied from a low of \$35.00 in Montreal to \$62.61 in Regina.



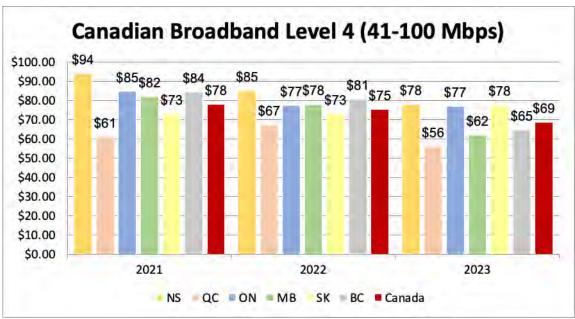
Wall Communications Inc. 2023

The 2023 Level 3 national average price fell from \$59.01 in 2022 to \$54.03
 – a decrease of more than 8%. Regina had the highest price at \$68.80 with the lowest price (\$46.43) once again found in Montreal.



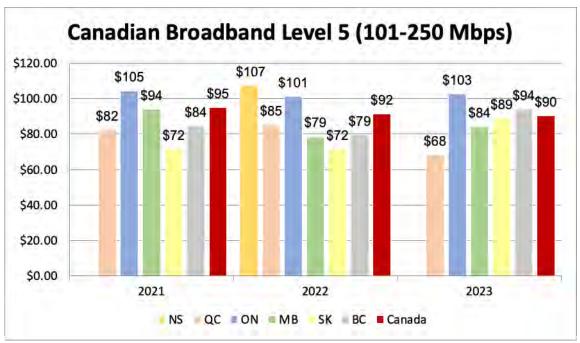
Wall Communications Inc. 2023

• The Level 4 national price fell from \$75.38 in 2022 to \$68.76 in 2023. Average 2023 Level 4 prices varied from \$55.97 in Montreal to \$77.95 in Halifax.



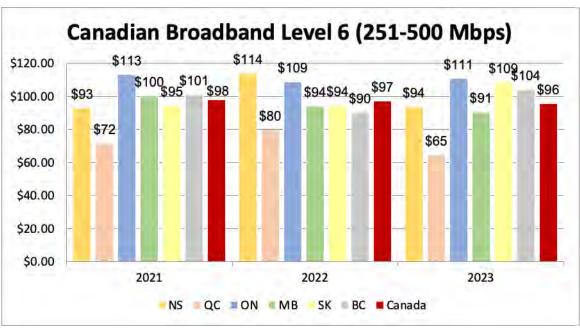
Wall Communications Inc. 2023

• The Level 5 national average price decreased slightly from \$91.50 in 2022 to \$90.39 in 2023. Toronto had the highest price (\$102.80) while the lowest price was found in Montreal (\$68.08).

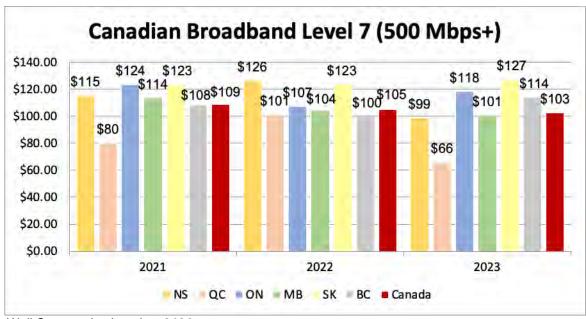


Wall Communications Inc. 2023

 Level 6 prices decreased marginally from \$96.97 in 2022 to \$95.75 in 2023. Prices varied from \$64.54 (Montreal) to \$110.63 (Toronto).



 Level 7 – introduced in 2020 at 500 Mbps or greater – posted an average national price of \$Regina (\$127.12) with the lowest average price found in Montreal (\$65.81).



Wall Communications Inc. 2023

It is worth noting that Montreal had the lowest average prices in six of the seven baskets while Regina had the highest prices in five baskets.

Table 11: Canadian Regional Broadband Prices 2023

	NS	QC	ON	MB	SK	ВС	Canada
Level 1	\$46.95	\$29.95	\$38.45	\$26.45	\$57.54	\$40.70	\$36.99
Level 2	n/a	\$35.00	\$48.97	\$58.50	\$62.61	\$46.20	\$45.59
Level 3	n/a	\$46.43	\$53.45	\$57.37	\$68.80	\$64.06	\$54.03
Level 4	\$77.95	\$56.02	\$76.92	\$61.94	\$77.55	\$64.75	\$68.76
Level 5	n/a	\$68.08	\$102.80	\$84.18	\$88.81	\$94.08	\$90.39
Level 6	\$93.59	\$64.54	\$110.63	\$90.65	\$108.57	\$103.98	\$95.75
Level 7	\$98.59	\$65.81	\$118.36	\$100.65	\$127.12	\$113.98	\$102.52

Price variations in the case of broadband services can be affected by differences in service speeds offered by ISPs. For the most part, the plans that are sampled have the same or very similar speeds associated with a given basket level.

Canadian broadband service plans also span a range of data caps. For Level 1, the lowest posted data cap was 200 GB (with a cap high of unlimited data). For Level 2, data caps ranged from 100 GB to unlimited GB. For all other levels data caps are unlimited. Over time, data cap upper limits have been increasing steadily.

We would note that speeds of 100 Mbps or higher are common across the country – in contrast to even three years ago. We would also note that 1 Gbps service is now offered in all regions.

In contrast to mobile wireless prices, which have gravitated towards uniformity across the regions of Canada over the last few years, there is still considerable price variation in broadband prices from province to province. Quebec is most often the low-price setter among regions – in six of seven baskets.

4.3 Fixed Broadband - Incumbents, WBCs and Flankers

While Flanker brands have been a fixture in the mobile wireless market for more than a decade, they are relatively new to the fixed broadband market. Currently broadband Flankers operate in two provinces, Quebec and Ontario.

Wholesale based competitors (WBCs) have been in operation for several years and operate in all regions of the country. With Bell's acquisition of Primus (and Distributel by extension), TekSavvy is the only large independent WBC offering services across the country. VMedia (owned by Videotron) provides service in Nova Scotia, Saskatchewan and Manitoba. CIK, an independent WBC, provides service in predominantly in Ontario²⁷.

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²⁷ CIK prices are tracked in the data base, but they are not included in calculating price averages, The total CIK customer base is reported (from the CIK website) as 250,000 total customers (apparently across several countries), and includes customers for internet, phone services,

In Table 12 below, we have added a category for independent WBCs (IWBCs) for purposes of comparing prices. Essentially the incumbent vs. IWBC comparison just involves the TekSavvy price relative to the average of incumbent prices in every region.

As was the case in past years, WBC prices tend to be lower than incumbent prices in most regions with the exception of the Quebec market. There is a substantial difference between the pricing of the incumbent (Bell Canada) and the lone WBC (Distributel) in the Quebec market. For national prices, WBCs are lower in every basket except for L7. We note that there is still quite a bit of price variability across regions.

Prices from IWBCs are lower than WBC prices in every level except for L4, L6 and L7. Consequently, the price differential between incumbents and IWBCs is greater than the differential of incumbent to WBC average price levels in those baskets.

Table 12: Fixed Broadband Prices of Incumbents vs. WBCs and IWBCs

	NS	QC	ON	MB	SK	ВС	Canada
Level 1							
Incumbents	n/a	n/a	n/a	n/a	\$57.95	n/a	\$57.95
WBC	\$44.95	\$29.95	\$38.45	\$26.45	\$26.45	\$40.70	\$34.49
IWBCs	\$41.95	\$29.95	\$38.45	\$26.45	\$26.45	\$26.45	\$31.62
Dif W/In	n/a	n/a	n/a	n/a	-54.36%	n/a	-40.48%
Dif IW/In	n/a	n/a	n/a	n/a	-54.36%	n/a	-45.44%
Level 2							
Incumbents	n/a	N/A	\$50.00	\$60.00	\$62.95	n/a	\$57.65
WBC	\$43.95	\$35.00	\$36.95	\$37.45	\$37.45	\$46.20	\$39.50
IWBCs	n/a	n/a	\$36.95	\$37.45	\$37.45	\$37.45	\$37.33
Dif W/In	n/a	n/a	-26.09%	-37.58%	-40.51%	n/a	-31.48%
Dif IW/In	n/a	n/a	-26.09%	-37.58%	-40.51%	n/a	-35.25%
Level 3							
Incumbents	N/A	\$45.00	N/A	\$60.00	\$69.45	\$65.00	\$59.86
WBC	n/a	\$50.80	\$53.45	\$48.95	\$68.95	\$53.95	\$55.22
IWBCs	n/a	\$53.45	\$43.47	\$47.95	\$47.95	\$47.95	\$48.15
Dif W/In	n/a	12.89%	n/a	-18.42%	-0.72%	-17.00%	-7.76%
Dif IW/In	n/a	18.78%	n/a	-20.08%	-30.96%	-26.23%	-19.56%
Level 4							
Incumbents	N/A	\$55.00	\$80.00	\$62.50	\$76.95	\$65.00	\$67.89
WBC	\$65.45	\$57.47	\$59.45	\$48.95	\$51.45	\$61.45	\$57.37
IWBCs	\$77.95	\$63.45	\$53.95	\$57.95	\$57.95	\$57.95	\$61.53
Dif W/In	n/a	4.48%	-25.68%	-21.68%	-33.14%	-5.46%	-15.50%
Dif IW/In	n/a	15.36%	-32.56%	-7.28%	-24.69%	-10.85%	-9.36%

security services and other services. CIK also has some customers in provinces other than Ontario. Calculating a CIK Ontario market share is not attempted due to lack of data.

Level 5							
Incumbents	N/A	n/a	\$105.00	\$85.00	\$89.45	\$95.00	\$93.61
WBC	\$69.95	\$65.47	\$69.95	\$69.95	\$68.95	\$99.95	\$74.04
IWBCs	n/a	\$58.95	\$59.99	n/a	n/a	n/a	\$59.47
Dif W/In	n/a	n/a	-33.38%	-17.71%	-22.92%	5.21%	-20.91%
Dif IW/In	n/a	n/a	-42.86%	n/a	n/a	n/a	-36.47%
Level 6							
Incumbents	\$93.73	\$62.50	\$115.00	\$90.00	\$109.45	\$105.00	\$95.95
WBC	\$79.95	\$74.48	\$86.95	\$92.45	\$92.45	\$104.95	\$88.54
IWBCs	n/a	n/a	\$83.95	\$104.95	\$104.95	\$104.95	\$99.70
Dif In/WBC	-14.70%	19.16%	-24.39%	2.72%	-15.53%	-0.05%	-7.72%
Dif IW/In	n/a	n/a	-27.00%	16.61%	-4.11%	-0.05%	3.91%
Level 7							
Incumbents	\$98.73	\$60.00	\$120.00	\$100.00	\$126.95	\$115.00	\$103.45
WBC	n/a	\$109.95	\$105.20	\$102.45	\$99.95	\$114.95	\$106.50
IWBCs	n/a	n/a	\$100.45	\$114.95	\$114.95	\$114.95	\$111.33
Dif W/In	n/a	83.25%	-12.33%	2.45%	-21.27%	-0.04%	2.95%
Dif IW/In	n/a	n/a	-16.29%	14.95%	-9.45%	-0.04%	7.62%

Table 13: Fixed Broadband Prices of Incumbents vs. Flankers

	QC (Virgin and Fizz)	ON (Virgin and Fido)
Level 1		
Incumbent	n/a	n/a
Flankers	n/a	n/a
Dif FL/In	n/a	n/a
Level 2		
Incumbent	n/a	\$50.00
Flankers	\$35.00 (both Fizz and Virgin)	n/a
Dif FL/In	n/a	n/a
Level 3		
Incumbent	\$45.00	n/a
Flankers	\$39.00 (both Fizz and Virgin)	n/a
Dif FL/In	-13.3%	n/a
Level 4		
Incumbent	\$55.00	\$80.00
Flankers	\$45.00 (both Fizz and Virgin)	\$50.00 (Virgin, Fido=\$50)
Dif FL/In	-18.2%	-37.50%
Level 5		
Incumbent	n/a	\$105.00
Flankers	\$55.00 (Fizz)	n/a
Dif FL/In	n/a	n/a
Level 6		
Incumbent	\$62.50	\$115.00
Flankers	\$58.00 (Fizz=\$59; Virgin=\$57)	\$72.50 (Virgin)
Dif FL/In	-7.2%	-37.0%
Level 7		

Incumbent	\$60.00	\$120.00
Flankers	n/a	n/a
Dif FL/In	n/a	n/a

Wall Communications Inc. 2023

As noted, Flanker broadband service is only offered in Ontario and Quebec. As was the case last year, the Flanker price is lower than the incumbent price in all cases where both the incumbent primary and Flanker brands offer a service. In Quebec Flanker prices are lower in two of three instances while in Ontario Flanker prices are lower in two of two instances. We also note that incumbent prices are substantially lower in Quebec than in Ontario in all cases where plan baskets match.

We note that there is one regional provider that also uses a Flanker brand: Fizz is the secondary brand of Videotron in Quebec. In every case where Virgin (the Bell Flanker) and Fizz both offer plans (L2, L3, L4 and L6), the Fizz plan is offered at a similar or exactly the same price.

No Flanker brand offers a plan in L1 or L7.

4.4 International Fixed Broadband Service Prices

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 may also have to lease a landline connection (which adds an additional access line charge).
- Fibre and/or DSL-based broadband services offered in the U.K., France, Germany and Italy generally include VoIP and/or IPTV 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 and (ii) an Internet access service provided by a thirdparty ISP. Therefore, there are two fees involved: the broadband access fee and the ISP fee.
- In the U.S., U.K., Australia, France, Italy, Germany and Japan lower-level plans (L1, L2) are no longer offered only Canada offers these plans.

Table 14 below provides a summary of the unweighted average "advertised" download and upload service speeds of the surveyed broadband services included in each of the seven specified broadband service baskets for Canada and the surveyed foreign jurisdictions.²⁸ Data caps are typically no longer listed in most countries (with the exception of Canada and Australia) – either because the vendor has chosen not to state the cap or (more likely) because the plans do not have data caps.

Table 14: International Fixed Broadband Country Average Advertised Download Speeds (Mbps)

	L1	L2	L3	L4	L5	L6	L7
Can.	5.1	11.3	27.1	63.2	177.8	415.4	1,031.0
US	NA	NA	30.0	62.5	196.1	418.3	904.5
UK	NA	NA	37.0	62.0	190.1	408.1	880.2
AU	NA	NA	25	50	245	NA	600
FR	NA	NA	20	NA	NA	330	1,500
JA	NA	NA	NA	NA	200	NA	1,800
IT	NA	NA	NA	100	NA	NA	1,000
GR	NA	NA	16	50	250	500	1,000
Int. Av. (exc. Canada)	NA	NA	25.9	64.6	216.2	414.1	990.7

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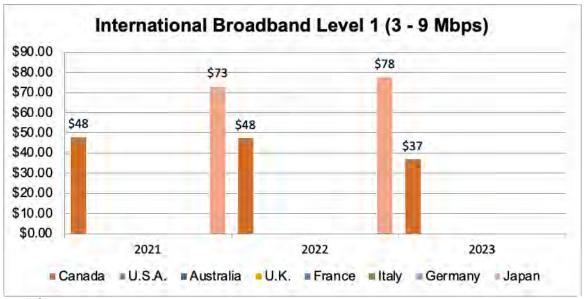
While past Studies have identified trends or relatively clear-cut international comparative conclusions, this year continues the general finding that Canada tends to have the highest broadband prices compared to all other countries with the exception of Australia. The offering of lower-level plans (i.e. L1 and L2) in 2021 and 2022 was limited to just Canada and Japan. In 2023, Canada is the only country offering either an L1 or L2 plan. At the higher end, almost every country now offers a 1 Gbps plan and every country offers a plan that is greater than 500 Mbps (i.e. the lower bound of the L7 category).

Findings for each of the seven broadband service baskets are described below.

• Level 1 broadband services were only available from surveyed ISPs in Canada. Canada's average monthly price of \$36.99 is considerably lower than the 2022 average price of \$47.61.

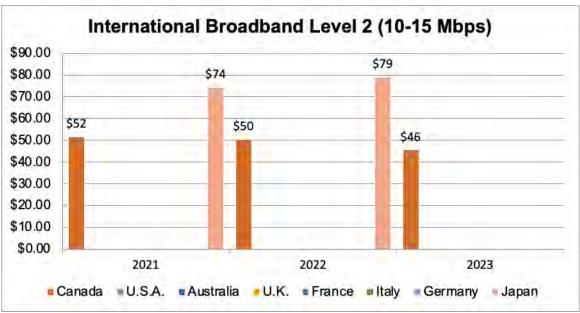
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²⁸ While advertised download speeds are readily available, the same is not true for upload speeds.



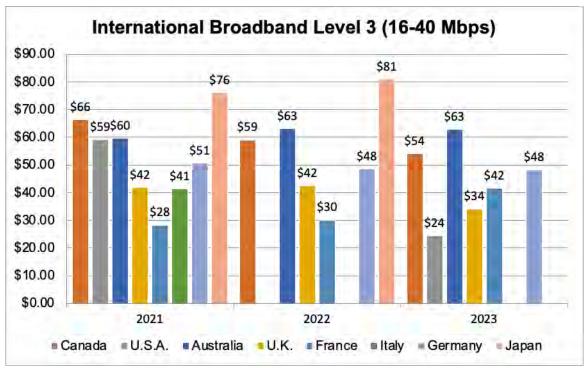
Wall Communications Inc. 2023

 In the case of the Level 2 basket, again only Canada provides this level of service. Canada's average monthly price of \$45.59 is lower than the average 2022 price of \$50.42.



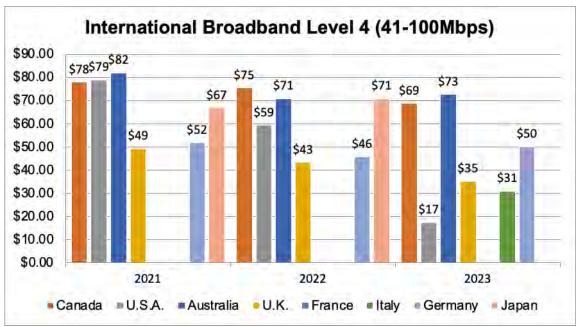
Wall Communications Inc. 2023

• For the Level 3 basket, Canada's average monthly price of \$54.03 is higher than all other countries except for Australia (\$62.76).



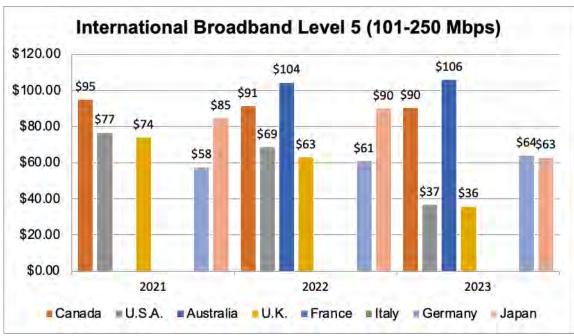
Wall Communications Inc. 2023

 For the Level 4 basket, Canada's average monthly price of \$68.76 is higher than all other countries with the exception of Australia. Prices in all other countries are at (or under) the \$50 mark.



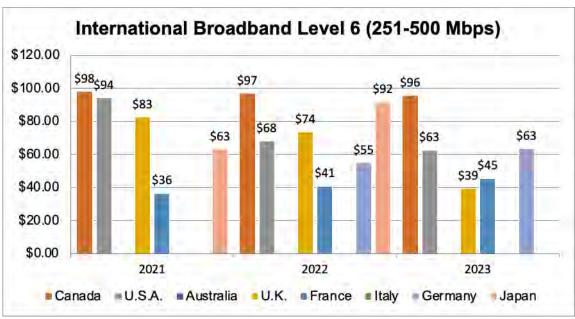
Wall Communications Inc. 2023

 The highest L5 prices are once again found in Canada (\$90.39) and Australia (\$105.88).



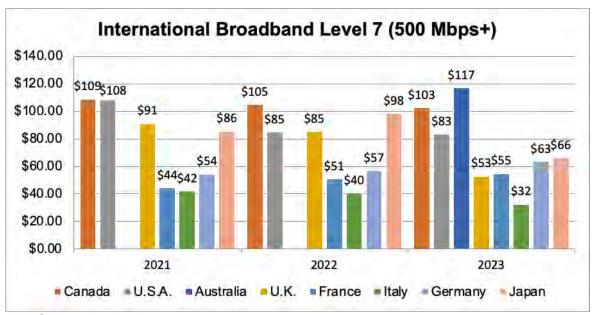
Wall Communications Inc. 2023

 The Canadian Level 6 broadband price of \$95.75 is the highest of the surveyed countries. The lowest price of \$39.46 is found in the U.K.



Wall Communications Inc. 2023

• The average price for Level 7 in Canada is \$102.52 is lower than the price in Australia (\$116.90). The U.K., France, Italy and Germany all have prices less than \$65 with the lowest price found in Italy (\$32.45).



Canada's broadband service relative price ranking has remained fairly consistent since the study was first conducted in 2008. The measured prices for the European countries included in the study (U.K., France, Italy and Germany) have consistently been lower than those in Canada – in some cases, by a wide margin. U.S. average price, which has been similar or higher than Canada's price for many years prior to 2021, is consistently lower in 2023 in all baskets where both countries offer a comparable service (i.e. L3 to L7)

All countries (except for Australia) have lower prices than Canada in a majority of baskets. Relative to last year, Canadian prices have declined in every basket.

5.0 TRANSITION SECTION ON PRICES IN THE CANADIAN FAR NORTH

5.1 Introduction

Last year, the Spotlight Section for the 2022 version of the Telecom Pricing Report examined the provision and pricing of telecom services in the Canadian Far North. Specifically, mobile wireless and fixed internet prices were examined for three centers: Yellowknife (Northwest Territories), Whitehorse (the Yukon) and Iqaluit (Nunavut). Going forward, the Far North will be added to the standard analysis of the six surveyed Canadian regions (Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan and British Columbia).

Northwestel (NWT) is the incumbent telecom provider of fixed broadband service in the Far North. Mobile wireless services are not provided by NWT, but Bell Mobility, a subsidiary of NWT's parent company (BCE), does provide this service along with other MNO's Telus and Rogers in both Yellowknife and Whitehorse. Bell and Rogers also provide service in Iqaluit.

The primary competitor to Northwestel for broadband Internet is Xplore. Starlink has announced its intention to begin providing LEO service sometime in 2023, but no definitive start dates have been announced.

For mobile wireless, the MNOs compete with Ice Wireless (all three locations) and SSi Canada (Qiniq) in Iqaluit.

It is worth noting that all three Far North townships have very small populations and extreme weather conditions. The population of Whitehorse (2021 Census) is 28,201. The average annual temperature is -0.1 C with a daily mean temperature varying from 14.3 C (July) to -15.2 C (January). Whitehorse has little precipitation with an average annual snowfall of 141.8 cm (55.8 in) and 160.9 mm (6.33 in) of rainfall. The climate is considered "subarctic".

The population of Yellowknife (2021 Census) is 20,340. The daily mean temperature varies between 17 C (July) and -25.6 C (January). Yellowknife has an average annual snowfall of 157.6 cm (62.0 in) and 170.7 mm (6.72 in) of rainfall. The climate is considered "subarctic".

The population of Iqaluit (2021 Census) is 7,429. The daily mean temperature varies from 8.2 C (July) to -27.5 C (February). The climate is considered "tundra".

All told, the combined population of the Yukon, NWT and Nunavut regions is about 130,000 – roughly one third of one percent of the Canadian population. As such, prices in the Far North do not materially impact the overall Canadian price

averages. Far North prices are, however, compared to Canadian average prices in this section.

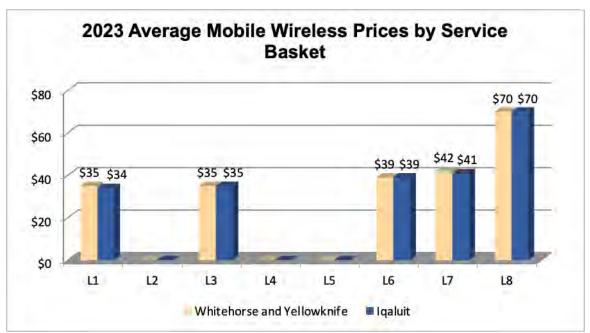
5.2 Price Review – Far North Mobile Wireless

Plan prices for comparative baskets (L1 to L8 in mobile) are provided for each location below.

Table 15: Mobile Wireless Prices in the Far North 2023

Whitehorse and Yellowknife							
	Bell	Telus	Rogers	Ice	Virgin	Koodo	Average
L1	\$35	\$35	\$35	\$25			\$34.69
L2							n/a
L3					\$35.00	\$35.00	\$35.00
L4							n/a
L5							n/a
L6					\$39.00	\$39.00	\$39.00
L7				\$39	\$45.00	\$45.00	\$42.43
L8	\$75	\$65	\$70		\$65.00	\$65.00	\$69.79

Iqaluit								
	Bell	Telus	Rogers	Ice	SSi			Average
L1	\$35		\$35.00	\$25	\$19.00			\$34.07
L2								n/a
L3						\$35.00		\$35.00
L4								n/a
L5								n/a
L6						\$39.00	\$39.00	\$39.00
L7				\$39		\$45.00	\$45.00	\$41.40
L8	\$75	\$65	\$70.00		\$60	\$65.00	\$65.00	\$69.69



The plan options in the Far North are split between baskets offered by the MNOs (and in some cases the regional provider Ice) and the two Flanker brands Virgin and Koodo (and in some cases Ice, a regional provider). The MNOs only offer two baskets (L1 and L8). The prices of the three MNOs are generally similar for both baskets.

A major change between 2022 and 2023 is the entry of Flanker brands. One or both Flankers offer plans in L3, L6, L7 and L8. Prices of both providers are the same where both offer a plan.

There is only one regional competitor to the MNOs and their Flankers in Whitehorse and Yellowknife and two competitors in Iqaluit. The market share of competitors to the MNOs is relatively small.

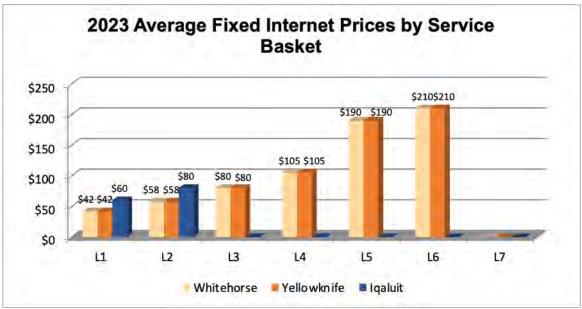
5.3 Price Review – Far North Fixed Broadband Internet

Plan prices for comparative baskets (L1 to L7 in fixed internet) are provided for each location below.

Table 16: Fixed Internet Prices in the Far North 2023

Whitehorse			
	NWTel	Xplore	Average

L1	\$41.95		\$41.95
L2	\$57.95		\$57.95
L3	\$79.95	\$79.99	\$79.97
L4	\$110.95	\$99.99	\$105.47
L5	\$189.95		\$189.95
L6	\$ 209.95		\$ 209.95
L7			
Yellowknife			
	NWTel		Average
L1	\$41.95		\$41.95
L2	\$57.95		\$57.95
L3	\$79.95	\$79.99	\$79.97
L4	\$110.95	\$99.99	\$105.47
L5	\$189.95		\$189.95
L6	\$ 209.95		\$209.95
L7			
lqaluit			
	NWTel	Xplore	Average
L1	\$60.00		\$60.00
L2	\$80.00		\$80.00
L3			
L4			
L5			
L6			
L7			



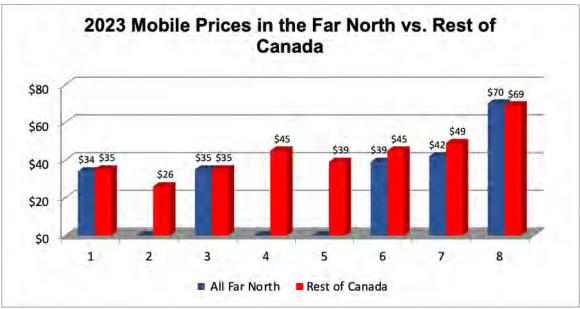
Only NWTel provides a comprehensive suite of Internet services in the Far North (although less so for Iqaluit). Options for consumers are very limited. NWTel is the only provider that utilizes terrestrial transport facilities for its service; other providers typically used some type of fixed wireless technology and/or satellite. While no market share data is available, it appears that the vast amount of subscribers are served by NWTel.²⁹

5.4 Far North Relative to Rest of Canada

Mobile Wireless

As can be seen in the Chart below, mobile wireless rates in the Far North compare favorably to prices in the rest of Canada, although the options available are limited relative to the rest of Canada.

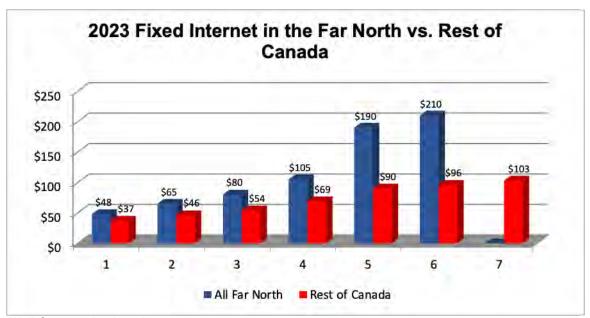
²⁹ Based on commentary from NWTel Far North competitors and business owners.



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Fixed Internet

As can be seen in the Chart below, fixed internet prices in the Far North are considerably higher than the rest of Canada – particularly as download speed is increased.



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6.0 SPOTLIGHT SECTION ON MONTHLY PRICING FEBRUARY TO OCTOBER 2023

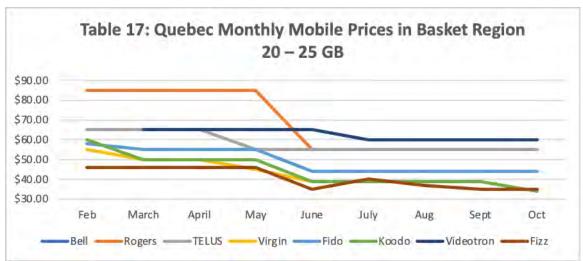
For the Spotlight section this year, the pricing behaviour of both mobile wireless providers and fixed broadband internet providers is examined during the period of February 2023 to October 2023. ATTACHMENT 4 contains the data underlying the following charts. Note that overlapping prices can be indistinct in the graphs.

6.1 Mobile Wireless in Selected Regions: February to October 2023

Pricing over the period is examined for the Quebec market (for the three MNOs – or Big Three - and their flanker brands as well as regional provider Videotron and its flanker Fizz) and for the Ontario, Alberta and BC regions (for the three MNOs and their flanker brands as well as regional provider Freedom).

Four mobile wireless baskets are examined: 20 to 25 GB, 40 to 50 GB, 60 to 75 GB and 100 to 150 GB.

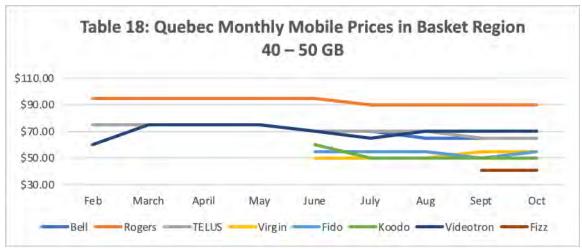
6.1.1 Quebec Mobile Wireless Pricing During 2023



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Pricing by the Big Three was generally similar to each other throughout the period (with Rogers higher than Bell and TELUS for the first few months). Pricing by the Big Three began in February at between \$65 and \$85 but had dropped to \$55 by October. Pricing by the Flankers was uniformly lower than the Big Three, beginning between \$55 and \$60 but dropping to \$34 to \$44 by the period's end.

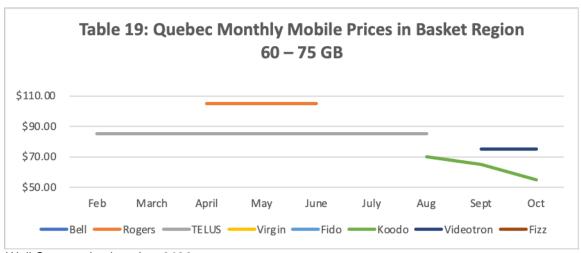
Videotron pricing tended to be equal or slightly higher than the Big Three throughout the period, although it did fall from \$65 in March to \$60 in October. Fizz, however, generally under-priced all other providers, falling from \$46 in March to \$35 in September. Fizz had the lowest price in six of the eight months where it offered a plan in the 20 to 25 GB basket.



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Pricing by the Big Three trended down over the period with price drops occurring in June, July and August. The Flankers did not introduce plans until June. The June to October Flanker prices were lower than both the Big Three and Videotron prices. Videotron had offered the lowest (or equal to lowest) price up to that point (February to May). A Flanker price was lowest between June and August.

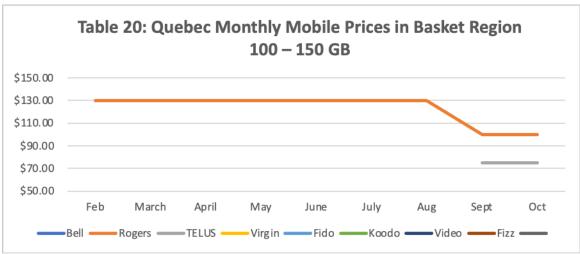
In September (and carrying into October), Fizz introduced a plan at a considerably lower price than the Flankers.



Pricing in the 60 to 75 GB range was intermittent with no provider providing a plan in every month. TELUS offered a plan in six of the nine months with the lowest (or equal to the lowest) price in six of the seven months that it provided plans.

The Flankers did not introduce plans until August (both Virgin and Koodo). A Flanker had the lowest priced plan in August through October.

Videotron did not introduce a plan until September in this range. Only the Flankers and Videotron offered plans in the last two months of the period.

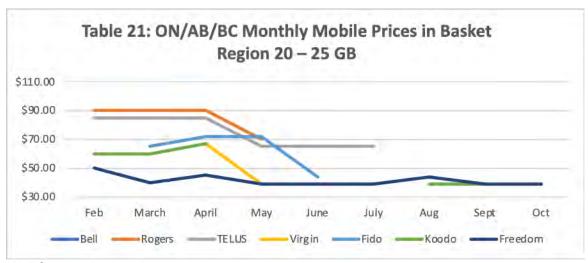


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Only Rogers offered a plan in the 100 to 150 GB range over the nine months surveyed. Both TELUS and Bell introduced plans in September, both at 25% lower than Rogers' price.

Neither Videotron or any Flanker offered a plan in this range.

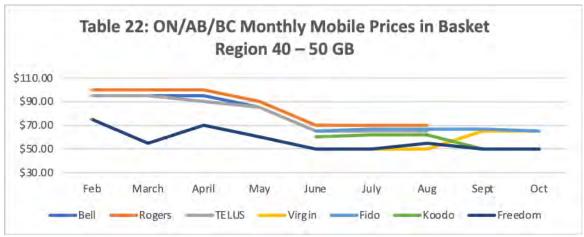
6.1.2 Ontario, Alberta and BC Mobile Wireless Pricing During 2023



While the Big Three typically offer the same slate of plans in Ontario, Alberta and British Columbia, there are a few exceptions. Bell and Rogers offered plans in all three provinces between February and May before dropping them. TELUS offered plans to the three provinces until May, but then only offered a plan in Alberta and BC for the next three months. The Big Three dropped prices between May and July.

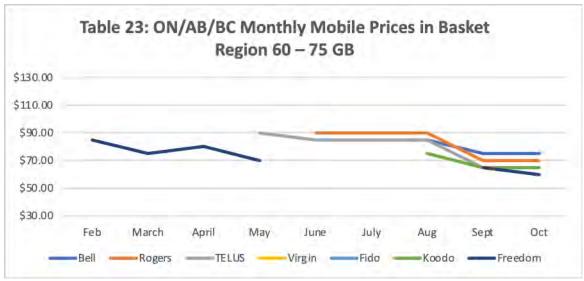
Koodo was the only Flanker with a plan in February, but they were joined by both Fido and Virgin in March. Flanker pricing was substantially lower than the Big Three pricing, much closer to – sometimes even matching - the prices offered by Freedom.

Freedom was the only provider to offer a plan throughout the entire period. Freedom offered the lowest (or equal to the lowest) monthly price in eight of nine months.



Bell, Rogers and TELUS all offered plans between February and August (seven months) before stopping. Prices were decreased by all three in May and then again in June. That same month (June) Fido, Virgin and Koodo began offering plans.

Freedom under-priced the Big Three in every month where they competed and offered the lowest (or equal to the lowest price) in eight of nine months. A Flanker price matched (or beat in one instance) the Freedom price in four of the months between July and October.

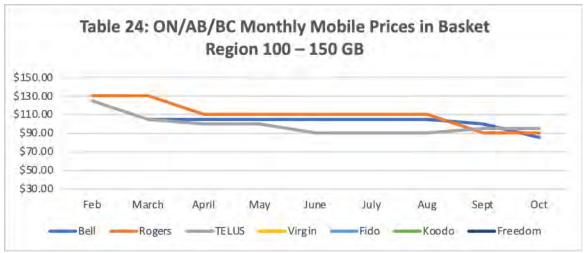


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No provider offered a plan in the 60 to 75 GB range in every month. Big Three prices dropped substantially over the period, starting at above \$100 and falling to as low as \$60 (from TELUS) in October. The TELUS \$60 plan matched the lowest price in the month of October (equal to the price of Freedom).

Flankers (Virgin and Koodo) only offered plans in the last few months of the period, with the Virgin plan only lasting for the month of August. Fido did not offer a plan during the period.

The Freedom price was the lowest (or equal to the lowest) in every month where it was offered (six months).



A plan in the 100 to 150 GB range was only offered by each of the Big Three – who provided plans in every month of the period. Prices from the Big Three were generally similar throughout the period with all three dropping prices in March and/or April. Rogers began the period with the highest price (\$130) but ended the period with a price of \$90. Bell had the lowest price by the period's end at \$85.

6.2 Broadband Pricing in Selected Regions: February to October 2023

Pricing over the period is examined for the Quebec market and for the Ontario, Alberta and BC collective regions. The providers examined are the large regional incumbents, a subsidiary of a large incumbent competing out of province, and an independent wholesale-based competitor (IWBC). The plans examined are the highest wireline home Internet speed plan offered by each respective provided as recorded - with that speed consistent for at least eight months and consistent the speed of plans offered by all other providers. Every provider provides a 1 Gbps plan in each month over the period so that speed has been used for uniform comparison.³⁰

As was the case for mobile wireless, the months of February to October 2023 are used in the analysis.

The providers examined are:

British Columbia	Alberta	Manitoba
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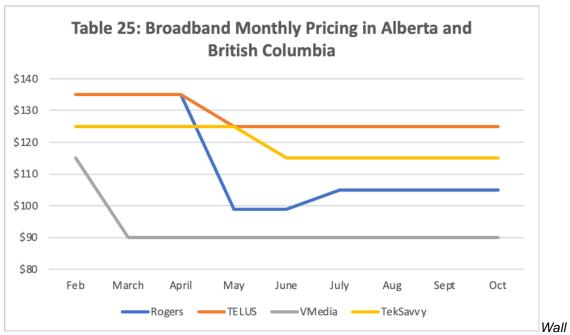
³⁰ Rogers offered a 1.5 Gbps plan over the entire period and TELUS offered plans of 2.5 Gbps and 3 Gbps for portions of the period. Pricing for these plans has been tracked in the data set but not used for comparative purposes.

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Incumbent 1	TELUS	TELUS	Bell/MTS
Incumbent 2	Rogers/Shaw	Rogers/Shaw	Rogers/Shaw
Incumbent Sub	VMedia	VMedia	VMedia
IWBC	TekSavvy	TekSavvy	TekSavvy

6.2.1 British Columbia and Alberta Fixed Broadband Pricing During 2023

As the prices by each surveyed provider are common between the provinces of British Columbia and Alberta, a single price is reported for the two provinces.

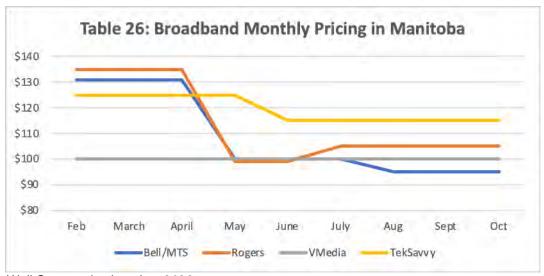


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As can be seen in the above table, VMedia (the out-of-province subsidiary of Videotron, a Quebec incumbent wireline provider) consistently offered the lowest price over the period. TekSavvy, the IWBC, offered the second lowest (or equal to the second lowest) price over the period until May when Rogers took over the number two spot (for lowest price).

6.2.2 Manitoba Fixed Broadband Pricing During 2023

The key difference between Alberta/British Columbia and Manitoba is the presence of Bell versus TELUS as an incumbent wireline provider. Rogers and TekSavvy exhibit the same prices over the period as were offered in Alberta/BC.



In the Manitoba market, the lowest price was provided by either one of the incumbents (Bell or Rogers) or the subsidiary of the out-of-province incumbent (VMedia). Pricing between all four providers was similar (between about \$95 and \$105 for the last five months of the nine month period).

6.3 Mobile Wireless vs. Fixed Broadband Pricing Behaviour Over the Period

A few brief observations can be made regarding pricing behaviour in the mobile wireless versus the broadband market.

- Pricing in the mobile wireless market appears to be much more dynamic than in the broadband market. Behaviour in the mobile market includes greater price movements by all providers, mid-period price introductions and greater price differentials between providers.
- Bell and Rogers (the two largest TSPs in Canada) offer the lowest prices at times in the Manitoba fixed broadband market while they never do in any regional mobile wireless market (with the exception of the 100 to 150 Gbps range where only Bell, Rogers and TELUS offer plans).

ATTACHMENT 1 – SERVICE BASKETS 2023

TABLE A1.1 MOBILE WIRELESS SERVICE BASKET DESCRIPTIONS

- Level 1: 450 voice minutes and 300 SMS (texts);
- Level 2: 1 GB of data usage per month (no talk or text);
- Level 3: unlimited nationwide talk and text along with 2-4 GB of data;
- Level 4: unlimited nationwide talk and text along with 5-6 GB of data;
- Level 5: unlimited nationwide talk and text along with 7-9 GB of data;
- Level 6: unlimited nationwide talk and text along with 10-19 GB of data;
- Level 7: unlimited nationwide talk and text along with 20-49 GB of data;
 and
- Level 8: unlimited nationwide talk and text along with 50-99 GB of data.

TABLE A1.2 BROADBAND INTERNET SERVICE BASKET DESCRIPTIONS

- **Level 1**: speeds of 3-9 Mbps:
- Level 2: speeds of 10 to 15 Mbps;
- Level 3: speeds of 16 to 40 Mbps;
- Level 4: speeds of 41 to 100 Mbps;
- Level 5: speeds of 101 to 250 Mbps:
- Level 6: speeds of 251 to 500 Mbps; and
- Level 7: speeds greater than 500 Mbps

ATTACHMENT 2 – CANADIAN PRICE COMPARISONS 2023

Table A2.1 – Canadian Historical Mobile Wireless Prices

Note: Due to Basket redefinitions in 2020, historical comparisons prior to that date are not exact in some categories

Level 1

	NS		QC		ON		MB		SK		ВС		Car	nada	YoY%
2017	\$	41.03	\$	38.62	\$	41.85	\$	36.40	\$	35.91	\$	44.40	\$	40.95	-16.00%
2018	\$	42.39	\$	36.69	\$	40.42	\$	39.25	\$	36.71	\$	41.28	\$	39.43	-3.72%
2019	\$	39.77	\$	37.23	\$	37.79	\$	38.90	\$	27.72	\$	39.28	\$	37.62	-4.59%
2020	\$	29.59	\$	30.86	\$	30.88	\$	30.96	\$	30.49	\$	29.71	\$	30.63	-18.57%
2021	\$	26.36	\$	27.53	\$	26.41	\$	27.12	\$	24.19	\$	26.68	\$	26.70	-12.83%
2022	\$	26.40	\$	26.99	\$	25.62	\$	25.53	\$	31.54	\$	25.42	\$	26.19	-1.90%
2023	\$	35.61	\$	35.05	\$	34.97	\$	35.47	\$	40.24	\$	35.33	\$	35.29	34.74%
CAGR		-2.33%		-1.60%		-2.95%		-0.43%		1.91%		-3.74%		-2.45%	

Level 2

	NS		QC		ON		МВ		SK		ВС		Car	nada	YoY%
2020	\$	33.37	\$	32.46	\$	32.24	\$	32.57	\$	20.21	\$	31.71	\$	31.82	
2021	\$	28.37	\$	25.70	\$	24.23	\$	29.70	\$	16.18	\$	25.67	\$	24.92	-21.67%
2022	\$	28.83	\$	28.78	\$	28.28	\$	28.40	\$	19.94	\$	28.38	\$	28.14	12.93%
2023	\$	-	\$	26.67	\$	26.67	\$	-	\$	12.08	\$	-	\$	25.96	-7.73%
CAGR		n/a		-6.33%		-6.13%		n/a		-15.76%		n/a		-6.55%	

Level 3

	NS		QC		ON		MB		SK		ВС		Car	nada	YoY%
2017	\$	93.98	\$	68.26	\$	87.45	\$	67.04	\$	56.43	\$	93.74	\$	81.61	0.70%
2018	\$	86.48	\$	57.95	\$	85.23	\$	52.77	\$	78.48	\$	85.09	\$	75.44	-7.56%
2019	\$	83.94	\$	53.92	\$	84.71	\$	57.63	\$	56.72	\$	85.83	\$	74.42	-1.36%
2020	\$	46.23	\$	42.74	\$	46.14	\$	46.17	\$	46.85	\$	46.43	\$	45.30	-39.12%
2021	\$	39.69	\$	39.67	\$	38.72	\$	39.44	\$	37.77	\$	39.30	\$	39.09	-13.71%
2022	\$	39.87	\$	39.19	\$	38.90	\$	39.42	\$	39.89	\$	39.43	\$	39.15	0.15%
2023	\$	36.21	\$	35.26	\$	35.13	\$	35.04	\$	37.15	\$	35.02	\$	35.25	-9.96%
CAGR		-14.70%		-10.43%		-14.10%		-10.25%		-6.73%		-15.13%		-13.06%	

Level 4

	NS	QC ON		MB	SK	ВС	Canada	YoY%
2017	\$ 105.89	\$ 87.09	\$ 113.95	\$ 74.71	\$ 74.06	\$ 121.49	\$ 104.49	8.20%

2018	\$ 101.67	\$ 65.27	\$ 99.69	\$ 61.56	\$ 66.68	\$ 100.76	\$ 87.32	-16.43%
2019	\$ 98.62	\$ 64.28	\$ 100.21	\$ 65.35	\$ 56.66	\$ 101.13	\$ 87.57	0.29%
2020	\$ 53.16	\$ 46.92	\$ 51.96	\$ 52.90	\$ 59.83	\$ 53.38	\$ 51.21	-41.52%
2021	\$ 45.59	\$ 45.61	\$ 45.08	\$ 45.39	\$ 50.23	\$ 45.25	\$ 45.47	-11.20%
2022	\$ 46.25	\$ 43.56	\$ 45.50	\$ 45.67	\$ 58.10	\$ 45.44	\$ 45.47	0.00%
2023	\$ 45.43	\$ 45.46	\$ -	\$ -	\$	\$ -	\$ 45.46	-0.03%
CAGR	-13.15%	-10.27%	n/a	n/a	n/a	n/a	-12.95%	

Level 5

	NS		QC		ON	ON		MB			ВС		Canada		YoY%
2020	\$	64.53	\$	58.07	\$	62.50	\$	63.89	\$	65.20	\$	63.20	\$	61.65	
2021	\$	54.14	\$	58.27	\$	52.02	\$	53.52	\$	55.45	\$	53.12	\$	54.13	-12.19%
2022	\$	55.79	\$	51.43	\$	54.85	\$	55.26	\$	56.76	\$	54.61	\$	54.01	-0.22%
2023	\$	-	\$	35.17	\$	41.67	\$	-	\$	-	\$	-	\$	39.28	-27.27%
CAGR		n/a		-15.39%		-12.64%		n/a		n/a		n/a		-13.95%	

Level 6

	NS		QC		ON		MB		SK		ВС		Car	nada	YoY%
2020	\$	80.12	\$	69.15	\$	76.76	\$	69.21	\$	71.27	\$	78.47	\$	74.57	
2021	\$	60.49	\$	52.70	\$	67.07	\$	60.61	\$	68.68	\$	66.88	\$	62.77	-15.83%
2022	\$	56.90	\$	49.48	\$	58.42	\$	56.13	\$	70.99	\$	52.71	\$	55.42	-11.70%
2023	\$	40.23	\$	55.12	\$	41.04	\$	40.88	\$	59.14	\$	40.94	\$	45.43	-18.02%
CAGR		-20.52%		-7.28%		-18.84%		-16.09%		-6.03%		-19.49%		-15.22%	

Level 7

	NS		QC		ON		MB		SK		BC		Car	nada	YoY%
2020	\$	98.56	\$	86.43	\$	92.30	\$	89.09	\$	91.29	\$	94.16	\$	91.04	
2021	\$	80.74	\$	58.67	\$	83.36	\$	71.93	\$	85.15	\$	83.28	\$	76.23	-16.72%
2022	\$	78.79	\$	63.27	\$	76.20	\$	69.48	\$	76.11	\$	77.94	\$	72.81	-4.49%
2023	\$	47.47	\$	54.72	\$	46.10	\$	47.12	\$	64.31	\$	46.74	\$	49.27	-32.33%
CAGR		-21.61%	-	14.13%		-20.66%		-19.13%		-11.02%		-20.82%		-18.51%	

Level 8

	NS	QC	ON	MB	SK	ВС	Canada	YoY%
2020	\$ 128.09	\$ 117.22	\$ 126.54	\$ 117.06	\$ 113.29	\$ 126.05	\$ 123.11	
2021	\$ 125.43	\$ 113.87	\$ 125.00	\$ 113.07	\$ 112.51	\$ 125.00	\$ 121.06	-1.67%
2022	\$ 100.78	\$ 94.37	\$ 102.53	\$ 93.23	\$ 106.96	\$ 112.98	\$ 101.74	-15.96%
2023	\$ 69.75	\$ 70.72	\$ 68.42	\$ 69.97	\$ 71.86	\$ 67.93	\$ 69.19	-31.99%
CAGR	-18.34%	-15.50%	-18.53%	-15.76%	-14.08%	-18.62%	-17.48%	

Table A2.2 - Canadian Historical Fixed Broadband Internet Prices

Note: Due to Basket redefinitions, historical comparisons are not exact in some categories

Level 1 (3-9 Mbps)

	NS	QC	ON	MB	SK	ВС	Canada	YoY
2008	\$34.95	\$32.45	\$38.95	\$29.95	\$30.45	\$23.45	\$32.88	
2009	\$35.95	\$28.43	\$35.45	\$30.95	\$30.45	\$24.95	\$30.98	-5.79%
2010	\$36.95	\$29.43	\$33.45	n/a	\$30.95	\$29.00	\$31.44	1.49%
2011	\$36.15	\$36.90	\$34.15	n/a	\$32.52	\$33.00	\$34.85	10.86%
2012	\$39.15	\$33.35	\$45.37	n/a	\$31.95	\$35.40	\$39.37	12.98%
2013	\$42.15	n/a	n/a	n/a	\$31.95	\$39.00	\$38.91	-1.19%
2014	\$40.15	n/a	\$50.95	n/a	\$42.95	n/a	\$50.00	28.50%
2015	\$55.13	n/a	n/a	n/a	\$34.10	n/a	\$47.51	-4.96%
2016	\$88.73	\$41.07	\$33.63	\$55.80	\$46.95	\$51.00	\$41.94	-11.74%
2017	\$50.27	\$41.47	\$32.52	\$59.00	\$49.75	\$57.58	\$41.83	-0.25%
2018	\$39.40	\$45.19	\$39.11	\$30.61	\$46.17	\$40.01	\$40.67	-2.78%
2019	\$57.95	\$37.64	\$35.09	\$28.61	n/a	\$33.51	\$35.98	-11.54%
2020	\$54.86	\$43.86	\$44.90	\$42.28	n/a	\$42.22	\$44.37	23.30%
2021	\$56.85	\$45.78	\$50.36	\$41.03	\$41.03	\$44.24	\$47.60	7.29%
2022	\$49.03	\$47.03	\$50.24	\$41.03	n/a	\$42.57	\$47.61	0.02%
2023	\$46.95	\$29.95	\$38.45	\$26.45	\$57.54	\$40.70	\$36.99	-22.31%
CAGR	1.99%	-0.53%	-0.09%	-0.83%	4.33%	3.74%	0.79%	

Level 2 (10-15 Mbps)

	NS	QC	ON	MB	SK	ВС	Canada	YoY
2008	\$47.45	\$48.95	\$48.95	\$41.95	\$45.45	\$40.95	\$46.58	
2009	\$48.45	\$50.43	\$50.95	\$42.95	\$45.45	\$38.45	\$47.26	1.47%
2010	\$49.45	\$51.43	\$47.95	n/a	\$45.95	\$40.00	\$47.60	0.71%
2011	\$50.75	\$52.83	\$49.33	n/a	\$48.52	\$45.65	\$49.79	4.61%
2012	\$57.75	\$60.92	\$52.79	n/a	\$54.95	\$46.40	\$54.31	9.07%
2013	\$51.15	\$55.60	\$47.18	n/a	\$54.95	\$53.51	\$51.20	-5.72%
2014	\$54.95	\$53.91	\$55.25	n/a	\$54.95	\$56.68	\$55.10	7.61%
2015	\$74.45	\$54.83	\$55.17	\$59.17	\$52.88	\$59.90	\$56.66	2.84%
2016	n/a	\$51.75	\$61.92	\$62.60	\$56.95	\$62.00	\$58.88	3.91%
2017	n/a	\$53.26	\$72.14	\$66.70	\$59.75	\$69.29	\$65.54	11.31%
2018	n/a	\$56.61	\$48.33	\$76.52	\$55.34	\$74.77	\$57.36	-12.48%
2019	n/a	\$55.38	\$50.95	\$68.58	\$49.95	\$52.61	\$53.20	-7.26%

2020	n/a	\$58.54	\$52.45	\$67.48	\$50.37	\$51.80	\$54.61	2.67%
2021	n/a	\$53.43	\$50.21	\$60.00	\$50.44	\$50.16	\$51.54	-5.64%
2022	n/a	\$46.23	\$52.10	\$60.00	\$50.37	\$50.04	\$50.42	-1.90%
2023	n/a	\$35.00	\$48.97	\$58.50	\$62.61	\$46.20	\$45.59	-9.58%
CAGR	n/a	-2.21%	0.00%	2.24%	2.16%	0.81%	-0.14%	

Level 3 (16-40 Mbps)

	NS	QC	ON	MB	SK	ВС	Canada	YoY
2008	\$57.45	\$83.45	\$73.95	\$52.95	\$55.95	\$50.95	\$68.74	
2009	\$58.45	\$64.40	\$62.45	\$52.95	\$55.95	\$53.45	\$60.08	-12.60%
2010	\$59.45	\$65.40	\$62.45	n/a	\$56.45	\$55.48	\$61.88	3.00%
2011	\$60.75	\$66.33	\$65.35	n/a	\$56.75	\$55.00	\$63.44	2.52%
2012	\$88.95	\$66.95	\$72.17	n/a	\$79.95	\$54.60	\$67.94	7.09%
2013	\$77.95	\$67.05	\$64.35	n/a	\$79.95	\$60.69	\$65.18	-4.07%
2014	\$87.95	\$67.15	\$70.87	n/a	\$70.95	\$62.00	\$68.60	5.25%
2015	\$92.95	\$59.93	\$71.39	\$67.93	\$62.88	\$68.17	\$67.81	-1.15%
2016	n/a	\$56.09	\$65.20	\$70.60	\$62.95	\$69.06	\$63.48	-6.39%
2017	n/a	\$50.80	\$70.89	\$73.35	\$73.95	\$73.09	\$65.59	3.32%
2018	\$82.50	\$55.62	\$79.15	\$76.82	\$66.19	\$71.16	\$70.70	7.78%
2019	n/a	\$65.24	\$51.54	\$77.90	\$66.19	\$40.39	\$55.20	-21.91%
2020	n/a	\$59.37	\$59.91	\$54.78	\$62.26	\$71.94	\$61.62	11.63%
2021	\$92.95	\$58.18	\$66.38	\$77.62	\$57.38	\$78.68	\$66.31	7.61%
2022	n/a	\$57.93	\$58.83	\$76.64	\$57.06	\$57.07	\$59.01	-11.01%
2023	n/a	\$46.43	\$53.45	\$57.37	\$68.80	\$64.06	\$54.03	-8.44%
CAGR	n/a	-3.83%	-2.14%	0.54%	1.39%	1.54%	-1.59%	

Level 4 (41-100Mbps)

	NS	QC	ON	MB	SK	ВС	Canada	YoY
2011	\$84.75	\$73.30	\$73.75	n/a	\$99.95	\$91.40	\$77.71	
2012	\$138.95	\$82.95	\$106.98	n/a	n/a	\$74.90	\$94.39	21.47%
2013	\$102.75	\$82.95	\$80.57	n/a	\$99.95	\$85.00	\$82.88	-12.19%
2014	\$99.55	\$84.75	\$86.87	n/a	\$105.95	\$86.00	\$86.46	4.31%
2015	\$99.26	\$74.51	\$79.68	\$87.10	\$105.80	\$89.79	\$80.63	-6.74%
2016	\$84.17	\$72.21	\$76.80	\$89.80	\$85.95	\$89.16	\$78.77	-2.30%
2017	\$87.22	\$78.06	\$85.51	\$90.00	\$83.95	\$79.18	\$82.54	4.79%
2018	\$95.69	\$71.14	\$95.84	\$94.14	\$96.65	\$86.67	\$87.00	5.41%
2019	\$86.27	\$73.63	\$70.42	\$83.71	\$96.65	\$62.34	\$72.01	-17.23%
2020	\$76.41	\$67.08	\$83.33	\$77.66	\$71.14	\$77.82	\$77.18	7.18%
2021	\$93.99	\$60.87	\$84.69	\$81.88	\$73.11	\$84.31	\$77.98	1.04%

2022	\$85.03	\$67.29	\$77.47	\$78.13	\$73.03	\$80.80	\$75.38	-3.37%
2023	\$77.95	\$55.97	\$76.92	\$61.94	\$77.55	\$64.75	\$68.76	-8.79%
CAGR	-0.69%	-2.22%	0.35%	-4.17%	-2.09%	-2.83%	-1.01%	

Level 5 (101-250 Mbps)

	NS	QC	ON	МВ	SK	ВС	Canada	YoY
2016	\$133.10	\$138.80	\$92.91	\$123.00	n/a	\$123.00	\$114.65	
2017	\$113.55	\$79.15	\$100.08	\$122.01	\$139.95	\$92.50	\$95.10	-17.06%
2018	\$108.62	\$87.22	\$108.90	\$116.44	\$104.95	\$107.61	\$102.76	8.06%
2019	\$103.95	\$87.00	\$87.11	\$74.53	\$104.95	\$59.31	\$83.25	-18.99%
2020	\$84.95	\$60.00	\$95.44	\$78.91	\$96.20	\$89.32	\$83.95	0.85%
2021	n/a	\$82.46	\$104.50	\$93.97	\$71.55	\$94.38	\$95.00	13.16%
2022	\$107.45	\$85.14	\$101.19	\$78.51	\$71.55	\$79.40	\$91.50	-3.68%
2023	n/a	\$68.08	\$102.80	\$84.18	\$88.81	\$94.08	\$90.39	-1.21%
CAGR	n/a	-9.67%	1.46%	-5.27%	-7.30%	-3.76%	-3.34%	

Level 6 (251-500 Mbps)

	NS	QC	ON	MB	SK	ВС	Canada	YoY
2018	\$125.69	\$105.45	\$135.23	n/a	\$144.95	n/a	\$123.87	
2019	\$112.13	\$78.30	\$96.74	\$98.19	\$144.95	\$89.94	\$93.03	-24.90%
2020	\$98.31	\$76.27	\$107.38	\$100.00	\$106.72	\$99.56	\$97.16	4.44%
2021	\$92.95	\$71.62	\$112.88	\$100.24	\$94.52	\$101.09	\$98.08	0.95%
2022	\$113.86	\$79.65	\$108.79	\$94.19	\$94.24	\$90.11	\$96.97	-1.14%
2023	\$93.59	\$64.54	\$110.63	\$90.65	\$108.57	\$103.98	\$95.75	-1.26%
CAGR	-5.73%	-9.35%	-3.94%	-1.98%	-5.62%	3.69%	-5.02%	

Level 7 (500 Mbps+)

 -01011	JOO MIDPOT							
	NS	QC	ON	MB	SK	ВС	Canada	YoY
2020	\$112.12	\$87.45	\$117.90	\$113.59	n/a	\$108.94	\$107.55	
2021	\$115.23	\$79.95	\$123.51	\$113.62	\$123.42	\$108.33	\$108.71	1.08%
2022	\$126.07	\$101.00	\$107.32	\$104.34	\$123.31	\$99.00	\$104.75	-3.64%
2023	\$98.59	\$65.81	\$118.36	\$100.65	\$127.12	\$113.98	\$102.52	-2.13%
CAGR	-4.20%	-9.04%	0.13%	-3.95%	1.53%	1.52%	-1.58%	

ATTACHMENT 3 – INTERNATIONAL PRICE COMPARISONS 2023

Table A3.1 – International Historical Mobile Wireless Prices

Note: Due to Basket redefinitions, historical comparisons are not exact in some categories.

Level 1

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2016	\$48.77	\$51.64	n/a	\$25.79	\$24.17	\$24.41	\$28.28	\$48.78
2017	\$40.95	\$49.48	\$27.36	\$22.58	\$23.88	n/a	n/a	\$45.38
2018	\$39.43	\$44.29	n/a	\$16.68	n/a	\$11.86	\$15.06	n/a
2019	\$37.62	\$42.89	n/a	\$16.32	\$10.76	\$12.25	\$14.92	\$35.31
2020	\$30.63	\$48.65	n/a	\$23.74	\$12.63	n/a	n/a	\$30.70
2021	\$26.70	\$49.19	n/a	n/a	\$6.78	n/a	n/a	\$32.67
2022	\$26.19	\$52.00	n/a	n/a	\$6.40	\$15.31	\$9.13	\$35.65
2023	\$35.29	n/a	n/a	n/a	\$10.45	\$14.61	n/a	\$37.06
CAGR	-4.52%	n/a	n/a	n/a	-11.29%	-7.07%	n/a	-3.85%

Level 2

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2020	\$31.82	\$26.95	n/a	n/a	n/a	n/a	n/a	\$35.06
2021	\$24.92	n/a	n/a	\$21.47	n/a	n/a	n/a	\$34.51
2022	\$28.14	n/a	n/a	n/a	n/a	n/a	n/a	\$41.69
2023	\$25.96	n/a	n/a	n/a	n/a	n/a	\$12.28	\$28.42
CAGR	-6.55%	n/a	n/a	n/a	n/a	n/a	n/a	-6.76%

Level 3

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2016	\$81.05	\$89.50	\$44.78	\$35.55	\$61.60	\$49.42	\$68.12	n/a
2017	\$81.61	\$67.20	\$54.29	\$34.26	\$31.86	\$41.22	\$72.41	\$60.11
2018	\$75.44	\$61.26	\$24.70	\$26.56	\$30.91	\$21.11	\$45.80	\$81.52
2019	\$74.42	\$59.50	\$22.35	\$24.72	\$33.09	\$26.80	\$41.08	\$78.42
2020	\$45.30	\$39.08	\$24.88	\$23.27	\$33.31	\$28.38	\$43.61	\$73.60
2021	\$39.09	\$54.11	n/a	\$27.82	n/a	n/a	\$17.75	\$86.62
2022	\$39.15	\$60.51	n/a	\$21.01	n/a	n/a	\$18.35	\$89.23
2023	\$35.25	\$84.82	n/a	\$23.51	n/a	n/a	\$16.78	\$100.46
CAGR	-11.21%	-0.76	n/a	-5.74%	n/a	n/a	-18.14%	8.94%

Level 4

Canada U.S.A. Australia U.K. France Italy Germany Japan

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	2016	\$96.55	\$117.33	\$66.67	\$42.22	\$70.12	\$61.02	\$88.23	n/a
	2017	\$104.49	\$75.06	\$67.04	\$39.20	\$46.45	\$53.22	\$82.21	\$74.12
	2018	\$87.32	\$97.88	\$27.27	\$31.26	\$34.31	\$29.55	\$64.89	\$103.07
	2019	\$87.57	\$63.04	n/a	\$28.48	\$27.28	n/a	\$54.67	\$95.63
	2020	\$51.21	\$43.52	n/a	\$25.73	\$28.41	n/a	\$54.43	\$88.46
	2021	\$45.47	\$45.79	n/a	\$21.43	\$25.63	\$21.82	\$42.02	\$99.95
	2022	\$45.47	\$48.94	n/a	\$23.63	\$25.45	n/a	\$27.51	\$110.27
	2023	\$45.46	\$53.73	n/a	\$29.76	\$32.56	n/a	\$21.86	n/a
	CAGR	-10.20%	-10.56%	n/a	-4.87%	-10.38%	n/a	-18.07%	n/a

Level 5

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2020	\$61.65	\$64.47	\$24.88	\$17.56	n/a	n/a	\$67.49	\$100.96
2021	\$54.13	\$43.15	n/a	\$17.66	n/a	n/a	n/a	\$110.72
2022	\$54.01	\$57.67	n/a	\$21.78	n/a	n/a	\$45.83	\$117.77
2023	\$39.28	n/a	n/a	\$17.99	n/a	n/a	\$25.20	n/a
CAGR	-13.95%	n/a	n/a	0.81%	n/a	n/a	-27.99%	n/a

Level 6

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2020	\$74.57	\$61.56	\$32.93	\$22.15	\$44.71	n/a	\$82.66	\$78.89
2021	\$62.77	\$63.52	\$32.30	\$24.24	\$39.45	n/a	\$61.45	\$73.62
2022	\$55.42	\$66.63	\$28.24	\$23.72	\$43.05	n/a	\$47.53	\$78.32
2023	\$45.43	\$72.85	n/a	\$19.08	n/a	n/a	\$37.90	n/a
CAGR	-15.22%	5.77%	n/a	-4.85%	n/a	n/a	-22.89%	n/a

Level 7

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2020	\$91.04	n/a	\$41.60	\$35.66	\$33.29	\$34.21	\$86.02	\$108.94
2021	\$76.23	n/a	\$40.09	\$31.05	\$33.66	\$31.07	\$77.63	\$110.47
2022	\$72.81	n/a	\$44.91	\$29.94	n/a	n/a	\$76.43	\$98.04
2023	\$49.27	n/a	\$29.33	\$31.41	\$34.94	n/a	\$54.49	\$90.81
CAGR	-18.51%	n/a	-11.00%	-4.15%	1.63%	n/a	-14.12%	-5.89%

Level 8

		Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2	2020	\$123.11	\$82.94	\$97.12	\$55.87	\$57.27	\$66.85	\$102.08	n/a
2	2021	\$121.06	n/a	\$55.52	\$38.97	\$37.72	\$36.29	n/a	\$118.13
2	2022	\$101.74	n/a	\$38.99	\$32.55	\$40.39	\$29.32	\$70.44	\$111.88

2023	\$69.19	\$79.63	\$47.30	\$35.98	n/a	\$19.58	\$67.06	\$132.08
CAGR	-17.48%	-1.35%	-21.32%	-13.64%	n/a	-33.59%	-13.07%	18.06%

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Table A3.2 - International Historical Fixed Broadband Internet Prices

Note: Due to Basket redefinitions, historical comparisons are not exact in some categories.

Level 1 (3-9 Mbps)

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2008	\$32.88	\$33.77	\$42.79	\$29.93	\$42.23	n/a	n/a	n/a
2009	\$30.98	\$40.19	\$41.31	n/a	\$44.87	n/a	n/a	n/a
2010	\$31.44	\$39.61	\$34.91	n/a	n/a	n/a	n/a	\$39.73
2011	\$34.85	\$51.06	\$29.84	n/a	\$28.33	n/a	n/a	\$43.13
2012	\$39.37	\$57.24	n/a	n/a	n/a	n/a	n/a	\$50.48
2013	\$38.91	\$52.38	n/a	n/a	n/a	n/a	n/a	\$45.55
2014	\$50.00	\$62.53	n/a	n/a	n/a	n/a	n/a	\$56.55
2015	\$47.51	\$54.54	n/a	n/a	n/a	n/a	n/a	\$57.83
2016	\$41.94	\$79.64	\$58.38	n/a	n/a	n/a	\$28.28	n/a
2017	\$41.83	\$63.92	\$54.72	n/a	n/a	\$41.18	n/a	\$59.49
2018	\$40.67	\$63.32	n/a	n/a	n/a	\$60.53	n/a	\$40.56
2019	\$35.98	\$62.50	n/a	\$37.52	n/a	n/a	n/a	n/a
2020	\$44.37	n/a	n/a	\$37.01	n/a	\$50.98	n/a	\$73.33
2021	\$47.60	n/a	n/a	n/a	n/a	n/a	n/a	\$73.10
2022	\$47.61	n/a	n/a	n/a	n/a	n/a	n/a	\$77.76
2023	\$36.99	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CAGR	0.79%	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Level 2 (10-15 Mbps)

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2008	\$46.58	\$55.97	\$62.56	\$44.05	\$45.82	n/a	n/a	n/a
2009	\$47.26	\$57.92	\$63.76	\$30.22	\$48.69	n/a	n/a	n/a
2010	\$47.60	\$58.97	\$52.01	\$40.57	\$44.03	n/a	n/a	\$49.55
2011	\$49.79	\$65.14	\$56.74	\$40.72	\$47.41	n/a	n/a	\$53.79
2012	\$54.31	\$78.84	\$59.81	\$30.50	\$46.97	n/a	n/a	\$55.70
2013	\$51.20	\$81.42	\$58.15	\$32.85	n/a	n/a	n/a	\$52.53
2014	\$55.10	\$72.91	\$50.67	\$30.22	n/a	\$52.26	\$26.09	\$60.65
2015	\$56.66	\$67.66	\$53.75	n/a	\$67.78	\$54.31	\$29.08	\$61.03

	1	•						
2016	\$58.88	\$83.85	\$54.49	n/a	\$73.83	\$64.29	n/a	\$51.75
2017	\$65.54	\$82.43	\$46.90	n/a	\$39.81	n/a	\$27.77	\$54.39
2018	\$57.36	\$75.56	n/a	\$54.13	\$48.83	n/a	n/a	\$61.14
2019	\$53.20	\$69.35	n/a	\$40.36	n/a	n/a	n/a	\$47.76
2020	\$54.61	n/a	n/a	\$38.84	n/a	\$50.98	n/a	\$69.10
2021	\$51.55	n/a	n/a	n/a	n/a	n/a	n/a	\$74.28
2022	\$50.42	n/a	n/a	n/a	n/a	n/a	n/a	\$79.01
2023	\$45.59	n/a						
CAGR	-0.14%	n/a						

Level 3 (16-40 Mbps)

Level 3	(16-40 Mbps)							
	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2008	\$68.74	\$67.40	\$76.47	\$52.72	\$49.41	n/a	n/a	n/a
2009	\$60.08	\$70.41	\$77.98	\$35.93	\$47.73	n/a	n/a	n/a
2010	\$61.88	\$75.26	\$74.32	\$46.24	\$57.45	n/a	n/a	\$72.15
2011	\$63.44	\$79.60	\$59.72	\$40.09	\$66.37	n/a	n/a	\$54.52
2012	\$67.94	\$97.00	\$61.69	\$40.88	\$46.07	n/a	n/a	\$59.37
2013	\$65.18	\$99.10	\$57.10	\$43.01	\$49.34	n/a	n/a	\$61.52
2014	\$68.60	\$79.76	\$67.44	\$46.89	\$51.15	\$52.92	\$38.30	\$63.88
2015	\$67.81	\$91.55	\$69.64	\$41.25	\$51.68	\$52.28	\$47.08	\$64.50
2016	\$63.48	\$97.53	\$57.41	\$40.43	n/a	\$41.77	\$49.75	\$71.52
2017	\$65.59	\$99.64	\$70.35	\$55.67	\$50.43	n/a	\$46.80	\$68.32
2018	\$70.70	\$84.33	\$66.74	\$49.42	\$38.15	\$45.45	\$50.18	\$71.77
2019	\$55.20	\$69.02	\$62.36	\$46.11	n/a	\$49.26	\$49.15	n/a
2020	\$61.62	\$65.10	\$56.53	\$40.39	\$36.33	\$50.98	\$43.65	\$72.51
2021	\$65.61	\$59.11	\$59.61	\$41.82	\$28.25	\$41.27	\$50.52	\$76.04
2022	\$59.01	n/a	\$63.02	\$42.48	\$30.07	n/a	\$48.47	\$80.89
2023	\$54.03	\$24.49	\$62.76	\$34.07	\$41.54	n/a	\$48.16	n/a
CAGR	-1.59%	-6.53%	-1.31%	-2.87%	-1.15%	n/a	2.58%	n/a

Level 4 (41-100Mbps)

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2011	\$77.71	\$95.07	\$67.19	\$50.07	\$49.79	n/a	n/a	\$59.76
2012	\$94.39	\$160.97	\$82.25	\$58.66	\$62.36	n/a	n/a	\$62.65
2013	\$82.88	\$123.27	\$72.69	\$53.31	\$54.58	n/a	n/a	\$64.89
2014	\$86.46	\$103.17	\$70.33	\$47.76	\$55.98	\$61.79	\$58.52	\$67.73
2015	\$80.63	\$105.90	\$72.66	\$50.75	\$57.95	\$60.45	\$59.32	\$65.32
2016	\$78.77	\$112.30	\$71.03	\$54.20	\$63.80	\$53.02	\$61.78	\$49.78
2017	\$82.54	\$114.81	\$89.98	\$59.38	\$42.47	n/a	\$54.45	\$69.58

2018	\$87.00	\$105.34	\$88.74	\$67.69	\$53.14	\$65.20	\$64.84	\$84.43
2019	\$72.01	\$75.48	\$75.06	\$55.20	n/a	\$42.27	\$53.80	\$63.69
2020	\$77.18	\$72.80	\$78.28	\$49.23	n/a	\$50.98	\$53.01	\$66.83
2021	\$78.18	\$78.87	\$81.97	\$49.24	n/a	n/a	\$51.94	\$66.63
2022	\$75.38	\$59.40	\$70.85	\$43.27	n/a	n/a	\$45.75	\$70.88
2023	\$68.77	\$17.32	\$72.65	\$35.04	n/a	\$30.91	\$50.06	n/a
CAGR	-1.01%	-13.23%	0.65%	-2.93%	n/a	-7.41%	-1.72%	n/a

Level 5 (101-250 Mbps)

Level 5	101-230 1011	01-250 Mbps)									
	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan			
2016	\$114.65	\$127.69	n/a	\$57.56	\$70.54	n/a	\$56.57	\$71.36			
2017	\$95.10	\$145.15	n/a	\$70.67	\$50.19	\$60.39	\$58.33	\$65.64			
2018	\$102.76	\$131.06	n/a	\$64.86	\$60.86	n/a	\$72.45	\$79.90			
2019	\$83.25	\$93.01	n/a	\$75.87	\$33.79	\$49.26	\$65.87	\$77.69			
2020	\$83.95	\$86.98	n/a	\$75.30	n/a	\$50.98	\$64.85	\$82.70			
2021	\$95.19	\$76.66	n/a	\$73.95	n/a	n/a	\$57.54	\$84.70			
2022	\$91.50	\$68.64	\$104.38	\$63.10	n/a	n/a	\$60.95	\$90.10			
2023	\$90.39	\$36.75	\$105.88	\$35.94	n/a	n/a	\$64.17	\$62.92			
CAGR	-3.34%	-16.30%	1.44%	-6.51%	n/a	n/a	1.82%	-1.78%			

Level 6 (251-500 Mbps)

2010 (201 000 1115)0)											
	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan			
2018	\$123.87	\$160.08	n/a	\$78.96	\$70.18	\$46.33	\$94.33	\$72.23			
2019	\$93.03	\$120.62	n/a	\$78.62	\$41.20	\$42.27	\$47.64	\$76.31			
2020	\$97.16	\$97.63	n/a	\$84.08	\$39.51	\$50.98	n/a	\$77.13			
2021	\$99.11	\$94.10	n/a	\$82.57	\$36.47	n/a	n/a	\$63.00			
2022	\$96.97	\$68.12	n/a	\$73.60	\$40.76	n/a	\$55.03	\$91.69			
2023	\$95.75	\$62.58	n/a	\$39.46	\$45.43	n/a	\$63.43	n/a			
CAGR	-5.02%	-17.13%	n/a	-12.95%	-8.33%	n/a	-7.63%	n/a			

Level 7 (500 Mbps+)

	Canada	U.S.A.	Australia	U.K.	France	Italy	Germany	Japan
2020	\$107.55	\$113.37	n/a	\$92.86	\$49.69	\$50.98	\$58.42	\$79.46
2021	\$109.02	\$108.40	n/a	\$91.19	\$44.36	\$42.02	\$54.38	\$85.58
2022	\$104.75	\$84.76	n/a	\$85.30	\$50.78	\$40.47	\$56.82	\$98.21
2023	\$102.52	\$83.44	\$116.90	\$52.95	\$54.76	\$32.45	\$63.43	\$66.05
CAGR	-1.58%	-9.71%	n/a	-17.07%	3.29%	-13.98%	2.78%	-5.97%

ATTACHMENT 4: Spotlight on Canadian Mobile and Broadband Pricing

February 2023 to October 2023 in Selected Regions

A4.1 Canadian Mobile Pricing

Price decrease	Price increase	Eligible Plan introduced midperiod	Lowest monthly price

Table A4.1.1: Quebec Monthly Mobile Prices in Basket Region 20 – 25 GB

	Feb	March	April	May	June	July	Aug	Sept	Oct
Bell	\$	\$	\$	\$	\$	\$	\$	\$	\$
	65.00	65.00	65.00	<mark>55.00</mark>	55.00	55.00	55.00	55.00	55.00
Rogers	\$	\$	\$	\$	\$	\$	\$		
Ū	85.00	85.00	85.00	85.00	<mark>55.00</mark>	55.00	55.00		
TELUS	\$	\$	\$	\$	\$	\$	\$	\$	\$
	65.00	65.00	65.00	<mark>55.00</mark>	55.00	55.00	55.00	55.00	55.00
Virgin	\$	\$	\$	\$	\$	\$	\$	\$	\$
	55.00	<mark>50.00</mark>	50.00	<mark>45.00</mark>	<mark>39.00</mark>	39.00	39.00	39.00	<mark>34.00</mark>
Fido	\$	\$	\$	\$	\$	\$	\$	\$	\$
	58.00	<mark>55.00</mark>	55.00	55.00	<mark>44.00</mark>	44.00	44.00	44.00	44.00
Koodo	\$	\$	\$	\$	\$	\$	\$	\$	\$
	60.00	<mark>50.00</mark>	50.00	50.00	<mark>39.00</mark>	39.00	39.00	39.00	34.00
Videotron		\$	\$	\$	\$	\$	\$	\$	\$
110.001.011		65.00	65.00	65.00	65.00	60.00	60.00	60.00	60.00
Fizz	\$	\$	\$	\$	\$	\$	\$	\$	\$
	46.00	46.00	46.00	46.00	3 5.00	40.00	37.00	<mark>35.00</mark>	35.00

Table A4.1.2: Quebec Monthly Mobile Prices in Basket Region 40 – 50 GB

	Feb	March	April	May	June	July	Aug	Sept	Oct
Bell	\$	<mark>\$</mark>	\$	\$	\$	\$	\$	\$	\$
	75.00	75.00	75.00	75.00	<mark>70.00</mark>	70.00	<mark>65.00</mark>	65.00	65.00
Rogers	\$	\$	\$	\$	\$	\$	\$	\$	\$
3 - 1	95.00	95.00	95.00	95.00	95.00	<mark>90.00</mark>	90.00	90.00	90.00
TELUS	\$	<mark>\$</mark>	\$	\$	\$	\$	\$	\$	\$
	75.00	75.00	75.00	75.00	<mark>70.00</mark>	70.00	70.00	<mark>65.00</mark>	65.00
Virgin					\$	\$	\$	\$	\$
3					50.00	50.00	50.00	55.00	55.00
Fido					\$	\$	\$	\$	\$
					55.00	55.00	55.00	<mark>50.00</mark>	55.00
Koodo					\$	\$	\$	\$	\$

					60.00	<mark>50.00</mark>	50.00	50.00	50.00
Videotron	\$	\$	\$	\$	\$	\$	\$	\$	\$
	60.00	75.00	75.00	75.00	<mark>70.00</mark>	<mark>65.00</mark>	70.00	70.00	70.00
Fizz								\$	\$
								41.00	41.00

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Table A4.1.3: Quebec Monthly Mobile Prices in Basket Region 60 – 75 GB

	Feb	March	April	May	June	July	Aug	Sept	Oct
Bell		\$	\$	\$	\$				
		85.00	85.00	85.00	85.00				
Rogers	\$		\$	\$	\$				
	120.00		105.00	105.00	105.00				
TELUS	\$	\$	\$	\$	\$	\$	\$		
	85.00	85.00	85.00	85.00	85.00	85.00	85.00		
Virgin							\$		
<u> </u>							60.00		
Fido									
Koodo							\$	\$	\$
							70.00	<mark>65.00</mark>	<mark>55.00</mark>
Videotron								\$	\$
1.2.50								75.00	75.00
Fizz									

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Table A4.1.4: Quebec Monthly Mobile Prices in Basket Region 100 – 150 GB

	Feb	March	April	May	June	July	Aug	Sept	Oct
Bell								\$ 75.00	\$ 75.00
Rogers	\$ 130.00	130.00	\$ 130.00	\$ 130.00	\$ 130.00	\$ 130.00	\$ 130.00	<u>\$100.00</u>	\$100.00
TELUS								§ 75.00	5 75.00
Virgin									
Fido									
Koodo									
Video									
Fizz									

Ontario, Alberta and BC Mobile Wireless Pricing During 2023

Table A4.1.5: ON/AB/BC Monthly Mobile Prices in Basket Region 20 – 25 GB

	Feb	March	April	May	June	July	Aug	Sept	Oct
Bell	\$	\$	\$	\$					
	85.00	85.00	85.00	<mark>65.00</mark>					
Rogers	\$	\$	\$	\$					
9	90.00	90.00	90.00	<mark>70.00</mark>					
TELUS					BC,	BC,			
	\$	\$	\$	\$	AB\$	AB\$			
	85.00	85.00	85.00	<mark>65.00</mark>	65.00	65.00			
Virgin		\$	\$	\$			\$		
3		60.00	67.00	<mark>39.00</mark>			39.00		
Fido		\$	\$	\$	\$		<u>\$</u>		
		65.00	72.00	72.00	<mark>44.00</mark>		44.00		
Koodo	\$	\$	\$		\$		\$	\$	
	60.00	60.00	67.00		<mark>39.00</mark>		39.00	39.00	
Freedom	\$	\$	\$	\$	\$	\$	\$	\$	\$
	50.00	4 0.00	45.00	<mark>39.00</mark>	39.00	39.00	44.00	<mark>39.00</mark>	39.00
147 11 0				l	L	1	1	II.	<u> </u>

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Table A4.1.6: ON/AB/BC Monthly Mobile Prices in Basket Region 40 - 50 GB

	Feb	March	April	May	June	July	Aug	Sept	Oct
Bell	\$	\$	\$	\$	\$	\$	\$		
	95.00	95.00	95.00	<mark>85.00</mark>	<mark>65.00</mark>	65.00	65.00		
Rogers	\$	\$	\$	\$	\$	\$	\$		
3 - 3	100.00	100.00	100.00	90.00	<mark>70.00</mark>	70.00	70.00		
TELUS	\$	\$	\$	\$	\$	\$	\$		
	95.00	95.00	90.00	<mark>85.00</mark>	<mark>65.00</mark>	65.00	65.00		
Virgin					\$	\$	\$	\$	\$
g					50.00	50.00	50.00	65.00	65.00
Fido					\$	\$	\$	\$	\$
					65.00	67.00	67.00	67.00	<mark>65.00</mark>
Koodo					\$	\$	\$	\$	
					60.00	62.00	62.00	<mark>50.00</mark>	
Freedom	\$	\$	\$	\$	\$	\$	\$	\$	\$
	75.00	<mark>55.00</mark>	70.00	<mark>60.00</mark>	50.00	50.00	55.00	<mark>50.00</mark>	50.00

Table A4.1.7: ON/AB/BC Monthly Mobile Prices in Basket Region 60 – 75 GB

Feb Mar	ch April May	June July	Aug	Sept	Oct
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Bell	\$				\$	\$	\$	\$	\$
	105.00				<mark>85.00</mark>	85.00	85.00	<mark>75.00</mark>	75.00
Rogers	\$				\$	\$	\$	\$	\$
	110.00				<mark>90.00</mark>	90.00	90.00	<mark>70.00</mark>	70.00
TELUS	\$			\$	\$	\$	\$	\$	\$
	105.00			<mark>90.00</mark>	<mark>85.00</mark>	85.00	85.00	65.00	60.00
Virgin							\$		
							65.00		
Fido									
Koodo							\$	\$	\$
							75.00	<mark>65.00</mark>	65.00
Freedom	\$	\$	\$	\$				\$	\$
	85.00	<mark>75.00</mark>	80.00	<mark>70.00</mark>				<mark>65.00</mark>	<mark>60.00</mark>

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Table A4.1.8: ON/AB/BC Monthly Mobile Prices in Basket Region 100 – 150 GB

	Feb	March	April	May	June	July	Aug	Sept	Oct
Bell	\$	\$	\$	\$	\$	\$	\$	\$	\$
	125.00	105.00	105.00	105.00	105.00	105.00	105.00	100.00	<mark>85.00</mark>
Rogers	\$	\$	\$	\$	\$	\$	\$	\$	\$
	130.00	130.00	110.00	110.00	110.00	110.00	110.00	90.00	90.00
TELUS	\$	<u>\$</u>	\$	\$	\$	\$	\$	\$	\$
	125.00	105.00	100.00	100.00	<mark>90.00</mark>	90.00	90.00	95.00	95.00
Virgin									
Fido									
Koodo									
Freedom									

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A4.2 Canadian Broadband Pricing

	British Columbia	Alberta	Manitoba
Incumbent 1	TELUS	TELUS	Bell/MTS
Incumbent 2	Rogers/Shaw	Rogers/Shaw	Rogers/Shaw
Incumbent Sub	VMedia	VMedia	VMedia
IWBC	TekSavvy	TekSavvy	TekSavvy

Price decrease	Price increase	Lowest monthly price

Fixed Broadband Pricing During 2023

Table A4.2.1: Broadband Monthly Pricing in Alberta and British Columbia

	Feb	March	April	May	June	July	Aug	Sept	Oct
Rogers	\$135	\$135	\$135	<mark>\$99</mark>	\$99	\$105	\$105	\$105	\$105
TELUS	\$135	\$135	\$135	<mark>\$125</mark>	\$125	\$125	\$125	\$125	\$125
VMedia	\$ 115	<mark>\$</mark> 90	\$ 90	\$ 90	\$ 90	\$ 90	\$ 90	\$ 90	\$ 90
TekSavvy	\$125	\$125	\$125	\$125	<mark>\$115</mark>	\$115	\$115	\$115	\$115

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A4.2.2: Broadband Monthly Pricing in Manitoba

	Feb	March	April	May	June	July	Aug	Sept	Oct
Bell/MTS	\$131	\$131	\$131	\$100	\$100	\$ 100	<mark>\$</mark> 95	\$ 95	\$ 95
Rogers	\$135	\$135	\$135	<mark>\$</mark> 99	\$ 99	\$ <mark>105</mark>	\$105	\$105	\$105
VMedia	\$ 100	\$ 100	\$ 100	\$100	\$100	\$ 100	\$100	\$100	\$100
TekSavvy	\$125	\$125	\$125	\$125	<mark>\$115</mark>	\$115	\$115	\$115	\$115