

Conseil de la radiodiffusion et des télécommunications canadiennes



#### Canadian Radio-television and Telecommunications Commission

# Communications | N Monitoring | O Report | O



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## Communications Monitoring Report (CMR)

# Canadian Radio-television and Telecommunications Commission (CRTC)

2017

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Interested parties are welcome to provide comments for improvements or additions to future editions of the report. You can send your comments to the attention of the Secretary General, CRTC, Ottawa, K1A ON2.

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### **Executive Summary**

The Communications Monitoring Report (CMR) offers a comprehensive view of the communications services sector in Canada. Specifically, it provides Canadians, industry and stakeholders with meaningful information to help them better understand the communications industry and participate in the CRTC's proceedings.

#### i Key trends in the communications industry

- Overall, communications industry revenues reached \$66.6 billion in 2016, up from \$65.8 billion in 2015. The revenue growth rate of 1.3% between 2015 and 2016 is slightly below the five-year average growth rate of 1.9%. From 2015 to 2016, telecommunications service revenues grew 2.0%, while broadcasting service revenues decreased by 0.5%.
- In 2016, telecommunications service revenues represented 73% of overall communications service revenues. Total telecommunications service revenues reached \$48.7 billion, while broadcasting service revenues decreased to \$17.9 billion.
- The retail Internet service market sector grew by 10.1% from 2015 to 2016, and now represents 23% of all retail telecommunications service revenues. Like last year, it is the fastest growing sector of the retail telecommunications service market.
- The wireless service market sector is the largest sector of the retail telecommunications service market, accounting more than half (52%) of all retail telecommunications service revenues.
- Specialty services reported Canadian programming expenditures (CPE) totaling \$1.6 billion in 2016, up by \$100 million (6.6%) from 2015. Specialty services' programming expenditures included \$255.8 million in programs of national interest (PNI), a \$1.8 million increase from 2015.
- Revenues of Internet Protocol television (IPTV) service providers continued on their upward trend and totaled \$1.8 billion in 2016. This represented an increase of \$232 million (14.8%) from 2015 and of \$1.2 billion (205%) since 2012. By contrast, the revenues of cable and satellite service providers have been on a downward trend since 2012, recording the largest losses over the past two years. Cable service providers generated revenues of \$4.8 billion in 2016, down 5.5% from 2015, while satellite service providers generated revenues of \$2.15 billion, down 6.1% during the same period.
- The five largest companies reported 83% of overall communications revenues in 2016, a slight increase from 82% in 2015.
- Average monthly household spending on communications services increased from \$215 in 2014 to \$218 in 2015, the most recent year for which data is available. Monthly spending on mobile services and Internet services grew to an average of \$87 and \$47, respectively. From 2014 to 2015, average monthly spending on Internet services grew by 9.6% while spending on mobile services grew 5.5%.
- In 2015, wireless services represented the largest communication expense for Canadian households, representing 40% of their average monthly expenditures on communications services, followed by home television services (25%), Internet services (21%), and home telephone services (14%).
- From 2015 to 2016, Canadians data consumption continued to grow and reached an average of 128.3 gigabytes (GB) transferred per month on their home Internet connection and 1,225 megabytes (MB) per month on their mobile phones, representing increases of 23.4% and 24.9%, respectively.

# ii Canadians appetite for data and high speed connections continues to grow

- Canadian wireless service subscribers now use, on average, 1,225 MB of wireless data per month, a 25% increase from the 2015 average of 981 MB per month. 48% of Canadian subscribers now have a plan that includes at least 1GB of data, a 2 percentage point increase from the 2015 level of 46%.
- Helping Canadians access their favorite content on the go, the latest wireless service technologies are now available to the vast majority of Canadians, with long term evolution advanced (LTE-A) technology available to 83% of Canadians and long term evolution (LTE) available to 98.5% of Canadians.<sup>1</sup>
- More Canadians are subscribing to mobile broadband services. Mobile broadband service subscribers continued to post strong gains, with over 25 million subscriptions to mobile broadband services in 2016, compared to 22.0 million in 2015, and 14.3 million in 2012.
- The total number of wireless service subscribers increased to nearly 31 million in 2016, a 3.3% increase over 2015.
- At home, monthly data transfer over fixed Internet reached 128.3GB in 2016, a 23.4% increase from 2015 to 2016. Over the last five years, Canadians' monthly data consumption grew, on average, by approximately 40% per year.
- In 2016, over 51% of Internet service subscribers had plans that included 160GB or more of data per month. The average amount of data included with plans reached 177GB in 2016 due to the significant number of plans with very high data limits.
- At the same time as Canadians are increasing the amount of data they use, they are increasing the speed of their Internet connection. In 2016, approximately 26% of subscribers had an Internet connection with a download speed of 50Mbps or more, while in 2015, approximately 19% of subscribers had such a connection.
- As of December 2016, 84% of Canadians households had access to an Internet service meeting the new CRTC universal service objective of a download speed of at least 50 Mbps, an upload speed of at least 10 Mbps, and unlimited data transfer option. Overall, 11% of households subscribed to such a service in 2016.

#### iii Canadians continue to watch TV

- Traditional TV viewing time remained relatively stable, decreasing by 0.6 hours from 2015 to 2016. Canadians (aged 2 and over) watched, on average, 26.6 hours of traditional television per week during the 2015-2016 broadcast year, compared to 27.2 hours in 2014-2015, and 28.2 hours in 2011-2012.
- Internet TV viewing continued to increase in 2016. Weekly users 18 years of age and older watched 6.4 hours of Internet TV on a weekly basis, compared to 1.5 hours in 2008.
- IPTV service revenues continued their rapid growth. IPTV service providers reported revenues of approximately \$1.8 billion in 2016, up \$232 million or 15% from 2015.

<sup>&</sup>lt;sup>1</sup> LTE and LTE-A are technically capable of reaching download speeds of 300 megabit per second and 1 gigabit per second, respectively.

#### iv Canadians supplement their content consumption online

- Canadians continue to use streaming music services to supplement their regular radio listening. In 2016, according to the Media Technology Monitor (MTM), 89% of Canadians 18 years of age or older listened to the radio, while 55% streamed music videos on YouTube and 22% streamed AM/FM radio online.
- In 2016, 27% of Canadians 18 years of age and older streamed personalized music, while 20% did so in 2015, according to data from MTM.
- Again, according to MTM, in 2016, 16% of Canadians 18 years of age and older subscribed to satellite radio services. This figure is unchanged from 2015 and 2014.
- While 95% of Canadians 18 years of age or older still watched traditional TV in 2016, Internet television's popularity continues to grow, with 58% of reporting streaming Internet TV content compared to 55% in 2015, according to MTM.

# 1.0 Introduction

### i Purpose of the Communications Monitoring Report

Over the last few decades, communications technology has undergone radical transformations. Canadians now have real-time access to a world of information and entertainment across a multitude of platforms. They rely on their communication system to create meaningful content, contribute to Canada's economy and democracy, and connect with their friends, families, and communities. As Canadians adapt to technological change, the Canadian Radio-television and Telecommunications Commission (CRTC) will continue to supervise and regulate in a responsible, measured, and intelligent way in the public interest.

The *Communications Monitoring Report* (CMR) is a tool for analyzing the evolving state of Canada's communication system. It is designed to support evidence-based policy development, decision making, and open public discussion of broadcasting and telecommunications regulatory policies and issues. The CRTC invites parties to use the data in this report to enrich their participation in its regulatory and policy activities.

#### ii Scope and structure of this year's report

The 2017 CMR captures a wide range of information on financial performance, industry characteristics, Canadian programming expenditures, service prices and availability across Canada, and many other communications-related subjects.

Building on recent efforts to provide a concise overview, Section 2.0 highlights key trends and information directly relevant to Canadians as citizens, consumers, and creators. This section provides a general summary of key trends and of market performance, competition, pricing, and access across all services. Subsequent sections offer more granular sector-level information.

Section 3.0 surveys Canada's communications industry as a whole, focusing on such characteristics as market participants and the number of firms operating across the Canadian communications industry. The remaining sections provide information on specific markets, offering an in-depth view for those seeking granular data. For example, Sections 4.0 through 4.3 are dedicated to radio, television and broadcasting distribution markets, featuring a range of data on audience measurement, programming contributions and expenditures, and service availability. Sections 5.0 through 5.6 pertains to Canada's telecommunications sector and addresses retail and wholesale Internet, wireline telephone (landlines), wireless, and data and private line services.
# iii Changes to the 2017 report

The CRTC seeks to enhance the relevance of the report to take into account emerging technologies, consumption patterns and business models in addition to shedding more light on existing services. Additions and changes for the 2017 *Communications Monitoring Report* include the following:

- A new "rotating spotlight" featuring the Wireless Code (section 2.0)
- Additional IPTV financial data (sections 4.0 and 4.3)
- An Internet-based video services subsection (section 4.2)
- Updated Internet and wireless service baskets to reflect Canadians' move to services including more data and faster speeds (section 5.3 and 5.5)
- Information on Internet and wireless revenues from overage charges (section 5.3 and 5.5)
- A new chart on wireless services pricing from 2013 to 2015 (section 5.5)
- A new map showing the coverage of long-term evolution advanced (LTE-A) technology (section 5.5)
- Availability and take-up of internet services meeting the CRTC's objective for the availability of fixed broadband internet access (section 5.3)
- New information about submissions to the Spam Reporting Centre and complaints pertaining to the Unsolicited Telecommunications Rules (section 3.0).

These changes will provide Canadians with improved indicators and trends to further enhance their understanding of the communications sector.

# 1.1 The CRTC

# i Who we are and what we do

The Canadian Radio-television and Telecommunications Commission (CRTC) is an administrative tribunal within the Government of Canada that is responsible for regulating and supervising Canada's communication system in the public interest.

The CRTC operates under a number of legislative authorities and Acts of Parliament. These include the following: the CRTC Act, the Bell Canada Act, the Broadcasting Act, the Telecommunications Act, Canada's Anti-Spam Legislation and the Canada Elections Act, which includes provisions that established the Voter Contact Registry.

At the heart of our mandate is the duty to serve the public interest by putting Canadians at the centre of the communications system. To this end, our role encompasses consulting Canadians on communications issues of importance to them, dealing with the many applications we receive by making decisions and rules, responding to enquiries and complaints, as well as reporting to Canadians on the progress and outcomes of our work. The CRTC promotes and enforces compliance with its regulatory policies and decisions. It encourages and facilitates industry co-regulation and self-regulation through consultations, committees, and working groups with various industry stakeholders. The CRTC also plays a key role in resolving industry disputes. Finally, in the current dynamic and evolving communications environment, the CRTC collaborates with various domestic and international stakeholders to leverage capacity and intelligence on a host of interrelated policy issues and questions.

For more information on the CRTC's mandate, mission, and activities please consult the CRTC's three-year plan at <u>http://www.crtc.gc.ca/eng/backgrnd/plan2017/plan2017.htm</u>.

# 2.0 Canada's Communication System: An Overview for Canadians

The CRTC continues to strengthen its efforts to place Canadians at the centre of the communication system, whether as consumers of communications products and services; creators and distributors of content; or citizens who need access to information, products, and services to fully engage in a democratic society. This section focuses on Canadians' use of communications services, competitive prices, household expenditures, and access to communications services.<sup>2</sup> This year, this section also provides additional analysis of the wireless service industry and its regulation.

In 2015, household expenditures on Internet services and wireless services grew by 9.63% and 5.54%, respectively, over the previous year, while expenditures on wireline telephone services and broadcasting distribution services decreased by 9.5% and 3.3%, respectively, over the same period.

While average household expenditures on wireless services represent the largest expenditures on communications services, expenditures on Internet services have been increasing by 7.7% per year on average from 2011 to 2015, representing the fastest-growing expenditures category for households.

In 2015, Canadian households spent an average of \$218.42 per month for their communications services, an increase of \$3.67 (or 1.7%) from 2014. The average annual inflation rate in Canada was 1.1% in 2015 according to Statistics Canada.

In 2015, Canadian households continued to spend more per month on wireless services (\$87.25) and BDU services (\$54.50) compared to Internet services (\$46.50) and wireline telephone services (\$30.17).

In 2015, average communications service expenditures as a percentage of average household annual income decreased slightly from 3.0% to 2.9%. However, households in the first and second income quintiles<sup>3</sup> spent, on average, 8.6% and 5.0% of their average annual incomes on communications services.

#### The percentage of Canadian households subscribing exclusively to wireless services reached 27.5% in 2015.

First- and second-income-quintile households still lead in the wireless-service-only category with 35% and 30.4%, respectively. However, an increasing number of households in the fifth income quintile are forgoing wireline telephone services in favour of relying solely on wireless telephone services.

In 2015, 18.8% of households in the fifth and highest income quintile were wireless only households, compared to 11.5% in 2014, an increase of over 60%.

<sup>&</sup>lt;sup>2</sup> Data sources: Both CRTC and Statistics Canada data are presented in this section. CRTC information presents 2016, while data from Statistics Canada's Survey of Household Spending reflects the most recently available data from 2015.

<sup>&</sup>lt;sup>3</sup> Each 20% of households by average annual income.

# i Industry landscape and competition

Canada's communication system is composed of two broad sectors: broadcasting and telecommunications. In 2016, total communications service revenues increased by 1.4% since 2015. However, this overall growth masks important divergences across individual types of services. While detailed financial information can be found in separate sections of this report, this section presents an overview of industry revenues and the competitive landscape in the broadcasting and telecommunications industries.

Categories	2014	2015	2016	Growth (%) 2015-2016
Communications	64.1	65.8	66.6	1.3
Broadcasting	18.2	18.0	17.9	-0.5
Radio	1.9	1.9	1.8	-2.0
TV	7.4	7.2	7.3	1.7
BDU	8.9	8.9	8.7	-2.1
Telecommunications (retail and wholesale)	45.9	47.8	48.7	2.0
Wireline voice (local and long distance)	10.1	9.7	9.0	-7.6
Internet	8.9	9.8	10.8	9.8
Data and private line	4.8	4.6	4.5	-3.0
Wireless (local and long distance)	22.0	23.6	24.4	3.4

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Source: CRTC data collection

**What are BDUs?** Broadcasting distribution undertakings (BDUs) provide subscription television services to Canadians. They redistribute programming from conventional over-the-air television and radio stations. They also distribute pay audio and discretionary services (i.e. pay, specialty, pay-per-view (PPV) and video-on-demand (VOD) services). Most BDUs are cable, national direct-to-home (DTH) satellite, or Internet Protocol television (IPTV) service providers.

# Telecommunications services remain dominant

In 2016, revenues from telecommunications services continued to represent approximately 73% of all communications service revenues, with broadcasting service revenues representing the remaining 27%. This speaks in part to the scale of revenues from mobile wireless services, which accounted for nearly half of all telecommunications service revenues. Indeed, mobile wireless services alone generated more revenues than the entire broadcasting sector.

As noted above, more Canadians now subscribe exclusively to mobile wireless services than to wireline telephone services. This reflects financial data trends that demonstrate relatively consistent mobile service revenue growth.

A similar phenomenon – one in which certain services drive overall sector growth while other services remain flat or shrink – has emerged across multiple subsectors of the communication system. Services introduced in the early-to-mid-20<sup>th</sup> century, including wireline voice services, conventional television services, and radio

services continue to be widely used by many Canadians. However, these services' revenues have not grown at the same pace as those of newer services; in many cases, they have even declined.

# A concentrated market

The competitive landscape in the communication system as a whole remains mostly unchanged from last year. Large vertically and horizontally integrated entities hold dominant market positions. As Figure 2.0.1 indicates, the top five broadcasting and telecommunications groups/entities (Bell Canada, Quebecor, Rogers, TELUS, and Shaw/Corus) together accounted for approximately 83% of total industry revenues in 2016, a slight increase compared to 2014 and 2015 data.

Figure 2.0.1 Percentage of total combined revenues, by broadcasting and telecommunications ownership groups



Percentage of total combined revenues, by broadcasting and telecommunications ownership group

Source: CRTC data collection

# Bundling

Market concentration plays a role in the rise of bundling, since the largest entities are well positioned to offer their customers discounts in exchange for subscribing to a range of services. The table below shows the number of subscriptions to two or more services with one company. From 2012 to 2013, the number of subscriptions to bundled services increased from 10.0 million to 10.4 million. Following a stagnation in the number of bundled service subscriptions from 2013 to 2014, bundled service subscriptions decreased for two subsequent years. In 2016, bundled service subscriptions were lower than what they were almost 4 years earlier, which shows that the market might have reached its saturation point in 2014.

Measure	2012	2013	2014	2015	2016	2012-2016 CAGR <sup>4</sup> (%)
Number of subscriptions with bundled services	10.0	10.4	10.4	10.2	9.6	-0.8
Growth (%)	1.4	4.8	-0.3	-2.2	-5.3	n/a

Table 2.0.2 Number of subscriptions with bundled services (millions)

Source: CRTC data collection

# ii Communications service expenditures and prices

The amounts that Canadian households spend on communications services provide an important perspective on how communications services impact the household budget. These data also point, to a certain extent, to national shifts in demand and the competitive landscape.

However, it is important to recognize the limitations of expenditure data. First, the data may overlook the fact that certain free services, such as over-the-air television and radio services, remain valuable to Canadians. Second, the average expenditure amount takes into account all households, including those that do not subscribe to one or more services. As a result, expenditures by households that purchase services may appear lower or higher than they actually are.

<sup>&</sup>lt;sup>4</sup> Compound annual growth rate

# Spending on communications services continues to rise<sup>5</sup>

Throughout 2015, the average Canadian household spent \$218.42 per month on communications services, an increase of \$3.67 (1.71%) from 2014. Similar to 2014, Internet services and mobile wireless services drove household expenditure growth and telecommunications industry revenues.

In 2015, expenditures on Internet services took the lead in terms of growth (9.6%), followed by expenditures on mobile wireless services (5.5%). These increases reflect the observed trends in subscriptions to higher Internet speeds and to mobile plans with more data.

While there is considerable variance between the average amounts spent by Canadians in each income quintile, households tended to devote a larger amount of their communications service budget to either mobile wireless services or cable IPTV services and DTH satellite services. However, spending on cable, IPTV, and DTH services decreased across all income quintiles between 2014 and 2015. Household wireline telephone service expenditures also decreased across all income quintiles, although at a faster pace than expenditures on cable, IPTV, and DTH services.

On average, household spending on BDU services decreased by 3.25% from 2014 to 2015, while average household spending on wireline telephone services decreased by 9.5% during the same period. In both cases, spending decreased across all income quintiles, although the decrease in expenditures was the least pronounced in households in the first income quintile, while expenditures by households in the fourth income quintile decreased the most.

<sup>&</sup>lt;sup>5</sup> The information presented regarding household expenditures on communications services comes from Statistics Canada's Survey of Household Spending and does not include any projections or CRTC data.

Table 2.0.3 Monthly household spending on communications services, by service and by income quintile (\$/month/household)

Service	Year	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile	Average of all quintiles	CAGR (%) of average of all quintiles (2011-2015)
	2013	29.08	33.50	36.08	38.17	41.00	35.58	
	2014	26.58	31.08	32.50	36.17	40.33	33.33	
wireline	2015	25.50	28.08	29.83	31.50	36.08	30.17	-6.91
telephone	Growth 2014- 2015 (%)	-4.08	-9.65	-8.21	-12.90	-10.54	-9.50	
	2013	42.42	55.92	77.25	91.75	127.00	78.92	
Mobilo	2014	43.92	60.42	80.83	100.42	127.83	82.67	
wireless	2015	43.75	62.25	84.83	105.33	140.08	87.25	6.73
WILCIESS	Growth 2014- 2015 (%)	-0.38	3.03	4.95	4.90	9.58	5.54	
	2013	25.58	35.25	42.08	48.00	52.42	40.67	
	2014	29.50	37.17	44.17	48.75	52.67	42.42	
Internet	2015	30.58	41.58	49.92	53.75	56.83	46.50	7.68
	Growth 2014- 2015 (%)	3.67	11.88	13.02	10.26	7.91	9.63	
	2013	37.00	49.33	57.67	64.58	74.50	56.58	
Cable,	2014	38.92	49.42	56.92	62.25	74.17	56.33	
IPTV, and	2015	38.83	46.92	55.42	58.75	72.42	54.50	-0.34
DTH	Growth 2014- 2015 (%)	-0.21	-5.06	-2.64	-5.62	-2.36	-3.25	
	2013	134.08	174.00	213.08	242.50	294.92	211.75	
	2014	138.92	178.08	214.42	247.58	295.00	214.75	
	2015	138.67	178.83	220.00	249.33	305.42	218.42	
Total	Growth 2014- 2015 (%)	-0.18	0.42	2.60	0.71	3.53	1.71	2.58
	CAGR 2011- 2015 (%)	2.65	1.92	2.43	2.83	2.83	2.58	

Source: Statistics Canada's Survey of Household Spending

All data in Table 2.0.3 was collected and analyzed to show the growth percentages between 2014 and 2015, the most recent data available. The expenditure data reflects average expenditures per household and excludes sales tax.

Similar to previous years, household spending on mobile wireless, Internet, and overall communications services continued to grow in 2015. Household spending on wireline telephone services and Internet services fluctuated the most from 2014 to 2015: spending on wireline telephone services decreased 9.5% and spending on Internet services increased 9.6%.

Overall, households spent the most on mobile wireless services (\$87.25). On average, for all income quintiles, spending on wireline services declined from 2011 to 2015 at a compound annual growth rate (CAGR) of -6.9%. However, average expenditures on Internet services for all income quintiles show the largest growth (9.63%) between 2014 and 2015, and the strongest 2011 to 2015 CAGR (7.68%).

Although average household spending on communications services increased 1.71% between 2014 and 2015, households in the highest income quintiles spent more on communications services than those in the lower quintiles. This is reflected in the total growth of expenditures in each income quintile. Expenditures by households in the first income quintile stayed somewhat stable between 2014 and 2015, showing only a slight decrease (-0.18%), while expenditures by households in the fifth income quintile increased the most (3.53%).

Even though spending on communications services by lower-income households was less than that by higherincome households, as shown in Table 2.0.3, expenditures on communications services take up a significantly larger percentage of their annual incomes – as Table 2.0.4 shows.

Characteristics	Household income less than <b>\$31,608</b> (first quintile)	Household income from <b>\$31,609 to</b> <b>\$54,587</b> (second quintile)	Household income from <b>\$54,588 to</b> <b>\$82,709</b> (third quintile)	Household income from <b>\$82,710 to</b> <b>\$126,878</b> (fourth quintile)	Household income over <b>\$126,879</b> (fifth quintile)	Average of all quintiles
Average annual income	\$19,403	\$42,887	\$68,331	\$103,021	\$210,693	\$88,867
Members per household	1.43	2.11	2.57	2.91	3.35	2.47
Communications expenditures as a percentage of annual income	8.6%	5.0%	3.9%	2.9%	1.7%	2.9%

Table 2.0.4 Household spending on communications services, by income quintile, 2015

Source: Statistics Canada's Survey of Household spending

Income quintiles represent each 20% of households by average annual income.

Based on Statistics Canada's Survey of Household Spending, the average annual household income before taxes in Canada in 2015 was \$88,867. The Canadian provincial average annual household income before taxes ranged from \$71,436 to \$127,859. Alberta had the highest average (\$127,859), followed by Saskatchewan (\$94,007). From 2014 to 2015, the average annual household income increased for each income quintile except for the first quintile, which decreased \$261 from \$19,664 to \$19,403.

Between 2014 and 2015, the average number of members per household remained constant. However, the average annual household income increased by 2.9%, while expenditures on communications services increased by 1.7%, resulting in a decrease in expenditures on communications services as a percentage of annual household income, from 3.0% in 2014 to 2.9% in 2015.





# Monthly household expenditures, by service and by age of reference person (\$/month/household), 2015

#### Source: Statistics Canada's Survey of Household Spending

In 2015, persons in all age groups except those aged 65 years and over spent the least on wireline telephone services. Persons in all age groups, excluding those aged 65 years and over, also spent the most on mobile wireless services. Persons under 30 years of age spent the most on mobile wireless services (\$112.75 per month), which is more than 12 times the amount they spent, on average, on landline telephone services (\$8.92 per month). Persons aged 40 to 54 spent the most on communications services (\$252.42 per month), while persons aged 65 years and over spent the least (\$172.58 per month).

A true generation gap is demonstrated in the amount spent on communications services between persons aged less than 30 years and persons aged 65 years and over, since the youngest generation tends to spend more on communications services, specifically on mobile wireless services (\$112.75 per month). However, although members of the eldest generation spent the least on communications services, they spent the most on wireline telephone services (\$41.83 per month).

Figure 2.0.2 demonstrates the difference in importance of a service for persons in different age groups through the amount spent per service. For instance, persons under 30 years of age spent the least on wireline telephone services (\$8.92), whereas persons 65 years and over spent almost four times that amount (\$41.83).

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### **Price indices**

Price indices offer a perspective on the extent to which prices for a basket of goods and services change over time. Figure 2.0.3 shows the price changes for fixed baskets of telecommunications services (telephone and Internet services), and BDU services (cable, DTH satellite, and IPTV services), as well as overall price changes as measured by the Consumer Price Index (CPI). By maintaining a consistent basket of goods and services and comparing prices in the current year to the index reference period (2002), these indices measure price changes accurately.

**Telephone services index:** The telephone services index reflects the price changes experienced over time by a household for a fixed basket of telephone services, including both landline and mobile wireless services. This type of basket reflects a weighted average of consumer expenditures on basic local services, as well as other local telephone services, such as options and features, long distance services, installation, and repair services. This index does not include Internet service expenditures.

**BDU services index:** The BDU services index includes cable, DTH satellite, and IPTV (including pay television) services and reflects the price changes experienced over time by a household for a basket of subscription-based television services. This basket includes both "basic" and "extended" television distribution services. Basic service is the minimum service to which all customers must subscribe. Extended service is the most popular package of additional channels. This index does not account for bundling discounts.

**Internet services index:** The Internet services index reflects the price changes experienced over time by a household for a constant quantity and quality of Internet services. This basket includes a monthly Internet access service subscription through wireline service to the household. This index does not include access to the Internet bundled with wireless voice services.



Figure 2.0.3 Price indices for telephone services, BDU services, and Internet services compared to the CPI

#### Source: Statistics Canada

As measured by the CPI, average annual inflation in Canada was 1.4% in 2016. In comparison, from 2015 to 2016, the prices of key communications services changed by -0.3% (telephone services), 4.5% (BDU services), and 0.8% (Internet access services). As shown above, telephone service prices decreased in 2016 for the first time in over 10 years.

Overall, the CPI increased at an average annual rate of 1.6% over the 2006-2016 period, while telephone, Internet, and BDU service prices increased at average annual rates of 2.0%, 2.6%, and 4.3%, respectively, over the same period.

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# National prices – Urban vs. rural

The following figures present broadband, wireline, and wireless service pricing on a national scale for rural and urban communities to show the price differences between regions and services. More detailed information on wireline telephone service pricing can be found in section 5.2 of the report, details on broadband service pricing can be found in section 5.3, and details on wireless service pricing can be found in section 5.5.

The number at the end of each bar in figures 2.0.4 and 2.0.5 represent the highest price reported. The number of service providers in each province (in both urban and rural communities) is indicated in parentheses. For example, "B.C. broadband (2/3)" means that the number of service providers in the communities in British Columbia included in the survey varied between 2 and 3.

Prices for broadband, basic local wireline, and wireless services were compared in urban and rural communities. Depicted broadband service prices are based on the least expensive service with a 5 Mbps download speed and a 1 Mbps upload speed or greater offered by the service provider. Basic local wireline services include unlimited calling within a specified geographic area, 9-1-1 services, message relay services, and access to long distance services. Figure 2.0.4 displays the prices of basic local telephone services on a stand-alone basis in a number of rural communities. Mobile wireless services include 1,200 minutes or greater of voice service, at least 300 SMS, and over 2 GB of data per month, since 81% of subscribers have data plans and used on average 1,570 MB of data per month in 2016.

Figure 2.0.4 Broadband, wireline, and wireless pricing comparison in rural communities, per province/territory, 2016



Broadband, wireline and wireless pricing comparison in rural communities (\$/month), 2016

■ Variance between highest and lowest price

Source: CRTC data collection

#### Broadband in rural communities

The average minimum price is \$53.67 per month for broadband services in rural Canada. Ontario has the lowest price for broadband services in rural communities (\$24.95 per month) compared to the other provinces/territories. The Northwest Territories have the highest reported price for broadband services in rural communities (\$110.95 per month). The variance data was calculated by finding the difference between the minimum and maximum prices in each province/territory. The widest range of prices is in New Brunswick, where prices range from a minimum of \$32.99 to a maximum of \$88.45 per month, a variance of \$55.46.

#### Basic local wireline in rural communities

The minimum prices for basic local wireline services are relatively the same among the provinces/territories, with an average of \$31.05 per month. The lowest price, \$25.36 per month, is found in Newfoundland and Labrador. Similar to last year, Ontario has the highest maximum price of \$37.99 per month.

#### Wireless in rural communities

The lowest reported price for wireless services in rural communities is approximately \$55.71 per month on average. Once again, Quebec has the lowest price at \$40.00 per month. Most provinces and territories (Nunavut, the Northwest Territories, Yukon, Manitoba, Saskatchewan, Alberta, and British Columbia) have the same maximum price of \$85.00 per month. British Columbia has the highest variance at \$40.00.

Overall, prices in rural communities are highest for broadband services, with wireless service pricing not too far behind.

Figure 2.0.5 Broadband, wireline, and wireless service pricing comparison in urban communities, per province/territory, 2016



Broadband, wireline, and wireless service pricing comparison in urban communities (\$/month), 2016

Source: CRTC data collection

#### Broadband in urban communities

The highest price reported across all provinces/territories is \$88.95 per month for broadband services. In most provinces, the lowest reported price for broadband services is \$25.00, as seen in Figure 2.0.5. The widest range (\$55.96) is seen in Newfoundland and Labrador and in New Brunswick, where broadband service prices range from \$32.99 to \$88.95 per month.

#### Basic local wireline in urban communities

There is little variance in basic local wireline service prices in urban communities. The average maximum price for these services in urban communities is \$34.73 per month. The highest price is \$39.95 per month in British Columbia, Yukon, the Northwest Territories, and Nunavut, and the lowest price is \$22.37 per month in Saskatchewan. The highest variance is in Ontario (\$10.00), which demonstrates that most basic local wireline service users in urban communities across the country pay approximately the same amount each month and are not subject to widely varying prices.

#### Wireless in urban communities

The average maximum wireless service price in urban communities is \$69.48 per month. British Columbia, Alberta, and Ontario all have the lowest price of \$37.70 per month. Wireless service prices in urban communities in the North reach a reported price of \$85.00 per month, the highest reported price in Canada, which is the same for wireless service prices in rural communities (see Figure 2.0.4).

Overall, pricing patterns in rural communities are similar to those in urban communities throughout most provinces/territories. However, the variance in prices is much higher in urban communities due to lower minimum prices.

# Primary brands vs. flanker brands<sup>6</sup>

An examination of the different prices offered under primary brands and flanker brands gives perspective on how prices vary depending on the brand and region. In this subsection, primary and flanker brand prices are broken down nationally and by province/territory. The analysis is further divided into service baskets to view the magnitude of price differences between service levels.

**Primary brand:** This is the brand that is most recognizable by consumers and is directly associated to the parent company that owns and operates the facilities to provide services.

**Flanker brand:** This brand, also referred to as an extension or a secondary brand, is expressed as logos or words, and is used by the primary brand wireless service provider (WSP) to market and offer varying services and plans to consumers. The primary brand's network is used to provide services under the flanker brand. Virgin, Koodo, and Fido are examples of flanker brands.

The division of service levels into baskets is based on consumer use. The baskets help differentiate between available phone and data plans. To analyze what prices service providers have to offer, both flanker and primary brands were considered. Prices were assessed for all provinces/territories and baskets. To assess the pricing of mobile wireless services, the following four baskets were used:

- **Basket 1** represents introductory or low-usage types of plans that offer 150 minutes of voice service per month, with no SMS or Internet data service.
- **Basket 2** encompasses low- to mid-tier types of plans that provide customers with at least 450 minutes of voice service, 300 SMS, and 1 GB of Internet data per month.
- **Basket 3** comprises plans representative of a typical smartphone user that offer at least 1,200 minutes of voice service, 300 SMS, and 2 GB of Internet data per month.
- **Basket 4** comprises plans geared towards smartphone users who want access to unlimited voice service and SMS, along with 5 GB of Internet data per month.

<sup>&</sup>lt;sup>6</sup> Data for this subsection was obtained from service providers' websites to accurately represent the prices offered to consumers. The research was conducted in February 2017, which means that the prices reported in Figures 2.0.6 to 2.0.8 may not mirror the other 2017 CMR data.



#### Figure 2.0.6 Price differences between primary and flanker brand phone plans, Canada, February 2017

Price differences between primary and flanker brand wireless plans, Canada, February 2017

■ Variation between the highest and lowest price ● Flanker brand average price ● Primary brand average price

# Source: Service plan pricing as published on service providers' websites in February 2017

Figure 2.0.6 presents average primary and flanker brand prices, as well as the variation in pricing for each basket across service providers. Data shows that variation in pricing is accentuated in the baskets that comprise more minutes, SMS, and data. As such, basket 1 has the lowest price variation, which indicates that the pricing of services in this basket tends to be consistent across service providers.

Overall, the average advertised price of the studied service baskets is 23% lower under flanker brands compared to primary brands. As demonstrated in Figure 2.0.6, flanker brand average prices lay clearly below primary brand average prices for each basket.

The average incremental cost between basket 2 and 3 wireless services is \$11 under primary brands and \$9 under flanker brands, while the average incremental cost between basket 3 and 4 wireless services is \$18 under primary brands and \$24 under flanker brands.

The following two figures show the pricing of the 4 baskets of wireless services studied, by province and territory.

Figure 2.0.7 Primary vs. flanker brand wireless pricing, baskets 1 and 2, by province and territory, February 2017



Primary vs. flanker brand wireless pricing, baskets 1 and 2, by province and territory, February 2017

Source: Service plan pricing as published on service providers' websites in February 2017

This chart depicts the pricing of primary brands and their flanker brands for baskets 1 and 2, by province/territory. As observed in the national figures, pricing for basket 1 is somewhat consistent across service providers. However, a gap between the primary brand average price and the flanker brand average price for basket 2 can be observed in most provinces, except Manitoba and Saskatchewan. The average price differences between primary brands and flanker brands are \$3.46 and \$20.95 for baskets 1 and 2 respectively.

Overall, basket 2 prices offered by primary brands are lowest in Saskatchewan (\$40.00) and Manitoba (\$40.00). Also in Saskatchewan and Manitoba, the average advertised price of basket 2 was higher under flanker brands than under primary brands.



Figure 2.0.8 Primary vs. flanker brand wireless pricing, baskets 3 and 4, by province and territory, February 2017

Source: Service plan pricing as published on service providers' websites in February 2017

This chart depicts the pricing of primary brands and their flanker brands for baskets 3 and 4, by province/territory. There is a notable difference in pricing (i.e. prices are consistently lower than the national average) in Quebec, Manitoba, and Saskatchewan, where regional service providers are present, for baskets 3 and 4. In the other provinces and in the territories, the prices seem to follow a consistent trend. Overall, the flanker brand average prices for basket 4 are only slightly higher than the primary brand prices for basket 3.

The area with the highest average price for basket 4 offered by primary brands is Alberta (\$108.33), while the area with the highest average price for basket 4 offered by flanker brands is Yukon (\$93.33).

# iii Access and service availability

One of the CRTC's key goals is to ensure that Canadians have access to a world-class communication system. Achieving this objective requires quality information about the diverse challenges faced by communities across the country. To better understand how the communication system is evolving to help Canadians connect with one another and the world, the rest of this section focuses on the availability of communications services in Canada, with particular regard to official language minority communities and access to communications services in minority official languages.

# Wireless and wireline telephone services

Another approach to the issue of availability is to consider the extent to which Canadian households subscribe to key communications services. As Table 2.0.5 shows, nearly all Canadians (99.3%) subscribed to either mobile wireless or landline telephone services in 2015. However, rather than subscribing to both telephone services (i.e. landline and mobile wireless services), some Canadians are choosing only one service – and for the most part, this appears to be mobile wireless service. As noted in Table 2.0.5, the percentage of mobile-wireless- only households (27.5%) continues to exceed the percentage of wireline-only households (13.2%). Over the last decade, the percentage of wireline -only households has continuously decreased, while the percentage of mobile-wireless -only households has steadily increased.

While the transition to widespread mobile wireless service use – partly at the expense of wireline telephone service use – is a long-term process, the historical data in Table 2.0.5 shows how rapidly Canadian households have embraced this newer technology. In 2005, wireline-only households (36.0%) far outpaced their mobile-wireless -only counterparts (4.8%).

By organizing this information by province (see Table 2.0.6) and income quintile (see Table 2.0.7), it is more apparent which groups of Canadians are driving the year-over-year shift in service subscriptions. For instance, consumers in the four Western provinces (Manitoba, Saskatchewan, Alberta, and British Columbia) and Ontario have played a key role in the rise of mobile-wireless-only households. In contrast, both Quebec and the Eastern provinces (New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador) continue to feature a larger percentage of wireline-only households. Nevertheless, all provinces had decreasing percentages of wireline-only households in 2015, except Manitoba, Quebec, and Nova Scotia, whose percentages of wireline-service-only households increased (see Table 2.0.6). However, this had no effect on the provinces' percentages of mobile-wireless-only households. In fact, mobile-wireless-only households in all provinces increased. Figure 2.0.9 shows the ownership rates of cellphones and landlines by Canadians. In 2015, 99.3% of Canadian households owned either a cellphone or a landline. While 86.2% of households had cellphones in 2015, from 2012 to 2015, the percentage of households owning more than one cellphone increased from 45.9% to 51.2%. During the same period, landline ownership decreased gradually from 83.8% in 2012 to 71.9% in 2015, as seen in Figure 2.0.9. Overall, cellphone ownership rates rose from 85.6% in 2014 to 86.2% in 2015, compared to 71.9% of Canadians who had a landline in 2015, down from 75.5% in 2014.

#### Figure 2.0.9 Cellphone and landline ownership rates



### Cellphone and landline ownership rates

#### Source: Statistics Canada's Survey of Household Spending

The figure above provides the percentages of Canadian households by cellphone and landline ownership between 2012 and 2015, using the most recent data available through Statistics Canada's Survey of Household Spending.

# The link between income and telephone service subscriptions

The data on telephone ownership rates by income quintile (see Table 2.0.7) continue to illustrate the overall transition to mobile phones. Household telephone service subscribers tend follow the same trend every year across most income quintiles, in which the uptake of wireline services decreases in favour of mobile wireless services. However, the number of wireline-only households in the second income quintile increased from 16.2% in 2014 to 18.7% in 2015.

In 2015, of the five income quintiles, households in the fifth quintile changed their telephony habits the most. Their exclusive use of cellphones increased 63.5%, while wireline-only households in this income quintile decreased by 35.4%.

Financial resources appear to play a role in whether households subscribe to both wireless and wireline services, or only one of the two. While only 21.9% of households in the highest income quintile subscribed to only wireline or only wireless services in 2015, there is a significant difference in the percentages of households in lower income quintiles that subscribed to only wireline or only wireless services (63.7% in the first income quintile). Indeed, the data suggest that the higher a household's income, the more likely it is that the household subscribes to both types of telephone services.

Year	Wireline	Mobile wireless	Wireline and/or mobile wireless	Wireline only	Mobile wireless only	Only wireline or only wireless
2004	96.2	58.9	98.9	40.0	2.7	42.7
2005	94.0	62.9	98.8	36.0	4.8	40.8
2006	93.6	66.8	98.6	31.8	5.0	36.8
2007	92.5	71.9	98.8	26.9	6.3	33.2
2008	91.1	74.3	99.1	24.8	8.0	32.8
2009	89.3	77.2	99.3	22.1	10.0	32.1
2010	89.3	78.1	99.4	21.3	10.1	31.4
2011	86.6	79.1	99.3	20.2	12.7	32.9
2012	83.8	81.3	99.2	17.9	15.4	33.3
2013	79.1	84.7	99.3	14.6	20.2	34.8
2014	75.5	85.6	99.2	13.6	23.7	37.3
2015	71.9	86.1	99.3	13.2	27.5	40.7

#### Table 2.0.5 Canadian wireline and mobile wireless service subscribers per 100 households

Source: Statistics Canada's Survey of Household Spending

Table 2.0.6 Wireline and mobile wireless service subscribers per 100 households, by province, 2015

Province	Wireline	Mobile wireless	Wireline and/or mobile wireless	Wireline only	Mobile wireless only	Only wireline or wireless
British Columbia	70.7	88.5	98.9	10.4	28.2	38.6
Alberta	65.2	93.4	99.8	6.4	34.7	41.1
Saskatchewan	68.7	91.1	99.4	8.4	30.8	39.1
Manitoba	76.1	85.1	99.0	13.9	22.9	36.8
Ontario	69.1	88.1	99.5	11.4	30.4	41.8
Quebec	77.0	79.0	99.2	20.2	22.2	42.4
New Brunswick	84.1	82.8	98.5	15.7	14.4	30.1
Nova Scotia	75.0	83.2	99.2	16.0	24.2	40.2
Prince Edward Island	77.3	83.8	98.8	15.0	21.5	36.5
Newfoundland and Labrador	83.6	86.4	99.1	12.7	15.5	28.3
All of Canada	71.9	86.1	99.3	13.2	27.5	40.7

Source: Statistics Canada's Survey of Household Spending

Service	Year	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile
	2013	65.2	75.0	82.2	84.7	87.5
	2014	65.3	69.1	74.3	80.2	88.3
Wireline	2015	63.6	68.6	72.1	74.1	81.0
	Growth 2014- 2015 (%)	-2.6	-0.7	-3.0	-7.6	-8.3
	2013	66.8	79.7	88.5	92.9	96.4
Mahila	2014	67.4	83.2	89.4	93.2	95.0
wireless	2015	69.9	80.3	89.9	93.9	96.7
	Growth 2014- 2015 (%)	3.7	-3.5	0.6	0.8	1.8
	2013	97.5	99.7	99.7	99.6	100.0
Wireline	2014	97.8	99.4	99.2	99.5	99.8
mobile	2015	98.6	99.0	99.5	99.8	99.8
wireless	Growth 2014- 2015 (%)	0.8	-0.4	0.3	0.3	0.0
	2013	30.7	20.0	11.2	6.7	3.6
\\/irolino	2014	30.4	16.2	9.8	6.3	4.8
only	2015	28.7	18.7	9.6	5.9	3.1
,	Growth 2014- 2015 (%)	-5.6	15.4	-2.0	-6.3	-35.4
	2013	32.3	24.7	17.5	14.9	12.5
Mobile	2014	32.5	30.3	24.9	19.3	11.5
wireless	2015	35.0	30.4	27.4	25.7	18.8
only	Growth 2014- 2015 (%)	7.7	0.3	10.0	33.2	63.5

Table 2.0.7 Canadian wireline and mobile wireless service subscribers per 100 households, by income quintile

Source: Statistics Canada's Survey of Household Spending

The results of Statistics Canada's Survey of Household Spending are released approximately two years after the data is collected. Consequently, the most recently available data is from 2015.

# The link between income and Internet subscriptions

Mobile wireless devices (such as smartphones and tablets) and technologies (HSPA and LTE<sup>7</sup>) enable Canadians to access the Internet from nearly any location. However, home computers still play an important role for Canadians. As Table 2.0.8 shows, most Canadian households have home computers (84.5%).

Overall, slightly more households owned cellphones (86.1%) than home computers (84.5%) in 2015. This trend is more pronounced in the lower income quintiles. For example, 69.9% of Canadian households in the lowest income quintile owned cellphones (see Table 2.0.7), compared to 61.9% of households that owned home computers. Overall, the average of home computer ownership for all income quintiles has had fairly flat growth, increasing only 0.2% between 2014 and 2015.

The only decreases in home computer ownership in the household are seen in the fifth income quintile and in the first quintile, by 0.8% and 3.7%, respectively. While this may be due to a number of factors, one important factor could be that low-income households are choosing to devote their resources to a technology that can provide multiple communications services (e.g. voice and Internet), rather than subscribing to each service individually.

Internet use from home has increased throughout all income quintiles except the fifth quintile, which saw a decrease of 0.1%. The majority of growth came from households in the second and third income quintiles, which reported increases of 4.6% each in Internet use from home. Overall, Internet use from home has increased 2.4%. However, Internet use from home in the first income quintile is still 17.7 percentage points lower than that in the second quintile, and 22.5 percentage points lower than the overall average.

Technology	Year	First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile	Average for all quintiles
Home	2014	64.3	78.1	87.7	94.0	97.4	84.3
computer	2015	61.9	79.6	89.1	95.3	96.6	84.5
ownership	Growth (%)	-3.7	1.9	1.6	1.4	-0.8	0.2
	2014	63.5	78.5	88.7	95.5	98.3	84.9
Internet use	2015	64.4	82.1	92.8	97.2	98.2	86.9
ii oin noine	Growth (%)	1.4	4.6	4.6	1.8	-0.1	2.4

Table 2.0.8 Home computer ownership and Internet use from home per 100 households, by income quintile

Source: Statistics Canada

<sup>&</sup>lt;sup>7</sup> High-speed packet access (HSPA) and long-term evolution (LTE) are the protocols or standards used for communications between a mobile phone and cell towers in mobile networks. HSPA is also referred to as 3G (third generation) cellular while LTE is referred to as 4G (fourth generation) cellular. LTE is the current standard that is now widely deployed in most mobile networks.

Figure 2.0.10 Residential broadband service availability (5 Mbps or higher download speed), by province/territory (% of households), 2016



Residential broadband service availability (5 Mbps or higher download speed) 2016

#### Source: Innovation, Science and Economic Development Canada (ISED) and CRTC data collection

DTH satellite services are excluded since they have a national footprint. They would add approximately 1.5% to the availability of 5 Mbps broadband services.

The rise in Internet service use across income quintiles is also reflected in overall residential Internet service availability and subscriptions. The percentage of households with access to broadband services with a download speed of at least 5 Mbps is 97% nationally.

The data indicates that Canadians are clearly embracing faster connections, which are becoming more widely available: the majority of households now subscribe to Internet service packages with download speeds at or above 10 Mbps.

Advertised download speed	2012	2013	2014	2015	2016
256 Kbps and higher	78	79	81	83	84
1.5 Mbps and higher	75	77	80	82	83
5 Mbps and higher	62	71	77	80	81
10 Mbps and higher	29	45	55	61	65
16 Mbps and higher	21	25	34	41	46
50 Mbps and higher	3	4	8	16	22
All speeds (including dial-up)	79	80	82	84	84

Table 2.0.9 Residential Internet service subscriptions by advertised download speed per 100 households

Source: CRTC data collection

# iv Internet data consumption

While 86.9% of Canadian households use the Internet at home, their Internet use and data consumption varies greatly. To better understand the impacts of using different online services, 3 different data usage scenarios were created and data usage was analyzed. Table 2.0.10 presents the activities included in each usage profile, while Figures 2.0.11, 2.0.12, and 2.0.13 present overall data consumption and a breakdown by service.<sup>8</sup>

# Low-volume usage

This scenario covers individuals who regularly participate in low-usage activities, such as Web browsing, and social media, as well as occasional video streaming.



#### Figure 2.0.11 Low Internet GB consumption, per service, per month

Source: CRTC research and tests

IM: instant messaging HD: high definition SD: standard definition

<sup>&</sup>lt;sup>8</sup> Estimates of data usage per type of online activity are based on information published on service providers' websites and data from the CRTC test environment. Actual data usage may vary.

### Medium-volume usage

This scenario covers individuals who participate in low-usage activities, such as Web browsing and social media on a daily basis, as well as medium-usage activities, such as audio and video streaming on a regular basis.



#### Figure 2.0.12 Medium Internet GB consumption, per service, per month

Source: CRTC research and tests

### High-volume usage

This scenario covers families with children who participate in low- and medium-usage activities on a daily basis, as well as high-usage activities, such as video streaming on a regular basis.



#### Figure 2.0.13 High Internet GB consumption, per service, per month

Source: CRTC research and tests

Service	Measure	Low usage	Medium usage	High usage	Data usage (MB) per unit
Websites, emails, and IM	Hours	40	60	90	146
Uploading photos	Photos	20	40	60	3
Streaming audio	Hours	30	55	65	100
Gaming	Hours	-	50	80	997
Downloading music	Songs	10	20	22	4
Streaming SD video	Hours	3	8	10	900
Streaming SD movies	Movies	8	15	24	1,500
Streaming HD movies	Movies	8	16	22	3,318

#### Table 2.0.10 Internet data consumption, per service

Source: CRTC research and tests

Estimates of data usage per type of online activity are based on information published on service providers' websites and data from the CRTC test environment. Actual data usage may vary

For more details regarding data consumption, see "Broadband measurement" in section 5.3.

As shown in the figures and table above, streaming HD content accounts for the largest portion of data usage in all three scenarios, followed by streaming SD content and gaming.

# v 2017 CMR Rotating Spotlight: The Wireless Code

The rotating spotlight is a new annual feature in the CMR to highlight changes in the Canadian communications industry during the year. It presents information that impacts consumers directly. This year's spotlight is on the Wireless Code.

# The Wireless Code – The beginning

The first version of the Wireless Code came into effect in December 2013. The Code was created to respond to significant concerns about wireless services and to establish more consumer-friendly business practices. The Code addresses the clarity and content of wireless service contracts to assist consumers, including small businesses, in making informed choices in the marketplace. The Code also endeavours to limit the risk of bill shock to customers and to facilitate switching service providers, thus contributing to a more dynamic marketplace.

The Code applies to all WSPs that serve customers of retail mobile wireless services, irrespective of their business model or where they operate. The Code is administered by the Commissioner for Complaints for Telecommunication Services (CCTS).

# The Wireless Code – Implications for consumers

Each rule in the Wireless Code was designed to address a specific consumer concern, such as the following:

- Long contracts and associated early cancellation fees the Code does not allow for early cancellation fees to be imposed after 24 months.
- Unilateral changes to contract terms the Code requires WSPs to obtain customer consent for changes to key terms and conditions related to postpaid services.
- Unclear and confusing contracts the Code requires WSPs to communicate in plain language, including in their written contracts, and sets out the information that must be included in both postpaid and prepaid contracts. The Code also requires WSPs to provide a Critical Information Summary to postpaid service customers summarizing the most important elements of the contract in two pages or less.
- **Bill shock**, especially related to data and roaming fees the Code requires WSPs to suspend data roaming and data overage charges once they reach \$100 and \$50, respectively. The Code also requires WSPs to notify customers when their device is roaming in another country.
- **Opportunity to test a service** the Code requires WSPs to offer customers who are subject to an early cancellation fee a 15-day trial period in which they can cancel their service and return their device without being subject to an early cancellation fee. WSPs must also offer an extended trial period of 30 days to persons who self-identify as having a disability.

As a result of the *Review of the Wireless Code*, Telecom Regulatory Policy <u>CRTC 2017-200</u>, 15 June 2017, which amended the original Wireless Code, WSPs are required to do the following:

- As of the date of the decision:
  - **Application of overage and roaming caps** apply the data roaming charge cap and the data overage cap on a per-account basis rather than a per-device basis (i.e. the \$50 data overage cap is triggered at \$50 for the entire account, not at \$200 for an account with four devices).
  - **Consent regarding data roaming or overage charges** obtain consent from the account holder of a family or shared plan to incur data roaming charges or overage charges beyond the Code-established caps, unless the account holder authorizes another user associated with the account to consent to additional charges.
  - **Consent regarding changing key elements of a contract** obtain consent from the account holder of a family or shared plan to change the key terms or conditions of the contract; key terms now explicitly include those related to voice, text, and data, if those services are included in the contract for the duration of the contract term.
- As of 1 December 2017:
  - **Paper/electronic contacts** allow customers to expressly choose between an electronic or a paper copy of their contract.
  - **Electronic contracts** If the customer opts for an electronic copy of the contract, the WSP must send it to the customer within 1 business day of the agreement being entered into.
  - **Unlocking** provide newly purchased devices unlocked and unlock any devices immediately upon request, at no charge.
  - Service trials allow customers to use at least 50% of their regular monthly voice, text, and data allotments during the 15-day trial period, and 100% of those allotments for the extended 30-day trial period for persons with disabilities.
  - Service trial notifications notify customers, 90 days before the end of their contract, of (i) when their contract is going to end, (ii) whether their monthly charge will stay the same or what the new charge will be going forward, and (iii) that they are no longer subject to any penalty to switch plans, cancel their service, or switch service providers.

# The Wireless Code – Public opinion research highlights (Fall 2016)

As part of the process to update the Code, the CRTC sought to understand the impact of the Code over time on consumers' understanding of their wireless service contracts and related rights. Public opinion research (POR) was conducted in the spring of each year since 2014.

Highlights of the Fall 2016 POR as they pertain to bill shock and complaints, are as follows:

#### Bill shock

- A sizeable number of Canadians (21%) continue to experience bill shock; however, Figure 2.0.14 demonstrates a decline in bill shock since 2014.
- Most incidents of bill shock (64%) are for amounts of \$100 or less.
- Similar to previous years, data overage fees are the primary cause of bill shock (48%), followed by international roaming fees (17%).

#### Complaints

- 17% of Canadians made a complaint about their wireless services in the last year.
- Figure 2.0.14 demonstrates a decline in complaints since 2014, when the research began. Nonetheless, there was a peak in complaints in 2015.
- Canadians who tend to complain do so often, averaging 2.88 complaints in the past 12 months.

Figure 2.0.14 Percentage of Canadians experiencing bill shock and filing complaints



# Percentage of Canadians experiencing bill shock and filing complaints

Source: CRTC Public Opinion Research, Spring 2014 to Fall 2016
### Wireless-service-related contacts, complaints, and spam

The increase in wireless device usage presents unique challenges for Canadians. Between 1 April 2016 and 31 March 2017, 41% of Web form submissions to the CRTC's Spam Reporting Centre concerned spam sent through mobile text messages. This represents an increase from the 2015-2016 fiscal year, when SMS-based spam represented 18% of Web-based submissions. In 2015-2016, the CRTC and the CCTS combined received approximately 12,000 wireless-service-related complaints and contacts.

#### CCTS

- The CCTS logged almost 8,000 wireless-service-related complaints in 2015-2016, representing 50.3% of all complaints to the CCTS.
- Wireless-service-related complaints to the CCTS in 2014-2015 accounted for 52% of total complaints, compared to 61% in 2013-2014.

#### CRTC

- The CRTC received about 4,000 wireless-service-related contacts in 2016, representing 21% of all contacts received by the CRTC.
- In 2016, wireless-service-related contacts ranked second to telemarketing-related contacts, which accounted for approximately 4,200 contacts or 23% of all CRTC contacts.
- Billing/rate issues were the primary source of wireless-service-related contacts (with approximately 1,300 contacts), and CRTC policies/decisions came in second (with about 1,000 contacts).

### Metrics – Contract length

As illustrated in the figure below, the percentage of postpaid plans with contract periods exceeding two years dropped following the 2013 implementation of the Wireless Code.

#### Figure 2.0.15 Percentage of wireless service plans with contracts, by duration



#### Percentage of wireless plans with contracts, by duration

Source: CRTC data collection

## Metrics – Early cancellation fee revenues

Early cancellation fee revenues (for the five entities that submitted data as part of the Wireless Code review proceeding) in 2013 and 2014 were relatively flat, at approximately \$130 million, rising to approximately \$140 million in 2015.

Three of the five companies posted a decrease in early cancellation fee revenues in 2014, with three of the five also posting a decrease in such revenues in 2015.

### Unlocking fees

Since the creation of the Wireless Code, the CRTC has received over 650 complaints/inquiries about unlocking fees.

Unlocking fees were one of the most frequently cited frustrations of consumers on the record of the Wireless Code review proceeding: 46 Canadians commented on unlocking fees, with many subscribers suggesting that once a mobile device has been fully paid for, WSPs should unlock the device free of charge.

#### Table 2.0.11 Aggregate data released on the number of devices unlocked and revenues from unlocking

Metric	2014	2015	2016
Number of devices unlocked by WSPs	734,595	922,931	943,363
Revenues from unlocking (\$M)	21.6	28.5	37.7

Source: Undertakings submitted as part of the wireless code review proceeding

## 2.1 Local spotlight: Access for official language minority communities

As a designated institution under section 41 of the *Official Languages Act*, the CRTC is committed to enhancing the vitality of the English- and French-language minority communities in Canada, supporting their development and addressing their needs within the context of its mandate, and fostering the full recognition and use of both official languages in Canadian society. To this end, the CRTC focuses on ensuring that official language minority communities have access to an appropriate and equitable number of quality services and that these communities are adequately represented in the programming of these services.

These objectives reflect the Canadian broadcasting policy objectives, which the Commission is tasked to pursue. In this regard, the *Broadcasting Act* specifies that the Canadian broadcasting system should demonstrate Canada's linguistic duality through programming and employment opportunities; that a range of broadcasting services in English and French shall be extended to all Canadians as resources become available; and that the programming provided by the Canadian Broadcasting Corporation be in English and in French, and reflect the different needs and circumstances of English and French linguistic minorities.

Province/territory	Official language minority population (% of total population)
British Columbia	1.3
Alberta	1.9
Saskatchewan	1.4
Manitoba	3.3
Ontario	3.8
Quebec	7.8
New Brunswick	31.4
Nova Scotia	3.3
Prince Edward Island	3.5
Newfoundland and Labrador	0.5
Territories	3.0
Canada	4.6

Table 2.1.1 Official language minority population as a percentage of the total population, by province and territory,2016

#### Source: 2011 Census, Statistics Canada

A number of different criteria can be used to identify the language of individuals. These include the first language learned at home, the language spoken at home, and the language of education. For the purpose of this report, the official language minority population is defined in terms of the first language learned at home in childhood (i.e. the mother tongue) and still understood at the time of the 2016 Census.

This table displays the percentage of the population for whom the mother tongue is an official language in minority status in the province or territory in which they reside, and in Canada as a whole. In all provinces and territories except Quebec, the official language having minority status is French. New Brunswick has the highest percentage of official language minority population, at 31.4%, followed by Quebec at 7.8%. This data excludes institutional residents.



### Map 2.1.1 Locations of official language minority communities in Canada

Source: Canadian Heritage, Official Languages Branch

Province/territory	Radio	Over-the- air television	Cable distribution (excluding DTH satellite)	Broadband Internet	Mobile wireless broadband
British Columbia	71	49	94	96	98
Alberta	77	33	90	99	99
Saskatchewan	55	17	74	99	99
Manitoba	78	62	75	99	99
Ontario	71	34	88	97	99
Quebec	83	87	93 96	96	99
New Brunswick	94	46	93	99	99
Nova Scotia	75	1	76	99	99
Prince Edward Island	64	0	60	86	99
Newfoundland and Labrador	56	0	82	85	95
Territories	51	0	75	97	84
Canada	72	62	91	97	99

Table 2.1.2 Percentage of official language minority community households having access to communications services in their official language, by type of service, for the provinces/territories and all of Canada, 2013

Source: 2011 Census, Statistics Canada, and CRTC data collection

This table displays the percentages of the official language minority community households in each province and in the territories that have access to radio services, television services, cable distribution services (excluding DTH satellite services since these services are generally available to all households), broadband Internet services, and mobile wireless broadband services, from which they can be served in their first official language.

# 3.0 The Communications industry



Increase of 1.3% from 2015 The communications industry encompasses both the broadcasting and telecommunications market sectors. In 2016, telecommunications revenues represented 73% of the communications revenues compared to 27% for broadcasting. The communications industry served over 14 million households and over a million businesses in Canada using both landline and wireless facilities. Over 60% or \$36 billion of all communications services revenues, excluding revenues generated from discretionary and on-demand television services, as well as direct-to-home (DTH) broadcast distribution undertaking (BDU) services, were generated in the provinces of Ontario and Quebec.

This section examines key characteristics of the communications industry, including overall revenue growth and financial performance. More detailed information, including market financial performance, ownership landscape data, and pricing information for rural and urban centres across the country, can be found in sections 4 and 5 of the report.

The wireless market sector continue to be the largest single communications sector, capturing 37% of the \$66.6 billion in communications revenues in 2016. Internet revenues surpassed broadcasting distribution revenues by approximately \$2.1 billion, and the Internet sector has emerged as the second largest market sector, with 16% of communications revenues. Internet service providers remain particularly reliant on residential Internet access services, which account for 75% of their total Internet revenues.

Revenues from the top five ownership groups accounted for approximately 83% of total communications revenues in 2016, compared to 81% in 2013. Of these groups of companies, two are incumbent telephone companies (Bell and TELUS) and three are traditional broadcasting distribution companies (Rogers, Shaw, and Quebecor).

Over the past five years, revenues from the cable-based carriers and the incumbent telecommunications service providers (TSPs), as a percentage of total communications revenues, have remained more or less stable at approximately 33% and 49%, respectively. During this period, cable-based carriers' telecommunications revenues increased by 5.1% annually, from \$13.3 to \$16.2 billion. Traditional telephone companies, however, increased their BDU revenues 8.2% annually, from \$2.4 billion in 2012 to \$3.2 billion in 2016.

## i Revenues

Category	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Telecommunications	43.9	44.8	45.9	47.8	48.7	2.0	2.6
Broadcasting	17.9	18.0	18.2	18.0	17.9	-0.5	-0.04
Total revenues	61.8	62.8	64.1	65.8	66.6	1.3	1.9

Table 3.0.1 Communications revenues (\$ billions)

Source: CRTC data collection

Revenues are one of the principal means to measure the performance of the communications industry. This table shows revenues, the growth rate from 2015 to 2016, and the compound annual growth rate (CAGR) from 2012 to 2016 for telecommunications service providers (TSPs) and broadcasters (including all Canadian Broadcasting Corporation (CBC) revenues and broadcasting distribution undertakings (BDU) revenues).

Figure 3.0.1 Annual communications revenue growth rates



Source: CRTC data collection

Annual revenue growth rates are an indicator of overall broad trends in the communications industry. This graph shows annual revenue growth rates for the telecommunications and broadcasting industries from 2012 to 2016.

Region	2014	2015	2016	Percentage of total (%)	Growth (%) 2015-2016
Atlantic	3.8	4.0	4.0	6.7	0.5
BC and Territories	7.8	8.1	8.2	13.6	0.8
Ontario	22.7	23.0	24.0	40.0	4.7
Prairies	11.5	12.1	11.8	19.7	-2.4
Quebec	11.6	12.0	12.0	19.9	-0.3

#### Table 3.0.2 Communications revenues by region (\$ billions)

Source: CRTC data collection

This table excludes revenues generated from discretionary and on-demand television services as well as DTH BDU services, because those services are licensed as national services. These services generated \$4.4 billion and \$2.2 billion in 2016, respectively. Estimates were made for companies that were not required to provide provincial and territorial telecommunications data. Growth rate variance is calculated from exact amounts and may not be apparent in the rounded revenue numbers reported in this table.

#### Growth (%) **CAGR (%)** Туре Subtype 2012 2013 2014 2015 2016 2015-2016 2012-2016 Telecommunications 28.0 28.3 28.9 29.7 29.1 -1.7 1.1 **Broadcasting** Incumbent TSPs<sup>9</sup> 2.7 2.4 3.0 3.1 3.2 3.1 8.2 distribution Subtotal 1.7 30.3 31.0 31.8 32.8 32.4 -1.3 Alternative Other facilities-based 1.2 1.2 1.2 1.5 1.7 12.3 9.5 service providers service providers (excluding cable-Resellers 1.5 1.5 1.6 1.7 1.7 2.9 3.0 based carriers)<sup>10</sup> **Telecommunications** 13.8 15.0 8.2 5.1 13.3 14.2 16.2 Cable-based<sup>11</sup> Broadcasting 6.2 6.1 6.0 5.8 5.5 -4.9 -3.0 carriers distribution Subtotal 19.5 19.9 20.2 20.8 21.7 4.5 2.8 Other **Broadcasting – Radio** 9.2 9.3 9.3 9.0 9.1 1.0 -0.5 broadcasting & TV All 61.8 Total 62.8 64.1 65.8 66.6 1.3 1.9

#### Table 3.0.3 Communications revenues, by type of service provider (\$ billions)

Source: CRTC data collection

Canadians receive broadcasting and telecommunications services from a range of types of service providers through a range of technologies. This table lists each type of telecommunications and broadcasting service provider and shows changes in total annual revenues for each year between 2012 and 2016.

<sup>&</sup>lt;sup>9</sup> Incumbent TSPs are the companies that provided local telecommunications services on a monopoly basis prior to the introduction of competition.

<sup>&</sup>lt;sup>10</sup> Alternative service providers are providers of telecommunications services that are not incumbent TSPs. They are subdivided into facilities-based and non-facilities-based service providers.

<sup>&</sup>lt;sup>11</sup> Cable-based carriers are the former cable monopolies that also provide telecommunications services (e.g. wireline voice, Internet, data and private line, and wireless services). They are a type of alternative service provider.

## ii Industry characteristics

Table 3.0.4 Industry convergence – Cable vs. telecommunications

Year	Percentage of cable-based carriers' revenues from telecommunications services	Percentage of incumbent TSPs' revenues from television services
2016	74.6	10.0
2015	72.1	9.6
2014	70.5	9.3
2013	69.4	8.8
2012	68.1	7.8
2011	66.8	7.2

Source: CRTC data collection

This table shows the extent to which cable-based carriers collect revenues from telecommunications services and incumbent TSPs (traditional telephone companies) collect revenues from television services. It illustrates one measure of the state of convergence in the industry between 2011 and 2016. Telecommunications services include local telephone, long distance, Internet, data and private line, and wireless services.

Table 3.0.5 Percentage of broadcasting and telecommunications revenues generated by companies operating in multiple sectors

Number of sectors in which	Number or entitio	of reportines operating sectors	ng groups g in these	Percentage of broadcasting and telecommunications revenues generated in these sectors			
companies offer service	2014	2015	2016	2014	2015	2016	
10	3	3	3	60	59	60	
9	0	0	0	0	0	0	
8	7	7	7	30	30	29	
7	0	0	2	0	0	0	
6	3	2	2	0	0	0	
5	11	17	18	0	1	2	
4	28	27	35	1	1	1	
3	44	39	43	5	4	5	
2	38	45	42	1	2	1	
1	215	220	212	3	3	2	

#### Source: CRTC data collection

The table above shows that three communications service providers offered services in all 10 market sectors in the telecommunications industry: radio (1), television (2), BDU (3), discretionary and on demand television (4), in the broadcasting industry, and local and access (5), long distance (6), Internet (7), wireless (8), data (9), and private line (10), and generated 60% of communications revenues. In contrast, 212 providers that offered only one service generated 2% of communications revenues.

The communications industry is still highly integrated, with the vast majority of revenues generated by companies operating in eight or more sectors.

## iii Financial performance

Figure 3.0.2 Percentage of total combined revenues, by broadcasting and telecommunications ownership groups



Percentage of total combined revenues, by broadcasting and telecommunications ownership group

#### Source: CRTC data collection

Canada's communications services market is dominated by a small number of large ownership groups. The top five groups, Bell, Quebecor, Rogers, Shaw, and TELUS, account for approximately 83% of total industry revenues. The next five largest groups/entities account for approximately 9%, and all remaining groups/entities account for 8%. Revenues include those of their affiliates.

Figure 3.0.3 Communications revenues by type of provider, 2016



Communications revenues, by type of provider, 2016

Source: CRTC data collection



#### Figure 3.0.4 Broadcasting and telecommunications revenues

#### Source: CRTC data collection

This bar graph compares cable-based service provider revenues from two principal sources: basic and nonbasic programming services (i.e. revenues from the distribution of television services) and wireline telecommunications services (i.e. local, long distance, data, private line, and Internet) between 2012 and 2016.

Overall, revenues have been stable in broadcasting, although they declined slightly from 2014 to 2016, while telecommunications revenues consistently grew during the five-year period from 2012-2016.



#### Figure 3.0.5 Cable-based carriers' revenues, by service type

#### Source: CRTC data collection

This bar graph compares cable-based carrier revenues from two principal sources: basic and non-basic programming services (i.e. revenues from the distribution of television services), and wireline telecommunications services (i.e. local, long distance, data, private line, and Internet) between 2012 and 2016.

This graph excludes revenues from BDU satellite services and mobile wireless services.

Figure 3.0.6 Canadian communications revenue composition for a select number of large service providers, 2016



## Canadian communications revenue composition for a select number of large companies, 2016

#### Source: CRTC data collection

Many of Canada's largest communications service providers offer telecommunications services as well as broadcasting services. This graph plots the total revenues of these providers by size (the larger the circle, the greater the company's revenue) and by industry (proximity to an axis indicates a larger share of revenue derived from that industry service).



Figure 3.0.7 EBITDA margins achieved by cable-based carriers, incumbent TSPs, and other service providers

#### Source: CRTC data collection

This graph shows earnings before interest, taxes, depreciation, and amortization (EBITDA) margins for cablebased carriers, incumbent TSPs, and other service providers (including resellers and other alternative facilitiesbased service providers) for BDU and telecommunications services for the period from 2013 to 2016. EBITDA margin is a measure of profitability. Higher EBITDA margins are generally associated with greater profitability. Only companies with Canadian communications revenues greater than 80% of their total revenues were included in the calculation of EBITDA.

The figure demonstrates an extreme jump in the EBITDA margins of other service providers; this was mainly due to some companies reporting "extraordinary accounting items" in their income statements in 2015; it does not represent a change in their position in the market. The drop in 2016 was mainly due to the reclassification of companies as a result of mergers and acquisitions activities.

## iv Consumer voices

Table 3.0.6 Number of communications-related contacts received by the CRTC, by type of issue

Type of contact	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Broadcasting-related contacts <sup>1</sup>	17,701	16,015	15,111	13,254	10,862
Broadcasting-related complaints <sup>1</sup>	11,206	11,138	10,158	8,669	7,104
Telecommunications-related contacts <sup>2</sup>	N/A	25,153	27,077	23,453	18,243
Telecommunications-related complaints <sup>2</sup>	N/A	18,624	19,818	16,613	11,724
Electronic commerce-related submissions (Spam Reporting Centre) <sup>1, 3</sup>	N/A	N/A	264,821	291,145	373,943
Telecommunications-related complaints (Unsolicited Telecommunications	136,622	113,641	107,293	129,984	79,417

1. For the 12-month period from 1 April to 31 March.

2. For the 12-month period from 1 January to 31 December.

3. The Spam Reporting Centre (SRC) began collecting data in July 2014.

4. For detailed info on Unsolicited Telecommunications Rules (UTR) complaints, please see the National Do Not Call List (DNCL) <u>report</u>.

Source: CRTC correspondence tracking system, Spam Reporting Centre, and Unsolicited Telecommunications Rules database

The CRTC tracking system counts multiple communications from the same client regarding the same complaint as separate units; therefore, the actual number of complaints received may be slightly lower.

**Contacts** refers to the total number of cases (comments, questions, complaints, campaigns, and petitions) that were assigned to and dealt with by Client Services across Canada. **Complaints** refers to a consumer lodging a complaint, expecting feedback and resolution. **Submissions** refers to the total number of reports Canadians sent to the Spam Reporting Centre.

## 4.0 Broadcasting sector overview



Decrease of 0.5% from 2015

BDUs

The Canadian broadcasting sector consists of radio (private and CBC), conventional television (private and CBC), and discretionary and on-demand television services (pay, pay per view (PPV), video-on-demand (VOD) and specialty services) and broadcasting distribution undertakings (BDU) (cable, satellite and IPTV).<sup>12</sup>

In 2016, revenues reported by the Canadian broadcasting sector (\$17.85 billion) decreased by 0.5% relative to 2015 revenues, which totalled \$17.95 billion. Broadcasting revenues represented 26.8% of all Canadian communications revenues. From 2012 to 2016, overall broadcasting revenues decreased by 0.14%, the equivalent of an average annual decrease of 0.04%.

Total television revenues increased by 1.7% from 2015 to 2016. The discretionary and on-demand sector was the main source of the growth, with reported revenues of \$4.4 billion and a PBIT margin of 21.0% in 2016, representing a 2.9% or \$126-million increase in revenues from 2015 to 2016.

CBC conventional television also contributed to television revenue growth from 2015 to 2016, reporting revenues totalling \$1,185 million in 2016, a 7.0% or \$78-million increase over 2015.

While the profitability of the private conventional television sector improved slightly, reaching -6.7% in 2016 compared to -8.0% in 2015, revenues decreased 4.5% over the same period, totalling \$1.7 billion in 2016.

Discretionary and on demand services rely primarily on subscriber revenues while conventional broadcasters rely essentially on advertising revenues. In 2016, approximately 92% of private conventional broadcasters' revenues and 31% of discretionary and on demand services' revenues came from advertising revenues.

In 2016, the top 5 companies, in terms of revenues, generated \$14.5 billion in broadcasting revenues and accounted for approximately 81% of total broadcasting revenues. The remaining entities reported combined revenues of \$3.4 billion, or 19% of total broadcasting revenues.

Companies operating in all broadcasting segments (i.e. radio, conventional television, discretionary and on demand television and BDU) generated approximately 64% of total Canadian broadcasting revenues in 2016. In comparison, companies operating in only one market sector generated 5% of total Canadian broadcasting revenues. The remaining 31% of revenues were reported by companies operating in two or three market sectors.

<sup>&</sup>lt;sup>12</sup> Internet radio and Internet television revenues are not included in broadcasting total revenues.

## i Revenues

Table 4.0.1 Broadcasting revenues (\$ millions)

Category	Sub-category	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Private commercial AM stations	306	295	290	286	284	-0.6	-1.8
	Private commercial FM stations	1,312	1,328	1,323	1,316	1,267	-3.8	-0.9
Radio	Private commercial Total	1,618	1,623	1,613	1,602	1,551	-3.2	-1.1
	CBC AM stations	73	58	53	49	51	4.4	-8.6
	CBC FM stations	253	246	235	228	240	5.3	-1.3
	CBC total	326	305	288	277	291	5.1	-2.8
	Total	1,944	1,927	1,901	1,879	1,842	-2.0	-1.3
	Private conventional	2,038	1,944	1,804	1,757	1,678	-4.5	-4.7
television	CBC conventional	1,369	1,247	1,328	1,107	1,185	7.0	-3.5
television	Total conventional	3,407	3,191	3,132	2,864	2,863	-0.04	-4.3
Discretionary and on demand television	Discretionary and on demand services	3,968	4,091	4,249	4,290	4,416	2.9	2.7
Total television	Total	7,375	7,282	7,381	7,154	7,279	1.7	-0.3
	Cable	5,480	5,390	5,231	5,067	4,789	-5.5	-3.3
RDU	IPTV	589	931	1,285	1,563	1,795	14.8	32.2
вро	DTH/MDS	2,492	2,472	2,414	2,289	2,150	-6.1	-3.6
	Total	8,561	8,794	8,930	8,919	8,734	-2.1	0.5
All Broadcasting services	Total	17,880	18,004	18,212	17,952	17,855	-0.5	-0.04

#### Source: CRTC data collection

In this table, broadcasting revenues are presented for each type of service and their component parts, for the years 2012 to 2016. It also shows a compound annual growth rate (CAGR) for each component. For more details, visit the CRTC's financial summaries page: <u>http://www.crtc.gc.ca/eng/stats.htm</u>.

Region	2014	2015	2016	Percentage of total (%)	Growth (%) 2015-2016
Atlantic	0.8	0.8	0.8	6.8	1.2
BC and Territories	1.5	1.5	1.6	13.8	5.2
Ontario	4.5	4.3	4.3	38.0	-0.6
Prairies	2.1	2.1	2.0	17.6	-4.0
Québec	2.7	2.8	2.7	23.8	-2.2

Table 4.0.2 Broadcasting revenue distribution by region (\$ billions)

#### Source: CRTC data collection

This table excludes revenues generated from discretionary and on demand television services as well as DTH BDU services as those services are licensed as national services. Growth rate variance is calculated from exact amounts and, therefore, may not be apparent in the rounded revenue numbers reported in this table.

## ii Industry characteristics

Number of sectors in which companies offer	nber of sectorsNumber of reporting group or entities operating in thesein whichentities operating in thesempanies offersectors					dcasting in these
service	2014	2015	2016	2014	2015	2016
4	3	3	3	63	64	64
3	4	4	4	22	21	21
2	17	18	17	8	10	10
1	171	160	173	6	6	5

Table 4.0.3 Percentage of broadcasting revenues generated by companies operating in multiple sectors

Source: CRTC data collection

The broadcasting industry comprises four sectors: radio (1); conventional television (2); discretionary and on demand television (3); and BDUs including cable, satellite and IPTV (4). (Internet radio and Internet television services are not included.) While most companies operate in only one sector, several operate in all four. This table shows the number of companies that operate in different numbers of sectors, and the percentage of total revenues generated by those companies according to the number of sectors in which they operate. Taken together, the data illustrate that the small number of companies operating in multiple sectors earned about two-thirds of total industry revenues. Affiliated companies are included with their parent company.

Figure 4.0.1 Percent of total broadcasting revenues, by ownership groups



Percent of total broadcasting revenues, by ownership

#### Source: CRTC data collection

This figure shows the combined percentage of broadcasting revenues of Canada's five largest groups—BCE, Shaw (including Corus), Rogers, CBC, Quebecor—as well as the next five largest, and the remaining groups/entities in the industry. Groups' revenues include those of their affiliates.



Percentage of commercial radio revenues by broadcaster, 2016

#### Figure 4.0.2 Percentage of total commercial radio revenues by broadcaster, 2016

#### Source: CRTC data collection

Canada's five largest commercial radio broadcasters reported 59% of the sector's total revenues in 2016.

The "percentage of total revenue" calculation is based on total revenues reported for each service controlled by the broadcaster. Control was determined where the broadcaster had greater than 50% direct and indirect voting interest as of 31 August 2016.

#### Figure 4.0.3 Percentage of television revenues by broadcaster, 2016



#### Percentage of television revenues by broadcaster, 2016

#### Source: CRTC data collection

The six largest television broadcasters accounted for 90% of the sector's total industry revenues in 2016. In the determination of the top 6 companies, Shaw and Corus were counted as one entity.

The "percentage of total revenue" calculation is based on total revenues reported for each service controlled by the broadcaster. Control was determined where the broadcaster had greater than 50% direct and indirect voting interest as of 31 August 2016.

CBC revenues include advertising, subscriber, and other commercial revenues and Parliamentary appropriations.

## iii Financial performance

Figure 4.0.4 Total broadcasting revenues by type of service (\$ billion)



Total broadcasting revenues by type of service (\$ billion)

The bar graph shows total broadcasting industry revenues and total revenues generated in each of the industry's subcategories (BDU, commercial television, commercial radio, and the CBC).

#### Figure 4.0.5 PBIT/EBITDA margins by type of service (%)



#### PBIT/EBITDA margins by type of service (%)

#### Source: CRTC data collection

The line graph shows Profitability before interest and taxes (PBIT) margins for private radio and television services and Earnings before interest, taxes, depreciation and amortization (EBITDA) margins for broadcasting distribution undertakings (BDUs), as measures of profitability.

National direct-to-home (DTH) and multipoint distribution service (MDS) refer to satellite service providers. IPTV refers to Internet protocol television.

## 4.1 Radio sector \$1.8 billion

Broadcasting revenues in 2016 **\$17.9 billion** 



CBC radio

Private commercial Radio

Total radio revenues

**\$1.8 B** 

Decrease of 2.0% from 2015 Listening

## 14.5 HRS

Canadians (12+) listen to radio each week on average Private commercial radio revenues

## **\$1.6 B**

Decrease of 3.2% from 2015 CBC radio revenues

**\$0.3 B** 

Increase of 5.1% from 2015 In 2016, private commercial radio stations reported \$1,551 million in revenues and a profitability margin of 18.6%. Commercial radio is profitable overall. However, this can vary significantly depending on region, language and format.

There are 711 private commercial radio stations in Canada. They operate in hundreds of different markets and account for over three-quarters of all radio stations in operation in Canada. From 2012 to 2016, commercial radio stations reported an average annual revenue decrease of approximately -1.1%. Over the same period, revenues reported by AM radio stations dropped from \$306 million to \$284 million. This can be attributed in part to faltering advertising revenues. FM stations reported an annual revenue decrease of 0.9% over the same five year period.

Canadians continue to have access to a wide variety of musical choices and local, regional and national news platforms with over 1,100 radio and audio services broadcasting across the country. Over 75% of all private commercial radio stations in Canada are located in Ontario, Quebec, Alberta or British Columbia.

The Canadian Broadcasting Corporation/Société Radio-Canada (CBC/SRC), Canada's public broadcaster, operates 67 English- and French-language radio stations across Canada. Revenues for CBC/SRC's radio unit have steadily declined from \$326 million in 2012 to \$291 million in 2016.

Community, campus and Aboriginal radio stations play an important role in the communities they serve and in the broadcasting sector as a whole. These radio stations numbered 180 and reported \$58 million in revenues. In 2016, the Commission issued 15 new licences, 11 of which were to non-commercial entities.

Country and contemporary music formats continue to garner the largest national listener share. The popularity of these genres on Canadian radio has been steadily increasing over the last few years.

Canadians are increasingly using a range of audio content services in addition to over-the-air radio. According to the Media Technology Monitor (MTM), 22% of Canadians (18+) stream AM/FM radio online and 55% of Canadians (18+) stream music videos on YouTube, consistent with last years findings. National satellite subscribership is unchanged over the past three years, as MTM again estimates 16% of Canadians (18+) subscribe to satellite radio.

## i Revenues

In 2016, the 711 commercial radio stations in operation generated total revenues of \$1,551 million, down 3.2% from 2015. There were 7 additional FM services in operation in 2016 relative to the previous year, bringing the total number of FM station to 587 services. They reported combined total revenues of \$1,267 million. Revenues for FM services have decreased on average by 0.9% each year since 2012.

By contrast, the number of AM radio stations has decreased by 5 stations since 2012, for a total of 124 AM services in 2016. AM radio stations struggled relative to FM stations over this period: their revenues dropped 1.8% per year on average since 2012 (to \$284.4 million in 2016), twice the rate of FM stations.

A total of 24 radio services were offering third-language programming in 2016, half of them on the AM band and the other half on the FM band. These services generated a combined \$46.3 million in revenue in 2016, down 0.7% from 2015. Total revenues for ethnic radio services have recorded an average growth rate of 0.5% per year, those for French 0.3% per year, while English-language services have declined by an average rate of 1.4% per year, over the 2012 and 2016 period.

Type of station	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
English-language - AM	274.9	264.6	261.3	257.1	255.5	-0.6	-1.8
French-language - AM	6.1	4.9	4.3	4.0	4.1	1.3	-9.8
Third-language - AM	25.2	25.1	24.7	24.9	24.8	-0.4	-0.4
All languages - AM	306.2	294.6	290.2	286.0	284.4	-0.6	-1.8
English-language - FM	1,040.1	1,053.8	1,042.7	1,040.1	987.9	-5.0	-1.3
French-language - FM	251.9	253.2	259.2	254.4	257.3	1.1	0.5
Third-language - FM	20.2	21.1	21.3	21.8	21.5	-1.3	1.6
All languages - FM	1,312.2	1,328.0	1,323.3	1,316.4	1,266.7	-3.8	-0.9
All languages – AM and FM	1,618.4	1,622.7	1,613.5	1,602.3	1,551.1	-3.2	-1.1

Table 4.1.1 Revenues (\$ millions) of private commercial radio stations, by language of broadcast and frequency band

Source: CRTC data collection

This table show revenue trends for private English-, French-, and Third-language commercial AM and FM radio stations, for the period 2012 and 2016, and includes the annual growth between 2015 and 2016, and over the entire study period.

Network results are included; however, results for pay and specialty audio programming services, as well as for multi-channel subscription radio services, are excluded.

Type of radio station	2012	2013	2014	2015	2016
English-language - AM	111	109	108	105	105
French-language - AM	6	8	6	7	7
Third-language - AM	12	12	12	12	12
All languages - AM	129	129	126	124	124
English-language - FM	444	454	466	478	484
French-language - FM	90	89	90	91	91
Third-language - FM	12	13	12	11	12
All languages - FM	546	556	568	580	587
All languages – AM and FM	675	685	694	704	711
				-	

Table 4.1.2 Number of private commercial radio stations reporting financial results, by language of broadcast and frequency band

#### Source: CRTC data collection

The Canadian Broadcasting Corporation (CBC), Canada's public broadcaster, operates a total of 14 AM and 53 FM radio stations across Canada. These services' total revenues have declined from \$326 million in 2012 to \$277 million in 2015. From 2015 to 2016, reported revenues increased 5.1% to reach \$291 million. The majority of this increase is attributable to an increase in Parliamentary Appropriation.

2016 marked the 3<sup>rd</sup> year of eligibility for the CBC to generate national advertising revenues on ICI Musique and Radio 2. A total of \$1.1 million in advertising revenue was generated, down 22.6% from 2015. Nonetheless, advertising revenues remain a modest source of income for the CBC's radio services – it accounted for 0.4% of the broadcaster's total radio revenues in 2016.

The number of radio stations operated by the CBC declined by 13 between 2014 and 2015 to 69. This is explained by the fact that the CBC ended a pilot project whereby it was airing local content on these 13 stations, which have since reverted back to rebroadcasters.

Metric	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Advertising revenues	0	0	1,074	1,366	1,057	-22.6	n/a
Parliamentary appropriations	316,508	295,523	277,310	266,880	280,962	5.3	-2.9
Sales/syndication of programs	952	1,087	1,328	1,816	1,684	-7.3	15.3
Other revenues	8,432	8,145	7,924	6,480	6,991	7.9	-4.6
Total revenues	325,892	304,756	287,636	276,542	290,694	5.1	-2.8
Number of stations	78	81	82	69	67	-2.9	-3.7

#### Table 4.1.3 Revenues of CBC/SRC radio stations summary, by type of revenue (\$ thousands)

Source: CRTC data collection

In its Broadcasting Decision CRTC 2013-263, the Commission allowed the broadcast of national advertising on ICI Musique and Radio 2. Advertising revenues for CBC/SRC in 2014 and after in the above table reflect this decision.

Market Type	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Designated	1,223.7	1,216.7	1,201.7	1,194.6	1,150.4	-3.7	-1.5
Non-designated	394.7	405.9	411.7	407.7	400.7	-1.7	0.4
All markets	1,618.4	1,622.7	1,613.5	1,602.3	1,551.1	-3.2	-1.1

Table 4.1.4 Revenues (\$ millions) of commercial radio stations, by radio market type

Source: CRTC data collection

Designated markets generate 74% of all revenues reported by commercial radio stations. They include markets formally known as medium, large and major markets in addition to additional markets. To find out more information on designated and non-designated markets, please consult the CRTC's 2011-2015 commercial radio financial summaries:

http://crtc.gc.ca/eng/publications/reports/BrAnalysis/radio2016/radio2016.htm.

Figure 4.1.1 Revenues (\$ millions) of ethnic commercial radio stations, by province



Ethnic radio revenues by province, 2016

Source: CRTC data collection

This figure shows radio revenues reported by ethnic radio stations by province from 2012 to 2016. There were no ethnic commercial stations to report for in Saskatchewan, the Atlantic Provinces and the North.

The data in the four following figures present the revenues of private commercial English, French, and thirdlanguage AM and FM radio stations. The data on average annual revenues are compared to profit before interest and taxes (PBIT) to indicate the financial health of groups of radio stations. The data for AM and FM stations, as well as the language of broadcast, are segmented to show the variations for each of these criteria.





#### Private commercial radio stations

#### Source: CRTC data collection

"FM as a total" refers to the proportion of revenues and undertakings that FM stations represent out of the total.

The data in figures 4.1.2 through 4.1.4 include network results, but exclude pay and specialty audio programming services, as well as multi-channel subscription audio services.



Figure 4.1.3 Revenues of English-language private commercial radio stations and number of reporting undertakings



#### Source: CRTC data collection

"FM as a total" refers to the proportion of revenues and undertakings that FM stations represent out of the total.

Figure 4.1.4 Revenues of French-language private commercial radio stations and number of reporting undertakings



#### French-language private commercial radio stations

#### Source: CRTC data collection

"FM as a total" refers to the proportion of revenues and undertakings that FM stations represent out of the total.



#### Figure 4.1.5 Revenues of Ethnic private commercial radio stations and number of reporting undertakings

#### Source: CRTC data collection

The line "FM as a total" shows the proportion of revenues and undertakings that FM stations represent out of the total. Revenues from private commercial radio stations operating in the context of the Ethnic Broadcasting Policy have remained stable from 2012 to 2016.

Type of station	Metric	2012	2013	2014	2015	2016
	Number of stations reporting	33	36	29	25	24
	Advertising revenues	5,397	4,647	5,043	4,512	4,286
Native	Other revenues	10,772	11,203	8,221	8,978	9,077
stations <sup>13</sup>	Total revenues	16,168	15,850	13,264	13,490	13,363
	Advertising as a percent of total revenues (%)	33.4	29.3	38.0	33.4	32.1
	PBIT margin (%)	-4.7	-15.3	-3.8	-0.2	1.3
	Number of stations reporting	111	112	111	115	110
	Advertising revenues	15,545	15,223	14,973	16,194	16,136
Community	Other revenues	15,241	17,190	16,815	18,643	18,483
radio stations	Total revenues	30,786	32,412	31,787	34,838	34,618
	Advertising as a percent of total revenues (%)	50.5	47.0	47.1	46.5	46.6
	PBIT margin (%)	3.7	7.4	4.4	5.8	4.5
	Number of stations reporting	49	47	47	47	46
	Advertising revenues	1,019	889	1,337	907	936
Campus radio	Other revenues	7,814	8,323	8,440	8,839	9,112
stations	Total revenues	8,833	9,213	9,777	9,746	10,049
	Advertising as a percent of total revenues (%)	11.5	9.6	13.7	9.3	9.3
	PBIT margin (%)	10.5	8.5	7.9	4.8	3.6

Table 4.1.5 Financial summary (\$ thousands) of native, community, and campus radio stations

Source: CRTC data collection

This table shows the number of stations reporting revenues and PBIT margins (PBIT divided by total revenues) for radio stations operating in the context of the Native Broadcasting Policy, as well as community and campus stations from 2012 to 2016.

For all three types of radio stations, "other revenues" include fundraising and other sources. For native radio stations only, "other revenues" also include band council grants and contributions.

<sup>&</sup>lt;sup>13</sup> Native type B stations as defined in the CRTC Public Notice 1990-89 are referred to as native stations in this document.

## ii Financial performance

Overall, the average profit before interest and taxes margin (PBIT margin) of the commercial radio industry has remained in the 18-20% range over the past 5 years as expenses remained relatively constant in response to stagnating revenues. In 2016, the sector reported an average PBIT margin of 18.6%, down 0.3% percentage points from 2015.

FM radio services report higher-than-average PBIT margins. In 2016, their combined profitability stood at almost 21.6% (or \$273 million), while that of the AM services was of 5.3% (\$15.1 million).

The data presented in figures 4.1.5 through 4.1.12 include network results, but exclude results for pay and specialty audio programming services, as well as for multi-channel subscription audio services.





Private commercial radio stations (average per-station)

Source: CRTC data collection


#### Figure 4.1.7 PBIT and PBIT margins of private commercial radio stations

#### Source: CRTC data collection

There was an overall increase in the PBIT and PBIT margins for all radio stations from 2010 to 2013, followed by decrease in 2014 and a slight increase in 2015. These markers have stayed stable in 2016.

Figure 4.1.8 Average annual revenues and PBIT per station of English-language private commercial radio stations



### English-language private commercial radio stations

#### Source: CRTC data collection

Average annual per-station revenues for both AM and FM English-language private commercial radio stations have decreased slightly in 2016.



#### Figure 4.1.9 PBIT and PBIT margins of English-language private commercial radio stations



Source: CRTC data collection



Figure 4.1.10 Average annual revenues and PBIT per station of French-language private commercial radio stations

#### Source: CRTC data collection

Average annual per-station revenues for French-language private commercial radio stations remained constant from 2012 to 2015. We have seen an increase in revenues of 1.12% in 2016. This was largely due to the strength of revenues from FM stations. Revenues from French-language AM radio stations have declined considerably since 2011 but have stabilized in 2016.





French-language private commercial radio stations

#### Source: CRTC data collection





Ethnic private commercial radio stations

Source: CRTC data collection

Average annual revenues of private ethnic commercial radio stations fluctuated around the \$2-million mark over the last five years. From 2012 to 2016, AM radio stations outperformed FM radio stations in terms of revenues.



#### Figure 4.1.13 PBIT and PBIT margin – Ethnic private commercial radio stations

#### Source: CRTC data collection

PBITs and PBIT margins for private ethnic commercial AM radio stations increased every year over the past 5 years. PBIT and PBIT margins for the private ethnic commercial FM radio stations remained relatively stable from 2015 to 2016, following a strong increase in 2014.

## iii Availability of radio and audio services

Canadians have access to a number of different audio services such as private AM and FM commercial radio, non-commercial AM and FM radio, Satellite subscription radio services and pay and specialty audio services.

In 2016, a total of 1,112 services were authorized to broadcast in Canada, a decrease of 8 over-the-air services over 2015. Private commercial radio stations account for almost two thirds of all the audio services in Canada, while community stations, the second most numerous type of audio service, represented 12% of all audio services in 2016.

	Eng	lish-	French-		Third-		All languages	
Type of station	lang	uage	lang	language		uage	/ III languages	
	2015	2016	2015	2016	2015	2016	2015	2016
CBC Radio/Radio Canada	53	53	35	35	0	0	88	88
CBC/SRC Radio network licenses	2	2	2	2	0	0	4	4
Private commercial AM stations	106	105	9	9	14	14	129	128
Private commercial FM stations	482	484	93	93	19	20	594	597
Private commercial AM and FM network licences	0	0	1	1	0	0	1	1
Religious (music and spoken word)	44	45	5	4	1	1	50	50
Community	58	59	67	65	3	3	128	127
Community Developmental	5	2	1	1	0	0	6	3
Campus Community-based	42	42	5	5	0	0	47	47
Campus Instructional	0	0	0	0	0	0	0	0
Aboriginal stations	41	43	5	5	3	3	49	51
Other (tourist/traffic, etc.)	11	3	2	2	0	0	13	5
Total number of over-the-air Canadian radio services	844	838	225	222	40	41	1,109	1,101
Satellite subscription radio service	2	2	0	0	0	0	2	2
Specialty audio (commercial / non-profit, regional/national)	2	2	0	0	5	5	7	7
Pay audio	0	0	0	0	2	2	2	2
Total number of Canadian radio and audio services	848	842	225	222	47	48	1,120	1,112

Table 4.1.6 Number and type of radio and audio services authorized to broadcast in Canada, by language of broadcast

Source: CRTC internal database

This table shows the number of radio services approved by the Commission. Not all are necessarily in operation. "Over-the-air radio services" exclude radiocommunication distribution undertakings, rebroadcasters, and radio services exempt from licensing requirements. These figures are as of 31 December 2016.

	English-lar	nguage	French-lan	iguage	Third-lan	guage	Tota	I
Province/territory	Public/ community	Private	Public/ community	Private	Public/ community	Private	Public/ community	Private
British Columbia	32	104	5	0	0	7	37	111
Alberta	8	106	5	0	0	4	13	110
Saskatchewan	8	43	2	0	0	0	10	43
Manitoba	7	34	3	0	0	1	10	35
Ontario	53	209	13	4	1	15	67	228
Quebec	10	9	57	94	2	6	69	109
New Brunswick	7	25	13	4	0	0	20	29
Nova Scotia	14	31	6	0	0	1	20	32
Prince Edward Island	1	5	1	0	0	0	2	5
Newfoundland and Labrador	11	18	1	0	0	0	12	18
The North	7	5	2	0	0	0	9	5
Canada	158	589	108	102	3	34	269	725

Table 4.1.7 Number of public/community-based and private radio services authorized to broadcast over-the-air, by province and language of broadcast, 2016

Source: CRTC internal database

Non-commercial, tourist information and emergency radio services, as well as rebroadcasters are excluded. Third-language includes Native-language services. This table shows the number of radio services approved by the Commission. All are not necessarily in operation.

Figure 4.1.14 Types of radio and audio services authorized to broadcast in Canada, as a percentage of all such services, 2016



## Types of radio and audio services authorized to broadcast in

#### Source: CRTC data collection

In 2016, private commercial radio stations accounted for 65.3% of the total number of stations licensed for broadcast in Canada.

Category	Sub-category	2012	2013	2014	2015	2016	Total
	English-language	26	20	24	10	10	90
Longuago	French-language	1	5	2	3	2	13
Language	Third-language	Sub-category         2012         2013         2014         2015           nglish-language         26         20         24         10           ench-language         1         5         2         3           'hird-language         1         0         3         1           Total         28         25         29         14           Commercial         18         12         20         7           Community         5         7         6         2           Campus         0         0         1         1           Native         3         0         2         1           Other         2         6         0         3           Total         28         25         29         14           and-alone digital         0         0         0         0           Digital radio         0         0         0         0         0           AM to FM         2         5         0         2         1           FM frequency         28         25         29         14           Comversions         2         5         0         2 <t< td=""><td>3</td><td>8</td></t<>	3	8			
	Total	28	25	29	14	<ul> <li>2016</li> <li>10</li> <li>2</li> <li>3</li> <li>15</li> <li>4</li> <li>6</li> <li>0</li> <li>5</li> <li>0</li> <li>15</li> <li>0</li> <li>2</li> <li>13</li> <li>0</li> <li>15</li> <li>2</li> <li>13</li> <li>15</li> <li>2</li> <li>13</li> <li>15</li> <li>13</li> </ul>	111
	Commercial	18	12	20	7	4	61
	Community	5	7	6	2	6	26
Liconco cotogony	Campus	0	0	1	1	0	2
Licence category	Native	3	0	2	1	5	11
	Other	2	6	0	3	0	11
	Total	mpus       0       0       1       1       0         ative       3       0       2       1       5         other       2       6       0       3       0         otal       28       25       29       14       15         lone digital       0       0       0       0       0         requency       0       0       2       1       2	111				
	Stand-alone digital	0	0	0	0	0	0
	Digital radio	0	0	0	0	0	0
	AM frequency	0	0	2	1	10         10         2         3         15         4         6         0         5         0         15         0         2         13         0         15         2         13         0         15         2         13         15         2         13         15         2         13         15         2         13	5
Туро	FM frequency	28	25	27	13	13	106
Type	AM to FM						
	conversions	2	5	0	2	0	9
	(included in FM)						
	Total	28	25	29	14	15	111
	Competitive	7	0	5	1	2	15
Process	Non-competitive	21	25	24	13	13	96
	Total	28	25	29	14	15	111

Table 4.1.8 Number of new over-the-air radio stations licensed categorized by language, licence category, type and licensing process

Source: CRTC decisions issued from 1 January 2012 to 31 December 2016

*This table shows the number of stations licensed by language, licence category, type of service and process used in granting the licence.* 

The "Other" licence category includes not-for-profit stations, such as those operated in English and in French by the CBC/SRC, and Environment Canada.

#### Figure 4.1.15 Percentage of Canadians accessing online streamed audio services monthly, by language group





Source: MTM, Fall 2015-2016 (respondents: Canadians aged 18+)





Satellite radio subscriptions, by language group

Source: MTM, Fall 2011-2016 (respondents: Canadians aged 18+)

## iv Audience measurement

Audience measurement data is important not only to industry stakeholders, who use the data to help sell air time to advertisers, but also to the CRTC, which uses the data to assess the effectiveness of its policies by understanding the reach of programming across the country and across various demographics.

- Audience measurement data is compiled by Numeris through the use of portable people meters (electronic devices that records listenership data) and diary surveys (written logs of listenership). National figures are based on diary surveys only. All Numeris-related data for previous years have been restated to align with methodological changes.
- Audience measurement data is based on Numeris radio diary data from the fall surveys across Canada, Monday to Sunday from 5 am to 1am, with participants aged 12 or older.
- **NEW TO FALL 2016**: Online Radio Diary (ORD) was implemented in all radio diary markets<sup>14</sup>. For the first time, participating households were provided the choice of completing the day diary by using either the traditional paper form or the new online form. The introduction of ORD affects the data collection methodology and therefore, fall 2016 results may not be comparable to previous years with high precision.

Age group	2012	2013	2014	2015	2016	Growth (%) 2015-2016
All persons 12+	16.9	16.4	16.0	15.6	14.5	-7.6
Teens 12 – 17	6.7	6.1	5.7	5.8	4.8	-18.0
18 – 24	11.2	10.8	10.6	9.7	8.7	-11.1
25 – 34	14.9	14.4	14.1	13.8	12.0	-12.6
35 – 49	18.3	18.0	17.1	16.6	15.0	-9.5
50 – 54	20.5	20.0	19.3	19.5	17.6	-9.9
55 - 64	20.0	19.3	19.2	18.5	17.9	-3.5
65 +	20.0	19.3	19.1	18.7	18.0	-3.8

#### Table 4.1.9 Average weekly hours of radio tuned per capita by age group for all Canada

Source: Numeris Radio Diary, Fall surveys, Mo-Su 5a-1a, 12+. Note: Fall 2016 Online Radio Diary (ORD) introduced.

This table shows that over the past 5 years, the average listening hours has decreased by at least 2 hours across all age groups. The average number of hours per week per capita is determined by dividing the total number of hours tuned by the population.

<sup>&</sup>lt;sup>14</sup> Diary markets are defined as markets other than Calgary, Edmonton, Montréal, Toronto and Vancouver.

Radio station type	2012	2013	2014	2015	2016	Growth (%) 2015-2016
English-language AM	16.7	16.6	16.0	17.1	16.6	-3.1
English-language FM	56.1	57.5	57.7	56.8	57.1	0.4
English total	72.9	74.1	73.7	73.9	73.6	-0.4
French-language AM	0.2	0.2	0.2	0.2	0.2	-
French-language FM	20.7	20.2	20.4	20.0	20.5	2.4
French total	20.9	20.4	20.5	20.2	20.7	2.8
Other	6.2	5.5	5.7	5.9	5.7	-4.2

#### Table 4.1.10 Radio tuning share (%) in an average week for English- and French-language AM and FM stations

Source: Numeris Radio Diary, Fall surveys, Mo-Su 5a-1a, 12+. Note: Fall 2016 Online Radio Diary (ORD) introduced.

This table shows radio tuning by frequency band and by language of broadcast over the past five years. The "Other" category is mainly over-the-air tuning to U.S. border stations (diary), but also includes tuning to Internet radio that is not attributed to Canadian over-the-air radio stations, multi-channel subscription (satellite radio) services, pay and specialty audio services, over-the-air and video services available on cable, and unknown sources.

Table 4.1.11 Average weekly hours (millions of hours) of radio tuned by listener for English- and French-language AM and FM stations

Tuning	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Average weekly time spent listening (per listener)	18.9	18.5	18.1	17.7	16.6	-6.2	-3.2
Total average weekly national hours (millions)	509.9	502.9	494.1	486.3	455.6	-6.3	-2.8

Source: Numeris Radio Diary, Fall surveys, Mo-Su 5a-1a, 12+. Note: Fall 2016 Online Radio Diary (ORD) introduced.

The average number of weekly hours per listener is determined by dividing the total number of hours tuned by reach, which is the number of different persons who tune in for at least one quarter hour within a specified time period, as estimated by Numeris.

Commercial radio operator	Metric	2014	2015	2016
BCE	Tuning	71.2	65.1	60.3
BCE	Share (%)	19.5	18.1	18.0
Cogeco	Tuning	n/a	n/a	n/a
	Share (%)	n/a	n/a	n/a
Corrus	Tuning	42.1	39.2	40.0
Corus	Share (%)	11.5	10.9	11.9
Newfoundland Capital Corporation	Tuning	33.3	30.8	31.3
Limited (Newcap)	Share (%)	9.1	8.6	9.3
Decere	Tuning	46.8	49.8	42.9
Rogers	Share (%)	12.8	13.9	12.8
Total English Janawara stations	Tuning	364.6	359.5	335.4
lotal English-language stations	Share (%)	100	100	100

Table 4.1.12 Tuning (millions of hours) and tuning share (%) achieved by the largest English-language private commercial radio operators in Canada in an average week

Source: Numeris and CRTC data collection

Four ownership groups garner over 50% of all tuning in Canada across all English-language stations in 2016.

Table 4.1.13 Tuning (millions of hours) and tuning share (%) achieved by the largest French-language private commercial radio operators in Canada in an average week

Commercial radio operator	Metric	2014	2015	2016
PCE	Tuning	24.5	24.7	20.7
BCE	Share (%)	24.9	25.2	21.9
Caraaa	Tuning	31.9	31.2	30.4
Cogeco	Tuning         24.5           Share (%)         24.9           Tuning         31.9           Share (%)         31.5           Tuning         101.5	31.8	32.1	
Total - French-language stations	Tuning	101.5	98.1	94.4
	Share (%)	100	100	100

Source: Numeris and CRTC data collection

*These tables present tuning data by large radio ownership groups, by language, for the years 2014 through 2016.* 

*In 2016, the BCE and Cogeco groups garnered over 55% of all tuning in Canada, across all French-language stations.* 

In Broadcasting Decision 2013-310, the Commission approved the change in effective control of Astral's 21 French-language and 63 English-language radio stations to BCE, subject to the divestiture by BCE of 10 English-language (7 Astral and 3 BCE) radio stations, and the transfer of their management and control to a trustee (Pierre Boivin), pending their sale to third parties;

Several divested stations from Pierre Boivin have been acquired by other large private commercial radio operators, hence the fluctuation by operator in listening hours (2013-2014).

#### Figure 4.1.17 Radio tuning by station type in diary markets, 2016



#### Radio tuning by station type in diary markets

#### Sources: Numeris 2016 and CRTC data collection

This table shows the different types of radio stations tuned by listeners in diary markets in 2016.

The "Audio services" segment includes tuning to multi-channel subscription (satellite radio) services, pay and specialty audio services, over-the-air radio stations, and video services broadcast over cable and the Internet.

Top formats/Radio Networks	Audience share	Number of stations
CBC Radio One	13%	32
Today's Country	12%	108
Adult Contemporary	11%	112
Hot Adult Contemporary	10%	86
News/Talk	9%	39
Mainstream Top 40/CHR	8%	46
Classic Hits	8%	56
AOR/Mainstream Rock	6%	54
Classic Rock	5%	26
CBC Radio Two	3%	17
Other	15%	247

Table 4.1.14 Fall radio tuning shares - English-language radio station formats, 2016

Sources: Numeris Fall 2016 and CRTC data collection

Although CBC/SRC radio non-commercial stations are not considered a Format, they have been added as they hold an important radio tuning share.

Top formats/Radio Networks	Audience share	Number of stations
Hot Adult Contemporary	21%	20
News/Talk	18%	8
Adult Contemporary	17%	37
ICI Radio-Canada Premiere	16%	21
Mainstream Top 40/CHR	9%	16
ICI Radio-Canada Musique	5%	14
Community Radio	4%	52
Classical/Fine Arts	3%	2
Classic Hits	2%	4
Sports	1%	1
Other	4%	34

#### Table 4.1.15 Fall radio tuning shares - French-language radio station formats, 2016

#### Sources: Numeris Fall 2016 and CRTC data collection

Although CBC/SRC radio non-commercial stations are not considered a Format, they have been added as they hold an important radio tuning share.

Among Canadians listening to English-language radio stations, over 46% of listening hours went to CBC Radio One, country, and adult contemporary formats. Among French-language radio station listeners, almost 40% of listening hours went to the adult contemporary formats. Audiences tune in much more to News/Talk radio in the French-language markets (18%) than in the English-language markets (9%).

## v Programming contributions and expenditures

The CRTC uses a number of approaches to achieve the cultural, social, and economic objectives set out in the Broadcasting Act. One such instrument has been the establishment of various contribution and expenditure regimes.

In the 2015-2016 broadcast year, commercial radio operators contributed 3 cents per revenue dollar to support Canadian Content Development (CCD). Collectively, they contributed nearly \$47 million to the development of Canadian content. On average, the fund has decreased 3.9% annually over the past 5 years. Approximately 50.7% of the funds were a direct result of the conditions of licence issued to new radio stations and tangible benefits paid following a change in ownership or control of radio stations, the other half was garnered through licence renewals.

What are tangible benefits and CCD contributions? In the absence of a competitive licensing process relating to transfers of ownership or control of radio or television services, tangible benefits, which are financial contributions proportionate to the value of the transaction (6% minimum for radio and 10% minimum for television service), are required to be made to the broadcasting system by the purchaser of a licensed radio or television service. They are usually paid over five to seven consecutive broadcast years. Tangible benefits is one means, used by the Commission, of ensuring the best possible proposal by the applicant and that approval is in the public interest, consistent with the overall objectives of the Broadcasting Act.

Canadian Content Development (CCD) contributions are financial contributions made by radio broadcasters to support the development and promotion of Canadian musical and spoken word content for broadcast. Most applicants make specific CCD commitments as part of applications for new licences and as tangible benefits at the time of transfer of ownership and control of radio stations. Commercial and ethnic stations are further subject to regulations requiring annual CCD contributions.

These financial contributions serve, among other things, to foster the creation of Canadian content, to help advance the careers of emerging Canadian artists, and to increase the supply of quality Canadian music in a variety of genres.

Chart 4.1.1 Radio CCD contributions structure



*Commercial radio broadcasters support CCD financially as a result of three regulatory processes:* 

- Basic annual CCD contributions;
- Additional contributions over and above the basic CCD contribution (usually related to applications for new licences); and
- Contributions made in relation to applications for transfers of ownership or control (tangible benefits).



#### Figure 4.1.18 CCD contributions by regulatory measure (\$ millions)

#### Source: CRTC data collection





CCD contributions by regulatory measure (%)

Source: CRTC data collection

#### Table 4.1.16 Summary of annual CCD contributions reported by radio station licensees (\$ thousands)

CCD category	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	Growth (%) 2014-15 to 2015-16	CAGR (%) 2011-12 to 2015-16
FACTOR	10,545	12,022	13,982	10,090	9,868	-2.2	-1.6
MUSICACTION	2,538	2,426	3,596	3,461	3,347	-3.3	7.2
Community Radio Fund of Canada	1,509	1,722	2,922	2,954	3,072	4.0	19.5
Music Industry Association	3,754	4,334	3,168	4,360	3,300	-24.3	-3.2
Local music initiatives	13,777	10,538	10,731	9,675	9,690	0.2	-8.4
New spoken word content	943	253	292	1,208	1,374	13.8	9.9
Audio content initiatives	135	531	968	638	245	-61.6	16.1
Schools and educational institutions	2,383	1,430	1,818	1,249	1,135	-9.1	-16.9
Radio Starmaker Fund/Fonds	11,783	10,985	15,902	9,479	9,762	3.0	-4.6
RadioStar							
Other eligible CCD initiatives	7,713	8,114	6,190	4,639	4,827	4.1	-11.1
Total	55,080	52,536	59,567	47,753	46,621	-2.4	-4.1

Source: CRTC data collection

Contributions are based on annual payments reported by licensees for the broadcast year (i.e., 1 September to 31 August). Contributions include those made under both the CCD and the former Canadian talent development regimes. Figures for the 2012-2013 broadcast year include contributions made by pay audio undertakings. The contributions made by satellite radio services have been split between the first licence term and the licence renewal sections (25% and 75%, respectively), based on a licence renewal date of 1 December.

Table 4.1.17 Annual CCD contributions reported by new radio station licensees during the first licence term (\$ thousands)

CCD category	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	Growth (%) 2014-15 to 2015-16	CAGR (%) 2011-12 to 2015-16
FACTOR	2,615	2,818	2,008	1,544	771	-50.1	-26.3
MUSICACTION	563	242	255	403	0	-100.0	-100.0
Community Radio Fund of Canada	165	17	21	21	7	-65.1	-53.8
Music Industry Association	2,221	2,342	1,754	1,477	970	-34.3	-18.7
Local music initiatives	9,106	5,524	3,275	2,446	1,359	-44.4	-37.8
New spoken word content	545	192	171	-	8	-	-65.2
Audio content initiatives	-	172	585	153	4	-97.2	-
Schools and educational institutions	1,553	886	516	435	210	-51.8	-39.4
Radio Starmaker Fund/Fonds RadioStar	1,038	466	-	-	0	-	-100.0
Other eligible CCD initiatives	6,195	3,986	352	355	377	6.3	-50.3
Total	24,001	16,644	8,935	6,833	3,706	-45.8	-37.3

Source: CRTC data collection

Contributions are based on annual payments reported by licensees for the broadcast year (i.e., 1 September to 31 August). Contributions include those made under both the CCD and the former Canadian talent development regimes. Figures for the 2012-2013 broadcast year include contributions made by pay audio undertakings. The contributions made by satellite radio services have been split between the first licence term and the licence renewal sections (25% and 75%, respectively), based on a licence renewal date of 1 December.

CCD category	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	Growth (%) 2014-15 to 2015-16	CAGR (%) 2011-12 to 2015-16
FACTOR	1,971	3,152	4,156	4,847	5,359	10.6	28.4
MUSICACTION	727	1,414	1,681	1,695	1,871	10.4	26.7
Community Radio Fund of Canada	617	1,020	1,305	1,342	1,402	4.5	22.8
Music Industry Association	966	1,607	932	2,504	1,939	-22.6	19.0
Local music initiatives	2,381	3,352	4,417	4,788	5,812	21.4	25.0
New spoken word content	398	61	121	1,167	1,326	13.6	35.1
Audio content initiatives	-	-	-	446	201	-54.9	-
Schools and educational institutions	614	342	948	603	747	23.7	5.0
Radio Starmaker Fund/Fonds RadioStar	246	35	52	-	0	-	-100.0
Other eligible CCD initiatives	1,194	4,026	5,716	4,152	4,287	3.3	37.7
Total	9,114	15,010	19,328	21,545	22,942	6.5	26.0

Table 4.1.18 Annual CCD contributions reported by radio licensees in the context of licence renewals (\$ thousands)

#### Source: CRTC data collection

Contributions are based on annual payments reported by licensees for the broadcast year (i.e., 1 September to 31 August). Contributions include those made under both the CCD and the former Canadian talent development regimes. Figures for the 2012-2013 broadcast year include contributions made by pay audio undertakings. The contributions made by satellite radio services have been split between the first licence term and the licence renewal sections (25% and 75%, respectively), based on a licence renewal date of 1 December.

Table 4.1.19 Annual CCD contributions reported by radio licensees in the context of changes in ownership and/or control (\$ thousands)

CCD category	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015-2016	Growth (%) 2014-15 to 2015-16	CAGR (%) 2011-12 to 2015-16
FACTOR	5,959	6,053	7,818	3,699	3,739	1.1	-11.0
MUSICACTION	1,248	770	1,660	1,362	1,476	8.3	4.3
Community Radio Fund of Canada	727	684	1,596	1,591	1,663	4.6	23.0
Music Industry Association	567	386	482	379	390	3.1	-8.9
Local music initiatives	2,290	1,662	3,038	2,442	2,520	3.2	2.4
New spoken word content	-	-	-	40	40	-	-
Audio content initiatives	135	359	383	40	40	-	-26.2
Schools and educational institutions	216	203	354	211	179	-15.2	-4.6
Radio Starmaker Fund/Fonds RadioStar	10,499	10,483	15,850	9,479	9,762	3.0%	-1.8
Other eligible CCD initiatives	324	102	122	133	163	22.9	-15.8
Total	21,965	20,703	31,303	19,375	19,972	3.1	-2.3

Source: CRTC data collection

Contributions are based on annual payments reported by licensees for the broadcast year (i.e., 1 September to 31 August). Contributions include those made under both the CCD and the former Canadian talent development regimes. Figures for the 2012-2013 broadcast year include contributions made by pay audio undertakings. The contributions made by satellite radio services have been split between the first licence term and the licence renewal sections (25% and 75%, respectively), based on a licence renewal date of 1 December.

## vi Tangible benefits

In 2016, 4 transactions were approved for both English and French language services resulting in total tangible benefits of \$1.4 million.

Table 4.1.20 Number of radio service transactions, value of those transactions and corresponding tangible benefits for the period from 1 January 2012 to 31 December 2016 (\$ millions)

Language of services	Metric	2012	2013	2014	2015	2016	Total
	Number of Transactions	5	4	9	6	4	28
English	Value (\$M)	80.4	756.7	257.7	55.1	1.41	1,151.3
	Benefits (\$M)	4.8	52.0	15.5	4.0	0.8	77.1
Franch	Number of Transactions	2	1	-	6	4	13
French	Values (\$M)	1.5	357.7	-	54.6	9.4	423.2
	Benefits (\$M)	0.1	25.0	-	3.9	0.6	29.6

Sources: CRTC decisions and administrative approvals

The BCE/Astral ownership transaction, which occurred in 2013 (see Broadcasting Decision 2013-310), resulted in \$71.5 million in tangible benefits. Approximately \$46.5 million of this amount was committed to Englishlanguage initiatives and \$25 million to French-language initiatives. In its decision, the Commission directed BCE to divest itself of 10 radio services. These divestitures are expected to generate not less than \$11 million in additional tangible benefit commitments from other purchasers. In December 2013, the Commission approved the divestiture of 3 radio stations (CFQX-FM Selkirk and CHIQ-FM Winnipeg, Manitoba, and CKCE-FM Calgary, Alberta) to the Jim Pattison Broadcast Group Limited Partnership (Pattison). Pattison has committed \$1.8 million in tangible benefits initiatives.

## vii Programming of high standards

The *Broadcasting Act* sets out that programming provided by broadcasting undertakings should be of high standard. In addition to the CRTC, two bodies deal with programming complaints relating to public and community broadcasters, as well as non- members of the Canadian Broadcast Standards Council (CBSC). The CRTC also deals with issues that are outside the parameters of the codes administered by the CBSC.

The CBSC administers specific codes of broadcast conduct and provides a means of recourse for members of the public regarding the application of the standards set out in the following codes:

- Canadian Association of Broadcasters (CAB) Code of Ethics;
- CAB Violence Code;
- CAB Equitable Portrayal Code; and
- Radio Television Digital News Association of Canada (RTDNA Canada) Code of Ethics.

The CBSC is an independent organization created by the CAB to administer codes established by Canada's private broadcasters. The CBSC's membership includes more than 790 private-sector radio and television stations, specialty services, pay services, and networks across Canada. Membership includes broadcasters broadcasting in English, French, and third languages. For more information, visit <u>www.cbsc.ca</u>.

The Advertising Standards Canada (ASC) is a national, not-for-profit advertising self-regulatory body that responds to complaints by consumers and special interest groups regarding advertising with respect to all media subject to the Canadian Code of Advertising Standards, the principal instrument of advertising self-regulation.

The ASC also undertakes pre-clearance functions in five industry categories, which consist of reviewing advertisements based on applicable legislation, regulations, and/or industry codes and guidelines.

Additional information on the ASC can be found at: <u>www.adstandards.com/en/</u>

Fiscal year	CRTC – policies/ decisions	Billing	Quality of service/ delivery	Terms and conditions	Accessibility issues	Programming	Loudness	Other	Total
2014- 2015	847	3	41	3	0	802	9	227	1,932
2015- 2016	695	4	33	0	0	456	13	46	1,247
2016- 2017	864	11	184	16	0	531	4	233	1,843

Table 4.1.21 Number of radio-related contacts received by the CRTC, by type of issue

Source: CRTC correspondence tracking system

	2012-	2013	2013-	-2014	2014-	2015	2015	-2016	2016	2017
Subject Matter	Complaints received	Referrals to the CBSC								
Abusive comment	64	32	32	8	46	16	39	12	40	2
Adult content	9	3	5	1	4	1	10	2	1	-
Alcohol advertising	4	-	3	-	2	0	-	-	-	-
Gender portrayal	1	-	2	1	2	1	2	-	-	-
Offensive comment	283	135	702	582	317	203	163	48	273	168
Offensive language	50	14	31	13	41	16	27	9	14	5
Total	411	184	775	605	412	237	241	71	328	175

#### Table 4.1.22 Number of radio complaints by subject matter

Source: CRTC correspondence tracking system

Together, the CRTC and the CBSC receive and address a range of complaints regarding radio and subscription radio services. This table shows the number of complaints received by the CRTC—and referred to the CBSC—regarding various issues across diverse market sectors for the 2012-2013 through 2016-2017. No complaints were received for satellite radio between 2012-2013 and 2016-2017.

The CRTC's correspondence tracking system counts multiple communications from the same client regarding the same complaint as separate units. Consequently, the actual number of complaints received is likely to be slightly lower than the figures indicated.

The category "Abusive comment" includes complaints alleging hatred or contempt incited on air against one of the groups identified in the Television Broadcasting Regulations, 1987 or the Specialty Services Regulations, 1990.

The category "Offensive comment" includes complaints alleging offensive humour, or other comments that do not fall under the "abusive comment" provision in CRTC regulations.

The category "Offensive language" includes complaints alleging offensive language in song lyrics or in spoken word programming.

#### Table 4.1.23 Radio complaints handled by the CBSC in 2016 by language and national origin

Category	Sub-category	Radio	Subscription radio (satellite)	Total
	English	209	4	213
Language of Broadcast of program	French	151	0	151
	Third language	17	0	17
	Other	1	0	1
	Total	378	4	382
	Canadian	350	0	350
National origin of program	Foreign	13	2	15
National origin of program	Other	15	2	17
	Total	378	4	382

Source: CBSC, 2015-2016 annual report

Table 4.1.24 Complaints handled by the ASC

Statistic	2012	2013	2014	2015	2016
Total number of complaints	1,310	1,310	1,274	1,774	1,639
Complaints about radio advertisements	55	84	64	94	82
Radio complaints as percentage of total (%)	4%	6%	5%	5%	5%
Radio complaints as percentage of total (76)	470	070	J70	J70	J70

Source: ASC complaint reports

This table shows the number of complaints handled by the ASC relating to advertisements on radio as a percentage of the total number of complaints handled. In 2016, 5% of those complaints related to radio advertisements.

## viii Ownership groups

Between 2014 and 2016, Canada's six largest commercial radio operators together accounted for nearly 65% or \$1.1B of the commercial radio industry's revenues. They also accounted for nearly 40% of the total number of radio undertakings in the country.

Table 4.1.25 English-language and French-language radio revenues and number of undertakings reporting for the largest commercial radio operators in Canada

Language	Radio operator	Rever	nues (\$ thous	sands)	Num un r	nber of r dertakir eporting	adio ngs g	Sha re	are of to venue (	otal %)
Language		2014	2015	2016	2014	2015	2016	2014	2015	2016
	BCE	414,116	410,835	397,090	107	106	106	26	26	26
	Rogers	228,485	233,380	220,847	55	53	53	14	15	14
	Corus	164,525	152,433	123,941	39	39	39	10	10	8
All	Newfoundland Capital Corporation Limited (Newcap)	156,289	152,471	155,985	69	67	68	10	10	10
languages	Cogeco	109,943	106,718	115,615	13	13	13	7	7	7
	Total largest commercial radio operators	1,073,358	1,055,837	1,013,478	283	278	279	67	66	65
	Total all commercial radio operators	1,613,471	1,602,342	1,551,098	694	704	711	100	100	100
	BCE	306,288	305,905	296,339	86	85	85	23	24	24
	Rogers	228,485	233,380	220,847	54	52	52	18	18	18
	Corus	164,525	152,433	123,941	39	39	39	13	12	10
English-	Newfoundland Capital Corporation Limited (Newcap)	156,289	152,471	155,985	69	67	68	12	12	13
language	Total English-language largest commercial radio operators	855,587	844,189	797,112	248	243	239	65	65	64
	Total English-language commercial radio operators	1,303,965	1,297,234	1,243,407	574	583	589	100	100	100
	BCE	107,828	104,930	100,751	21	21	21	41	40	39
	Cogeco	n/a	n/a	n/a	12	12	12	n/a	n/a	n/a
French- language	Total - largest commercial radio operators	107,828	104,930	100,751	33	33	33	41	40	39
	Total French-language commercial radio operators	263,513	258,460	261,358	96	98	98	100	100	100

Source: CRTC data collection

The total number of services owned by private, English- and French-language radio operators includes commercial networks and ethnic commercial radio stations. Transfers of ownership or control of radio services to or from ownership groups are deemed to have occurred in the broadcast year in which the proposed transfer was approved by the CRTC and not on the closing date of the transaction. Further, the radio service's entire annual revenue is attributed to its deemed ownership group. Cogeco's revenue data have been removed from the category "largest French-language commercial radio corporations" due to residual disclosure issues.

# 4.2 Television programming sector \$7.3 billion



Canadians have access to over 600 Canadian and non-Canadian television services. Most still watch television by traditional means, whether it be over-the-air, or via cable, satellite or IPTV. However, Canadians are also turning to new platforms and devices connected to the Internet for their video content consumption.

According to 2015-2016 audience measurement data, Canadians two years of age and older are watching an average of more than 26 hours of television each week. However, teens and young adults tend to watch less television through traditional means. From 2014-2015 to 2015-2016, traditional television viewership in the 12-17 age demographic decreased the most, reaching 16.4 hours per week, a 13% decrease relative to the 2014-2015 average of 18.8 hours per week.

While traditional viewership is decreasing, Canadians are supplementing their viewership with Internet television.<sup>15</sup> According to MTM, Canadians 18 years of age and older are now watching an average of 3.1 hours per week of Internet TV compared to an average of 0.5 hours per week in 2010.

In 2016, the private conventional television sector reported \$1.68 billion in revenues, compared to \$4.42 billion for discretionary services (pay, pay-per-view, video-on-demand and specialty services). The television industry's five large ownership groups reported 89% of all television revenues.

The English-language private conventional television sector includes three major ownership groups: BCE, with a 42% revenue share of the private conventional television sector; Corus, with a 23% revenue share; and Rogers, with a 12% revenue share. The French-language private conventional television sector has two major players: Quebecor, with a 12% revenue share of the private conventional television sector; and Remstar, with a 4% revenue share.

In 2016, the CBC, Canada's national public broadcaster, reported \$1.19 billion in revenues, 69% of which were parliamentary appropriations.

Collectively, broadcasters contributed over \$3 billion to Canadian programming expenditures (CPE), 22% of which was spent on Programs of National Interest (PNI) in 2016. For each dollar earned, television services invested 41 cents in support of Canadian programming during the 2015-2016 broadcast year.

<sup>&</sup>lt;sup>15</sup> Internet TV is defined as watching or streaming television programs or clips available over the Internet.

## i Revenues

Total revenues generated in the television industry<sup>16</sup>—private and CBC conventional television and discretionary services combined—increased by 1.7% from 2015 to 2016, reaching \$7,279 million in 2016.

Revenues generated by discretionary services (all types of services combined) increased 2.7% per year on average between 2012 and 2016, attaining \$4,416 million in 2016. While discretionary services reported only a modest increase of 0.96% in revenues between 2014 and 2015, their revenues increased by 2.9% or \$126 million from 2015 to 2016.

Conventional television services owned by both private operators and the CBC generated \$2,863 million in revenues in 2016, a \$1-million decrease compared to 2015 levels.

The 93 privately owned conventional stations in operation in 2016 garnered \$1,678 million, down 4.5% or \$79 million from 2015. However, the 27 CBC conventional television stations reported total revenues of \$1,185 million in 2016, a 7% or \$78 million increase from 2015.

Туре	Subtype	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Conventional	Private	2,038	1,944	1,804	1,757	1,678	-4.5	-4.7
tolovision sorvicos	CBC/SRC	1,369	1,247	1,328	1,107	1,185	7.0	-3.5
television services	Subtotal	3,407	3,191	3,132	2,864	2,863	0.0	-4.3
Discretioner	Pay, PPV, and VOD	837	799	801	773	723	-6.5	-3.6
Discretionary	Specialty	3,130	3,292	3,448	3,517	3,693	5.0	4.2
services	Subtotal	3,968	4,091	4,249	4,290	4,416	2.9	2.7
All services	Total	7,375	7,282	7,381	7,154	7,279	1.7	-0.3

#### Table 4.2.1 Revenues of television services, by type of service (\$ millions)

Source: CRTC data collection

*This table shows the change in television revenues by type of service from 2012 to 2016.* 

<sup>&</sup>lt;sup>16</sup> Total revenues generated in the television industry does not include digital media revenues.





#### Revenues of television services, by type of service (\$ millions)

#### Source: CRTC data collection

Total revenues include "other revenues" (i.e., those tied to a broadcasting licence but not stemming from broadcasting activities, for example, fundraisers) and funding from the Local Programming Improvement Fund (LPIF) from 2012-2014. Total revenues also include funding from the Small Market Local Programming Fund (SMLPF) in 2015 and 2016. Advertising revenues include local, national, network and infomercial sales.



#### Figure 4.2.2 Private conventional television revenue sources (%), 2016

#### Source: CRTC data collection

"Network payments" includes net payments made to the affiliates as a reduction of the revenue. For the affiliates it should include their share of the network net payments, or the reverse as the case may be; "Infomercials" is programming exceeding 12 minutes in length that combines entertainment or information with the sale or promotion of goods or services into a virtually indistinguishable whole;

"Syndicated Production" is the revenue perceived by the sale or airing permission of a program produced by a network to another network;

"SMLPF" is defined by Small Market Local Programming Fund;

"Local Time Sales" are revenues from the sale of air time by local sales representative, net of advertising agency commissions and trade discounts;

"National Time Sales" are Revenues for national advertising, net of any advertising agency commissions and trade discounts;

"Other" includes broadcast related revenue received from the use of talent services and technical facilities.



Figure 4.2.3 Advertising revenues of conventional television stations owned and operated by the CBC

#### Source: CRTC data collection

Table 4.2.2 CBC conventional television revenues (\$ millions)

Туре	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
English-language stations advertising	245	200	333	104	149	43.6	-11.7
French-language stations advertising	127	131	141	116	117	0.7	-2.0
Advertising total	373	331	475	220	266	20.9	-8.1
Other revenues	135	133	127	129	107	-17.3	-5.7
Parliamentary appropriation	861	783	726	758	812	7.2	-1.5
Total revenues	1,369	1,247	1,328	1,107	1,185	7.0	-3.5

Source: CRTC data collection

"Other revenues" include syndication revenues and funding from the LPIF from 2012 to 2014.

Language of broadcast	Type of revenue	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Advertising	1,540	1,468	1,369	1,366	1,300	-4.8	-4.2
English	Other	131	115	106	81	74	-8.5	-13.3
	Subtotal	1,672	1,583	1,475	1,447	1,374	-5.0	-4.8
	Advertising	291	290	273	260	253	-2.8	-3.5
French	Other	75	70	56	50	51	1.1	-9.3
	Subtotal	367	361	329	310	304	-2.2	-4.6
	Advertising	1,832	1,758	1,642	1,626	1,553	-4.5	-4.0
Total	Other	206	186	162	131	125	-4.8	-11.8
	Total	2,038	1,944	1,804	1,757	1,678	-4.5	-4.7

Table 4.2.3 Advertising and other revenues: private conventional television stations, by language of broadcast

Source: CRTC data collection

Revenues for English-language private conventional television stations include revenues for ethnic stations since a significant portion of these stations' revenues was derived from English-language programming. "Other" revenues include funding from the LPIF for 2012-2014 and funding from the Small Market Local Programming Fund (SMLPF) in 2015 and 2016.

Type of		Catagorias	Reven	ues (\$ thou	sands)	PBIT	۲ (\$ thousa	nds)	PB	IT margin (	%)
Type of services Specialty Specialty Pay PPV VOD Pay, PPV and VOD Total	Language	Categories	2014	2015	2016	2014	2015	2016	2014	2015	2016
		Category A	1,409,549	1,368,309	1,298,926	470,041	476,871	452,912	33.3	34.9	34.9
	English-	Category B	375,938	377,404	399,805	112,605	113,989	113,773	30.0	30.2	28.5
	language	Category C	968,017	1,010,483	1,212,919	211,780	218,527	268,626	21.9	21.6	22.1
		All Categories	2,753,504	2,756,195	2,911,649	794,426	809,385	835,312	28.9	29.4	28.7
		Category A	288,126	302,735	303,707	83,947	76,210	70,984	29.1	25.2	23.4
	French-	Category B	42,983	51,755	56,891	-4,533	2,984	7,914	-10.5	5.8	13.9
	language	Category C	282,522	327,938	342,911	34,815	-11,788	3,180	12.3	-3.6	0.9
Specialty		All Categories	613,631	682,427	703,510	114,229	67,406	82,078	18.6	9.9	11.7
	Ethnic and	Category A	57,392	54,985	50,468	9,929	8,462	5,093	17.3	15.4	10.1
	third-	Category B	23,061	23,505	27,404	3,903	5,203	4,279	16.9	22.1	15.6
	language	All Categories	80,453	78,490	77,872	13,832	13,665	9,373	17.2	17.4	12.0
		Category A	1,755,067	1,726,029	1,653,101	563,918	561,543	528,990	32.1	32.5	32.0
		Category B	441,982	452,663	484,100	111,975	122,177	125,967	25.3	27.0	26.0
	All languages	Category C	1,250,539	1,338,420	1,555,830	246,594	206,739	271,806	19.7	15.4	17.5
		All Categories	3,447,588	3,517,113	3,693,031	922,487	890,459	926,762	26.8	25.3	25.1
Pay	All languages	N/A	435,350	423,105	404,196	110,667	63,467	16,037	25.4	15.0	4.0
PPV	All languages	N/A	101,326	95,149	87,837	8,336	-10,909	9,502	8.2	-11.5	10.8
VOD	All languages	N/A	264,498	254,367	230,581	-18,433	-21,368	-26,598	-7.0	-8.4	-11.5
Pay, PPV and VOD	All languages	N/A	801,174	772,621	722,614	100,570	31,190	-1,059	12.6	4.0	-0.1
Total	All services	All Categories	4,248,763	4,289,734	4,415,645	1,023,056	921,649	925,703	24.1	21.5	21.0

Table 4.2.4 Revenues of discretionary services, by language of broadcast

Source: CRTC data collection

English-language specialty services accounted for the majority of the total number of services (48%) as well as of revenues (79%). They also were the most profitable language group (average PBIT margin of 28.7%). Their revenues totalled \$2.9 billion in 2016, a 5.6% increase from 2015.

*Revenues of the French-language specialty services rose by 3.1% from 2015 to 2016. The sports-related specialty services TVA Sports saw its total revenues increased fivefold, with its subscriber revenues multiplied by 4 in 2015 relative to 2014, as the service aired NHL hockey games.* 

*Ethnic and third-language specialty services' revenues have stayed stable and generated 1.76% (\$77.9 million) of total revenues in 2016, reporting a 0.8% decrease in revenues.* 

On-demand services, namely pay-per-view and video-on-demand, continued their downward trend in 2016. These two categories of services combined reported revenues of \$318 million in 2016, down \$31.1 million (-8.9%) from 2015, and \$47 million (13%) from 2014.

*Category A* – A service that focuses on a specific genre (for example, music, children's programming, weather, comedy programming). It is protected from competition from non-Canadian services and Category B services. All broadcasting distribution undertakings must carry these services.

*Category B* – A service that focuses on a specific genre, that is not competitive with any Category A or Category C service. Category B services do not have any specific carriage rights.

*Category C* – A service that operates in either of the competitive genres of national news or mainstream sports. There are no specific carriage rights for Category C Sports services. Category C News services must be made available in the best possible discretionary package consistent with their genre. They must also be made available to subscribers on a stand-alone basis.



Figure 4.2.4 Ranking by revenue of individual discretionary services, in descending order, 2016

#### Source: CRTC data collection

This graph shows the total revenues reported by individual discretionary services, in descending order, in 2016. Each of the top five services reported close to or over \$100 million in revenues, while each of the next five services reported between \$70 million to \$95 million in revenues. These 10 highest grossing services reported 42% of total revenues generated in 2016. Five of them were sports related services; two owned by BCE, two owned by Rogers and one by Groupe TVA.

Each of the next 73 ranked services reported total revenues in excess of \$10 million; each of the next 88 services reported total revenues in excess of \$1 million; and each of the remaining ranked services reported total revenues of less than \$1 million.



#### Figure 4.2.5 Revenues of English-language private conventional television and discretionary services

Revenues of English-language private conventional television and discretionary services

#### Source: CRTC data collection

Ethnic conventional television stations have been included with English-language stations since a significant portion of their revenues is derived from English-language programming. English-language discretionary services include bilingual services.

The line in the chart shows advertising revenues as a percentage of total revenues for private conventional television and specialty services (all categories included).



#### Figure 4.2.6 Revenues of French-language private conventional television and discretionary services

Revenues of French-language private conventional television and discretionary services

#### Source: CRTC data collection

The line in the chart shows advertising revenues as a percentage of total revenues for private conventional television and specialty services (all categories included).





#### Revenues of ethnic and third-language discretionary services

#### Source: CRTC data collection

In 2016, no ethnic or third language pay services were in operation. From 2012 to 2014, the remaining ethnic and third-language pay services either ceased operations or changed licence type to specialty.

The line in the chart shows advertising revenues as a percentage of total revenues for specialty services (all categories included) and pay services.




#### Source: CRTC data collection

This graph shows the revenues of each of the three largest English-language private conventional television ownership groups in each of the 2012 to 2016 broadcast years. It also shows the total revenues of these three groups as a percentage of total English-language private conventional television revenues. Ethnic private conventional television stations have been included with English-language stations since a significant portion of their revenues is derived from English-language programming.

Each group's total annual revenues are based on total revenues of stations controlled by the broadcaster. Control was determined where the broadcaster had a greater than 50% direct and indirect voting interest as of 31 August of that year. Total revenues include funding from LPIF for 2012-2014 and SMLPF 2015-2016.

Figure 4.2.9 Collective revenues of top two owners of French-language private conventional stations



Collective revenues of top two owners of French-language private conventional stations

## Source: CRTC data collection

The line "Revenue of top 2 groups as % of total" shows the proportion of revenues reported by these 2 ownership groups out of the total French-language private conventional television revenues

# ii Internet-based video services

Revenues for Internet-based services are new to this year's report. Different types of Internet-based services are available to Canadians. Depending on their business model, they can be categorized into the following three types of services:

- Subscription video-on-demand (SVOD) refers to an Internet-based service model in which a client pays a subscription fee to gain access to a library of content. Examples of SVOD services are Club illico, Crave, and Netflix.
- **Transactional video-on-demand (TVOD)** refers to an Internet-based service model in which a client pays only for the specific content watched. The client usually does not pay to access the service itself. Examples of this type of service are iTunes, Microsoft Movies & TV, and the PlayStation Network.
- Advertising video-on-demand (AVOD) refers to an Internet-based service model in which a client typically has free access to content but is exposed to advertisements. YouTube is an example of this service type.

Estimated revenues for Internet-based video services in Canada grew by 17.8% from 2015 to 2016, reaching almost \$2 billion in 2016<sup>17</sup>. Some services, such as AVOD services, rely heavily on mobile platforms for their revenues; for these, mobile platforms represent approximately one third of their AVOD revenues.

Please note that information found in this section has been sourced from an external research firm and is not based on data collected by the Commission.

Sorvico	2012	2012	2014	2015	2016	Growth (%)	CAGR (%)
Service	2012	2015	2014	2015	2010	2015-2016	2012-2016
SVOD	232.0	368.1	648.8	911.8	1082.1	18.7	47.0
TVOD	252.6	294.4	322.9	365.4	393.5	7.7	11.7
AVOD	150.7	219.4	291.5	383.8	480.0	25.1	33.6
Total	654.4	881.9	1263.2	1661.2	1955.5	17.7	31.5

#### Table 4.2.5 Estimated revenues of Internet-based video services in Canada by type of service (\$ millions)

Source: OVUM, 2016

#### *This table shows the estimated revenues for SVOD, TVOD, and AVOD services.*

SVOD revenues represent over half the total revenues of Internet-based services. While TVOD services have shown the steadiest growth over the past five years, both AVOD and SVOD have grown rapidly over this period. Netflix is the largest SVOD player in Canada, with their 2016 revenues being estimated at \$766 million, or 70.8% of total SVOD revenues, up from an estimated \$156 million in 2012.

<sup>&</sup>lt;sup>17</sup> Data used from OVUM has been converted from US dollars to Canadian dollars using 1.325521, the yearly average exchange rate for 2016.

Service	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
iTunes	176.9	202.1	219.6	250.9	267.6	6.6%	10.9%
Microsoft Movies & TV	32.8	36.6	37.1	45.5	49.2	8.2%	10.6%
PlayStation Network	13.9	19.0	24.2	27.3	33.4	22.6%	24.6%
Google Play	12.6	14.6	19.4	20.0	21.6	8.2%	14.4%
CinemaNow	6.3	8.8	8.1	5.5	5.9	8.2%	-1.7%
Others	10.1	13.2	14.5	16.4	15.7	-3.8%	11.7%
Total	252.6	294.4	322.9	365.4	393.5	7.7%	11.7%

Table 4.2.6 Estimated revenues of top 5 TVOD services in Canada (\$ millions)

Source: OVUM, 2016

*This table shows the revenues of the top 5 TVODs in Canada.* 

In Canada, iTunes is the largest service in terms of revenues, earning more than two thirds of total TVOD revenues in 2016, followed by Microsoft's service (12.5%) and the PlayStation Network (8.5%). Overall, the annual growth of TVOD revenues are more moderate than SVOD and AVOD revenues, with the PlayStation Network growing at the fastest pace over the past five years.

#### Table 4.2.7 Estimated revenues of AVOD services by platform in Canada (\$ millions)

Platform	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Non-mobile	143.5	192.7	247.6	287.8	325.3	13.0%	22.7%
Mobile	7.2	19.5	43.8	95.9	154.6	61.1%	115.2%
Total	150.7	212.2	291.5	383.8	480.0	25.1%	33.6%

Source: OVUM, 2016

#### This table shows the revenues of AVOD services by platform in Canada.

While non-mobile AVOD revenues continue to outpace mobile revenues, representing approximately two thirds of total AVOD revenues in 2016, mobile AVOD revenues have increased twentyfold from 2012 to 2016, significantly narrowing this gap.



#### Figure 4.2.10 Estimated AVOD revenues of Facebook and YouTube in Canada (\$ millions)

#### Source: OVUM, 2016

This figure shows the estimated AVOD revenues of YouTube and Facebook in Canada.

In both 2015 and 2016, YouTube's estimated AVOD revenues represented approximately one quarter of total AVOD revenues, although they grew at a slower pace than total AVOD revenues. Conversely, Facebook's estimated AVOD revenues went from representing a 6% share of AVOD revenues in 2015 to a 14% share in 2016, increasing by 176% year over year. Please note that Facebook's AVOD revenues exclude revenues from Instagram.

# iii Financial performance

Although private conventional television stations did not achieve profitability in 2016, their losses nonetheless decreased, reporting a -6.7% Profit Before Interest and Taxes (PBIT) in 2016, compared to the -8.0% PBIT reported in 2015. 2016 marked the fourth consecutive year of financial losses for the private conventional television stations.

Discretionary and On-Demand services reported an average PBIT margin of 21% in 2016, similar to 2015's 21.5%. Category A services with a 32% PBIT margin, were the most profitable of all types of services. PPV managed to attain a 10.8 PBIT margin but Video-on-demand slumped to -11.5. As a result, Pay, PPV and VOD service together recorded an overall PBIT margin of 0.1%, down from the previous year's 4%.

Figure 4.2.11 Aggregate PBIT margins for private conventional television and discretionary services



## Aggregate PBIT margins

Source: CRTC data collection

Figure 4.2.12 Aggregate PBIT margins for English-language private conventional television and discretionary services



Aggregate PBIT margins for English-language services

Source: CRTC data collection

Figure 4.2.13 Aggregate PBIT margins for French-language private conventional television and discretionary services



## Aggregate PBIT margins for French-language services

Source: CRTC data collection



Figure 4.2.14 Aggregate PBIT margins for ethnic and third-language discretionary services

Source: CRTC data collection

# iv Availability of television and video services

Canadians enjoy multiple sources and means of accessing content, from conventional over-the-air linear broadcasting to digital media provided over the Internet. The following chart shows the various categories and types of programming sources and platforms.







For figures and tables with the Media Technology Monitor (MTM) as a source, note that:

- "Internet video" is defined as watching or streaming video available over the Internet (e.g. video clips on YouTube, television programs, sports, movies, etc.); and
- "Internet TV" is defined as watching or streaming television programs or clips available over the Internet.

Figure 4.2.15 Percentage of Canadians who viewed television and Internet video services and programming in the past month, by language and platform, 2016

Percentage of Canadians who viewed television and Internet video services and programming in the past month, by language and platform



#### Source: MTM, 2016 (Respondents: Canadians 18+)

Table 4.2.8 Estimated Canadian Youtube and Facebook monthly active users (millions)

Service	2015	2016	Growth (%) 2015-2016	
Youtube	21.0	21.2	1.0	
Facebook (excl. Instagram)	21.5	23.9	11.3	

Source: OVUM, 2016

		Eng	lish-	Fre	nch-	Thi	ird-	ŀ	All
Category	Subcategory	lang	uage	lang	uage	lang	uage	languages	
			2016	2015	2016	2015	2016	2015	2016
	CBC/SRC (owned and operated)	14	14	13	13	0	0	27	27
Canadian conventional	Private commercial	64	67	20	20	6	6	90	93
television services	Religious	7	7	0	0	0	0	7	7
	Educational	4	1	3	2	0	0	7	3
	Community	4	6	1	1	0	0	5	7
	Specialty Category A services 4		44	16	15	5	5	65	64
	Specialty Category B services	78	84	10	10	33	109	121	203
Considion discustions w	Specialty Category C services	5	6	4	4	0	0	9	10
	Pay television services		7	2	1	0	0	9	8
services	PPV services (DTH and terrestrial)	12	6	0	1	0	0	12	7
	VOD services	20	11	1	4	0	0	21	15
Other Canadian services	Other community services	11	5	4	2	0	0	15	7
	House of Commons (CPAC)	1	1	1	1	0	0	2	2
Non-Canadian services	Authorized for distribution in Canada	128	138	22	24	149	165	299	327
Total	Total	399	397	97	98	193	285	689	780

Table 4.2.9 Type and number of television services authorized to broadcast in Canada, by language of broadcast

#### Source: CRTC internal database

This table shows the types and number of television services that are authorized to broadcast in Canada. Types include conventional television services; various discretionary services (i.e., specialty, pay, PPV, and VOD); community services and the House of Commons (CPAC) service; and non-Canadian programming services authorized for distribution.

Radiocommunication distribution undertakings (RDUs), rebroadcasters, exempt television services, specialty services for which broadcast authority has expired, and some network licences are not included. Private commercial does not include private commercial religious stations. Conventional Community and Other Canadian community services have been broken down. Specialty Category B services include only services that have been launched and have filed annual returns with the Commission. Pay television services include only pay services that launched as of 31 December 2012. VOD services include services that have been approved but are not necessarily in operation. The number of services presented in the table has decreased following the issuance of Exemption order for small video-on-demand undertakings, Broadcasting Order CRTC 2011-60, 31 January 2011. Carriage of authorized non-Canadian services is at the discretion of the BDU. Appendix 2 to List of non-Canadian programming services authorized for distribution – Annual compilation of amendments, Broadcasting Regulatory Policy CRTC 2015-27, 30 January 2015, sets out a complete list of non-Canadian programming services approved as of 31 December 2014. English-language services include those considered bilingual (English/French and English/Native). Other Canadian services exclude community channels reported by BDU licensees.

Table 4.2.10 Number of Canadian public/community/educational and private conventional television services authorized to broadcast, by province and language of broadcast, 2016

	English-lan	guage	French-lan	guage	Third-lang	guage	Tota	l
	Public,		Public,		Public,		Public,	
Province/territory	community	Private	community	Private	community	Private	community	Private
	and	conv.	and	conv.	and	conv.	and	conv.
	educational		educational		educational		educational	
British Columbia	6	11	1	0	0	1	7	12
Alberta	2	13	1	0	0	2	3	15
Saskatchewan	1	6	1	0	0	0	2	6
Manitoba	2	4	1	0	0	0	3	4
Ontario	5	22	2	0	0	2	7	24
Quebec	1	3	11	20	0	1	12	24
New Brunswick	2	3	1	0	0	0	3	3
Nova Scotia	3	4	0	0	0	0	3	4
Prince Edward Island	1	0	0	0	0	0	1	0
Newfoundland and	1	1	0	0	0	0	1	1
Labrador	Ţ	T	0	0	0	0	T	T
The North	2	0	0	0	0	0	2	0
Canada	26	67	18	20	0	6	44	93

Source: CRTC internal database

Nationally, Canadians have access to 93 private conventional television services and 44 public/community/educational television services. Québec leads all provinces in regard to public, community and education stations (12). Ontario and Quebec lead in regard to private conventional television stations (24).

# v Audience measurement

Audience measurement data is important not only to industry stakeholders, who use the data to help sell air time to advertisers, but also to the CRTC, which uses the data to assess the effectiveness of its policies by understanding the reach of programming across the country and across various demographics.

Unless otherwise specified, audience measurement data sourced from Numeris was collected by portable people meter (PPM) devices;

The Numeris data presented by linguistic market divides Canada into two sections: (1) all of Canada, excluding Francophone respondents in Quebec; and (2) exclusively Francophones respondents in Quebec;

The television seasons used by Numeris were the following:

- 29 August 2011 to 26 August 2012, includes all persons 2+, Monday to Sunday, 2 a.m. to 2 a.m.;
- 27 August 2012 to 25 August 2013, includes all persons 2+, Monday to Sunday, 2 a.m. to 2 a.m.;
- 26 August 2013 to 31 August 2014, includes all persons 2+, Monday to Sunday, 2 a.m. to 2 a.m.;
- 1 September 2014 to 30 August 2015, includes all persons 2+, Monday to Sunday, 2 a.m. to 2 a.m.; and
- 31 August 2015 to 28 August 2016, includes all persons 2+, Monday to Sunday, 2 a.m. to 2 a.m.

For figures and tables with the Media Technology Monitor (MTM) as a source, note that:

- "Internet video" is defined as watching or streaming video available over the Internet (e.g. video clips on YouTube, television programs, sports, movies, etc.); and
- "Internet TV" is defined as watching or streaming television programs or clips available over the Internet.

For tables with data by ownership groups:

- Where ownership transactions were in progress at the time of data collection, ownership was based on the date of the approval decision, not the official closing date of the transaction.
- Viewing for the entire television season was attributed to the ownership group holding direct and indirect voting interests greater than 50% on 31 December of each year.



# Figure 4.2.16 Average number of hours Canadians watched traditional television (2011-2012 through 2015-2016 broadcast years) and Internet television (2010 to 2016)

#### Source: Numeris, MTM (respondents: Canadians 18+)

These graphs show the national average number of hours Canadians 18 years of age and older watched traditional television (excluding digital media) and Internet television each week. The graph displaying Internet television data shows the viewing habits of respondents who watch Internet television every week, as well as those of the national average. 2014 data for Internet TV is unavailable.

Whereas weekly viewing of traditional television has decreased by approximately 1 hour over the last 5 years, weekly Internet television viewing in the total population increased by approximately 2.5 hours and by approximately 4 hours for typical Internet TV weekly users over the same period.

Age group	Average	Growth (%) 2014-15 to				
	2011-12	2012-13	2013-14	2014-15	2015-16	2015-16
All persons 2+	28.2	27.9	27.4	27.2	26.6	-2.2
Children 2-11	22.2	21.6	20.6	21.4	20.3	-5.1
Teens 12–17	22.7	21	19.9	18.8	16.4	-12.8
18–34	22.8	21.9	20.6	19.7	18.5	-6.1
35–49	24.8	24.7	24	23.6	22.1	-6.4
50-64	33.1	33.2	33.4	33	32.9	-0.3
65+	41.9	41.5	41.8	42	42.8	1.9

Table 4.2.11 Average nun	nber of hours Canadians	watched traditional to	elevision each week	, by age group
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#### Source: Numeris

This table shows the national average of weekly viewing hours by age group. It does not include digital media.

Average weekly viewing declined across all age groups except for the 65+ age group which saw little movement over the same timeframe.

			View	ving shar	e (%)		Growth (%)
Category of services	Subcategory	2011-	2012-	2013-	2014-	2015-	2014-15 to
		2012	2013	2014	2015	2016	2015-16
	CBC	5.5	5.1	6.9	5.2	5.1	-1.9
	Private conventional	25.6	24.9	25.3	26.1	25.1	-3.8
Canadian English- language	Discretionary and on- demand services	49.6	51.1	50.3	52.0	52.5	1.0
	Other services	2.2	2.3	2	2.3	2.2	-4.3
Canadian English- language Canadian French- language Canadian other	All services	82.8	83.4	84.5	85.6	84.9	-0.8
Canadian French-	SRC	0.2	0.1	0.1	0.1	0.1	0.0
	Private conventional	0.1	0.1	0.1	0.1	0.1	0.0
Canadian French-	Télé-Québec	0	0	0	0.0	0.0	0.0
language	Discretionary and on- demand services	0.4	0.4	0.4	0.3	0.4	33.3
Canadian French- language	All services	0.8	0.7	0.6	0.5	0.6	20.0
	Private conventional	1.1	0.9	0.6	0.4	0.2	-50.0
Canadian other	Discretionary and on- demand services	1	0.9	1	0.9	0.6	-33.3
Canadian other languages	APTN	0.1	0.2	0.2	0.2	0.2	0.0
	All services	2.3	2	1.8	1.5	1.0	-33.3
	Community services	0.3	0.3	0.3	0.3	0.3	0.0
Canadian all languages	VOD/PPV	0	0	0	n/a	n/a	n/a
	All services	86.1	86.4	87.2	87.9	86.5	-1.6
	U.S. conventional	5.4	5	4.5	4.8	4.5	-6.3
Non-Canadian	U.S. discretionary	8.5	8.8	8	7.2	8.5	18.1
NUII-Callaulall	International	0	0	0	0.1	0.1	0.0
	All services	13.0	137	125	121	131	83

Table 4.2.12 Viewing share of Canadian and non-Canadian television services, by language and type of service, for all of Canada, excluding the Quebec francophone market

Source: Numeris

All services

Relative to the total viewing hours, viewership has slightly declined or has remained stable across the different services over the past five years. The total hours for all services has diminished by over 30 million hours from 2011-2012 to 2015-2016.

720.0

712.0

710.7

704.7

684.9

-2.8

Total hours (millions)

Table 4.2.13 Viewing share of Canadian and non-Canadian television services, by language and type of service, in the Quebec francophone market

			Viev	ving shai	re (%)		Growth (%)
Category of services Canadian French- language Canadian English- language Canadian other	Subcategory	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	2014-15 to 2015-16
	SRC	11.8	12.8	13.4	12.3	12.9	4.9
	Private conventional	32	32.4	30.8	30.5	30.6	0.3
Conselier French	Télé-Québec	2.9	3	3	3.4	3.8	11.8
	TFO	0.1	0.1	0.3	0.3	0.2	-33.3
language	Discretionary and on demand services	45.8	44.7	45	45.8	45.2	-1.3
	All services	92.7	93	92.5	92.3	92.7	0.4
	CBC	0.6	0.4	0.8	0.6	0.5	-16.7
Canadian English- language	Private conventional	1.7	1.7	1.7	1.9	1.7	-10.5
	Discretionary and on demand services	3.1	3.1	3.2	3.8	3.5	-7.9
	Other services	0.1	0	0	0	0	0.0
	All services	5.5	5.2	5.7	6.3	5.7	-9.5
	Private conventional	0.1	0.2	0	0	0	0.0
Canadian other	Discretionary and on demand services	0	0	0	0.1	0.1	0.0
languages	APTN	0	0.1	0	0	0	0.0
	All services	0.2	0.3	0.1	0.1	0.1	0
	Community services	0.2	0.2	0.2	0.2	0.2	0
Canadian all languages	VOD/PPV	0	0	0	n/a	n/a	n/a
	All services	98.6	98.8	98.3	98.9	98.5	-0.4
	US conventional	0.8	0.8	1	0.8	0.6	-25.0
Non-Canadian	US discretionary	0.6	0.5	0.5	0.5	0.5	0.0
	International	0.1	0.1	0.1	0	0	0.0
	All services	1.5	1.4	1.6	1.3	1.1	-15.4
All services	Total hours (millions)	211.3	216.5	220.3	225.5	223.7	-0.8

Source: Numeris

In contrast to the English-language market, which has seen its total viewing hours diminish in the past five years, the French-language market has experienced a growth in total viewing hours of 12.4 million hours.

Table 4.2.14 Average weekly viewing hours (millions) for Canadian programs broadcast by Canadian television services, by language market, program origin, and program category

Programming Category	Viewing Metric	Engli services Queb	sh-langua s, all of Ca ec franco	age and e anada (ex phone ma	thnic cluding arket)	French-language services, Quebec francophone market				
		2012- 2013	2013- 2014	2014- 2015	2015- 2016	2012- 2013	2013- 2014	2014- 2015	2015- 2016	
	Viewing hours (M)	84.7	84.8	82.2	77.1	30.7	26.4	27.1	27.0	
News (category 1)	% Canadian	100	100	99.9	99.7	98.8	98.7	98.1	98.3	
	% of total	14.6	14.2	13.6	13.1	15	13.2	13.4	13.6	
	Viewing hours (M)	21.6	11.2	28.6	23.9	10.9	10.4	11.3	9.7	
Long-form documentary	% Canadian	46.9	48.2	47.6	46.3	42.9	47	48.7	46.5	
(category 2(b))	% of total	3.7	3.9	4.7	4.1	5.4	5.2	5.6	4.9	
Other informational	Viewing hours (M)	52.2	50.2	53.8	49.6	32.7	28.7	29	28.2	
(categories 2 through 5,	% Canadian	56.9	59.1	56.6	58.2	91.1	91.3	89.5	90.0	
excluding 2(b))	% of total	9	8.4	8.9	8.4	16	14.4	14.3	14.1	
Sports (category 6)	Viewing hours (M)	70.9	95.5	93.8	110.5	10.7	17.7	18.6	16.7	
	% Canadian	65.9	72.9	67.3	72	67.8	75	70.5	64.3	
	% of total	12.2	16	15.6	18.8	5.3	8.9	7.7	8.4	
Drama and comedy	Viewing hours (M)	237.4	227.5	230.8	215.3	79.8	76	78.2	78.0	
	% Canadian	20	19.4	19.2	18.7	29.1	28.8	29.2	27.0	
(category 7)	% of total	40.9	38.1	38.3	36.6	39.1	38.1	38.7	39.1	
Music, dance, and	Viewing hours (M)	10.5	9	7.3	7	3.8	3.1	3.1	3.0	
variety (categories 8 and	% Canadian	23.8	34.6	40.9	33.6	81.5	85.4	83.5	86.1	
9)	% of total	1.8	1.5	1.2	1.2	1.8	1.6	1.5	1.5	
Como chow (cotogon)	Viewing hours (M)	8.1	9.1	8.5	10.1	9.1	9	7.2	7.0	
dame show (category	% Canadian	26.7	23.6	22.5	14.1	94.1	95.4	89.3	91.7	
10)	% of total	1.4	1.5	1.4	1.7	4.5	4.5	3.5	3.5	
General entertainment/	Viewing hours (M)	94.6	97.6	97.4	95	25.9	28.1	30.4	29.8	
Human interest/ Reality	% Canadian	29.7	31.7	32.1	32.1	68.9	68.2	65.4	66.3	
(category 11)	% of total	16.3	16.3	16.2	16.1	12.7	14.1	15	14.9	
Other (categories 12	Viewing hours (M)	0.1	4.1	4.1	0.1	0.4	18.6	0.4	0.1	
through 15)	% Canadian	96.4	61.5	81.1	71.5	91.6	67.8	98.3	87.3	
	% of total	0	0	0	0	0.2	0	0.2	0	
All Catagorias	Viewing hours (M)	580.1	596.8	602.5	588.5	204.1	199.5	202.3	199.5	
All Categories	% Canadian	43.4	46.1	44.8	46.1	61.4	61.5	59.9	58.7	

## Source: Numeris

Drama and comedy exhibits the highest viewing percentage of any category for both French- (39.1%) and English-language (36.6%) markets, yet only 27% of this type of programming for the French-language market and 18.7% for the English-language market is produced in Canada. News and Sports programming are 98.3% and 64.3% Canadian-made in the French-language market, while 99.7% and 72% of these types of program respectively are made in the English-language market.

Table 4.2.15 Average weekly viewing hours for Canadian programs broadcast by CBC conventional television services, by language market, program origin and program category

		Englis	h-langua	age and	ethnic				
			serv	ices,		From	eh lena:		
			all of C	Canada		Fren	ch-langu	lage serv	/ices,
Programming Category	Viewing Metric	(	excludin	g Quebe	ec	Quebe	e france	phone	narket
		francophone market)							
		2012-	2013-	2014-	2015-	2012-	2013-	2014-	2015-
		2013	2014	2015	2016	2013	2014	2015	2016
	Viewing hours (M)	7.1	7.2	7.3	5.7	4.4	4.1	3.9	3.8
News (category 1)	% Canadian	100	100	100	100	100	100	100	100
	% of total	20.4	14.9	20.9	16.6	15.9	13.9	14	13.3
Long-form	Viewing hours (M)	1.6	1.3	1.6	1.7	0.3	0.3	0.4	0.3
documentary	% Canadian	96.6	98.4	89.8	49.3	93	98.7	97.7	95.6
(category 2(b))	% of total	4.7	2.8	4.2	5	1.1	1	1.4	1
Other informational	Viewing hours (M)	2.9	2.1	2.3	2.2	3.6	2.8	3	2.9
(categories 2 through	% Canadian	99.9	100	100	80.8	99.9	99.9	100	99.9
5, excluding 2(b))	% of total	8.3	4.3	6.5	6.6	12.9	9.6	11	10.2
	Viewing hours (M)	9.9	25.4	10.8	12.9	0.3	2.9	0.4	2.1
Sports (category 6)	% Canadian	100	100	100	100	100	99.9	100	100
	% of total	28.3	52.6	30.8	37.8	1	9.7	1.3	7.5
	Viewing hours (M)	9.4	8.6	10.9	9.1	9	8.4	9.6	8.7
Drama and comedy	% Canadian	54.1	56	63.4	61.3	70	70	66	69
(category 7)	% of total	26.9	17.8	31.1	26.6	32.4	28.6	34.9	30.5
Music, dance, and	Viewing hours (M)	0.1	0.1	0.1	0.4	1.4	1.5	1.5	1.6
variety (categories 8	% Canadian	100	100	51.1	79.6	100	100	100	99.7
and 9)	% of total	0.2	0.2	0.4	1.1	5.1	5.1	5.4	5.4
0	Viewing hours (M)	0.2	0	0.2	0.1	1.7	1.5	1.2	1.2
Game show (category	% Canadian	0	0	100	100	100	100	100	100
10)	% of total	0.5	0	0.4	0.4	6.2	5.1	4.2	4
General	Viewing hours (M)	3.7	3.6	2	2	7	7.9	7.7	8
entertainment/	% Canadian	99.5	99.6	98.9	96	100	100	100	100
Human interest/	% of total	10.6	74	56	5.8	25.3	26.9	27.8	28
Reality (category 11)		10.0	,.+	5.0	5.0	23.5	20.5	27.0	20
Other (categories 12	Viewing hours (M)	0	2.2	0	0	0	0.3	0	0
Uther (categories 12 through 15)	% Canadian	0	100	100	100	100	100	100	98.1
	% of total	0	0	0	0	0	0	0	0.1
All Categories	Viewing hours (M)	35	48.3	35	34.2	27.6	29.5	27.6	28.7
	% Canadian	86.9	92.1	87.9	85.4	90.2	91.4	88.1	90.5

Source: Numeris

In French-language markets, drama and comedy garnered the highest percentage of total CBC viewing (30.5%), followed closely by the General entertainment/Human interest/Reality category at 28%. English-language markets shared an interest for drama and comedy, with 26.6% of total viewing, yet preferred the Sports category (37.8% of total viewing) to the General entertainment/Human interest/Reality category (5.8% of total viewing).

Table 4.2.16 Average weekly viewing hours for Canadian programs broadcast by private conventional services, by language market, program origin, and program category

		English-language and ethnic										
			servi	ces,		Frenc	h-langu	lage ser	vices,			
			all of C	anada		Qu	ebec fra	ancopho	one			
Programming Category	Viewing Metric	(e:	xcluding	g Quebe	90		ma	rket				
		frar	ncophor	ie mark	et)							
		2012-	2013-	2014-	2015-	2012-	2013-	2014-	2015-			
		2013	2014	2015	2016	2013	2014	2015	2016			
	Viewing hours (M)	36.7	37.3	34.1	30.9	10.3	9.2	9.2	9			
News (category 1)	% Canadian	100	100	100	99.3	100	100	100	100			
	% of total	21.6	22	19.9	19.5	14.8	13.6	13.6	13.4			
Long-form documentary	Viewing hours (M)	1.5	1.8	1.8	1.6	0.3	0.2	0.4	0.5			
(category 2(h))	% Canadian	95.2	89.2	96.6	97.6	90.5	79.9	80.2	53.3			
(66668019 2(0))	% of total	0.9	1.1	1	1	0.4	0.4	0.6	0.8			
Other informational	Viewing hours (M)	10.4	10.5	11.5	11.5	14.5	12.3	12.3	12.8			
(categories 2 through 5,	% Canadian	62.2	65.8	67.2	68.9	100	99.8	99.3	99.7			
excluding 2(b))	% of total	6.1	6.2	6.7	7.2	20.8	18.3	18.2	19.1			
	Viewing hours (M)	4.6	3.8	6.8	4.7	0	0.7	0.1	0.2			
Sports (category 6)	% Canadian	6.5	7.4	32.8	14.7	85.9	60.9	71.8	7.1			
	% of total	2.7	2.3	4	3	0	0.1	0.1	0.4			
Durance and some di	Viewing hours (M)	64.9	65.3	66.4	58.9	26.9	28.4	29.4	29.6			
(catagory 7)	% Canadian	10.3	10	7.7	8.6	22.7	22.5	22.2	19.9			
(category 7)	% of total	38.1	38.6	38.8	37.2	38.7	42.2	43.5	44.1			
Music, dance, and	Viewing hours (M)	7.3	5.4	3.6	3.5	0.9	0.3	0.2	0.3			
variety (categories 8 and	% Canadian	2	3.5	5.4	2.1	59.7	71.1	85.4	74.5			
9)	% of total	4.3	3.2	2.1	2.2	1.3	0.4	0.3	0.5			
Como chow (actorowy	Viewing hours (M)	5	6	5.5	6.9	6.6	6.9	5.3	5			
Game show (category	% Canadian	3.7	2.9	3.3	3.8	99.5	99.5	94.4	98.4			
10)	% of total	2.9	3.5	3.2	4.4	9.6	10.2	7.9	7.4			
General entertainment/	Viewing hours (M)	40	39.1	41.5	40.4	9.7	9.9	10.4	9.7			
Human interest/ Reality	% Canadian	22.9	29	37.7	38.6	81.5	85.9	85.5	83.6			
(category 11)	% of total	23.5	23.1	24.2	25.5	14	14.8	15.4	14.5			
Other	Viewing hours (M)	0	0	0.3	0	0.3	0	0.4	0			
(categories 12 through	% Canadian	0	0	95.3	89.8	100	0	100	n/a			
15)	% of total	0	0	0	0	0.5	0	0.5	0			
All Categories	Viewing hours (M)	170.1	169. 2	171. 1	158. 5	69.4	67.2	67.6	67.2			
	% Canadian	35.9	38	39.1	39.1	66.9	64.9	63.2	61.3			

Source: Numeris

The News category reaches almost 100% Canadian production across the English- (99.3%) and Frenchlanguage (100%) markets, while the percentage is much lower for the Sports category (English 14.7%; French 7.1%) and Drama and comedy category (English 8.6%; French 19.9%). Table 4.2.17 Average weekly viewing hours for Canadian programs broadcast by discretionary services, by language market, program origin, and program category

		Englis	h-langu	age and	ethnic				
			serv	vices,		Eron	ch langi	1200 001	wicos
Drogramming			all of (	Canada		Ouch	cil-lange	lage sei	vices,
Cotogomy	Viewing Metric	(e	excludin	g Quebe	ec	Quebo		phione	market
Category		fra	ncopho	ne mark	et)				
		2012-	2013-	2014-	2015-	2012-	2013-	2014-	2015-
		2013	2014	2015	2016	2013	2014	2015	2016
	Viewing hours (M)	41.2	40.3	40.8	40.5	16	13.1	13.1	14.2
News (category 1)	% Canadian	100	99.9	99.8	99.9	97.7	97.5	96.3	96.7
	% of total	11.2	10.6	10.3	10.2	15.9	12.8	14	13.7
Long-form	Viewing hours (M)	16	20	25.4	20.5	9.8	9.9	9.8	8.9
documentary	% Canadian	41	41.1	41.8	42	41.2	44.6	45.6	44.5
(category 2(b))	% of total	4.3	5.3	6.4	5.2	9.7	9.6	10.5	8.6
Other informational	Viewing hours (M)	36.6	37.6	40	35.9	13.5	13.6	12.8	12.5
(categories 2 through	% Canadian	51.2	55	51	53.4	79.4	81.7	78.5	77.7
5, excluding 2(b))	% of total	9.9	9.9	10.1	9.1	13.4	13.3	13.7	12
	Viewing hours (M)	56.5	66.3	76.2	92.8	10.4	14.8	14.2	14.3
Sports (category 6)	% Canadian	64.7	66.3	65.7	71.1	66.9	70.2	69.8	59.9
	% of total	15.3	17.5	19.2	23.5	10.4	14.4	15.2	13.8
	Viewing hours (M)	159.	153.	152.6	147.	40.2	20.2	26.6	20.7
Drama and comedy		1	6	155.0	3	40.2	59.2	50.0	59.7
(category 7)	% Canadian	21.7	21.3	21	20.2	23.5	24.5	25.4	23.1
	% of total	43.2	40.5	38.7	37.2	40	38.1	39.2	38.3
Music, dance, and	Viewing hours (M)	3.1	3.5	3,6	3.1	1.3	1.3	1.3	1.1
variety (categories 8	% Canadian	73.6	81.3	75.7	63.2	72.8	71.8	65.2	70.6
and 9)	% of total	0.8	0.9	0.9	0.8	1.3	1.3	1.4	1.1
Come chow lostogowy	Viewing hours (M)	3.2	3.1	2.9	3.1	0.6	0.6	0.7	0.8
dame show (category	% Canadian	62.4	63	55.2	34	15.9	35.8	32.8	40
10)	% of total	0.9	0.8	0.7	0.8	0.6	0.6	0.7	0.8
General	Viewing hours (M)	53.1	54.8	54	52.6	8.7	10.2	11,5	12.1
entertainment/	% Canadian	28.7	29.1	25.3	24.7	28	26.4	27.1	30
Human interest/	% of total	14.4	145	12.6	12.2	<b>9</b> 7	0.0	17.2	11 7
Reality (category 11)	76 OF LOCAT	14.4	14.5	13.0	13.5	0.7	9.9	12.5	11.7
Other	Viewing hours (M)	0	0.2	0	0	0	0.2	0	0
(categories 12	% Canadian	0	16.7	4.8	23.1	33.3	62	77.8	81.1
through 15)	% of total	0	0	0	0	0	0	0	0
All Categories	Viewing hours (M)	368.8	379.3	396.3	395.8	100.5	102.8	107.1	103.6
All Calegonies	% Canadian	42.6	43.9	43.4	45.5	50	50.8	50.5	48.2

Source: Numeris

Drama and comedy is the most viewed discretionary service category, but only 20.2% is made in Canada in the English-language market and 23.1% is made in Canada in the French-language market.

					Viewir	ng share (%)				
Owner	Language	2	013-2014		2	014-2015		:	2015-2016	
		Conventional	Discretionary	Total	Conventional	Discretionary	Total	Conventional	Discretionary	Total
	All	15.6	19.9	35.5	16.1	20.1	36.2	15.2	21.5	36.7
BCE	English	15.6	19.7	35.2	16.1	19.9	36	15.2	21.4	36.6
	French	0	0.3	0.3	0	0.2	0.2	0	0.1	0.1
	All	8.3	14.3	22.6	8.6	15.2	23.8	0	0	0
Shaw	English	8.3	14.3	22.6	8.6	15.2	23.8	0	0	0
	French	0	0	0	0	0	0	0	0	0
	All	1.7	11.7	13.3	1.6	11.3	12.9	8.5	26.1	34.6
Corus	English	1.7	11.6	13.2	1.6	11.2	12.8	8.5	26.1	34.6
	French	0	0.1	0.1	0	0.1	0.1	0	0	0
	All	4.5	5.2	9.7	4.4	6	10.4	4.2	7.7	11.9
Rogers	English	4.5	5.2	9.7	4.4	6	10.4	4.2	7.7	11.9
	French	0	0	0	0	0	0	0	0	0
	All	8.3	1.9	10.2	6.1	1.9	8	6.2	2.2	8.4
CBC-SRC	English	8.2	1.8	10	5.9	1.9	7.8	6	2.1	8.1
	French	0.2	0.1	0.2	0.1	0	0.1	0.2	0.1	0.3

Table 4.2.18 Viewing share of English- and French-language Canadian services, by ownership group in all of Canada, excluding the Quebec francophone market

Source: Numeris

Table 4.2.19 Viewing share of English- and French-language Canadian services, by ownership group in the Quebec francophone market

					Viev	ving share (%)				
Owner	Language	2	013-2014		20	014-2015			2015-2016	
		Conventional	Discretionary	Total	Conventional	Discretionary	Total	Conventional	Discretionary	Total
	All	23.4	8.7	32.1	23.3	11.2	34.5	23.5	11.3	34.8
Québecor	French	23.4	8.7	32.1	23.3	11.2	34.5	23.5	11.3	34.8
	English	0	0	0	0	0	0	0	0	0
	All	0.8	21.3	22.1	1	19.8	20.8	0.9	18	18.9
BCE	French	0	19.8	19.8	0	18.3	18.3	0	16.6	16.6
	English	0.8	1.5	2.3	1	1.4	2.4	0.9	1.4	2.3
	All	14.5	4.9	19.4	13.1	4.7	17.8	13.7	5.1	18.8
SRC-CBC	French	13.7	4.9	18.6	12.5	4.6	17.1	13.2	5	18.2
	English	0.8	0.1	0.8	0.6	0.1	0.7	0.5	0.1	0.6
	All	8	0.9	9	7.8	0.9	8.7	7.5	1.2	8.7
Remstar	French	7.9	0.9	8.8	7.6	0.9	8.6	7.3	1.2	8.5
	English	0	0	0	0	0	0	0	0	0
	All	0	8	8	0	7.8	7.8	0	9.5	9.5
Corus	French	0	7.7	7.7	0	7.4	7.4	0	8.2	8.2
	English	0	0.3	0.3	0	0.4	0.4	0	1.3	1.3

Source: Numeris

In Tables 4.2.18 and 4.2.19:

- Calculations were based on the total average viewing hours for Canadian services, for all persons 2 years of age or older, Monday to Sunday, 2 a.m. to 2 a.m.
- Totals for Rogers' conventional services include OMNI stations.
- As of 2014, total for Corus' services include Historia, Séries +, Teletoon, Teletoon Retro, Télétoon and Télétoon Rétro, and exclude Telelatino.

## Table 4.2.20 Total viewing hours (millions) by market

	Total hours (millions)											
Market		2013-2014			2014-2015		2015-2016					
	Conventional	Discretionary	Total	Conventional Discretionary Total		Conventional	Discretionary	Total				
Canada (excluding												
the Quebec	238.1	362.5	600.7	229.8	369.5	599.3	216.0	363.1	579.1			
francophone market)												
Quebec francophone	109.7	106 1	215 7	109.7	111 5	221.2	111.0	109.0	210.0			
market	109.7	100.1	213.7	109.7	111.5	221.2	111.0	109.0	219.9			

Source: Numeris

This table presents total viewing hours per market. Total viewing was based on viewing for all Canadian conventional stations (including ethnic stations) and Canadian discretionary and on demand services (specialty and pay only; excludes PPV and VOD services).

# vi Programming expenditures

The policy objectives of the *Broadcasting Act* include encouraging the development of Canadian expression and ensuring that each element of the Canadian broadcasting system contributes in an appropriate manner to the creation and presentation of Canadian programming. As such, Canadian broadcasters are required to allocate portions of their annual broadcasting revenues to expenditures on Canadian programming. These expenditures are used to create Canadian programming and to ensure that a diversity of voices and interests are represented in our national broadcasting system.

Television service providers contributed 43 cents per revenue dollar in support of Canadian programming during the 2015-2016 broadcast year. Canadian programming expenditures (CPE) totalled \$3 billion, 19% of which was spent on program of national interest (PNI).

Spending on non-Canadian programming by private conventional television stations decreased by \$46 million (-7%) to \$610.3 million in 2016.

The CRTC has defined programs of national interest (PNI) as including drama and comedy, long-form documentary, and specific Canadian award shows that celebrate Canadian creative talent. For French-language broadcasters, PNI also include music video and variety programs.

For the purposes of this report, PNI expenditures include expenditures in any of the following program categories:

- long-form documentary (category 2b);
- drama and comedy (category 7);
- French-language music, dance, and variety programming (categories 8 and 9); and
- English-language award shows (subset of category 11).

The PNI data presented in this section include all PNI expenditures reported by broadcasting undertakings, regardless of conditions of licence requiring such expenditures.

Chart 4.2.2 illustrates the flow of funding to the creation of Canadian programming. A percentage of BDU subscriber revenues is used to fund Canadian discretionary (pay, specialty, PPV and VOD) services, as well as local expression (community television), the Canada Media Fund (CMF), the LPIF, and various independent funds. Commercial television services (specialty, pay, and private conventional OTA) and the CBC rely on funds generated by advertising. Government funding is also provided to the CMF, the CBC (via parliamentary appropriations), and various independent content providers.





This chart provides an overview of the major sources of television program funding in Canada.



#### Figure 4.2.17 CPE on television, by type of service, 2016 (\$ millions)

#### Source: CRTC data collection

This chart shows the amount that broadcasters spent on Canadian programming, by type of service, as well as the percentage of total CPE in each case. Approximately half of the spending went to specialty and pay services.

CPE amounts exclude CMF "top-ups" reported by private conventional, specialty, pay, PPV, and VOD television services.

In 2016, discretionary and on demand services (specialty, pay, PPV and VOD) spent \$1,707 million in CPE, an increase of \$108 million (6.8%) over 2015. Historically, specialty services has accounted for more than half of CPE spending.



Figure 4.2.18 Television programming expenditures (\$4.3 billion total), PNI vs. Canadian vs. non-Canadian, 2016

Source: CRTC data collection

This chart shows the percentages of expenditures that broadcasters spent on Canadian programming (excluding PNI), PNI, and non-Canadian programming. Programming of VOD and PPV services, as well as other public and not-for-profit conventional television services, is excluded.

Almost 70% of the spending went to Canadian programming (PNI included).

#### Figure 4.2.19 Programming expenditures per revenue dollar



## Programming expenditures per revenue dollar

#### Source: CRTC data collection

This figure shows broadcaster spending per dollar of revenue on Canadian programming (excluding PNI), PNI, and non-Canadian programming. For example, it shows that for every dollar of revenue the broadcasters received in 2016, \$0.33 was spent on Canadian programming (excluding PNI), \$0.09 on PNI, and \$0.19 on non-Canadian programming. This chart excludes VOD and PPV services as well as other public and not-for-profit conventional television.

Sorvico	Program catogony	PNI e (\$	expendit millions	ures 5)	Growth (%)	2016 PNI expenditures
Service	Fiogram Category	2014	2015	2016	2015-2016	as percentage of total (%)
	Long-form documentary	6.3	7.3	8.2	12.3	1.2
Drivete	Drama	65.8	55.3	53.1	-4.0	7.8
conventional	Music, dance, and variety (French programming only)	17.5	12.6	13.1	4.0	1.9
LEIEVISION	Award shows (English programming only)	2.3	1.1	3.0	172.7	0.4
	Total PNI	91.9	76.3	77.6	1.7	11.4
	Long-form documentary	22.3	28.3	34.4	21.6	5.1
626	Drama	136.9	158.5	164.2	3.6	24.1
CBC conventional	Music, dance, and variety (French programming only)	20.4	21.3	16.6	-22.1	2.4
television	Award shows (English programming only)	3.1	3.6	3.7	2.8	0.5
	Total PNI	182.7	211.9	219.0	3.4	32.2
	Long-form documentary	107.4	113.3	96.6	-14.7	14.2
	Drama	224.1	194.3	259.2	33.4	38.1
Discretionary services	Music, dance, and variety (French programming only)	11.3	10.1	20.7	105.0	3.0
	Award shows (English programming only)	6.3	6.9	7	1.4	1.0
	Total PNI	349.1	324.6	383.5	18.1	56.4
	Long-form documentary	136	148.9	139.2	-6.5	20.5
	Drama	424	408.1	476.5	16.8	70.1
Total	Music, dance, and variety (French programming only)	49.3	44.0	50.4	14.5	7.4
	Award shows (English programming only)	11.7	11.6	13.7	18.1	2.0
	Total PNI	623.7	612.8	680.1	11.0	100.0

Table 4.2.21 PNI expenditures by type of service and program category (\$ millions)

Source: Public disclosure of aggregate annual returns for large ownership groups and CRTC data collection

*This table summarizes the PNI expenditures made by the CBC, private conventional television, and discretionary services.* 

Discretionary services spend the most on PNI (56.1%) with 37.9% going towards drama. Spending in the drama category grew by a more than a third between 2015 and 2016 while total PNI grew by 10.1% in 2016.

		PN	l expendit	ures		2016 PNI
Ownership	D		(\$ millions	)	Growth (%)	expenditures
group	Program category	2014	2015	2016	2015-2016	as percentage of total (%)
	Long-form documentary	22.3	28.3	34.4	21.6	5.1
	Drama	136.9	158.5	164.2	3.6	24.1
	Music, dance, and variety (French	20.4	24.2	16.6	22.4	2.4
CBC	programming only)	20.4	21.3	16.6	-22.1	2.4
	Award shows (English programming only)	3.1	3.6	3.7	2.8	0.5
	Total PNI	182.7	211.9	219.0	3.4	32.2
	Long-form documentary	47	54.9	38.8	-29.3	5.7
	Drama	96.2	77.3	89	15.1	13.1
BCE	Music, dance, and variety (French programming only)	0	0.7	1	42.9	0.1
	Award shows (English programming only)	8.3	7.1	7.9	11.3	1.2
	Total PNI	151.5	140	136.7	-2.4	20.1
	Long-form documentary	5.8	6.4	20.8	225.0	3.1
	Drama	71.7	91.2	99	8.6	14.6
Corus	Music, dance, and variety (French programming only)	0	0	0	n/a	n/a
	Award shows (English programming only)	0	0	0.2	n/a	0.0
	Total PNI	77.5	97.6	119.9	22.8	17.6
	Long-form documentary	2.8	4.1	6.5	58.5	1.0
	Drama	7.2	9.5	6.7	-29.5	1.0
Rogers	Music, dance, and variety (French programming only)	0	0	0	n/a	n/a
	Award shows (English programming only)	0	0	0	n/a	n/a
	Total PNI	10	13.6	13.2	-2.9	1.9
	Long-form documentary	27.3	23.4	-	n/a	n/a
	Drama	25.9	26.3	-	n/a	n/a
Shaw	Music, dance, and variety (French programming only)	0	0	-	n/a	n/a
	Award shows (English programming only)	0	0	-	n/a	n/a
	Total PNI	53.3	49.7	-	n/a	n/a
	Long-form documentary	136	148.9	139.2	-6.5	20.5
Total	Drama	424	408.1	476.5	16.8	70.1
	Music, dance, and variety (French programming only)	49.3	44.0	50.4	14.5	7.4
	Award shows (English programming only)	11.7	11.6	13.7	18.1	2.0
	Total PNI	623.7	612.8	680.1	11.0	100.0

Table 4.2.22 PNI expenditures by CBC and large private ownership groups, by program category (\$ millions)

Source: Public disclosure of aggregate annual returns for large ownership groups Following Corus's acquisition of Shaw Media, many specialty services are now listed under Corus Entertainment.

The 4 largest private ownership groups and CBC contributed almost 500 million dollars to programs of national interest in 2015-2016. The drama category benefitted the most with a total 358.9 million dollars. Its main benefactors were CBC (163.2 M), Corus (99 M), and BCE (89 M).

Program category	2012	2013	2014	2015	2016	Growth (%) 2015-2016
News (category 1)	196,688	212,876	207,331	190,937	173,523	-9.1
Long-form documentary (category 2(b))	36,042	30,870	22,337	28,471	34,410	20.9
Other informational (categories 2 through 5, excluding category 2(b))	67,446	63,744	62,792	50,651	45,547	-10.1
Sports (category 6)	158,698	127,730	258,029	35,940	117,300	226.4
Drama and comedy (category 7)	158,420	153,529	136,895	158,544	164,245	3.6
Music, dance, and variety (categories 8 and 9)	26,120	27,635	27,278	29,347	24,964	-14.9
Game show (category 10)	16,217	12,933	9,300	5,449	7,352	34.9
Human interest/Award shows/Reality (category 11)	73,063	70,337	64,807	56,742	66,685	17.5
Human interest	n/a	58,411	49,545	44,785	51,655	15.3
Award shows	n/a	7,467	7,725	8,008	8,041	0.4
Reality television	n/a	4,460	7,537	3,949	6,989	77.0
Other (categories 12 through 15)	941	1,139	1,011	1,102	1,060	-3.8
Total (categories 1 through 15)	733,635	700,793	789,782	557,183	635,085	14.0

Table 4.2.23 CPE for CBC English and French-language conventional television, by program category (\$ thousands)

Source: CRTC data collection

The breakdown for "Human interest/Award Shows/Reality" (category 11) is only available as of 2013. In 2015, CPE for sports has seen a decline partly due to the loss of the hockey rights.

Program category	2012	2013	2014	2015	2016	Growth (%) 2015-2016
News (category 1)	353,646	355,287	361,050	369,570	365,633	-1.1
Long-form documentary (category 2(b))	16,600	7,894	6,261	7,288	8,217	12.7
Other informational (categories 2 through 5, excluding category 2(b))	32,150	30,923	29,339	30,026	25,405	-15.4
Sports (category 6)	68,485	6,490	1,123	21,450	10,121	-52.8
Drama and comedy (category 7)	59,169	66,164	65,759	55,289	53,176	-3.8
Music, dance, and variety (categories 8 and 9)	30,241	24,476	22,317	17,097	13,251	-22.5
Game show (category 10)	17,546	19,394	19,042	17,258	18,670	8.2
Human interest/ Award shows/Reality (category 11)	83,017	92,345	113,897	134,422	138,513	3.0
Human interest	n/a	72,953	84,669	86,737	91,313	5.3
Award shows	n/a	4,071	3,695	2,671	3,035	13.6
Reality television	n/a	15,321	25,533	45,014	44,165	-1.9
Other (categories 12 through 15)	905	2,444	516	361	308	-14.7
Total (categories 1 through 15)	661,759	605,415	619,305	652,762	633,294	-3.0

#### Table 4.2.24 CPE for private conventional television, by program category (\$ thousands)

Source: CRTC data collection

The breakdown for "Human interest/Award Shows/Reality" (category 11) is only available as of 2013.

2016 private conventional television CPE is equivalent to 38% of this sector's revenues.



#### Figure 4.2.20 Distribution of CPE for private conventional television services, by program category, 2016

#### Source: CRTC data collection

*This figure shows the distribution, broken down by program category, of CPE of private conventional television services in 2016.* 

More than half of the expenditures were made on news programming. Other significant investments were made in general entertainment (including human interest and awards shows), and drama and comedy programming.

Program category	2012	2013	2014	2015	2016	Growth (%) 2015-2016
News (category 1)	57	4,631	594	703	0	-100
Long-form documentary (category 2(b))	298	454	603	218	22	-89.9
Other informational (categories 2 through 5, excluding category 2(b))	15,034	9,750	10,975	20,039	22,184	10.7
Sports (category 6)	17,877	20,269	19,953	28,747	34,484	20.0
Drama and comedy (category 7)	488,652	483,024	516,267	473,296	436,839	-7.7
Music, dance, and variety (categories 8 and 9)	47,333	57,128	28,736	10,499	4,570	-56.5
Game show (category 10)	5,278	5,625	8,360	8,287	9,353	12.9
Human interest/ Award shows/Reality (category 11)	151,234	151,044	131,529	114,346	102,799	-10.1
Human interest	n/a	90,375	72,813	66,417	56,389	-15.1
Award shows	n/a	14,173	16,152	14,493	15,276	5.4
Reality television	n/a	46,496	42,564	33,436	31,133	-6.9
Other (categories 12 through 15)	51	52	2	2	2	0.0
Total (categories 1 through 15)	725,813	731,978	717,018	656,137	610,253	-7.0

Table 4.2.25 Expenditures on non-Canadian programming by private conventional television services, by program category (\$ thousands)

Source: CRTC data collection

The breakdown for "Human interest/Award shows/Reality" (category 11) is only available as of 2013. 2016 private conventional television non-Canadian programming expenditures are equivalent to 36% of this sector's revenues.

From 2015 to 2016, the decrease in Non-Canadian programming was most prominent in the "Drama" programming category, which reported a year over year decrease of \$36M (-7.7%).

	20	15	20	16	Grow	th (%)
Program category	English-	French-	English-	French-	English-	French-
	language	language	language	language	language	language
News (category 1)	703	0	0	0	-100.0	n/a
Long-form documentary (category 2(b))	798	241	924	238	15.8	-1.2
Other informational (categories 2 through 5, excluding category 2(b))	20,039	222	22,184	0	10.7	-100.0
Sports (category 6)	28,742	0	34,484	0	20.0	n/a
Drama and comedy (category 7)	440,173	29,798	423,637	31,227	-3.8	4.8
Music, dance, and variety (categories 8 and 9)	10,624	0	4,690	0	-55.9	n/a
Game show (category 10)	8,275	0	9,353	0	13.0	n/a
Human interest/Award shows/Reality (category 11)	111,429	1,484	102,371	498	-8.1	-66.4
Human interest	63,520	1,464	55,962	498	-11.9	-66.0
Award shows	14,493	0	15,276	0	5.4	n/a
Reality television	33,416	20	31,133	0	-6.8	-100.0
Other (categories 12 through 15)	2	165	2	243	0.0	47.3
Total (categories 1 through 15)	620,786	31,909	597,646	32,229	-3.7	1.0

Table 4.2.26 Expenditures on non-Canadian programming by private and CBC conventional television services, by program category and linguistic market (\$ thousands)

Source: CRTC data collection

*Revenues for English-language private conventional television stations include revenues for ethnic stations since a significant portion of these stations' revenues was derived from English-language programming.* 

Table 4.2.27 CPE and expenditures on non-Canadian programming reported by specialty services, by language of broadcast and program category (\$ thousands) (Part 1 of 2)

Language of	Program category		СРЕ		Expenditures on non-Canadian programming			
broadcast	riogram category	2015	2016	Growth (%)	2015	2016	Growth (%)	
	Number of services reporting	129	134	3.9	129	134	3.9	
	News (category 1)	157,626	147,390	-6.5	768	898	16.9	
	Long-form documentary (category 2(b))	77,118	56,159	-27.2	32,897	39,401	19.8	
	Other informational (categories 2 through 5, excluding category 2(b))	87,927	88,067	0.2	6,045	6,120	1.2	
	Sports (category 6)	498,286	626,903	25.8	103,738	128,497	23.9	
	Drama and comedy (category 7)	89,447	115,495	29.1	142,783	165,451	15.9	
English	Music, dance, and variety (categories 8 and 9)	11,285	7,864	-30.3	637	502	-21.2	
-	Game show (category 10)	9,009	5,696	-36.8	1,056	2,386	125.9	
	Human interest/ Award shows/Reality (category 11)	89,435	91,760	2.6	70,603	75,536	7.0	
	Human interest	31,189	33,530	7.5	44,417	44,704	0.6	
	Award shows	6,592	6,789	3.0	811	258	-68.2	
	Reality television	51,653	51,441	-0.4	25,375	30,574	20.5	
	Other (categories 12 through 15)	46,148	14,076	-69.5	10,543	2,768	-73.7	
	Total (categories 1 through 15)	1,066,280	1,153,412	8.2	369,071	421,557	14.2	
	Number of services reporting	29	29	0.0	29	29	0.0	
	News (category 1)	74,476	77,055	3.5	0	0	0.0	
	Long-form documentary (category 2(b))	30,808	34,267	11.2	5,489	5,701	3.9	
	Other informational (categories 2 through 5, excluding category 2(b))	49,547	49,296	-0.5	1,718	1,282	-25.4	
	Sports (category 6)	190,428	193,352	1.5	13,033	13,433	3.1	
	Drama and comedy (category 7)	31,726	32,634	2.9	21,601	26,478	22.6	
French	Music, dance, and variety (categories 8 and 9)	7,613	8,345	9.6	514	437	-15.0	
	Game show (category 10)	4,100	4,048	-1.3	0	28	100.0	
	Human interest/ Award shows/Reality (category 11)	20,889	28,079	34.4	4,631	5,465	18.0	
	Human interest	15,204	17,748	16.7	1,145	1,336	16.7	
	Award shows	0	23	100	654	0	-100.0	
	Reality television	5,685	10,308	81.3	2,832	4,129	45.8	
	Other (categories 12 through 15)	6,892	2,029	-70.6	1,171	362	-69.1	
	Total (categories 1 through 15)	416,478	429,104	3.0	48,157	53,187	10.4	

Source: CRTC data collection

Canadian programming expenditures (CPE) and non-Canadian expenditures have grown by 3% and 10.4% this past year. The Sports and News categories are the biggest contributors. In fact, Sports represents 52% of total CPE when considering both language markets together.

Table 4.2.28 CPE and expenditures on non-Canadian programming reported by specialty services, by language of broadcast and program category (\$ thousands) (Part 2 of 2)

Language	Program category	СРЕ			Expenditures on non- Canadian programming		
broadcast		2015	2016	Growth (%)	2015	2016	Growth (%)
Third-	Number of services reporting	38	114	200	38	114	200
	News (category 1)	3,978	4,142	4.1	1,493	1,833	22.8
	Long-form documentary (category 2(b))	2,138	1,912	-10.6	74	0	-100.0
	Other informational (categories 2 through 5, excluding category 2(b))	2,792	2,843	1.8	445	527	18.4
	Sports (category 6)	749	829	10.7	900	908	0.9
	Drama and comedy (category 7)	3,021	2,959	-2.1	6,838	6,317	-7.6
	Music, dance, and variety (categories 8 and 9)	5,244	4,479	-14.6	1,046	956	-8.6
language	Game show (category 10)	499	699	40.1	930	1183	27.2
	Human interest/ Award shows/Reality (category 11)	4,175	4,234	1.4	4,265	8,586	101.3
	Human interest	3,902	4,022	3.1	4,265	4,343	1.8
	Award shows	272	205	-24.6	-	2	100.0
	Reality television	-	7	100.0	-	7	100.0
	Other (categories 12 through 15)	1,844	2,685	45.6	1,736	1,735	-0.1
	Total (categories 1 through 15)	24,450	24,783	1.4	16,994	17,812	4.8
	Number of services reporting	196	277	41.4	196	277	41.4
	News (category 1)	236,090	228,588	-3.2	2,261	2,730	20.7
	Long-form documentary (category 2(b))	110,065	92338	-16.1	38,459	45,102	17.3
	Other informational (categories 2 through 5, excluding category 2(b))	140,277	140,206	-0.1	8,208	7,928	-3.4
	Sports (category 6)	689,462	821,083	19.1	117,672	142,838	21.4
	Drama and comedy (category 7)	124,194	151,089	21.7	171,222	198,247	15.8
All	Music, dance, and variety (categories 8 and 9)	24,142	20,689	-14.3	2,197	1,895	-13.7
languages	Game show (category 10)	13,607	10,443	-23.3	1,986	3,596	81.1
	Human interest/ Award shows/Reality (category 11)	114,499	124,073	8.4	79,499	85,353	7.4
	Human interest	50,297	55,300	9.9	49,827	50,383	1.1
	Award shows	6,864	7,017	2.2	1,465	260	-82.3
	Reality television	57,338	61,756	7.7	28,207	34,710	23.1
	Other (categories 12 through 15)	54,885	18,790	-65.8	12,717	4,866	-61.7
	Total (categories 1 through 15)	1,507,218	1,607,300	6.6	434,222	492,557	13.4

Source: CRTC data collection

This table (Parts 1 and 2) shows total CPE and expenditures on non-Canadian programming of English-, French-, and third-language television services, broken down by program category. It also shows annual growth rates between the two years and lists the number of services reporting in each linguistic category.

The data listed for English-language services include expenditures on bilingual programming and expenditures relating to tangible benefits and to commitments made at the time of licensing, but excludes CMF "top-up" funding reported by specialty services.

CPE rose by \$100 million (6.6%) to reach \$1.6 billion in 2016. Of that amount, \$255.8 million was spend on programs of national interest (PNI), a stabilisation compared to the loss 9.8% from 2014 (\$281.6 million) to 2015 (\$254 million). Also of note is the \$821 million spent on sports programming (51% of total CPE) partly as a result of the acquisition of NHL programming rights by Rogers and Groupe TVA, notably, in 2014-2015.

Non-Canadian programming expenditures increased by \$58.6 million (13%) in 2016. Expenditures on non-Canadian sports programming increased by \$25.2 million (21.4%).

Metric	2012	12 2013 2014 2015		2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Total PPV and VOD services CPE	16,280	17,317	24,890	37,575	25,711	-31.6	12.1
Number of services reporting	26	23	24	24	22	-8.3	-4.1

#### Table 4.2.29 CPE reported by PPV and VOD services (\$ thousands)

Source: CRTC data collection

This table shows the total CPE reported by PPV and VOD services from 2012 to 2016, as well as the number of services reporting and the growth rate during that period.

Expenditures broken down by program category for PPV and VOD services are not available. The amounts shown exclude CMF "top-up" funding reported by PPV and VOD services, but include expenditures relating to ownership transfer benefits (tangible benefits) and to commitments made at the time of licensing.
# vii Tangible benefits

A total of 2 specialty television undertakings transactions resulting in a change of ownership or effective control triggering tangible benefits were approved in 2016

Language	Metric	2012	2013	2014	2015	2016	Total
English-	Transactions	4	4	2	0	2	12
language	Value (\$M)	106	944.4	174.3	0	5.7	1,230.4
services	Benefits (\$M)	18.6	94.4	17.4	0	1	131.4
French-	Transactions	0	3	1	0	0	4
language	Value (\$M)	0	1,512.80	22.9	0	0	1,535.7
services	Benefits (\$M)	0	151.3	2.3	0	0	153.6

Table 4.2.30 Value of television ownership transactions and corresponding tangible benefits for the period from 1 January 2012 to 31 December 2016

Source: CRTC internal database

- Figures for 2013 includes the BCE/Astral ownership transaction (see Broadcasting Decisions CRTC 2013-310, 2014-62), which resulted in \$188.0 million in tangible benefits. Approximately \$130 million of this amount was committed to French-language initiatives and \$58.3 million to English-language initiatives.
- In Broadcasting Decision 2013-310, the Commission directed BCE to divest itself of 11 specialty television services. Divestiture of these services generated \$60.1 million in additional tangible benefit commitments from other purchasers. Approximately \$36.2 million of this amount was committed to English-language initiatives and \$23.9 million to French-language initiatives. The Commission further stipulated that BCE supplement any shortfall between the total amount of tangible benefits generated on the later sale of Astral's 11 specialty television services and the \$72.7 million of tangible benefits attributed to them under the BCE/Astral transaction. The 2013 figures have been restated, increasing tangible benefits resulting from the BCE/Astral ownership transaction from \$175.4 million to \$188 million.
- In Broadcasting Decisions CRTC 2013-737 and 2013-738, the Commission approved the divestiture of six of these services (Historia, Séries+, TÉLÉTOON Rétro, TELETOON/TÉLÉTOON, TELETOON Retro, and Cartoon Network) to Corus Entertainment Inc. Corus has committed \$40.5 million in tangible benefits: approximately \$21.6 million to French-language initiatives and \$18.9 million to English-language initiatives.
- In Broadcasting Decision 2014-388, the Commission approved the divestiture of three of the remaining five services (Disney Junior, Disney XD and Family Channel) to DHX Media Ltd. (DHX). DHX has committed approximately \$17.3 million in tangible benefits to English-language initiatives.
- In Broadcasting Decision 2014-465, the Commission approved the divestiture of remaining two services (MusiquePlus and MusiMax) to Groupe V Média inc. (Groupe V). Groupe V has committed approximately \$2.3 million in tangible benefits to French-language initiatives.

# viii Programming of high standards

The *Broadcasting Act* sets out that programming provided by broadcasting undertakings should be of high standard. In addition to the CRTC, two bodies deal with programming complaints relating to public and community broadcasters, as well as non- members of the CBSC. The CRTC also deals with issues that are outside the parameters of the codes administered by the CBSC.

The CBSC administers specific codes of broadcast conduct and provides a means of recourse for members of the public regarding the application of the standards set out in the following codes:

- CAB Code of Ethics;
- CAB Violence Code;
- CAB Equitable Portrayal Code; and
- Radio Television Digital News Association of Canada (RTDNA Canada) Code of Ethics.

The Canadian Broadcast Standards Council (CBSC) is an independent organization created by the Canadian Association of Broadcasters (CAB) to administer codes established by Canada's private broadcasters. The CBSC's membership includes more than 790 private-sector radio and television stations, specialty services, pay services, and networks across Canada. Membership includes broadcasters broadcasting in English, French, and third languages. For more information, visit <u>www.cbsc.ca</u>.

The Advertising Standards Canada (ASC) is a national, not-for-profit advertising self-regulatory body that responds to complaints by consumers and special interest groups regarding advertising with respect to all media subject to the Canadian Code of Advertising Standards, the principal instrument of advertising self-regulation.

The ASC responds to complaints by consumers and special interest groups regarding advertising with respect to all media subject to the Canadian Code of Advertising Standards, the principal instrument of advertising self-regulation. In addition, the ASC undertakes pre-clearance functions in five industry categories, which consist of reviewing advertisements based on applicable legislation, regulations, and/or industry codes and guidelines.

Additional information on the ASC can be found at: www.adstandards.com/en/

Year	CRTC – policies/ decisions	Billing	Quality of service/ delivery	Terms and conditions	Accessibility	Programming	Loudness	Other	Total
2014-2015	1,182	0	132	4	132	2,437	595	337	4,819
2015-2016	1,356	105	390	19	271	1,357	592	54	4,144
2016-2017	1,676	718	560	198	93	861	149	27	4,282

# Table 4.2.31 Number of television-related contacts received by the CRTC, by type of issue

Source: CRTC Correspondence Tracking System

This table summarizes the contacts received by the CRTC, which included questions, comments, complaints, and other communications, broken down by the type of issue raised.

In 2016-2017 the CRTC received 4,282 contacts, a 3.3% increase from previous year's 4,144 contacts.

Table 4.2.32 Television programming complaints received by the Commission and referred to the Canadian Broadcast Standards Council, by sector and issue

	-	2012-2	2013	2013-2	2013-2014		2014-2015		2015-2016		2016-2017	
Market sector	Type of complaint	Complaints received	Referrals to CBSC									
	Abusive comment	30	6	15	5	24	6	19	3	30	3	
	Adult content	71	12	73	13	77	13	53	10	7	2	
	Alcohol advertising	18	3	9	2	14	1	13	0	3	0	
Conventional television	Gender portrayal	5	1	6	0	3	0	1	0	1	1	
	Offensive comment	233	62	164	63	171	25	113	23	124	18	
	Offensive language	32	8	45	7	67	15	46	7	35	1	
	Television violence	54	8	61	11	68	9	37	4	7	3	
	Abusive comment	5	2	2	0	10	6	14	4	0	4	
	Adult content	16	9	19	10	19	7	15	3	4	4	
	Alcohol advertising	2	1	3	1	0	0	2	0	0	0	
Specialty services	Gender portrayal	1	1	0	0	2	1	0	0	0	0	
	Offensive comment	44	23	46	25	51	24	14	4	10	1	
	Offensive language	11	7	15	8	8	4	10	6	6	1	
	Television violence	13	3	12	6	19	6	7	2	7	3	
	Abusive comment	0	0	0	0	0	0	0	0	0	0	
	Adult content	2	1	1	0	6	1	2	1	3	1	
	Alcohol advertising	0	0	0	0	0	0	0	0	0	0	
Pay and PPV services	Gender portrayal	0	0	0	0	0	0	0	0	0	0	
	Offensive comment	0	0	0	0	1	1	0	0	0	0	
	Offensive language	0	0	0	0	1	0	0	0	2	0	
	Television violence	0	0	1	0	1	0	0	0	1	0	
Total	Total	537	147	472	151	542	119	346	67	240	42	

Source: CRTC Correspondence Tracking System

Together, the CRTC and the CBSC receive and address a range of complaints regarding conventional television and discretionary services. This table shows the number of complaints received by the CRTC—and the number referred to the CBSC—regarding various issues for the 2012–2013 through 2016–2017 fiscal years (i.e., 1 April to 31 March). Between April 2016 and March 2017, approximately 17.5% of the complaints relating to television received by the Commission were referred to the CBSC. The CRTC's Correspondence Tracking System counts multiple contacts from the same client regarding the same complaint as separate units. Consequently, the actual number of complaints received should be slightly lower than the figures indicated. The category "Abusive comment" includes complaints alleging hatred or contempt incited on air against one of the groups identified in the Television Broadcasting Regulations, 1987 or the Specialty Services Regulations, 1990. The category "Offensive comment" includes complaints alleging offensive humour, or other comments that do not fall under the "abusive comment" provision in CRTC regulations. The category "Offensive language" includes complaints alleging offensive language in song lyrics or in spoken word programming.

Table 4.2.33 Television-related complaints handled by the CBSC, by language of broadcast and origin of the program (2015-2016)

Category	Subcategory	Conventional and specialty TV	Pay TV	Total
	English-language	618	14	632
Language of broadcast	French-language	206	2	208
	Third-language	5	0	5
	Other	8	0	8
	Total	837	16	853
	Canadian	605	2	607
Ovicin of the program	Foreign	141	9	150
Origin of the program	Other	78	5	83
	Total	824	16	840

Source: CBSC annual reports

The category "Other" in each case refers to complaints for which there was not enough information for the CBSC to determine either the language of broadcast or the national origin of the program.

Table 4.2.34 Complaints relating to	digital advertising	and advertising on	television, handled by the ASC
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Statistics	2012	2013	2014	2015	2016
Total number of complaints	1,310	1,310	1,274	1,774	1,639
Complaints about television advertisements	559	528	500	671	652
Complaints about television advertisements as percentage of total complaints received	43%	40%	39%	38%	40%
Complaints about digital advertisements	280	240	289	348	439
Complaints about digital advertisements as percentage of total complaints received	21%	18%	23%	20%	27%

Source: ASC Ad complaints reports

# ix Ownership groups

The following tables provide an overview of the different broadcasting ownership groups with a controlling interest in various types of discretionary services in 2016. The overview covers the type of services offered, as well as the language of the service, subscriber numbers, revenues, PBIT and PBIT margin for each service.

In regard to this section:

- In *Regulatory framework relating to vertical integration*, Broadcasting Regulatory Policy CRTC 2011-601, 21 September 2011, the Commission stated that it would publish complete financial information for specialty Category A services and for specialty Category B services owned or controlled by a vertically integrated entity. The Commission also stated that for all independent individual specialty Category B services, it would publish partial financial information, including total revenues, total programming expenses, and total Canadian programming expenses. It further stated that it would publish complete financial information for all independent specialty Category B services on an aggregate basis.
- Unpublished data points are marked as n/a.
- Shaw is affiliated with Corus Entertainment Inc. (Corus), as J.R. Shaw has voting control of both companies.
- Ownership is based on the percentage of direct and indirect voting interest held on 31 December 2016. Where a change in ownership has occurred, the information is based on the date of the approval decision, not the closing date of the transaction.
- The ownership percentages and the financial results presented in the tables are for individual speciality, pay, PPV, and VOD services. The percent ownership is not reflected in these results. For this reason, no totals per ownership group are provided.
- Only services launched as of 31 August 2016 are included in these tables.

The abbreviations used in the following tables are defined as follows:

- Sp. A = Specialty Category A service
- Sp. B = Specialty Category B service
- Sp. C = Specialty Category C service
- Pay A = Pay Category A service
- Pay B = Pay Category B service
- PPV\*\* =Pay-per-view (\*\*holds both a terrestrial licence and a DTH PPV licence)
- VOD = Video-on-demand service
- n/a = not applicable

Language	Service	Type of	Number of subscribers	Revenues (\$)	PBIT (\$)	PBIT margin
00		service	(000)	(000)	(000)	(%)
	Animal Planet	Sp. B	2,238	10,068	4,724	46.9
	Bell TV On Demand (formerly General Interest)	VOD	n/a	7,775	2,810	36.1
	Bell TV On Demand and Vu! (formerly Bell)	PPV**	n/a	33,844	10,084	29.8
	Bell TV On Demand (formerly Vu! On Demand)	VOD	n/a	35,873	12,413	34.6
	Book Television	Sp. A	481	2,412	1,285	53.3
	Bravo!	Sp. A	6,084	49,330	24,892	50.5
	Business News Network	Sp. A	5,364	25,961	8,214	31.6
	CablePulse 24	Sp. A	3,460	35,002	9,367	26.7
	Comedy Gold	Sp. B	680	3,235	2,000	61.8
	CTV News Channel	Sp. C	7,521	29,075	16,773	57.7
	Discovery Channel	Sp. A	6,899	94,689	35,330	37.3
	Discovery Science	Sp. B	1,660	6,676	2,770	41.5
	Discovery Velocity (formerly Discovery World)	Sp. B	962	21,431	13,545	63.2
English	E!	Sp. A	6,877	31,403	12,004	38.2
	ESPN Classic Canada	Sp. B	479	1,510	189	12.5
	Fashion Television Channel	Sp. A	475	2,558	1,519	59.4
	Investigation Discovery	Sp. B	1,302	12,912	8,581	66.5
	Gusto (formerly M3)	Sp. A	5,561	16,224	2,011	12.4
	MTV Canada	Sp. A	5,258	16,728	-512	-3.1
	MTV2 Canada	Sp. A	1,013	4,620	1,800	39
	Much (formerly MuchMusic)	Sp. A	8,423	33,083	4,804	14.5
	Northwestel VOD	VOD	n/a	724	-505	-69.8
	Space	Sp. A	5,858	56,651	29,098	51.4
	The Comedy Network	Sp. A	5,311	54,562	31,495	57.7
	The Movie Network	Pay A	1,937	167,468	13,037	7.8
	The Movie Network Encore	Pay A	2,506	27,940	16,472	59
	The Sports Network (TSN)	Sp. C	8,516	463,777	110,302	23.8
	Câblevision du Nord de Québec inc.	VOD	n/a	367	-37	-10.2
	Canal D	Sp. A	2,372	40,641	21,974	54.1
	Canal D Investigation	Sp. B	667	6,335	637	10.1
	Canal Vie	Sp. A	2,164	44,354	14,323	32.3
French	CINÉPOP	Рау В	1,279	12,299	6,484	52.7
	Le Réseau des Sports (RDS)	Sp. C	3,004	174,949	26,814	15.3
	RDS Info	Sp. A	1,040	6,430	-5,274	-82
	Super Écran	Pay A	588	60,651	16,715	27.6
	VRAK.TV	Sp. A	1,923	26,518	8,910	33.6
	Ztélé	Sp. A	1,828	25,348	5,764	22.7

Table 4.2.35 BCE – Controlling ownership interest in discretionary and on demand services, 2016

Sources: CRTC ownership records and CRTC data collection

Even though its PBIT margin is not the most outstanding of its counterparts, The Sports Network' (TSN) revenue and actual PBIT are the biggest in its group.

Language	Service	Type of service	Number of subscribers (000)	Revenues (\$) (000)	PBIT (\$) (000)	PBIT margin (%)
Eu allah	CBC News Network	Sp. C	10,917	86,679	3,084	3.6
English	Documentary	Sp. A	2,451	6,443	437	6.8
French	ARTV	Sp. A	1,752	13,460	-1,392	-10.3
	EXPLORA	Sp. B	n/a	5,561	n/a	n/a
	RDI	Sp. C	10,720	54,481	1,307	2.4

### Table 4.2.36 CBC - Controlling ownership interest in discretionary and on demand services, 2016

Sources: CRTC ownership records and CRTC data collection

CBC news services, CBC News Network and RDI, generate the highest PBITs while "Documentary" has the highest PBIT margin.

Table 4.2.37 Cogeco - Controlling ownership interest in discretionary and on demand services, 2016

Service	Type	Number of	Revenues	PBIT	PBIT
	of	subscribers	(\$)	(\$)	margin
	service	(000)	(000)	(000)	(%)
Cogeco On Demand/Cogeco Sur Demande	VOD	n/a	12,944	3,298	25.5

Sources: CRTC ownership records and CRTC data collection

Language	Service	Type of service	Number of subscribers (000)	Revenues (\$ 000)	PBIT (\$ 000)	PBIT margin (%)
	ABC Spark	Sp. B	n/a	11,856	n/a	n/a
	ACTION (formerly Showcase Action)	Sp. B	n/a	18,456	n/a	n/a
	BBC Canada	Sp. B	n/a	11,277	n/a	n/a
	BC News 1 (formerly Global News Plus BC)	Sp. B	n/a	1,559	n/a	n/a
	Cartoon Network (formerly TELETOON Kapow!)	Sp. B	n/a	n/a	n/a	n/a
	CMT Canada	Sp. A	6,216	21,497	6,276	29.2
	Cooking Channel (formerly W Movies)	Sp. B	n/a	6,629	n/a	n/a
	Cosmopolitan TV	Sp. B	n/a	8,305	n/a	n/a
	Crime + Investigation (formerly Mystery)	Sp. A	3,274	20,345	11,566	56.8
	DejaView	Sp. B	n/a	7,979	n/a	n/a
	D.I.Y. Network (formerly D.I.Y. Television)	Sp. B	n/a	11,738	n/a	n/a
	DTOUR (formerly TVtropolis)	Sp. A	4,579	24,184	13,345	55.2
	Encore Avenue	Pay A	n/a	9,201	1,634	17.8
	EuroWorld SPORT	Sp. B	n/a	16	n/a	n/a
	Food Network Canada	Sp. A	5,785	65,916	29,206	44.3
	Fyi (formerly Twist TV)	Sp. A	2,030	7,420	2,250	30.3
	H2 (formerly The Cave Men TV	Sp. A	2,665	9,383	4,726	50.4
	HGTV Canada - Home and Garden Television Canada	Sp. A	6,768	71,096	25,243	35.5
English	Historia	Sp. A	1,833	20,723	10,562	50.8
	History Television	Sp. A	6,711	71,173	45,290	63.6
	Lifetime (formerly Showcase Diva)	Sp. B	n/a	21,022	n/a	n/a
	Movie Central	Pay A	n/a	39,514	-49,986	-126.5
	Movie Time (formerly known as Lonestar	Sp.B	n/a	15,750	n/a	n/a
	NatGeo Wild	Sp. B	n/a	8,017	n/a	n/a
	National Geographic Channel	Sp. B	n/a	26,942	n/a	n/a
	Nickelodeon (formerly YTV OneWorld)	Sp. B	n/a	4,978	n/a	n/a
	OWN: The Oprah Winfrey Network (formerly OWN; formerly VIVA)	Sp. A	4,821	24,341	6,525	26.8
	Séries+	Sp. A	1,881	29,027	10,906	37.6
	Showcase	Sp. A	6,140	67,334	32,362	48.1
	Slice	Sp. A	4,738	31,902	1,609	5.0
	Sundance Channel (formerly Drive-In Classics Channel)	Sp. B	n/a	3,996	n/a	n/a
	TELETOON/TÉLÉTOON	Sp. A	6,372	58,582	17,999	30.7
	TGCOM (formerly Sky TG 24 Canada)	Sp. B	n/a	246	n/a	n/a
	The Independent Film Channel Canada	Sp. A	1,134	9,088	3,736	41.1
	TreeHouse TV	Sp. A	6,241	13,556	1,370	10.1
	W Network	Sp. A	5,681	77,870	43,405	55.7
	YTV	Sp. A	8,307	67,491	22,561	33.4

Table 4.2.38 Corus - Controlling ownership interest in discretionary and on demand services, 2016

French	La chaine Disney (formerly TÉLÉTOON Rétro)	Sp. B	n/a	1,965	n/a	n/a
	Séries+	Sp. A	1,881	29,027	10,906	37.6
	Historia	Sp. A	1,833	20,723	10,522	50.8
	Mediaset Italia	Sp. B	n/a	2,995	n/a	n/a
	TGCOM24 (formerly Sky TG 24 Canada)	Sp. B	n/a	246	n/a	n/a
Third-	Telebimbi	Sp. B	n/a	5	n/a	n/a
language	Telelatino	Sp. A	3,852	13,625	3,962	29.1
	Teleniños	Sp. B	n/a	33	n/a	n/a
	Univision Canada	Sp. B	n/a	1,631	n/a	n/a

Sources: CRTC ownership records and CRTC data collection

Encore-Avenue ceased operation on August 30th, 2016

Following Corus's acquisition of Shaw Media, many specialty services are now listed under Corus Entertainment.

Table 4.2.39 Quebecor - Controlling ownership interest in discretionary and on demand services, 2016

Language	Service	Type of service	Number of subscribers (000)	Revenues (\$ 000)	PBIT (\$ 000)	PBIT margin (%)
	addikTV	Sp. A	1,400	13,660	2,779	20.5
	ARGENT	Sp. A	n/a	1,173	-479	-40.8
	Canal Indigo	PPV**	n/a	7,144	2,169	30.4
	Casa	Sp. B	1,207	10,874	1,935	17.8
French	Illico sur demande	VOD	n/a	43,053	-865	-2
French	Le Canal Nouvelles (LCN)	Sp. C	2,464	31,850	8,850	27.8
	Moi&cie	Sp. B	896	7,048	-459	-6.5
	Prise 2	Sp. B	1,154	9,458	2,971	31.4
	TVA Sports	Sp. C	1,872	81,631	-33,792	-41.4
	YOOPA	Sp. B	655	4,107	203	5

Sources: CRTC ownership records and CRTC data collection

Argent Channel ceased operation on April 30th, 2016.

Service (English-language)	Type of service	Number of subscribers (000)	Revenues (\$ 000)	РВІТ (\$ 000)	PBIT margin (%)
FX (formerly FX Canada)	Sp. B	4,362	17,745	1,826	10.3
FXX	Sp. B	1,792	7,080	34	0.5
G4	Sp. A	196	1,450	-323	-22.3
Outdoor Life Network (OLN)	Sp. A	4,621	16,547	7,749	46.8
Rogers on Demand	VOD	n/a	36,469	-6,336	-17.4
Sportsnet	Sp. C	8,102	534,698	93,634	17.5
Sportsnet 360	Sp. A	5,360	34,436	1,172	3.4
Sportsnet One	Sp. C	6,479	98,691	44,833	45.4
Sportsnet PPV	PPV**	n/a	17,097	-4,799	-28.1
Sportsnet World	Sp. B	74	10,197	2,687	26.4
Viceland (formerly The Biography Channel)	Sp. A	1,509	5,462	-2,490	-45.6

#### Table 4.2.40 Rogers - Controlling ownership interest in discretionary and on demand services, 2016

Sources: CRTC ownership records and CRTC data collection

Sportsnet leads its group in revenues and PBIT.

#### Table 4.2.41 Shaw - Controlling ownership interest in discretionary services, 2016

Service (English-language)	Type of service	Number of subscribers (000)	Revenues (\$ 000)	PBIT (\$ 000)	PBIT margin (%)
Shaw on Demand	VOD	n/a	55,047	-657	-1.2
Shaw Pay-Per-View (formerly Allarcom)	PPV**	n/a	10,305	-1,027	-10
Shaw Pay-Per-View (formerly Home Theatre)	PPV**	n/a	6,401	119	1.9

Sources: CRTC ownership records and CRTC data collection

Following Corus's acquisition of Shaw Media, many specialty services are now listed under Corus Entertainment.

# 4.3 Broadcasting distribution sector **\$8.7 billion**



Broadcasting distribution undertakings (BDUs) provide subscription television services to Canadians. They distribute conventional television, discretionary services and on-demand services. The BDU section of this report focuses on three types of BDUs: cable, Internet protocol television (IPTV), and national direct-to-home (DTH) satellite service providers.

In 2016, BDUs reported \$8.7 billion in revenues, a decrease of 2.1% from 2015. Combined, the largest BDUs reported 87% of programming distribution revenues.

The Canadian distribution landscape has been dominated by cable and DTH satellite BDUs. However, from 2012 to 2016, cable and DTH service provider revenues declined by 12.6% and 13.8% respectively, while IPTV service provider revenues increased by 205%.

While cable is in decline, it still represents the largest type of BDU, with a little under 60% of the subscriber market share. However, IPTV service providers are rapidly growing due to expanded distribution networks and reach. In 2016, IPTV providers reported over 2.5 million subscribers, a 13.8% increase over last year.

Over 76% of Canadian households still subscribe to BDU services. Canadians living in urban centres generally have a choice of three to four service providers and/or types of service, while those living in the North and in rural communities usually have access to fewer than three providers.

From 2015 to 2016, BDU subscribers decreased by 124,841 or 1.11%. Over the last five years, the number of BDU subscribers decreased on average by 0.9% annually. Popular online video services are providing Canadians with more choice of where, when and how to access these programs. These services include both free and paid services and are offered by independent non-affiliated services such as Netflix and Youtube as well as traditional BDUs.

# i Revenues

In 2016, revenues of Canadian cable, IPTV and satellite companies stood at \$8,734 million, a 2.1% decrease from the previous year. This marks a second consecutive year of declining revenues. Despite the decline in revenues in 2015 and 2016 (and due to growth from 2012 to 2014), BDU revenues grew 0.5% per year on average from 2012 to 2016.

Revenues of IPTV service providers continued on their upward trend and totalled \$1,795 million in 2016. This represents an increase of \$232 million (14.8%) since 2015 and \$1,206 million (206%) since 2012. By contrast, the revenues of cable and satellite services continue on a downward trend, reporting decreases of 5.5% and 6.1% respectively from 2015 to 2016. These services generated revenues of \$4,789 million (cable) and \$2,150 million (satellite) in 2016.

Type of service	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Cable	5,480	5,390	5,231	5,067	4,789	-5.5	-3.3
IPTV	589	931	1,285	1,563	1,795	14.8	32.2
DTH and MDS	2,492	2,472	2,414	2,289	2,150	-6.1	-3.6
Total revenues	8,561	8,794	8,930	8,919	8,734	-2.1	0.5

Table 4.3.1 Revenues (\$ millions) of broadcasting distribution undertakings (BDU) - Basic and non-basic services

Source: CRTC data collection

Table 4.3.1 shows the annual revenues of cable BDUs, IPTV services and DTH satellite services collected by BDUs for cable, IPTV, and DTH services from 2012 to 2016, as well as the annual and compounded annual growth rates (CAGR) for all years combined. The data are for the 12-month period ending 31 August of each year. The growth of revenue from IPTV services is noteworthy relative to the other distribution services.

Table 4.3.2 Percentage of broadcasting distribution undertaking revenue	s (%)	- Basic and	l non-basic	services
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Type of service	2012	2013	2014	2015	2016
Cable	64.0	61.3	58.6	56.8	54.8
IPTV	6.9	10.6	14.4	17.5	20.6
DTH and MDS	29.1	28.1	27.0	25.7	24.6

Source: CRTC data collection

**Basic and non-basic services:** Basic service is the service distributed in a licensed area by a broadcasting distribution undertaking as a package consisting of programming services whose distribution is required by the Commission. Non basic service is the service distributed in a licensed area by a broadcasting distribution undertaking consisting of programming services whose distribution is not required by the Commission.

**Multipoint distribution service (MDS):** As of 1 September 2011, the Commission no longer issues MDS broadcasting licences. As part of the spectrum auction of the 2596 to 2686 MHz frequency band, which was the band used by MDS licensees, Innovation, Science and Economic Development Canada (ISED) converted various broadcasting certificates issued to MDS undertakings to Broadband Radio Service (BRS) licences. As of 1 September 2013, there are no MDS undertakings in operation.

# ii Subscriber Data

Cable, IPTV and satellite companies garnered 11.1 million subscribers in 2016, a 1.1% (124,841 subscribers) decline from 2015. Even though the IPTV sector has shown very strong growth, total BDU subscribers have been declining by approximately 1% each year since 2013.

From 2012 to 2016, IPTV companies increased their share of the subscriber market from 8.7% to 22.2% and now boast approximately 2.5 million subscribers. Conversely, the subscriber market share of the satellite companies decreased to 19.8% (2.2 million subscribers) in 2016. Nonetheless, satellite service providers garnered 24.6% of all BDU revenues, thus generating more revenue per subscriber than their cable and IPTV counterparts.

Type of service	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Cable	7,697	7,429	7,058	6,703	6,448	-3.8	-4.3
IPTV	1,006	1,397	1,788	2,169	2,468	13.8	25.2
DTH and MDS	2,826	2,691	2,559	2,375	2,206	-7.1	-6.0
BDU total subscribers	11,529	11,517	11,405	11,247	11,122	-1.1	-0.9

Table 4.3.3 Broadcasting distribution undertakings subscriber (thousands) numbers – Basic and non-basic services

Source: CRTC data collection

Table 4.3.4 Percentage of broadcasting distribution undertakings subscriber (%) - Basic and non-basic services

Type of service	2012	2013	2014	2015	2016
Cable	66.8	64.5	61.9	59.6	58.0
IPTV	8.7	12.1	15.7	19.3	22.2
DTH and MDS	24.5	23.4	22.4	21.1	19.8

Source: CRTC data collection

Tables 4.3.3 and 4.3.4 show the number of subscribers of cable BDUs, IPTV services, and DTH satellite services from 2012 to 2016, as well as the annual growth rates and the compound annual growth rate (CAGR) for years combined. The number of subscribers is as of 31 August of each year.

Largest Canadian BDUs	2013	2014	2015	2016	2017	Growth (%) 2016-2017	CAGR (%) 2013-2017
BCE	2,170	2,307	2,658	2,749	2,734	-0.5	5.9
Shaw	3,044	2,883	2,760	2,513	2,507	-0.2	-4.7
Rogers	2,189	2,107	1,983	1,870	1,796	-4.0	-4.8
Videotron	1,849	1,811	1,771	1,722	1,681	-2.4	-2.4
Telus	712	842	937	1,016	1,070	5.3	10.7
Cogeco	853	816	780	755	738	-2.3	-3.6
Total	10,817	10,766	10,889	10,625	10,526	-0.9	-0.7
% of all subscribers	93.9	93.9	96.1	95.0	-	-	-

Table 4.3.5 Number of subscribers for the largest Canadian BDUs (thousands)

Source: Corporate quarterly reports

This table shows the number of subscribers for each of the top six Canadian BDUs (based on revenues) within their exclusive market sectors.

The data are as of 31 March of each year with the exception of those for Shaw and Cogeco, which are as of 28 February of each year. The data are for cable BDUs, IPTV services, and DTH satellite services. The data for Shaw include Shaw Direct, and the data for BCE include broadcasting distribution activities by Bell Canada and Northwestel (Northwestel data have been included since 2011). Due to the acquisition of Bell Aliant by BCE, Bell Aliant's television subscribers are included with BCE as of 2015.

Table 4.3.6 Percentage of households subscribing to BDUs

Year	Household subscription rate (%)
2012	82.8
2013	82.0
2014	80.3
2015	78.5
2016	76.2

Source: CRTC data collection

To calculate the household subscription rates, the number of BDU subscriptions at the end of the annual period is divided by the total number of households in Canada.

# iii Financial performance

The EBITDA margin is a metric used to measure financial performance, it represents earnings before interest, taxes, depreciation, and amortization and is expressed as a percentage of total revenues.

The EBITDA margin of cable service providers declined from 27.1% in 2012 to 21.9% in 2016. DTH service providers performed better as their EBITDA margin generally grew over the period, starting at 30.1% in 2012, reaching a peak of 33.4% in 2013, declining to 27.7% in 2015 and stabilizing at 31.2% in 2016. While IPTV service providers reported major growth in revenues and subscribers from 2012 to 2016, they reported negative EBITDA margins throughout the period (from -43% in 2012 to -17.9% in 2016).

Figure 4.3.1 EBITDA margins achieved by BDUs - Basic and non-basic services





#### Source: CRTC data collection

This figure compares the EBITDA margins for cable BDUs and IPTV service providers with those of DTH satellite services and MDS providers, from 2012 to 2016. While these margins declined for cable BDUs, it increased for DTH satellite services and MDS' and IPTV. The data are for the 12-month period ending 31 August of each year.

# iv Performance indicators

	2012	2012	2014	2015	2016	Growth (%)	CAGR (%)
Type of BDOS	2012	2015	2014	2015	2010	2015-2016	2012-2016
Cable	58.72	59.43	60.12	60.76	60.69	-0.1	0.9
IPTV	58.78	64.64	67.61	67.96	64.52	-5.1	3.7
DTH and MDS	72.84	74.69	76.63	77.30	78.22	1.2	1.5
All Reporting BDUs	62.24	63.63	64.94	65.52	65.08	-0.7	1.3

Table 4.3.7 Monthly revenues per subscriber, by type of BDUs

Source: CRTC data collection

**Monthly revenues per subscriber:** Monthly revenues per subscriber are calculated by dividing BDUs' annual revenues from basic and non-basic services by the average number of subscriptions in the year. The result is then divided by 12 to obtain the monthly amount. The average number of subscribers is determined by dividing the sum of the number of subscribers at the beginning and at the end of the year by two.

# v Price

Each year, the Commission surveys the prices of basic television service in a number of urban centres and rural communities. The communities chosen for 2016 are set out in Appendix 9. In 2016, data from 24 major urban centres and a select number of rural communities shows that the prices of basic service and the number of channels included in the basic service varied significantly among service providers and across the communities served, for both types of communities.

In its Regulatory Policy (2015-96), following the Let's Talk TV proceeding, the Commission required licenced distributors to offer a \$25 entry-level service offering as of March 1<sup>st</sup> 2016, and full pick and pay as of December 2016. Given that the pricing data collected reflects prices as of December 31<sup>st</sup> 2016, the full effect of this policy may not be reflected until the next edition of the CMR.

# Urban centres

Figure 4.3.2 shows the 2016 prices for BDUs' basic services for Canadians living in 24 major urban centres. For the most part, those Canadians could choose from among three types of service providers: cable, IPTV or DTH satellite. The entry price for basic service is as low as \$18/month in some urban areas, in contrast to 2015 when the lowest entry prices were situated in the mid-\$30/month range.

#### Figure 4.3.2 BDU basic service prices by major centre, 2016



# BDU basic service prices by major centre, 2016

#### Source: CRTC data collection

The number of service providers in each urban centre is indicated in parentheses. As an example, there are four BDU service providers in Montréal, where the lowest price is \$18/month and the highest price is \$27/month.

The composition of a basic television package ranged typically from 20 to 35 channels, depending on location and service provider. The services were generally available in digital and high definition formats and the programming generally also included radio.

# Rural centres

Figure 4.3.3 BDU basic service prices by province in urban centres and rural communities, 2016



# Price of basic local residential service in urban centres and rural communities, 2016

#### Source: CRTC data collection

The number of service providers in each province (urban and rural areas surveyed) is indicated in parentheses, as an example, in Quebec, there are two to three service providers in the rural communities surveyed and three to four in the urban centres surveyed. The lowest prices offered by these providers for basic BDU service is \$25 per month in the rural communities, and \$18 in urban centres.

Which communities were included? Fifty-four rural communities were selected to assess the price of BDU basic services (see Appendix 9). These communities met the following criteria:

- The community was not part of one of the CMAs of the 24 major centres;
- It had a population density of fewer than 400 people per square kilometre, or its population centres had fewer than 1,000 people;
- The number of communities in each province was proportional to the population of the province; and
- The communities were not clustered together.

# vi Competitive landscape

Cable companies were the first providers of BDU services in Canada. By the mid-1990s, DTH satellite services had entered the Canadian market. More recently, IPTV services have become available.

In 2016, Canadians living in urban centres were able to choose between three types of BDU service providers: cable, IPTV and DTH satellite. In rural areas, just over half of Canadians households were dependent on a DTH satellite service provider. Just less than half of rural Canadian households had access to both cable and DTH satellite service providers.



#### Figure 4.3.4 Percentage of revenues and subscribers by type of distribution platform, 2016

Source: CRTC data collection

In 2016, DTH and MDS services generated 25% of the TV distribution revenues with 20% of the subscribers in the sector, while Cable services had 58% of the subscribers but reported 55% of the revenues of the sector.

# vii Consumer voices

Year	2014-2015	2015-2016	2016-2017
CRTC policies / decisions	755	1,456	1,693
Billing	1,298	652	630
Prices/Rates	223	154	251
Terms and conditions	313	180	236
Accessibility	62	58	57
Quality of services/Delivery	480	352	591
Equipment	n/a	n/a	376
Competition	110	60	64
Other	2,300	279	445
Programming	n/a	n/a	394
Total	5,541	3,191	4,737

Table 4.3.8 Number of BDU-related contacts received by the CRTC's client services

Source: CRTC Correspondence Tracking System

This table summarizes the contacts received by the CRTC, which included questions, comments, complaints, and other communications, broken down by the type of issue raised.

# viii Online television services

The following data on online television services is provided by the Media Technology Monitor (MTM) and is based on a survey reaching Canadians aged 18 and up.

Figure 4.3.5 Percentage of Canadians who watch TV exclusively online, nationally and by language



Percentage of Canadians who watch TV exclusively online, nationally and

Source: MTM, 2012-2016 (Respondents: Canadians 18+)

Figure 4.3.6 Percentage of Canadians who watch TV exclusively online, nationally, by age group



Percentage of Canadians who watch TV exclusively online in Canada, by age group

Source: MTM, 2012-2016 (Respondents: Canadians 18+)





Percentage of Canadians who subscribe to Netflix, by region

Source: MTM, 2014-2016 (Respondents: Canadians 18+)

Before 2016, Saskatchewan and Manitoba data was not reported separately by MTM.

Figure 4.3.8 Percentage of Canadians who subscribe to Netflix, by age group



#### Percentage of Canadians who subscribe to Netflix, by age group

#### Source: MTM, 2014-2016 (Respondents: Canadians 18+)

Younger Canadians are more likely to subscribe to Netflix than older Canadians.

Figure 4.3.9 Likelihood of Canadians "cutting the cord" on their current traditional TV subscription in the next 12 months (percentage)



Likelihood of Canadians "cutting the cord" on their current traditional TV subscription in the next 12 months (percentage)

Source: MTM, 2014-2016 (Respondents: Canadians 18+)

Table 4.3.9 Adoption rates (%	of various video technologie	es in Canada by l	language market

Video technology	Language market	2012	2013	2014	2015	2016
D\/P	Anglophone	43	46	50	49	50
PVR	Francophone	39	42	52	56	55
Internet TV	Anglophone	38	44	51	57	59
	Francophone	39	44	42	49	51
Natfliv	Anglophone	21	29	39	47	50
NetIIIX	Francophone	5	7	12	19	22

Source: MTM, 2012-2016 (Respondents: Canadians 18+, viewed or used in the past month)

This table shows the percentages of Canadians 18 years of age and older who had adopted various video technologies and services each year from 2012 through 2016. MTM describes "Internet TV" as watching or streaming television programs or clips available over the Internet.

# ix Contribution to Canadian programming

Cable, IPTV and satellite companies are required to contribute a minimum of 5% of their annual broadcastrelated revenues to the creation and production of Canadian programming. This can take the form of contributions to various Certified Independent Production Funds (CIPF), to the Canada Media Fund (CMF) or contributions towards local expression, which includes the creation and distribution of community programming. Furthermore, in 2009, the Commission established an additional fund, the Local Programming Improvement Fund (LPIF), in an effort to support local programming by conventional television stations during a difficult financial period. From 2010 to 2014, LPIF contributions made by BDUs averaged \$87 million per year. On 1 September 2014, the LPIF was discontinued.

Contributions to the creation and production of Canadian programming by cable, IPTV and satellite companies totalled \$428 million in 2016.



Figure 4.3.10 Contributions to Canadian programming by type (millions)

# Source: CRTC data collection

This figures shows the contributions made by BDUs to the CMF, the LPIF and other independent production funds, as well as spending on local expression (community channels), during the 12-month period ending 31 August of each year. BDU contributions include contributions reported by cable BDUs, DTH satellite services, MDS's and satellite relay distribution undertakings (SRDUs).

# Figure 4.3.11 BDU contributions to Canadian programming by recipient



# BDU contribution to Canadian programming by recipient

# Source: CRTC data collection

LPIF was discontinued on September 1, 2014.

# x Affiliation payments

The providers of discretionary programming services<sup>18</sup> (both Canadian and non-Canadian) receive remuneration from the BDUs that distribute their services. This remuneration is referred to as an affiliation payment, and is based on the number of BDU subscribers who receive the programming service.

Payments to Canadian affiliates have increased annually by 3.4% since 2012, whereas payments to non-Canadian affiliates have increased by 6.1%. The data are based on the 12-month period ending 31 August of each year.

Table 4.3.10 Affiliation payments made to Canadian and non-Canadian discretionary services reported by BDL	Js (\$
millions)	

Category	Type of service	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Cable and IPTV	1,930	2,024	2,193	2,322	2,368	2.0	5.2
affiliates	DTH and MDS	726	700	716	685	666	-2.8	-2.1
anniates	Total	2,656	2,724	2,909	3,007	3,034	0.9	3.4
Non-Canadian affiliates	Cable and IPTV	265	285	298	316	343	8.5	6.7
	DTH and MDS	86	94	93	101	102	1.0	4.4
	Total	351	379	391	417	445	6.7	6.1
All affiliates	All services	3,007	3,104	3,300	3,425	3,479	1.6	3.7

Source: CRTC data collection

This table provides a detailed breakdown of the amounts of affiliation payments made by BDUs (cable/IPTV vs DTH satellite/MDS) to discretionary services, broken down by Canadian and non-Canadian affiliates, for the years 2012 through 2016.

Table 4.3.11 Affiliation payments received by Canadian and non-Canadian discretionary services reported by BDUs (\$ millions)

Category	Type of service	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Pay, PPV and VOD	671	670	669	660	577	-12.6	-3.7
Canadian	Specialty	1,986	2,054	2,240	2,347	2,457	4.7	5.5
anniates	Total	2,657	2,724	2,909	3,007	3,034	0.9	3.4
Non-Canadian affiliates	Pay, PPV and VOD	34	37	38	54	55	1.9	12.8
	Specialty	317	342	353	363	390	7.4	5.3
	Total	351	379	391	417	445	6.7	6.1
All affiliates	All services	3,008	3,103	3,300	3,424	3,479	1.6	3.7

Source: CRTC data collection

*This table provides a detailed breakdown of the amounts of affiliation payments received from discretionary services (pay/PPV/VOD vs specialty), broken down by Canadian and non-Canadian affiliates, for the years 2012 through 2016.* 

<sup>&</sup>lt;sup>18</sup> Examples of Canadian discretionary services: CBC News Network & RDI Example of a non-Canadian discretionary service: CNN

# xi Broadcasting dispute resolution

Dispute resolution is designed to effectively mediate and resolve disputes in an increasingly competitive broadcasting industry. The process and procedures used for resolving disputes that come under the Commission's regulatory purview are set out in *Practices and procedures for staff-assisted mediation, final offer arbitration and expedited hearings,* Broadcasting and Telecom Information Bulletin CRTC 2013-637.

Disputes can be generally classified as follows: (1) dispute between broadcasting distributors and programming services concerning the terms of distribution; (2) disputes between competing broadcasting distributors over access to buildings and to the end-user; and (3) disputes between programmers regarding programming rights and markets served.

Туре	Type of intervention	2015-2016	2016-2017
Formal	Staff-assisted mediation	15	13
	Final offer arbitration	2	1
Informal	Informal intervention	133	328

#### Table 4.3.12 Number of dispute resolution cases per type and year

Source: CRTC data collection

#### Each 12-month period begins April 1.

*The mediation sessions were conducted on 27 days over the 12-month period of 1 April 2016 to 31 March 2017.* 

# 5.0 Telecommunications sector overview



Canada's telecommunications industry consists of six sectors: local, long distance, Internet, wireless, data, and private line. The two largest sectors combined, Internet and wireless, have grown by more than \$7.3 billion or 25.9% since 2012, and accounted for more than 63.8% of total telecommunications revenues in 2012 and 72.3% in 2016. Over the same five-year period, wireline voice service revenues have shown steady declines, representing 18.5% of total telecommunications revenues in 2012.

In 2016, Canadian telecommunications revenues reached \$48.7 billion, with the vast majority (92%) derived from retail services and the balance (8%) from the wholesale sector. Service providers supplied retail services to over 14 million households, 1 million businesses, and, through the wholesale market, 800 other telecommunications entities. Service providers continued to increase investments in their infrastructure, with capital expenditures reaching \$11.6 billion in 2016, an 11.3% increase over 2015 levels.

Large incumbent telecommunications service providers (TSPs)<sup>19</sup> captured over 59% of industry revenues. Their main group of competitors, cable-based carriers,<sup>20</sup> reported 33% of revenues and 8% of the total number of companies. Resellers<sup>21</sup> comprised nearly 69% of service providers but generated only 4% of revenues. The remaining 4% of revenues were captured by smaller incumbent TSPs and other facilities-based service providers.<sup>22</sup>

In December 2016, the Commission issued Telecom Regulatory Policy <u>2016-496</u>, in which it set out policies and actions it is taking to help Canadians participate in the digital economy and society. The main objectives of the new policies and actions are as follows:

- Canadians in urban, rural, and remote areas can access affordable, high-quality telecommunications services;
- telecommunications companies continue to invest in and various levels of government continue to fund robust infrastructure that can be upgraded in the future and that is capable of providing high-quality telecommunications services to Canadians across the country;
- Canadians can access innovative service offerings that enhance social and economic development; and,
- Canadians can make informed decisions about their telecommunications services.

The Commission also established the following universal service objective: Canadians, in urban areas as well as in rural and remote areas, have access to voice services and broadband Internet access services, on both

<sup>&</sup>lt;sup>19</sup> Incumbent TSPs are the companies that provided local telecommunications services on a monopoly basis prior to the introduction of competition.

<sup>&</sup>lt;sup>20</sup> Cable-based carriers are the former cable monopolies that also provide telecommunications services (e.g. wireline voice, Internet, data and private line, and wireless services).

<sup>&</sup>lt;sup>21</sup> Resellers, or non-facilities-based service providers, generally acquire telecommunications services from other providers and either resell those services or create their own network from which to provide services to their customers. A company that owns a small amount of facilities but has the vast majority of its operations on leased facilities may also be classified as non-facilities-based in the context of this report.

<sup>&</sup>lt;sup>22</sup> Other facilities-based service providers include utility telecommunications providers (such as electricity or gas) and other carriers that own physical transmission facilities.

fixed and mobile wireless networks. To measure the successful achievement of this objective, the Commission established several criteria, including the following:

- Canadian residential and business fixed broadband Internet access service subscribers should be able to access speeds of at least 50 megabits per second (Mbps) download and 10 Mbps upload, and subscribe to a service offering with an unlimited data allowance; and
- the latest generally deployed mobile wireless technology should be available not only in Canadian homes and businesses, but on as many major transportation roads as possible in Canada.

To help meet the universal service objective, the Commission began to shift the focus of its regulatory frameworks from wireline voice services to broadband Internet access services. The Commission will establish a mechanism to assist in funding continuing access to the basic telecommunications services that form part of the universal service objective. The Commission will also begin to phase out the subsidy that supports local telephone service and review its voice service regulatory frameworks. The Commission established regulatory measures to address issues related to accessibility for persons with disabilities and to enhance consumer empowerment. The effects of this policy will be reflected in future editions of the *Communications Monitoring Report*.

# i Revenues

Sector	Category	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Retail	20.6	20.9	21.2	21.4	21.4	0.4	1.0
Wireline	Wholesale	2.9	2.8	2.7	2.8	2.9	1.9	-0.4
	Wireline total	23.5	23.7	24.0	24.2	24.3	0.6	0.8
	Retail	19.5	20.2	20.9	22.5	23.2	3.2	4.5
Wireless	Wholesale	0.8	1.0	1.0	1.1	1.2	6.9	9.3
	Wireless total	20.4	21.2	22.0	23.6	24.4	3.4	4.7
Total	Retail	40.2	41.1	42.2	43.9	44.7	1.8	2.7
	Wholesale	3.7	3.7	3.8	3.9	4.1	3.3	2.0
	Total	43.9	44.8	45.9	47.8	48.7	2.0	2.6

#### Table 5.0.1 Telecommunications revenues (retail and wholesale) (\$ billions)

Source: CRTC data collection

Revenues from telecommunications services are derived from sales to residential and business consumers (retail revenues) and to other carriers (wholesale revenues). The table displays retail and wholesale revenues for wireline and wireless services for the years 2012 to 2016.

Estimates were made to capture revenues of service providers that did not provide data. In 2016, these estimates were less than 1% of total telecommunications revenues. Revenues derived from the sale and rental of local and access terminal equipment, and other non-telecommunications revenues, were excluded from wireline retail service revenues.

As shown in the table above, over 90% of telecommunications revenues are generated from the retail sector.

Region	2014	2015	2016	Percentage of total (%)	Growth (%) 2015-2016
Atlantic	3.1	3.2	3.3	6.7	0.4
<b>BC and Territories</b>	6.3	6.6	6.6	13.6	-0.1
Ontario	18.2	18.7	19.8	40.5	5.9
Prairies	9.5	10.0	9.8	20.1	-2.0
Quebec	8.9	9.3	9.3	19.0	0.3

Table 5.0.2 Telecommunications revenue distribution by region (\$ billions)

Source: CRTC data collection

Estimates were made for companies that were not required to provide provincial and territorial telecommunications data. Growth rate variance is calculated from exact amounts and, therefore, may not be apparent in the rounded revenue numbers reported in this table.

# ii Forbearance

The Commission refrains from regulation when it finds that a service is subject to sufficient competition or where refraining is consistent with the Canadian telecommunications policy objectives. This is referred to as forbearance. Where a service is forborne from regulation, the provider is generally relieved of the obligation to provide it pursuant to a Commission-approved tariff. Other aspects of the service may still be regulated.

In 2016, approximately 95% of telecommunications revenues were from services for which the Commission does not regulate the retail rates.

Category	2012	2013	2014	2015	2016
Local and access	77	78	79	80	82
Long distance	99	99	98	98	98
Internet	98	97	97	96	97
Data and private line	84	84	89	89	89
Wireless	100	100	100	100	100
Overall	93	94	94	95	95

Table 5.0.3 Percentage of telecommunications revenues generated by forborne services

Source: CRTC data collection

This table shows the percentage of telecommunications revenues by market sector from 2012 to 2016, including their wholesale components that are generated by services that are forborne. With respect to the local and access market sector, 'access' refers to wireline services that provide telecommunications service access to the subscriber or to the telecommunications network. Wireless services are forborne from regulation, whereas wholesale high speed access (WHSA) services are not forborne.

# iii Canadian ownership

Section 16 of the *Telecommunications Act* addresses the eligibility of Canadian carriers to operate as telecommunications common carriers. For the purposes of applying the provisions of Section 16, the Commission has determined that, for the period between the date of release of the 2016 *Communications Monitoring Report* and the date of release of the 2017 edition, total annual revenues from the provision of telecommunications services in Canada was \$48.7 billion.

What does section 16 of the *Telecommunications Act* require? Subject to certain exceptions, Section 16 requires that telecommunications companies that own or operate telecommunications transmission equipment and have Canadian telecommunications revenues greater than \$4.8 billion (i.e. 10% of total Canadian telecommunications revenues) be Canadian owned and controlled.

# iv Number, size, and type of companies

Figure 5.0.1 Distribution of telecommunications revenues, by type of TSP, 2016



#### Source: CRTC data collection

*This graph displays the percentage of total revenues captured by type of provider of telecommunications services and the percentage of providers offering service.* 

The incumbent TSP data displayed above includes revenues from all of their Canadian telecommunications operations, both inside and outside their traditional operating territories.

In the figure above, terms are used as follows:

*Incumbent TSPs* are the companies that provided local telecommunications services on a monopoly basis prior to the introduction of competition.

**Cable-based carriers** are the former cable monopolies that also provide telecommunications services (e.g. wireline voice, Internet, data and private line, and wireless services).

**Other facilities-based service providers** are providers of telecommunications services that are not incumbent providers and own and operate telecommunications networks.

**Resellers or Non-facilities-based service providers** generally acquire telecommunications services from other providers and either resell those services or create their own network from which to provide services to their customers. A company that owns a small amount of facilities but has the vast majority of its operations on leased facilities may also be classified as non-facilities-based.

The industry is dominated by 10 large companies that collectively, with their affiliates, accounted for 93% of Canadian telecommunications revenues in 2016. The remaining companies accounted for less than \$3.4 billion of these revenues.



#### Figure 5.0.2 Percentage of total combined telecommunications revenues by ownership group

#### Source: CRTC data collection

Group Bell, Group Quebecor, Group Rogers, Group Shaw, and Group TELUS are Canada's five largest providers of telecommunications services. Combined, including their affiliates, they accounted for 85% of total market revenues. The next five largest groups/entities accounted for 8% of total market revenues. The remaining groups/entities captured 7%.

The top 10 groups/entities are facilities-based service providers, meaning that they own and operate the transmission equipment required to provide telecommunications services. Of the remaining groups/entities, the vast majority are resellers.

Providers of telecommunications services are classified as either incumbent TSPs or alternative service providers. The alternative service providers consist of resellers and other facilities-based service providers, which include cable-based carriers.

Incumbent TSPs are the traditional telephone companies. For monitoring purposes, this group of TSPs is further subdivided in to large and small incumbent TSPs. Additional details on the classification of providers of telecommunications services (TSPs) can be found in Appendix 8.

The incumbent TSPs' revenues have increased at an average annual rate of 1.1% over the 2012 to 2016 period. Over the same period, revenues for alternative service providers, including resellers, grew 5.3% annually. Overall, the alternative facilities-based service providers have experienced the strongest growth in telecommunications revenues, which increased 24%, from \$14.4 billion in 2012 to \$17.9 billion in 2016.

Туре	Subtype	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Large incumbent TSPs	27,478.5	27,818.4	28,432.3	29,193.2	28,663.5	-1.8	1.1
Incumbent	Small incumbent TSPs	474.4	450.4	448.1	471.2	484.1	2.7	0.5
1383	Subtotal	27,953.0	28,268.8	28,880.4	29,664.4	29,147.5	-1.7	1.1
	Percentage of total (%)	64	63	63	62	60	-	-
	Cable-based carriers	13,260.2	13,785.5	14,204.1	14,976.7	16,198.7	8.2	5.1
	Other carriers	1,161.5	1,226.0	1,247.3	1,486.2	1,668.6	12.3	9.5
Alternative service	Facilities-based subtotal	14,421.7	15,011.6	15,451.4	16,462.9	17,867.3	8.5	5.5
providers	Resellers	1,527.7	1,542.0	1,585.5	1,647.8	1,722.7	2.9	3.0
	Subtotal	15,949.3	16,553.5	17,036.9	18,137.1	19,590.0	8.0	5.3
	Percent of total (%)	36	37	37	38	40	-	-
Total	All	43,902.3	44,822.3	45,917.3	47,801.5	48,737.5	2.0	2.6

Table 5.0.4 Total telecommunications revenues by type of service provider (\$ millions)

Source: CRTC data collection

This table displays telecommunications revenues by type of TSP for the years 2012 to 2016. The out-ofterritory revenues generated by large incumbent TSPs are no longer reported separately in this table; instead, these revenues are included in the incumbent TSPs' total revenues.
# v Financial performance

There are a number of elements to consider in assessing a company's financial performance or profitability. One of these is EBITDA (earnings before interest, taxes, depreciation and amortization) as a percentage of total revenue (EBITDA margins).

Figure 5.0.3 Telecommunications revenues and EBITDA margins



### Telecommunications revenues and EBITDA margins

### Source: CRTC data collection

The EBITDA margins are calculated for TSPs that had telecommunications revenues greater than 80% of their total revenues.

This figure shows the total growth in telecommunications revenues from wireless and wireline services between 2014 and 2016. It also shows the EBITDA margins in percentages for wireless, wireline, and total telecommunications.

Non-facilities-based alternative service providers (i.e. resellers) generally had a lower EBITDA margin. In 2016, contrary to previous years, the EBITDA margin for other service providers (i.e. those that were neither cable-based nor traditional telephone companies) was similar to that of facilities-based service providers. Despite modest wireline and wireless revenue growth in 2016, both segments experienced a decrease in EBITDA margins from 35.0% and 44.6% to 33.3% and 43.4%, respectively.



Figure 5.0.4 Percentage of total revenues by size of entity and their respective EBITDA margins, 2016



### Source: CRTC data collection

*The percentage of revenues and profitability are calculated for TSPs that had telecommunications revenues greater than 80% of their total revenues to ensure proper representation of the telecommunications sector.* 

These companies were subdivided into three telecommunications revenue ranges: \$1 million to \$10 million, \$10 million to \$100 million.

The collective EBITDA margin of companies with Canadian telecommunications revenues greater than 80% of their total revenues was 38.4%. As displayed above, companies with revenues in excess of \$100 million displayed the highest EBITDA margin, 39.1%. Companies with telecommunications revenues between \$10 million and \$100 million had a 19.5 % EBITDA margin, and those between \$1 million and \$10 million had a 10.8% margin. Note, those companies with telecommunications revenues between \$1 million and \$10 million had \$10 million \$

# vi Annual investment in plant and equipment

"Annual investment in plant and equipment" refers to the capital expenditures made to 'replenish' or upgrade a telecommunications service provider's network. In 2016, TSPs with over \$100 million in revenues spent \$11.6 billion on capital expenditures, of which 46% was for access services and 23% was network related. The remaining 31% related to non-network activities such as billing and fleet operations.

Sector	Category	Subcategory	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Wireline Alt	Incumbent TSPs	All	4.7	4.9	4.8	5.2	5.5	7.4	4.1
	Alternative service providers	Other facilities- based service providers (including cable-based carriers)	2.3	1.9	2.3	3.1	3.7	19.8	12.1
		Resellers	0.04	0.04	0.03	0.02	0.03	24.2	-8.5
	-	Subtotal	2.4	2.0	2.3	3.1	3.7	19.9	11.8
	Total	All	7.1	6.9	7.1	8.2	9.2	12.0	6.8
Wireless	Total	All	2.3	2.0	2.3	2.1	2.3	8.7	0.3
Total	Total	All	9.4	8.9	9.4	10.4	11.6	11.3	5.3

Table 5.0.5 Telecommunications investments made in plant and equipment, by type of provider of telecommunications service (\$ billions)

Source: CRTC data collection

This table shows the investments made by type of TSP for the period between 2012 and 2016.

The data for the incumbent TSPs includes their out-of-territory operations. The table also excludes TSPs with revenues less than \$100 million, which are not required to provide this data and expenditures made to acquire wireless spectrum.

Since many carriers do not recognize and report spectrum as a capital expenditure, the investments made in spectrum were removed from the table above.

### Investments in spectrum

Total investments made in spectrum between 2012 and 2016 were \$0.29 billion, \$0.28 billion, \$5.26 billion, \$2.96 billion, and \$0.15 billion, respectively. The data excludes TSPs with revenues less than \$100 million. The amounts reported in 2012 and 2013 reflect investments made mainly by satellite carriers. Investments made between 2014 and 2016 reflect investments made to acquire AWS-3 (advanced wireless services), 700 megahertz (MHz), and 2500 (MHz) spectrum.<sup>23</sup>

<sup>&</sup>lt;sup>23</sup> The source of this data was the CRTC data collection and the Innovation, Science and Economic Development Canada (ISED) website.

### Capital intensity

A useful measure to compare annual capital expenditures is "capital intensity." Under this measure, cablebased carriers and other facilities-based service providers spent, on average, 40 cents from every dollar of revenue over the past three years on wireline facilities, compared to 36 cents by the incumbent TSPs.

Figure 5.0.5 Telecommunications capital expenditures as a percentage of revenues, by type of TSP



### Capital expenditures as a percentage of revenues

This figure shows the capital intensity of TSPs for the period between 2012 and 2016.

**Capital intensity** is a measure of the degree or level a company spends on its plant and equipment. It is derived by dividing annual capital expenditures by annual revenues, expressed as a percentage.

Source: CRTC data collection

# 5.1 Telecommunications retail sectors



As noted in the previous section, Canada's telecommunications industry consists of six sectors: local, long distance, Internet, wireless, data, and private line.

In 2012, revenues from wireless services were \$19.5 billion, or 49% of total retail revenues. By 2016, wireless service revenues increased to \$23.2 billion, or 52% of total retail revenues. This growth was driven in large part by more subscriptions and heightened demand for wireless data services. Data revenues, excluding roaming and other services (e.g. interconnection), experienced an average annual growth rate of 15.2% between 2012 and 2016.

In 2016, Canadian retail telecommunications revenues were \$44.7 billion, of which 48% were from wireline services. Of the wireline revenues, 59% were from residential services and 41% from business services. The top five incumbent TSPs and top five cable-based carriers accounted for 59% and 35% of retail telecommunications revenues, respectively. Collectively, these 10 companies captured 94% of all retail revenues. The remaining 6% of the revenues were garnered by a large number of resellers and other facilities-based service providers. The data suggests that companies which operated in multiple sectors continue to have clear competitive advantages relative to those that are less integrated.

Wireline revenues have increased at a much slower pace since 2012. Wireline service revenues increased from \$20.6 billion in 2012, or 51% of retail telecommunications revenues, to \$21.4 billion, or 48%, in 2016. This small expansion masks the fact that wireline voice service revenues have fallen by nearly \$2.0 billion, or 20.4%, since 2012. The number of local lines has also declined from 17.7 million lines in 2012 to 15.2 million lines in 2016. In contrast, Internet was the only wireline service that experienced positive revenue growth in 2016. In fact, the Internet sector had the fastest growth across all sectors, with revenue growth of more than \$930 million, or 10.1%, in 2016.

# i Revenues

Telecommunications revenues come from a variety of sources. Wireline voice service revenues come from local telephone and long distance services, while revenues from non-voice services come from Internet services, newer data protocols services (such as Ethernet and IP VPN<sup>24</sup>), legacy data protocols services (such as X.25 and frame relay), and private line. Wireless service revenues come from mobile voice and data services, and from the sale and rental of mobile devices.

Sector	Category	Subcategory	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Wireless	Total	Total wireless	19.5	20.2	20.9	22.5	23.2	3.2	4.5
	M/irolino	Local	7.8	7.7	7.4	7.1	6.6	-7.2	-4.0
	wico	Long distance	2.1	1.9	1.8	1.5	1.3	-14.5	-11.9
	VOICE	Subtotal	10.0	9.6	9.2	8.7	7.9	-8.4	-5.6
		Internet	7.2	7.7	8.4	9.2	10.2	10.1	9.1
		Newer data protocols	1.8	1.9	1.9	1.9	1.9	-2.2	0.4
Wireline	Non-	Legacy data protocols, private line, and other	1.7	1.7	1.7	1.6	1.5	-4.7	-2.8
	voice	Data protocols, private line and other subtotal	3.5	3.6	3.6	3.5	3.3	-3.3	-1.1
		Non-voice subtotal	10.7	11.3	12.0	12.7	13.5	6.4	6.1
	Total	Total wireline	20.6	20.9	21.2	21.4	21.4	0.4	1.0
Total	Total	Grand total	40.2	41.1	42.2	43.9	44.7	1.8	2.7

### Table 5.1.1 Telecommunications retail revenues, by market sector (\$ billions)

Source: CRTC data collection

This table presents a detailed breakdown of the retail revenues, annual growth rates and the compound annual growth rate (CAGR) for wireline and wireless services by market sector for the years 2012 to 2016. Telecommunications service revenues exclude revenues from the sale and rental of wireline telephone sets.

Similar to last year, revenue growth comes from the Internet and wireless sectors. These sectors reported growth rates of 10.1% and 3.2%, respectively, while other sectors' revenues decreased.

Wireline services are generally a household or a business service, whereas wireless services are an individual or personal type of service. In 2015, the most recent period for which telephone penetration data is available from Statistics Canada's Survey of Household Spending, 71.9% of households had wireline service, 86.1% had wireless service, 13.2% had only wireline service, and 27.5% had only wireless service.

<sup>&</sup>lt;sup>24</sup> Internet Protocol virtual private network

### Figure 5.1.1 Telecommunications wireline and wireless retail revenues



Telecommunications wireline and wireless retail revenues

Source: CRTC data collection

This graph presents the retail wireline and wireless revenues for the years 2012 to 2016. Over this period, aggregate revenues from wireline and wireless services have increased steadily. The line on the graph represents retail wireline revenues as a percentage of total retail telecommunications revenues.



### Figure 5.1.2 Distribution of telecommunications retail revenues, by market sector

#### Source: CRTC data collection

These two figures show the distribution of retail telecommunications revenues by market sector for two periods, 2012 and 2016. Wireless data services are captured within the wireless market sector. These services are capturing increasingly larger shares of the market, while the market share of long distance and local telephone services has declined.

# ii Technology indicators

Technology has been a key driver of growth in the telecommunications industry. It has promoted network efficiencies, encouraged service and product innovation, and facilitated competition. Revenues from legacy services have generally been declining as consumers switch to other services that provide greater functionality and flexibility.

Figure 5.1.3 Annual revenue change for newer and legacy telecommunications services, by technology



Annual revenue change for telecommunications services

### Source: CRTC data collection

Newer technologies are changing the way Canadians access telecommunications services. This graph shows the annual change in revenues for newer technologies such as wireless, Internet, and other services based on data protocols in each of the past three years. The graph also compares the annual revenue change for newer services and for legacy services such as local, legacy data, and private line, and long distance services.

"Newer data protocols" refer to services using protocols such as Ethernet and Internet Protocol (IP). Legacy data refers to services using protocols such as X.25 and frame relay.

### Figure 5.1.4 Residential IP-based service revenues



### Residential IP-based service revenues

### Source: CRTC data collection

While Internet Protocol television (IPTV) revenues are growing steadily, more growth is driven by Internet access revenues.





### Homes passed by fibre-optic cable, 2016

■ FTTP ■ FTTN ■ FTTN&P

Source: CRTC data collection

Providers of telecommunications service are increasingly adopting fibre-optic-based systems. This graph shows the number of premises that were passed by fibre-based lines (fibre-to-the-premises, or FTTP), copper lines connected to a node that was served by a fibre-optic cable (fibre-to-the-node, or FTTN), or both (FTTN&P). The node connected by fibre-optic cable is the closest node to the premises. A node is a pedestal where connections are made. The number of homes passed refers to the number of homes that have access to the various telecommunications services (i.e. voice and Internet) that rely on this underlying technology.

A **fibre-optic cable** is a cable containing one or more strands that carry light. The light is used as a medium to transmit data. A fibre-optic cable is excellent for transmission over longer distances and at higher bandwidths or capacity than wire cables.

### Figure 5.1.6 Percentage of homes using fibre-optic cable provided by large incumbent TSPs



# Percentage of homes using fibre-optic cable provided by large incumbent TSPs

### Source: CRTC data collection

*These figures show the percentage of fibre-based lines as a percentage of total residential lines between 2014 and 2016.* 

# iii Competitive landscape

Facilities-based providers of telecommunications services accounted for 97% of the retail telecommunication revenues in 2016. Cable-based carriers and other facilities-based alternative providers of telecommunications services are the largest source of competition to the incumbent TSPs.



Figure 5.1.7 Total retail telecommunications revenue market share by type of service provider, 2016

### Source: CRTC data collection

Total retail telecommunications revenues in 2016 were \$44.7 billion. This chart shows the percentage of revenues captured by separate groups of TSPs. The incumbent TSPs captured the largest share of the market. Cable-based carriers and other facilities-based alternative TSPs captured the next largest share, followed by resellers.

Table 5.1.2 Number and percentage of retail telecommunications revenues generated by companies operating in multiple sectors

Number of sectors in which groups or	Number o or enti th	of reportin ties opera iese sector	g groups ting in 's	Percentage of telecom revenues generated (%)				
entities are operating	2014	2015	2016	2014	2015	2016		
6	8	7	8	84	82	87		
5	11	14	18	10	10	8		
4	25	23	31	2	1	1		
3	42	36	37	1	2	2		
2	22	37	25	1	2	2		
1	43	57	43	2	3	0.5		

Source: CRTC data collection

This table shows the dominance of larger companies in the telecommunications market sectors. For example, although few companies operate in all six sectors (local, long distance, Internet, wireless, data, and private line), these companies captured almost 87% of total market revenues. Reporting groups include affiliated companies.

Entities with services in five or more market sectors are generally large facilities-based service providers with annual revenues greater than \$100 million. Companies with services in two or fewer market sectors are generally resellers with annual revenues less than \$10 million.

Туре	Subtype	Residential	Business	Total
Incumbent TSPs	Incumbent TSPs	46.8	68.5	55.6
Alternative	Cable-based carriers and other facilities- based service providers	47.4	22.7	37.4
service	Resellers	5.9	8.7	7.0
providers	Subtotal	53.2	31.5	44.4

Table 5.1.3 Wireline telecommunications revenue market share (%) by type of service provider, 2016

Source: CRTC data collection

In this table, revenue market shares for wireline telecommunications services are split into residential and business sources for incumbent TSPs, as well as alternative service providers, such as resellers, cable-based carriers, and other facilities-based service providers.

In the wireline telecommunications market sectors, alternative service providers made greater revenue gains in both the residential and business markets. Contributing to this increase are the cable companies that upgraded their cable networks to provide telephony services to their residential television subscribers.

**Wireline market sectors include** local telephone market sector, long distance market sector, Internet market sector and data and private line market sector.

# iv Contribution

In 2016, approximately 10% of residential telephone lines were in high-cost serving areas. TSPs, or groups of related TSPs, with at least \$10 million in Canadian telecommunications service revenues, contributed towards the provision of residential telephone service in these areas. The total amount of subsidies paid to local exchanges carriers (LECs) has declined to \$105 million in 2016.As mentioned earlier, the Commission will be phasing out the local service subsidy regime in light of its shift in focus towards broadband Internet access services.

**High-cost serving areas (HCSAs)** are narrowly defined rate bands that clearly identify areas where the cost of providing service is substantially higher than the average cost in other parts of an incumbent local exchange carrier's territory (such as remote areas and certain rural areas).

### Figure 5.1.8 Subsidy paid to local exchange carriers (LECs) and the revenue-percent charge



Subsidy paid to local exchange carriers

Sources: CRTC data collection and decisions

### v Consumer voices

In 2016, the CRTC and the Commissioner for Complaints for Telecommunications Services Inc. (CCTS) had over 30,000 communications with Canadians regarding telecommunications services. Of these, 53% were with the CRTC and 47% were with the CCTS. Wireless service issues were the most common (35%), followed by Internet issues (22%), and telemarketing issues (6.2%).

The underlying issues of these complaints were billing errors (28%), CRTC decisions and policies (23%), contract disputes/terms of service (18%), and service delivery/provision of service (15%).

What is the CCTS? The CCTS is an independent organization dedicated to working with consumers and service providers to resolve complaints about telephone and Internet services. Its structure and mandate were approved by the CRTC. The CCTS handles complaints about most telecommunications services provided to individuals and small businesses, including home phone, wireless, Internet, and voice over Internet Protocol (VoIP) services. The CCTS is also responsible for administering the Wireless Code. Additional information on the CCTS can be found at <a href="https://www.ccts-cprst.ca/">https://www.ccts-cprst.ca/</a>

Subject	CRTC policies/ decisions	Billing /rates	Quality of service	Provision of service	Terms of service	Other	Total
Telemarketing	4,165	4	6	3	1	19	4,198
Incumbent telephone companies	881	460	277	115	116	20	1,869
Wireless services	956	1,395	749	233	470	102	3,905
Internet services	1,334	694	872	539	185	138	3,762
Telecommunication services	1,444	1,003	775	198	178	58	3,656
Competitive local exchange carriers	104	75	74	32	29	6	320
Alternative providers of long distance service	20	57	7	5	4	0	93
VoIP services	72	13	175	105	12	1	378
Pay telephone services	24	15	13	5	5	0	62
Total	9,000	3,716	2,948	1,235	1,000	344	18,243

Table 5.1.4 Number of telecommunications-related contacts received by the CRTC by type of issue and subject, 2016

Source: CRTC data collection

Service	Billing error	Contract dispute	Service delivery	Credit management	Total
Wireless services	3,364	2,706	1,402	459	7,931
Internet access	1,634	1,189	1,209	145	4,177
Local telephone	1,195	973	816	102	3,086
Long distance	288	91	171	12	562
Directory assistance	3	1	-	-	4
White page directories	-	-	-	-	0
Operator services	1	-	-	-	1
Total	6,485	4,960	3,598	718	15,761

### Table 5.1.5 Summary of issues raised in telecommunications complaints handled by the CCTS (2015-2016)

Source: CCTS annual report

# 5.2 Wireline voice retail sector **\$7.8 billion**

Retail telecommunications revenues in 2016

\$44.7 billion 🕨



Wireline voice

Wireline voice retail revenues

# \$7.8 B

Decrease of 8.5% from 2015

\$6.5 B

Local Telephone

Service Revenues

Decrease of 7.2% from 2015 VoIP Access-Independent Connections

# 0.6 M

4% of local telephone lines

Long Distance Service Revenues

# **\$1.3 B**

Decrease of 14.5% from 2015 Over 150 companies provide local and long distance services across Canada. In 2016, the retail wireline voice sector reported \$7.8 billion in revenues, 84% of which was from local telephone services. Revenues from wireline voice services decreased \$728 million, or 8.5%, from the previous year. This decline is mostly from local services (70%)

Cable-based carriers accounted for approximately 30% of residential local and long distance revenues in 2016, virtually unchanged since 2013.

The Canadian wireline sector continues to face pressure from technological substitution such as wireless services, video calling applications, and instant messaging. Steady losses in the wireline voice retail sector continued in 2016 as providers reported nearly 500,000 in line reductions. The wireless retail sector gained approximately 1 million new subscribers for the same year.

Voice over Internet Protocol (VoIP) services have opened the wireline voice market sector to new nontraditional providers. Access-independent VoIP providers use broadband Internet, giving them less control over the quality of the service, to provide voice services similar to those of traditional providers at a fraction of the cost. Canadians subscribing to access-independent VoIP service now represent 569,000 subscribers, or approximately 4% of retail local telephone lines.

A monthly subscription to local telephone service typically includes unlimited local calling within a specific geographic area, emergency calling (9-1-1), message relay services, and access to long distance and dial-up Internet services. Optional add-on services or features include call display, call forwarding, and conference calling. Long distance service provides voice communication between two different local calling areas and is generally billed on a per-minute basis or offered as a flat-rate option.

# i Revenues

Category	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Total retail local revenues	7,821	7,661	7,441	7,146	6,635	-7.2	-4.0
Less: Subsidy received	132	118	108	107	105	-1.5	-5.4
Net local service revenues	7,690	7,544	7,333	7,039	6,529	-7.2	-4.0
Long distance retail revenues	2,134	1,949	1,755	1,506	1,287	-14.5	-11.9
Local and long distance retail revenues	9,824	9,493	9,088	8,545	7,817	-8.5	-5.6

Table 5.2.1 Local and long distance retail revenues (\$ millions)

Source: CRTC data collection

Total retail local revenues include revenues from local telephone service provided to residential and business customers. They include revenues from calling features such as call display and call forwarding, as well as installation and repair, and excludes revenues from the sale and rental of telephone sets.

Basic local telephone service with access to long distance service is part of the Commission's basic service objective. The obligation to serve and the basic service objective are regulatory measures imposed on incumbent local telephone companies. To this end, these companies receive a subsidy from a national contribution fund in which all telephone service providers are required to participate.

In December 2016, the Commission issued Telecom Regulatory Policy <u>2016-496</u>, which set out policies and actions the Commission is taking to help Canadians participate in the digital economy and society. To help meet the universal service objective, the Commission began to shift the focus of its regulatory frameworks from wireline voice services to broadband Internet access services. The Commission will begin to phase out the subsidy that supports local telephone service and review its voice service regulatory frameworks.

This subsidy is excluded from the remaining tables and figures in this section.

Local retail revenues represent 84% of all local and long distance retail revenues, steadily increasing from 78% in 2012.

Type of TSP	Type of revenue	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Incumbent TSPs	Local	2,922	2,696	2,559	2,402	2,189	-8.9	-7.0
	Long distance	932	802	687	586	507	-13.6	-14.1
	Total	3,854	3,498	3,246	2,989	2,695	-9.8	-8.5
Alternative	Local	188	164	216	166	157	-5.4	-4.4
service	Long distance	281	211	178	159	105	-33.8	-21.8
providers (excluding cable-based carriers)	Total	469	375	393	325	263	-19.3	-13.5
Cable based	Local	1,307	1,388	1,399	1,347	1,225	-9.1	-1.6
Capie-based	Long distance	210	201	180	148	124	-15.9	-12.3
carriers	Total	1,517	1,589	1,580	1,495	1,349	-9.7	-2.9
	Local	4,417	4,248	4,174	3,916	3,571	-8.8	-5.2
All TSPs	Long distance	1,424	1,213	1,045	893	736	-17.6	-15.2
	Total	5,840	5,462	5,219	4,809	4,307	-10.4	-7.3

#### Table 5.2.2 Residential local telephone and long distance service retail revenues by type of TSP (\$ millions)

Source: CRTC data collection

This table displays revenues and annual revenue growth rates from residential local and long distance services, by type of provider, from 2012 to 2016. The annual growth rates indicate that residential revenues from both local and long distance services are in decline for all types of service providers except cable-based carriers and, to a lesser extent, other alternative service providers. These carriers have increased their revenues from local telephone service and have the lowest decline in revenues from long distance services.

Type of TSP	Type of revenue	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Local	2,970	2,909	2,781	2,672	2,448	-8.4	-4.7
Incumbent TSPs	Long distance	538	533	550	458	376	-17.9	-8.6
	Total	3,508	3,442	3,331	3,130	2,824	-9.8	-5.3
Alternative	Local	93	141	119	180	230	28.1	25.6
service	Long distance	108	142	109	109	126	15.7	4.0
providers (excluding cable-based carriers)	Total	200	283	228	289	356	23.4	15.5
Cable based	Local	210	247	258	272	280	3.1	7.5
capie-based	Long distance	66	60	52	46	49	7.0	-7.1
carriers	Total	276	307	310	317	329	3.7	4.5
	Local	3,273	3,295	3,159	3,123	2,958	-5.3	-2.5
All TSPs	Long distance	711	736	710	613	551	-10.1	-6.2
	Total	3,984	4,031	3,869	3,736	3,509	-6.1	-3.1

#### Table 5.2.3 Business local telephone and long distance retail revenues by type of TSP (\$ millions)

Source: CRTC data collection

This table displays revenues and annual revenue growth rates from business local and long distance services, by type of provider, from 2012 to 2016. Similar to the residential market, the business market is in decline, but at a slower rate. Canadian businesses appear to be moving to alternative service providers, including cablebased carriers, because both of these types of providers are experiencing growth in the local market. Part of the alternative service providers' revenue increase is due to ownership transactions. Alternative service providers are not limited only to VoIP, some offer traditional phone services.

Size	Type of provider	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Incumbent TSPs	1,444	1,311	1,216	1,017	856	-15.8	-12.2
Telecom revenues	Alternative service providers	68	56	45	34	46	35.7	-9.2
over \$100 million	Cable-based carriers	272	257	228	188	167	-11.1	-11.5
	Subtotal	1,783	1,624	1,488	1,239	1,069	-13.7	-12.0
Telecom revenues between \$10 million and \$100 million	All providers	268	251	196	191	146	-23.2	-14.0
Telecom revenues below \$10 million	All providers	83	74	70	77	72	-6.8	-3.6
Total	All providers	2,134	1,949	1,755	1,506	1,287	-14.5	-11.9

#### Table 5.2.4 Long distance retail revenues by type and size of provider (\$ millions)

Source: CRTC data collection

This table displays long distance revenues and annual revenue growth, by type and size of service provider, as measured by their total Canadian telecommunications revenues. As a group, TSPs with telecommunications revenues over \$100 million captured nearly 83% of the revenues from long distance services, which is the same as the 2012-2016 average. TSPs with telecommunications revenues less than \$100 million captured 17% of revenues from long distance services. These smaller service providers generally operate in relatively small niche markets that cater to the needs of specific consumers, such as prepaid phone card users. While revenues of alternative service providers grew significantly from 2015 to 2016, a portion of the growth is due to ownership transactions.

# ii Subscriber data

Local telephone service subscriber data is represented by the number of telephone lines, while minutes are used for long distance.

This section categorizes local telephone lines into two types: managed and non-managed. A managed line refers to telephone service that uses a local service provider's network, and the provider has control over call quality. A non-managed line refers to telephone service that is provided using the public Internet, with the local service provider having less control over the quality of service. This type of local service is referred to as access-independent VoIP.

Turne of line	2012	204.2	2014	2015	2010	Growth (%)	CAGR (%)
Type of line	2012	2013	2014	2015	2016	2015-2016	2012-2016
Managed local telephone lines	16,866	16,251	15,710	14,986	14,587	-2.7	-3.6
Non-managed local telephone							
lines (access independent	861	670	694	626	569	-9.2	-9.8
lines)							
Total	17,726	16,921	16,403	15,612	15,155	-2.9	-3.8

### Table 5.2.5 Number of retail managed and non-managed local telephone lines (thousands)

Source: CRTC data collection

The number of managed local telephone lines decreased from 17.7 million lines in 2012 to 15.2 million lines in 2016. The number of non-managed local lines decreased from 861,000 in 2012 to 569,000 in 2016. Consistent with the 2013-2016 average, managed local telephone lines accounted for 96% of telephone lines in 2016.

Type of TSP	Type of line	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
-	Residential	6,975	6,442	5,981	5,566	5,314	-4.5	-6.6
Incumbent TSPs	Business	5 <i>,</i> 084	4,890	4,670	4,335	4,044	-6.7	-5.6
	Total	12,059	11,332	10,650	9,901	9,358	-5.5	-6.1
Alternative	Residential	723	482	711	798	796	-0.3	2.4
service providers	Business	264	261	224	233	494	112.0	16.9
(excluding cable- based carriers)	Total	987	743	935	1,031	1,290	25.1	6.9
Cable based	Residential	4,258	4,314	4,247	4,031	3,828	-5.0	-2.6
Cable-based	Business	422	531	571	649	680	4.8	12.6
Carriers	Total	4,681	4,846	4,818	4,681	4,507	-3.7	-0.9
	Residential	11,956	11,238	10,939	10,395	9,938	-4.4	-4.5
All TSPs	Business	5,770	5,683	5,465	5,217	5,218	0.0	-2.5
	Total	17,726	16,921	16,403	15,612	15,155	-2.9	-3.8

Table 5.2.6 Residential and business local telephone lines by type of TSP (thousands)

### Source: CRTC data collection

This table presents the number of residential and business telephone lines, by type of service provider, and their respective annual growth rates. The total number of telephone lines has declined in both the residential and business markets. However, the number of residential telephone lines has declined more quickly than those of business.

The use of VoIP services in the residential and business markets varies significantly. Cable-based carriers provide local telephone service – mostly to residential customers – over their managed network using access-dependent VoIP technology. They leverage existing cable infrastructure to provide local telephone service via their cable networks. As a result, these carriers are the largest competitor to the traditional telephone companies in the residential market. Approximately 39% of households subscribed to local telephone service from a cable-based carrier in 2016, virtually unchanged since 2014.



### Figure 5.2.1 Retail VoIP local lines, access-dependent and access-independent, by market

Source: CRTC data collection

*In 2016, there were 4.9 million access-dependent lines, compared to 0.6 million access-independent lines.* 

# iii Performance indicators

Type of line	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Residential	40.16	39.25	39.22	37.25	35.31	-5.2	-3.2
Business	56.46	58.66	57.84	58.29	56.05	-3.8	-0.2

Table 5.2.7 Local and long distance retail monthly revenues (\$), per line

Source: CRTC data collection

Table 5.2.8 Long distance retail monthly revenues (\$), per line

Type of line	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Residential	9.79	8.72	7.85	6.92	6.04	-12.8	-11.4
Business	10.08	10.71	10.63	9.56	8.80	-8.0	-3.3

Source: CRTC data collection

**Monthly revenue per line** is calculated by (i) dividing the annual service revenues by the average number of local lines in the year, and (ii) dividing the result by 12. The average number of lines is determined by dividing the sum of the number of lines at the beginning of the year and at the end of the year by two.





### Long distance retail monthly revenues (\$), per line

Source: CRTC data collection

Aside from a slight increase in long distance revenue per business line per month from 2012 to 2013, long distance revenues per line have been consistently decreasing over the last decade for both residential and business lines.

Type of line	Type of TSP	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Incumbent TSPs	33.47	33.49	34.33	34.68	33.53	-3.3	0.0
Residential local service	Alternative service providers (excluding cable-based carriers)	22.90	22.72	30.12	18.33	16.45	-10.3	-7.9
	Cable-based carriers	26.18	26.99	27.24	27.12	25.98	-4.2	-0.2
	Total residential	30.37	30.53	31.37	30.59	29.27	-4.3	-0.9
	Incumbent TSPs	47.44	48.61	48.48	49.45	48.68	-1.5	0.6
Business local service	Alternative service providers (excluding cable-based carriers)	31.54	44.86	41.02	65.71	52.81	-19.6	13.8
	Cable-based carriers	41.86	43.16	39.04	37.08	35.16	-5.2	-4.3
	Total business	46.39	47.95	47.23	48.73	47.25	-3.0	0.5

Table 5.2.9 Local telephone retail service monthly revenues (\$) per line, by type of TSP

Source: CRTC data collection

Overall, alternative service providers experienced the largest declines in average monthly revenues per line during the 2012-2016 period.

Type of line	Type of TSP	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Incumbent TSPs	0.088	0.087	0.085	0.083	0.089	7.3	0.4
Residential local service	Alternative service providers (excluding cable- based carriers)	0.051	0.047	0.043	0.040	0.034	-14.9	-9.4
	Cable-based carriers	0.042	0.043	0.043	0.043	0.039	-8.4	-1.7
	Total residential	0.067	0.066	0.067	0.062	0.062	-0.1	-2.0
	Incumbent TSPs	0.045	0.044	0.044	0.038	0.041	7.6	-2.5
Business local service	Alternative service providers (excluding cable- based carriers)	0.038	0.044	0.040	0.069	0.032	-54.1	-4.4
	Cable-based carriers	0.025	0.024	0.025	0.025	0.024	-0.5	-0.6
	Total business	0.040	0.043	0.041	0.039	0.036	-8.1	-2.5

#### Table 5.2.10 Long distance retail revenues (\$) per minute, by type of TSP

Source: CRTC data collection

This table shows the average long distance revenues per minute for the residential and business markets by type of service provider. On average, residential lines generate more revenues per minute for long distance service than business lines do. In both cases, long distance revenues per minute have been trending downward. In 2016, residential lines generated 6.2 cents of revenue per minute, compared to 3.6 cents for business lines.

*Cable-based carriers generally had the lowest revenues per minute in both the residential and business markets.* 

### iv Price

Basic local telephone service includes unlimited calling within a geographic area, 9-1-1 services, and message relay services, as well as access to long distance services. Approximately 11% of households subscribing to wireline local service (unchanged from 2015) subscribe to basic service, while the remaining 89% subscribe to additional local features, which may be bundled with other services such as Internet, television, or wireless. The figures below display the price of basic local telephone service on a stand-alone basis in a number of urban and rural centres.

Excluding access-independent VoIP service providers, urban areas tend to have two to three service providers, while rural areas tend to depend on a sole service provider.

### Urban centres

The bar charts below display the range of monthly prices for basic local service in 24 major urban centres in Canada. The blue bar displays the difference between the lowest and the highest price. The number in brackets along the vertical axis represents the number of providers within the urban centre.

Figure 5.2.3 Price of basic local telephone service (\$/month) and number of companies providing this service in major urban centres, 2016



# Price of basic local residential service in major urban centres, 2016

■ Variance between highest and lowest price

### Source: CRTC data collection

The price of basic local service varied across the major urban centres from a minimum of \$22 per month in Regina and Saskatoon to a maximum of \$40 in Iqaluit, Yellowknife, and Whitehorse. In some cases, service providers did not provide the price of basic local telephone service and provided the price for the service that came closest to the definition. Access-independent VoIP, not included above, is available in many major urban centres.

### Rural communities

Figure 5.2.4 Price of basic local telephone service (\$/month) and number of companies providing this service in urban and rural communities, by province and territory, 2016



#### Source: CRTC data collection

This bar chart displays the range of monthly prices for basic local telephone service in 54 rural communities in Canada. The number appearing in parentheses along the vertical axis indicates the range in the number of basic local telephone service providers in each rural centre or community responding to the survey. The price of basic local telephone service in rural communities varied, from lows of \$25 to \$36 per month to highs of \$27 to \$38 per month.

In some cases, service providers did not provide basic local telephone service. These companies provided the price for the service that came closest to the definition of basic local telephone service as defined in the survey.

Which rural communities were included? 54 rural communities were selected to assess the price of local telephone services (see Appendix 9). The survey set out the following criteria:

- the community was not part of one of the census metropolitan areas of the 24 urban centres;
- the community had a population density of fewer than 400 people per square kilometre, or its population centre had fewer than 1,000 people;
- the number of communities selected in each province/territory was proportional to the population of the province/territory; and
- the communities were not clustered together.

### v Type of local facilities

Leased lines are lines acquired from facilities-based carriers. Resold lines connect directly from the underlying facilities-based carrier's network to a customer.

Figure 5.2.5 Alternative service providers' (including cable-based carriers) local retail lines, by type of facility



Alternative service providers' (including cable-based carriers) local retail lines

Source: CRTC data collection

### Figure 5.2.6 Local lines by type of line, (%), 2016



### Source: CRTC data collection

Not all unbundled loops are used for voice communication, but for purposes of this figure, they are included. The predominant means of competition is via cable facilities or VoIP.

# vi Competitive landscape

Traditionally, large incumbent TSPs were the sole providers of long distance services in Canada. With the introduction of long distance competition in 1992, other service providers entered the market.

Region	2012	2013	2014	2015	2016
B.C., Alberta	79	78	81	78	78
Saskatchewan	93	94	94	94	95
Manitoba	83	83	83	83	66
Ontario, Quebec	74	79	79	80	78
Atlantic	83	88	88	89	88
The North	99	99	99	99	99

Table 5.2.11 Large incumbent	TSPs' retail l	ong distance revenu	e market share	(%), by region
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Source: CRTC data collection

*This table shows the percentage of retail long distance revenues captured by the large incumbent TSPs. "The North" includes Yukon, the Northwest Territories, and Nunavut.* 

# vii Pay telephone service

Large incumbent TSPs continue to be the primary providers of payphone service across Canada.

### Table 5.2.12 Large incumbent TSPs' payphone revenues

Metric	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Annual revenue per payphone (\$)	682	559	462	413	385	-6.7	-13.3
Total revenues (\$ million)	64.0	47.4	34.1	27.7	22.2	-19.9	-23.3

Source: CRTC data collection

### Table 5.2.13 Large incumbent TSPs' payphone quantities

Metric	2012	2013	2014	2015	2016
Number of payphones	93,771	84,870	73,883	66,997	57,542
Number of payphones per 1,000 households	6.8	6.1	5.6	4.8	3.9
Coin-operated payphones as a percentage of total payphones	92.7%	91.5%	91.8%	91.3%	95.8%
Percentage of payphones equipped with Teletype capability	9.3%	12.6%	12.4%	12.6%	12.9%
Courses CDTC data callestics					

Source: CRTC data collection

In 2016, 42 payphones were equipped with Internet capability.
## 5.3 Retail Internet sector and broadband availability \$10.2 billion



As mentioned in previous sections, in Telecom Regulatory Policy 2016-496, the Commission established criteria to measure the successful achievement of the universal service objective, which included the availability of a fixed broadband Internet access service with a downstream rate of at least 50 Mbps and an upstream rate of at least 10 Mbps, as well as the availability of an option for unlimited monthly data transfer (usage). As of 31 December 2016, service meeting these criteria was available to 84% of Canadian households. However, the availability varies greatly between urban and rural areas, with only 39% of rural households having access to this kind of service, versus 96% in urban areas. Overall, 11% of Canadians households subscribe to a service meeting these criteria. It is important to note that the Commission's objective was to have these speeds available to Canadians, although actual subscription is at the discretion of consumer.

While the majority of Canadians do not subscribe to a plan meeting the Commission's target speeds, Canadians are increasingly subscribing to faster Internet services. Subscriptions to plans including service speeds of 5 to 9 Mbps declined from 41.3% in 2012 to 19.9% in 2016, while subscriptions to plans including service speeds of 50 Mbps and higher went from just 3.6% of residential high-speed subscriptions in 2012 to 26.2% in 2016.

At the same time, Canadians are demanding more bandwidth from broadband service providers. The average monthly amount of data downloaded by residential subscribers increased 25.6% between 2015 and 2016 to 116.9 GB per month, and an average of 42.4% annually over the last five years, indicating that Canadians are likely using more video content and other high-bandwidth-consuming services. Average upload amounts also increased 4.8% in 2016, reaching an average of 11.4 GB per month.

Stimulated by increasing demand for faster Internet services and bandwidth, Internet retail revenues are increasing at an impressive pace. Internet service revenues increased 10.1%, from \$9.2 billion in 2015 to \$10.2 billion in 2016. 82% of these revenues (\$8.3 billion) came from residential sources and 18% (\$1.8 billion) came from business sources.

Internet services were provided by a variety of ISPs, consisting of traditional telephone and cable companies, fixed wireless service providers, and resellers. The revenue market share for Internet access for the top five companies (Bell, Rogers, Shaw, TELUS, and Videotron) declined slightly, from 73.2% in 2015 to 73.1% in 2016. The cable-based carriers' revenue market share declined to 46% in 2016 from 47% in 2015, while the incumbent TSPs' revenue market share stayed roughly stable at 40%. Residential high-speed Internet service subscriptions provided through wholesale DSL and cable have more than doubled since 2012.

Industry churn rates<sup>25</sup> declined slightly in 2016. For residential high-speed Internet access service subscriptions, the rate went down slightly over last year, from 1.80% to 1.74%. For business subscriptions, the rate also went down slightly, from 1.47% to 1.40%.

<sup>&</sup>lt;sup>25</sup> Churn rates are based on information reported by larger ISPs, which make up approximately 90% of total residential high-speed subscriptions and 74% of total business high-speed subscriptions as of 2016.

In the *Communications Monitoring Report*, services providers are divided in two broad categories: Incumbent TSPs, which are the companies that provided local telecommunications services on a monopoly basis prior to the introduction of competition, and alternative service providers, which encompasses all other entities.

Alternative service providers (or alternative TSPs) include **cable-based carriers**, which are the former cable monopolies that also provide telecommunications services; **other carriers**; and **resellers**, which are defined as those who primarily<sup>26</sup> provide services based upon others' facilities.

In the following section (5.3), the following categories are used, to provide greater salience to cable-based carriers' Internet services:

- 1. Incumbent TSPs, such as Bell Canada, Saskatchewan Telecommunications (SaskTel), and TELUS . This also includes small incumbent TSPs such as Sogetel inc. and Execulink Telecom Inc.;
- 2. Cable-based carriers, such as Rogers, Shaw, and Videotron; and
- 3. Other service providers.

The "Other service providers" category maybe be further divided in "other carriers", such as Xplornet Communications Inc. and Zayo Canada Inc., and "resellers", such as Distributel Communications Limited, TekSavvy Solutions Inc. and Verizon Canada Ltd.

Cable-based carriers, along with incumbent TSPs, own and operate the greater part of the infrastructure used by other service providers to provide Internet services, and together generate 88% of Internet access services revenue and have 87% of subscriptions in the residential market.

<sup>&</sup>lt;sup>26</sup> A company that owns some facilities but has the vast majority of its operations on leased facilities may also be classified as a reseller for the purpose of this report.

### i Revenues

Table 5.3.1 Retail Internet service revenues (\$ millions)
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Туре	Subtype	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Access	5,369	5,938	6,554	7,224	8,045	11.4	10.6
Residential	Applications, equipment, and other Internet-related services	209	160	162	210	289	38.0	8.5
	Total	5,577	6,098	6,716	7,434	8,334	12.1	10.6
	Access and Transport	1,202	1,243	1,320	1,435	1,488	3.7	5.5
Business	Applications, equipment, and other Internet-related services	416	384	378	380	356	-6.3	-3.8
	Total	1,619	1,626	1,698	1,815	1,844	1.6	3.3
All	Total	7,196	7,725	8,414	9,249	10,178	10.1	9.1

### Source: CRTC data collection

This table presents an overview of revenues from residential and business Internet access services, as well as other related services. Applications, equipment, and other Internet-related services include email, web hosting, data centre services, and rentals and sales of modems.

Over the 2012 to 2016 period, residential Internet service revenues increased at a faster average annual rate than business Internet service revenues, i.e. 10.6% versus 3.3%, respectively

The types of Internet services available vary according to the download speed of the Internet connection. The lowest download speed comes with dial-up service, at 64 kilobits per second (Kbps). High-speed services refer to services provided including download speeds greater than 256 Kbps. Broadband service is defined as any service including a 1.5 Mbps or greater download speed. **"Business transport"** refers to the transfer of Internet traffic between networks. This is generally used by large business customers.

Ture	2012	2013	2014	2015	2016	Growth (%)	CAGR (%)
Туре			2014	2015	2010	2015-2016	2012-2016
Incumbent TSPs	1,891	2,156	2,442	2,760	3,132	13.5	13.5
Cable-based carriers	3,065	3,293	3,477	3,651	3 <i>,</i> 953	8.3	6.6
Other service providers	412	489	636	814	959	17.8	23.5
Total	5,369	5,938	6,554	7,224	8,045	11.4	10.6
Dial-up (as a percentage of	0.8	0.5	0.3	0.2	0.1		
revenues							

Table 5.3.2 Residential Internet access service revenues by type of service provider (\$ millions)

Source: CRTC data collection

In the table above, service providers are defined as follow:

*Incumbent TSPs* are the companies that provided internet services on a monopoly basis prior to the introduction of competition via their telephone infrastructure.

*Cable-based carriers* are the former cable monopolies that also provide telecommunications services via their cable infrastructure.

**Other service providers** are providers of telecommunications services that are not incumbent TSPs or cablebased carriers as described above. They include fixed wireless service providers, resellers, and facilities-based non incumbent providers.

Туре	Subtype	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Incumbent TSPs	579	581	591	659	634	-3.8	2.3
	Cable-based carriers	273	306	350	421	457	8.6	13.7
Internet access	Resellers, utility telcos, and other carriers	285	285	307	316	359	13.6	5.9
	Total	1,138	1,171	1,248	1,396	1,450	3.9	6.3
Transport	Total	65	71	72	39	38	-2.1	-12.6
Total	Total	1,202	1,243	1,320	1,435	1,488	3.7	5.5

#### Table 5.3.3 Business Internet access and transport service revenues, by type of service (\$ millions)

Source: CRTC data collection

Due to a change in company reporting, transport revenues in 2015 are not comparable to those in previous years. Part of the increase in cable-based carriers' revenues is due to a reclassification of revenues in 2015. Due to a change in company reporting, 2016 figures for resellers, utility telcos, and other carriers, as well as for incumbent TSPs, may not be comparable to previous years.

Over the 2012 to 2016 period, revenues from the business Internet access and transport service market increased on average 5.5% annually.

### ii Subscriber data

Residential Internet service subscribers receive Internet service from a variety of service providers. In 2016, residential subscribers reached 12.3 million, a 2.4% increase from 2015.

Type of service provider	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Incumbent TSPs	4,114	4,244	4,429	4,586	4,723	3.0	3.5
Cable-based carriers	5,930	5 <i>,</i> 933	5,954	5 <i>,</i> 986	6,030	0.7	0.4
Other service providers	947	1,074	1,247	1,447	1,548	7.0	13.1
Total	10,991	11,251	11,630	12,019	12,301	2.4	2.9
Dial-up (as a percentage of subscribers)	1.7	1.1	0.8	0.7	0.6	n/a	n/a

#### Table 5.3.4 Residential Internet service subscribers, by type of service provider (thousands)

Source: CRTC data collection

Other service providers reported the highest growth rates from 2012 to 2016, although cable-based carriers and incumbent TSPs still dominate the market. Overall, Internet subscription increased, on average, 2.9% annually since 2012. When compared to Statistics Canada's annual population growth rates, the rate of Internet service subscriber growth was approximately three times that of population growth.



#### Figure 5.3.1 Residential Internet service subscriber market share by type of service provider (%)

Source: CRTC data collection

Table 5.3.5 Business Internet access subscriptions by type of service provider (thousands)

Туре	Subtype	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Dial-up	Total	61	54	47	43	34	-21.1	-13.8
	Incumbent TSPs	463	487	504	538	520	-3.3	3.0
	Cable-based carriers	268	310	347	453	475	4.8	15.4
High-Speed	Resellers, utility telcos, and other carriers	150	170	179	185	159	-13.9	1.5
	Total	881	966	1,030	1,176	1,154	-1.8	7.0

Source: CRTC data collection

Due to a change in company reporting in 2015 for cable-based carriers and in 2016 for Resellers, utility telcos, and other carriers, subscriptions may not be comparable to previous years.

As shown in figure 5.3.2, take-up of unlimited Internet packages increased from 12% to 23% from 2012 to 2016. However, for resale-based independent ISPs, subscribers with unlimited bandwidth packages represent approximately 55% of their subscriptions, while 75% have plans that include 300GB per month or more.

In 2016, it is estimated that Canadian households paid around \$100 million in Internet overage charges, which accounts for around 1% of total residential Internet service revenues. Residential subscriptions that went over their limits on an average month are estimated at under 5%.

Canadian businesses paid around \$2.5 million in Internet overage charges, with only around 1% of subscriptions going over their monthly limits on an average month.

Figure 5.3.2 High-speed residential Internet service subscribers, by transfer (upload/download) capacity (GB) included in subscriptions



## High-speed residential Internet service subscribers, by transfer (upload/download) capacity (GB)

#### Source: CRTC data collection

Data for the 300 GB and higher category was not collected in 2012. Plans with unlimited upload were categorized according to their download limit.

In 2016, while most subscribers (51%) had transfer limits of 160GB or more, approximately 2% of subscribers had transfer limits below 20GB.

Data for tables 5.3.6, 5.3.8, 5.3.9, 5.3.10, 5.3.11, and 5.3.12, and for figure 5.3.2, are from the larger ISPs, which reported providing approximately 89% of total residential high-speed subscriptions in 2016.

Usage	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Download	28.4	44.8	66.5	93.0	116.9	25.6	42.4
Upload	5.4	6.0	8.6	10.9	11.4	4.8	20.6
Total	33.8	50.8	75.1	104.0	128.3	23.4	39.6

Table 5.3.6 Weighted-average upload and download usage (GBs) of residential high-speed Internet subscribers

Source: CRTC data collection

Downloads still account for the vast majority of Internet usage, reaching an average of 116.9GB per month per subscriber in 2016, a 25.6% increase over 2015 levels.

### iii Performance indicators

In general, the average revenue per user (ARPU) for high-speed Internet services has been increasing since 2008.<sup>27</sup> While some packages have experienced price declines, these declines have been offset by movement towards larger, faster packages.

Not only are Canadians choosing to subscribe to faster Internet services, they are also choosing packages with more capacity. From 2012 to 2016, the amount of GB downloadable in the average package increased every year except 2013.

As shown in table 5.3.7, from 2012 to 2016, resellers consistently reported the lowest ARPU, while the highest ARPU have been attributed to the Other facilities-based TSPs category, which consists mainly of fixed wireless and satellite-based service providers.

As shown in table 5.3.10, the weighted average download and upload speeds are approaching the 50 Mbps download and 10 Mbps upload speed set out in the universal service objective. However, only 23% of subscriptions currently meet or exceed these speeds, while 79% of subscriptions exceed 5 Mbps download and 1 Mbps upload.

<sup>&</sup>lt;sup>27</sup> Data excludes revenues from modem rentals.

Type of TSP	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Incumbent TSPs	38.77	43.00	46.92	51.02	56.08	9.9	9.7
Cable-based carriers	43.39	46.27	48.75	50.96	54.83	7.6	6.0
Other facilities-based service providers	49.34	48.29	54.21	62.73	66.26	5.6	7.7
Resellers	33.20	35.66	40.83	43.17	45.59	5.6	8.3
Total	41.31	44.50	47.74	50.91	55.13	8.3	7.5

#### Table 5.3.7 Residential Internet access service average revenue per user per month (ARPU), (\$)

Source: CRTC data collection

ARPU in the table above may vary from table 5.3.8 below, which uses data from only the larger providers, who comprise 89% of all high-speed subscriptions. ARPU is calculated based on year-end data, not data from throughout the year. This table also contains data from dial-up services.

Advertised download speed	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Wideband 300 to 1400 Kbps	35.83	35.49	33.80	38.02	43.83	15.3	5.2
1.5 to 4 Mbps	41.87	31.45	48.05	52.11	22.63	-56.6	-14.3
5 to 9 Mbps	44.05	46.10	46.87	48.37	53.00	9.6	4.7
10 to 15 Mbps	40.62	48.17	48.52	53.59	57.43	7.2	9.0
16 to 49 Mbps	44.85	58.69	51.96	55.35	62.29	12.5	8.6
50 Mbps and higher	59.69	66.05	60.90	60.44	64.78	7.2	2.1
All tiers	43.80	49.64	50.06	54.00	59.67	10.5	8.0

Table 5.3.8 Residential Internet service one-month average revenue, by advertised download speed (\$)

Source: CRTC data collection

The one-month average revenue by download speed was calculated by dividing the service providers' total one-month revenue in each speed tier by the total number of subscribers to the service in each speed tier in that month. The month used was December or the closest month for which information was available.

Advortised download speed	vertised download speed 2012 2013 2014 2015 2016	2016	Growth (%)	CAGR (%)			
Advertised download speed	2012	2013	2014	2015	2010	2015-2016	2012-2016
Wideband 300 to 1400 Kbps	17.89	25.42	27.25	31.23	40.23	28.8	22.5
1.5 to 4 Mbps	94.93	68.22	52.20	63.24	69.57	10.0	-7.5
5 to 9 Mbps	76.78	48.46	53.36	62.55	63.29	1.2	-4.7
10 to 15 Mbps	106.74	99.84	101.79	110.68	123.52	11.6	3.7

159.15

283.10

118.27

188.50

286.34

141.94

196.31

449.58

181.68

4.1

57.0

28.0

10.5

5.4

15.1

Table 5.3.9 Weighted-average upload/download limits (GBs) of residential Internet service plans, by advertised download speed

## All tiers Source: CRTC data collection

16 to 49 Mbps

50 Mbps and higher

131.50

364.80

103.48

The weighted-average upload/download limit was calculated for each downstream speed tier based on the number of subscribers to plans with upload/download limits.

142.14

362.86

99.24

Advertised download speed	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Wideband 300 to 1400 Kbps	313	291	283	279	293	4.9	-1.6
1.5 to 4 Mbps	651	768	746	757	764	0.9	4.1
5 to 9 Mbps	1,118	809	937	969	909	-6.2	-5.0
10 to 15 Mbps	2,519	2,407	2,225	2,414	2,631	9.0	1.1
16 to 49 Mbps	2,912	4,133	4,676	6,159	7,107	15.4	25.0
50 Mbps and higher	13,199	19,890	13,701	15,015	22,531	50.1	14.3
Weighted average upload speed for all tiers	2,009	3,031	3,676	5,528	8,722	57.8	44.3
Weighted-average download speed for all tiers	12,610	15,465	21,242	29,150	42,027	44.2	35.1

Table 5.3.10 Residential Internet service upload speed (Kbps) by advertised download speed and average advertised download speed

#### Source: CRTC data collection

The weighted-average upload speed was calculated for each advertised download speed tier based on the number of subscribers to the plan. The weighted-average download speed was calculated based on the number of subscribers to each plan.

### iv Price

The price structure of Internet services is based on download and upload speed as well as bandwidth or monthly transfer limits.

Consistent with previous years, urban households generally had access to lower Internet service prices and had a greater number of Internet service providers (ISPs) to choose from than rural households.

In 2016, service providers were asked to report the price of services meeting the new service objective target, the former objective target as well as an intermediate service:

- 5 Mbps download and 1 Mbps upload (5/1 Mbps) (the former basic service objective target speeds)
- 25 Mbps download and 3 Mbps upload (25/3 Mbps) with at least 100 GB of monthly transfer (intermediate service)
- 50 Mbps download and 10 Mbps upload (50/10 Mbps) with unlimited monthly transfer (the new universal service objective target speeds)

The analysis below consists of information from 28 service providers.

### Urban centres

Figure 5.3.3 Price of residential broadband (5/1 Mbps) Internet access service and number of companies providing this service in urban centres, 2016



## Price of residential broadband (5/1 Mbps) Internet access services in urban centres, 2016

■ Variance between highest and lowest price

### Source: CRTC data collection

This bar chart displays the range in the monthly prices of 5/1 Mbps Internet service in 24 urban centres in Canada. The number at the end of each bar is the highest price. The number in parentheses along the vertical axis after the name of each urban centre represents the number of ISPs in that urban centre.

With the exception of Iqaluit, satellite services are excluded, but are available in all areas.

While Iqaluit has no 5/1 Mbps fixed broadband service option, 5 Mbps/512kbps service is available at \$179.95 per month at the time of writing.<sup>28</sup>

<sup>&</sup>lt;sup>28</sup> Source: Service provider website.

The price of 5/1 Mbps Internet service varies from lows of between \$25 and \$86 per month to highs of between \$53 and \$89 per month.

The lowest cost 5/1 Mbps service option is provided with unlimited data transfer by at least one provider, and often two or three, in most urban centres outside the territories. Reported service options with data transfer limits include 25 to 300 GB per month.

Figure 5.3.4 Price of residential broadband (25/3 Mbps, 100 GB/month) Internet access service and number of companies providing this service in urban centres, 2016



### Price of residential broadband (25/3 Mbps, 100GB/month) Internet access services in urban centres, 2016

■ Variance between highest and lowest price

### Source: CRTC data collection

The lowest cost 25/3 Mbps service option tends to include at least 125 GB per month, while in some areas up to 450 GB are included with the service. A service with unlimited transfer was provided by at least one provider in all non-territorial areas, and oftentimes by two or three providers.

Figure 5.3.5 Price of residential broadband (50/10 Mbps, unlimited GB/month) Internet access service and number of companies providing this service in urban centres, 2016



### Price of residential broadband (50/10 Mbps, ∞GB/month) Internet access services in urban centres, 2016

■ Variance between highest and lowest price

### Source: CRTC data collection

As shown in the above figure, services including unlimited transfer, 50 Mbps download, and 10 Mbps upload are available in all non-territorial urban centres.

### Rural communities

As displayed below, Internet service prices are generally higher in rural communities than in urban centres.

Internet service subscribers living in rural communities generally have fewer service providers to choose from than subscribers living in urban centres. Of all the rural areas examined, the median number of available providers was 3, with an average of 3.7. The median for urban areas was 7, with an average of 6.6.

Figure 5.3.6 Price comparison of residential broadband (5/1 Mbps) Internet access service and number of companies providing this service in urban and rural communities, 2016



Price comparison of residential broadband (5/1 Mbps) Internet access services in urban and rural communities, 2016

This bar chart displays the range in the monthly price of broadband (5/1 Mbps) Internet access service in rural and urban communities in Canada. The number at the end of each bar is the highest price. The number in parentheses along the vertical axis after the name of each province and territory represents the range in the number of service providers among the rural communities or urban centres. For example, "BC rural (5/6)" means that the number of service providers among the rural communities in British Columbia included in the survey varied between 5 and 6.

Except in Iqaluit, satellite services are excluded in urban areas.

Figure 5.3.7 Price comparison of residential broadband (25/3 Mbps, 100 GB/month) Internet access service and number of companies providing this service in urban and rural communities, 2016



### Price comparison of residential broadband (25/3 Mbps, 100GB/month) Internet access services in urban and rural communities, 2016

Figure 5.3.8 Price comparison of residential broadband (50/10 Mbps, unlimited GB/month) Internet access service and number of companies providing this service in urban and rural communities, 2016



Price comparison of residential broadband (50/10 Mbps, ∞GB/month) Internet access services in urban and rural communities, 2016

Service offerings were reported in all rural communities for 5/1 Mbps, and in 61% of communities for 25/3 Mbps and 50/10 Mbps.

In addition to higher prices, service offerings in rural communities tend to have lower monthly transfer limits than in urban areas.

Unlimited transfer is included in the cheapest service offering in around 85% of rural areas at 5/1 Mbps, and in 44% of these areas at 25/3 Mbps.

Which rural communities were included? 54 rural communities were selected to assess the price of Internet access services (see Appendix 9). These communities met the following criteria:

- the community was not part of one of the census metropolitan areas of the 24 urban centres;
- the community had a population density of fewer than 400 people per square kilometre, or its population centre had fewer than 1,000 people;
- the number of communities selected in each province/territory was proportional to the population of the province/territory; and
- the communities were not clustered together.

### v Consumer trends

In 2012, 41.6% of ISPs' high-speed residential Internet access service revenues were generated from plans with download speeds of between 5 and 9 Mbps. Plans with lower speeds yielded 20.1% of the revenues, while plans with higher speeds generated 38.4%.

Four years later, 5 to 9 Mbps plans no longer yield the highest percentage of revenues, the revenues from these plans having declined to 17.7%, while revenues from lower-speed plans declined to under 3%, and revenues from higher-speed plans increased to 79.8%.

Advertised download speed	2012	2013	2014	2015	2016
Wideband 300 to 1400 Kbps	2.4	2.1	1.3	0.7	0.5
1.5 to 4 Mbps	17.4	4.6	3.6	2.8	1.9
5 to 9 Mbps	41.6	30.5	25.2	21.0	17.7
10 to 15 Mbps	9.3	24.8	24.8	23.9	21.6
16 to 49 Mbps	24.1	31.1	33.1	30.2	29.8
50 Mbps and higher	5	6.7	11.9	21.5	28.4
Total revenues in sample (\$M)	427.6	494.9	517.8	570.1	646.1

Table 5.3.11 Residential Internet service one-month revenue distribution (%), by advertised download speed

Source: CRTC data collection

Data excludes terminal rental revenues. Services are listed without regard to upload speeds. 24.1% of highspeed service revenues stem from services that meet the Commission's target speeds of 50 Mbps download and 10 Mbps upload, compared to 28.4% of revenues from services including at least 50 Mbps download and any upload speed. 50 Mbps download and 10 Mbps upload plans with unlimited monthly transfer made up only 14.1% of revenues.

In 2016, Canadians continued to subscribe to higher-speed Internet access services. In 2012, the most common plans included download speeds of 5 to 9 Mbps, representing 41.3% of all subscriptions. Plans with lower speeds made up 21.4% of all subscriptions, and plans with higher speeds represented 37.2% of subscriptions. Four years later, the 5 to 9 Mbps plans are no longer the most popular plans. The percentage of subscribers to these plans declined to 19.9%. In 2016, the percentage of subscribers to plans including speeds less than 5 Mbps declined to 1.4% while the percentage of subscribers to plans including speeds greater than 9 Mbps grew to 77.2%.

Advertised download speed	2012	2013	2014	2015	2016
Wideband 300 to 1400 Kbps	2.9	2.7	1.9	1.0	0.7
1.5 to 4 Mbps	18.2	7.3	3.7	2.9	2.1
5 to 9 Mbps	41.3	32.8	26.9	23.4	19.9
10 to 15 Mbps	10.1	25.6	25.6	24.1	22.4
16 to 24 Mbps	-	-	4.5	1.3	0.8
25 to 29 Mbps	-	-	17.4	15.8	14.5
30 to 49 Mbps	-	-	9.9	12.3	13.2
16 to 49 Mbps total	23.5	26.3	31.9	29.4	28.6
50 to 99 Mbps	-	-	-	7.2	10.4
100 Mbps and higher	-	-	-	8.0	15.8
50 Mbps and higher total	3.6	5	9.8	19.2	26.2
Total subscriptions in sample	9,761.1	9,970.1	10,345.1	10,558.7	10,827.5

Table 5.3.12 Residential Internet service one-month subscriber distribution (%), by advertised download speed

Source: CRTC data collection

This table indicates that, over time, faster-speed services make up more subscriptions. 83.9% of Canadian households subscribe to some form of high-speed Internet service.

22.9% of high-speed Internet service subscribers subscribe to a service that meets the Commission's target speeds of 50 Mbps download and 10 Mbps upload, compared to 26.2% who subscribe to a service with at least 50 Mbps download and any upload speed, while 50 Mbps download and 10 Mbps upload plans with unlimited monthly transfer made up 13.7% of total subscriptions.

## vi Competitive landscape

Canadians can access broadband Internet services using either wireline or wireless facilities. These facilities support evolving services, which make new experiences possible for Canadians, ranging from television and radio services, to new and highly interactive services and programs offering greater consumer control and choice. Consumers can engage with the digital world using their wireless devices at the time and place of their choice.

Figure 5.3.9 Residential broadband subscriptions – Incumbent TSPs vs. cable-based carriers (millions)



### Residential broadband subscriptions



Figure 5.3.10 Internet access service revenue shares, by market and type of service provider, 2016 (%)

Source: CRTC data collection





#### Source: CRTC data collection

Business Internet access service revenue is derived from services provided using a variety of access technologies. The "Other" segment refers to other technologies, such as fixed wireless and satellite technologies.



Figure 5.3.12 Residential Internet access service subscriptions by access technology, 2012 vs. 2016 (%)

#### Source: CRTC data collection

What are fixed wireless and satellite services? "Fixed wireless services" refers to the use of radio spectrum to provide communications services to subscribers. The connection to the subscriber's premises is from a tower located in the area.

Satellites can provide Internet access service.<sup>29</sup> Connections are established between an earth station on the ground (using equipment such as satellite dishes) and a satellite in space. Satellites can support various frequency bands (C-band, Ku-band, and Ka-band).

Satellite Internet services delivered using the C-band require a large satellite dish and are typically used to serve a community. Ka-band and, to a lesser degree, Ku-band, satellite Internet services can be offered using a small satellite dish located at the customer's premises.

<sup>&</sup>lt;sup>29</sup> Only direct-to-home services are counted as satellite services in this section.

### vii Capacity requirements

This section examines the capacity requirements of various streaming services. These services are a major component driving the demand for larger, faster broadband packages.

### Bit rate

The bit rate of a stream is, essentially, the number of bits transmitted in a particular time period. The standard measurement for bit rate of streaming services, like Internet access packages, is in a multiple of bits per second. Here, we use megabits per second (Mbps), which is one million bits (or 125,000 bytes) per second. The measurements presented in this section show sample average bit rates of various streaming services. The measurements were performed in the CRTC's Technology Resource Centre using off-the-shelf consumer electronics. For more information on the testing environment and methodology, see Appendix 10.

Since many streaming services use similar bit rates, they have been split into seven ranges. Table 5.3.13 lists the ranges, their average bit rate, a description, and examples of streaming services in each range. Some streaming services are in multiple ranges because their bit rate is automatically adjusted based on connection type (i.e. mobile or wireline) and speed. A stream's bandwidth can be adjusted by changing its compression level or codec; this compression level affects the bandwidth and thus the number of simultaneous streams that an Internet connection can handle. For more information on these topics, see Appendix 10.

Where services do offer multiple quality options, they have been itemized separately in the table. Some services use qualitative names for their settings (e.g. good, better, best), while others use the resolution and video frame rate. For example, "144p" means 144 lines of vertical resolution, progressive scan.<sup>30</sup> "2160p60" means 2160 lines of vertical resolution (marketed as "4K"), at 60 frames per second.<sup>31</sup> The term "Ultra-high-definition (UHD)" encompasses resolutions greater than 1440p, specifically 2160p and 4320p (also known as "4K" and "8K," respectively); this is in contrast with the current High Definition (HD) standard, which includes 720p, 1080p, and 1440p.

Due to the limited number of samples and the diversity of network configuration and equipment, the reported values in this section should be viewed as average-case estimates, not worst-case limits. It is important for consumers with data-limited Internet plans to monitor their usage using tools provided by the service provider. Some operating systems also include – or offer for download – usage measurement utilities, which can be used to estimate the provider's data usage calculation.

<sup>&</sup>lt;sup>30</sup> Progressive scanning updates the entire image at once, as opposed to interlacing, which updates even and odd lines in an alternating pattern.

<sup>&</sup>lt;sup>31</sup> A typical frame rate for television is 29.97 frames per second (fps), but more content is shifting to higher rates of 48 fps, and 60 fps for some web and streaming content.

Average Download Bit Rate	Description	Examples of Services and Quality Settings	Average data usage (GB) per hour of steaming
0.0 – 0.5 Mbps	Streaming audio, mobile-quality streaming video, voice and SD video calling	Streaming radio, Twitch 160p, Skype audio and SD video calling	0.1 GB/h
0.5 – 2.0 Mbps	Standard- definition streaming video, HD video calling	CBC TV 360p/540p, Skype high- quality/HD video calling, Netflix low/medium, TED, Global GO, Twitch 360p/480p/720p/1080p, YouTube 360p	0.6 GB/h
2.0 – 3.5 Mbps	Low bit rate HD streaming video	CBC TV 720p/1080p, CTV GO, Crackle, YouTube 720p/1080p, Twitch 720p60	1.2 GB/h
3.5 – 5.0 Mbps	High bit rate HD streaming video	Netflix high, Twitch 1080p60, YouTube 720p60/1440p <sup>32</sup>	1.8 GB/h
5.0 – 10.0 Mbps	Very high bit rate HD streaming video	CraveTV, YouTube 1080p60, Netflix HD	3.0 GB/h
10.0 – 20.0 Mbps	UHD streaming video	Netflix UHD, YouTube 1440p60/2160p	7.4 GB/h
20.0 – 50.0 Mbps	High frame rate UHD streaming video	Netflix UHD (some titles), YouTube 2160p60	11.3 GB/h

Table 5.3.13 List of ranges for data usage measurement calculations

Source: CRTC Broadband measurement

Figure 5.3.13 shows the approximate amount of data used per hour of streaming for each bit rate range listed in Table 5.3.13. These numbers measure the stream without any auxiliary content (e.g. previews, menus, trailers, advertisements), so the actual amount of data used may be greater than these estimates.

As an example, a 30-minute Skype HD video call would use, on average, approximately 0.3GB.

<sup>&</sup>lt;sup>32</sup> Although 1440p is not UHD, YouTube's 1440p and higher videos use much more data than other streaming services; this is likely due to the codecs used to transmit the data. See Appendix 10 for more details.





Data usage (GB) per hour of streaming

Gigabytes per hour (GB/h) Combined download and upload

### Source: CRTC Broadband measurement Streaming on mobile devices

With the proliferation of LTE data networks, consumers are now able to reliably use streaming and real-time communications applications on their mobile devices. Not only do LTE networks have much higher bandwidth, but they have consistent latency<sup>33</sup> regardless of signal strength.

While some streaming services allow the user to choose a quality setting, many automatically reduce the quality if they detect that the destination device is on a mobile network. This automatic adjustment ensures that users don't prematurely exhaust their data allowance by streaming high-bandwidth content. Many video streaming services also prompt the user for confirmation that they wish to use their mobile data, rather than connecting to a Wi-Fi network.

Many applications will reduce video quality on mobile devices regardless of the type of network they're connected to. Since mobile devices generally have smaller screens than televisions, bit rates above a certain threshold offer negligible quality increases for an often-significant increase in data usage. Therefore, a video streaming service's HD option may have a different bit rate on a mobile device than on a computer or a set-top streaming device.

<sup>&</sup>lt;sup>33</sup> Latency is a measurement of the time it takes data packets to travel from their source to their destination. High-latency connections make real-time communication difficult due to pauses in speech and video.

### viii Key indicators

Broadband service availability is calculated using information provided by ISPs. In 2012 to 2015 data, locations are considered to be serviced if their dissemination block representative point falls within broadband service coverage. As of 2016, ISED pseudohouseholds are used, along with 2016 census demography. Broadband service availability data may not take into account capacity issues or issues regarding line of sight.<sup>34</sup>

What are pseudohouseholds? Pseudohouseholds are points representing the population in an area. These points are placed along roadways within each area, and the population of the area, determined by Statistics Canada, is distributed amongst these points. Additional data regarding addresses and the position of dwellings is used to guide this distribution. The use of pseudohouseholds aims to improve the accuracy of the availability indicators over the use of the assumption that the population within an area is located at the center of the area.

Туре	Subtype	2012	2013	2014	2015	2016
	3G/3G equivalent	99	99	99	99	99
Mobile broadband	HSPA+	99	99	99	99	99
	LTE	72	81	93	97	98
	DSL	87	82	82	82	77
Wireline broadband	Cable modem	82	82	82	82	85
	Fibre	-	14	20	22	28
Wireline and fixed wireless	Total	97	97	97	98	98
Universal service objective	50 Mbps download 10 Mbps upload unlimited option	-	-	-	-	84
	IPTV	45	56	65	70	75
DO Services	Digital satellite	National	National	National	National	National

#### Table 5.3.14 Key telecommunications availability indicators (% of households)

#### Source: CRTC data collection

Not all broadband technologies are available in all parts of the country. This table lists the various types of mobile and wireline broadband technologies, such as long-term evolution (LTE), as well as IPTV and digital satellite technologies, and shows the percentage of households nationally that were able to access such technologies from 2012 to 2016. The declines in the availability of DSL in 2013 and 2016 were due to the deployment of fibre technology, with improvements in company reporting also contributing. Fibre availability is not reported for 2012. The increase in cable availability is mainly attributable to the change to the pseudohousehold methodology.

The vast majority of areas that have 50 Mbps download and 10 Mbps upload speeds also have unlimited monthly transfer options.

<sup>&</sup>lt;sup>34</sup> The information in this section does not take into account upload speeds unless noted.

**HSPA/HSPA+:** High-speed packet access (HSPA) is a protocol or standard used for communications between a mobile phone and cellular towers in mobile networks. HSPA is also referred to as 3G (third generation) cellular. HSPA+, or evolved HSPA, is a form of HSPA that uses technical measures to provide faster transmission speeds.



Figure 5.3.14 Broadband service availability vs. subscriptions by province/territory, 2016

#### Sources: Innovation, Science and Economic Development Canada (ISED) and CRTC data collection

The availability and take-up rates of broadband services vary from province to province. New Brunswick and Saskatchewan have arrangements to provide broadband services via satellite under terms and conditions similar to those for wireline services. In Prince Edward Island, HSPA+ is available to households without access to other means of broadband services under terms and conditions equivalent to those for wireline services. The fixed broadband availability data exclude satellite broadband services, but these services are included in the fixed broadband subscriptions data. The HSPA+ bar shows the effect that inclusion of HSPA+ technology would have on broadband availability.





# Broadband service, 5 Mbps availability

### Source: CRTC data collection

A broadband download speed of at least 5 Mbps is available to 99.3% of Canadian households through a variety of platforms. This bar graph shows the availability rates of broadband service access through DSL, cable modem, fixed wireless, fibre, and mobile technologies, as well as the availability rate of all technologies at this speed. Satellite service is excluded.

## ix Broadband service availability

As mentioned in previous sections, in Telecom Regulatory Policy 2016-496, the Commission established criteria to measure the successful achievement of the universal service objective, which included the availability of a fixed broadband Internet access service with a downstream rate of at least 50 Mbps and an upstream rate of at least 10 Mbps, as well as the availability of an option for unlimited monthly data transfer (usage). As of 31 December 2016, service meeting these criteria was available to 84% of Canadian households. However, the availability varies greatly between urban and rural areas, with only 39% of rural households having access to this kind of service, versus 96% in urban areas. Overall, 11% of Canadians households subscribe to a service meeting these criteria. It is important to note that the Commission's objective was to have these speeds available to Canadians while subscription is at the discretion of the consumers.

Approximately 99% of Canadian households can access a download speed of at least 5 Mbps, which is sufficient for streaming high quality audio and video content. The vast majority of Canadians (97%) can access this speed using either landline or fixed wireless facilities, and an additional 1.5% may get access via satellite facilities. Eighty-one percent of Canadian households subscribe to services with download speeds of 5 Mbps or higher. When taking into account an upload speed of 1 Mbps, availability of 5 Mbps or higher Internet services declines to 97%<sup>35</sup> (95% excluding satellite), with 67% of Canadian households subscribing to a service meeting these speeds.

Fixed wireless services are a major source of broadband Internet connectivity in rural areas, since 31% of rural households have access to broadband Internet via fixed wireless services, but not fibre, cable, or DSL. While satellite coverage is nationwide, capacity limitations restrict practical broadband Internet service availability to approximately 1.5% of all Canadian households. Additional coverage is available via LTE and HSPA+ networks, although data allowances may differ from satellite and wireline broadband. For more information on the wireless sector, see section 5.5.

Unless otherwise noted, broadband Internet service availability figures exclude wireless mobile technology. Satellite access services in this section refer to direct-to-home satellite, and not to the technology used to connect communities to the Internet.

<sup>&</sup>lt;sup>35</sup> Taking into account mobile LTE technology, virtually all households have access to 5 Mbps download and 1 Mbps upload speeds.



### Figure 5.3.16 Broadband service availability by speed (% of households)



Sources: Innovation, Science and Economic Development Canada (ISED) and CRTC data collection

The availability of broadband services at higher speeds has been expanding in Canada. This graph excludes broadband services provided through satellite and mobile technologies.

Increases in speed categories at and above 50 Mbps in 2015 are in part due to the consideration of the effects of line bonding (using more than one line to provide service) on DSL.

Increases in broadband service availability by speed categories in 2016 are partly due to the higher accuracy of the pseudohousehold methodology. The increase in availability due to migration to the pseudohousehold methodology is as follows (in percentage points): 0.7 for 1.5 to 4.9 Mbps, 1.0 for 5 to 9.9 Mbps, 1.4 for 10 to 15 Mbps, 1.7 for 16 to 24.9 Mbps, 1.8 for 25 to 29.9 Mbps, 2.7 for 30 to 49.9 Mbps, 2.9 for 50 to 99.9 Mbps, and 3.6 for 100+ Mbps.

Table 5.3.15 Broadband service availability in rural areas, by download speed and number of platforms (% of households), 2016

Number of wireline platforms	1.5 Mbps and higher	5.0 Mbps and higher	10.0 Mbps and higher	16.0 Mbps and higher	25.0 Mbps and higher	30.0 Mbps and higher	50.0 Mbps and higher	100 Mbps and higher
1	37	39	40	36	36	26	26	25
2	33	30	25	21	20	16	15	11
3	23	18	10	4	4	0	0	0
Total	93	87	75	61	60	42	41	37
Mobile only	6	10						

Sources: Innovation, Science and Economic Development Canada (ISED) and CRTC data collection

This table shows the percentage of households in rural areas that have access to broadband services at varying speeds, and over three platforms (DSL/fibre, cable modem, and fixed wireless), as well as the percentage of rural households that can only get mobile service (HSPA+ and/or LTE at 1.5 Mbps, LTE at 5 Mbps). On one end of the availability spectrum, non-mobile broadband service platforms at speeds of at least 5 Mbps are available to 87% of rural Canadian households. On the other end of the spectrum, two broadband service platforms at speeds of more than 100 Mbps are available to 11% of rural Canadian households.

The total at the bottom of each column indicates the percentage of rural Canadian households that can access the speeds noted for each column. This table excludes broadband services provided through satellite technologies.

Province/territory	1.5-4.9 Mbps	1.5-4.9 Mbps with HSPA+	5-9.9 Mbps	5-9.9 Mbps with LTE	10-15.9 Mbps	16-24.9 Mbps	25-49.9 Mbps	50 Mbps or higher
British Columbia	98	99	97	99	96	94	93	92
Alberta	99.7	100.0	99	99.9	97	94	95	83
Saskatchewan	93	99.7	90	96	83	62	60	52
Manitoba	98	99.8	95	97	87	78	77	70
Ontario	99	99.9	98	99.8	96	95	93	88
Quebec	98	99.7	98	99	95	92	91	90
New Brunswick	98	99.8	96	99	95	93	93	83
Nova Scotia	99.9	100.0	89	99	85	82	82	81
Prince Edward Island	96	100.0	83	100.0	69	67	67	67
Newfoundland and Labrador	89	98	87	98	76	76	73	72
Yukon	97	97	97	97	76	62	62	62
Northwest Territories	99	99	95	95	93	54	54	54
Nunavut	99	99	30	30	0	0	0	0

Table 5.3.16 Broadband service availability, by speed and province/territory (% of households), 2016

Sources: Innovation, Science and Economic Development Canada (ISED) and CRTC data collection

Not all provinces/territories have the same access to broadband services. This table shows regional availability in 2016 by broadband technology and by province and territory. The availability of broadband services vary from province to province. New Brunswick and Saskatchewan have arrangements to provide broadband services at 1.5 Mbps via satellite under terms and conditions similar to those for wireline services. In Prince Edward Island, HSPA+ is available to households without access to other means of broadband services under terms and conditions equivalent to those for wireline services. Since satellite service has a national footprint, it is excluded from this table.



### Figure 5.3.17 Broadband service availability – Urban vs. rural (% of households), 2016

Broadband service availability – Urban vs. rural (% of households), 2016

Sources: Innovation, Science and Economic Development Canada (ISED) and CRTC data collection

This table shows the percentage of Canadian households in large, medium, and small population centres, as well as in rural areas, that can access various broadband services.

Small population centres are considered to have populations of between 1,000 and 29,000. Medium population centres are considered to have populations of between 30,000 and 99,999. Large population centres are considered to have populations greater than 100,000. Rural areas have populations of less than 1,000, or fewer than 400 people per square kilometre.

The HSPA+ and LTE bars show the additional effect that inclusion of these technologies would have on the following categories: HSPA+ and LTE for 1.5 to 4.9 Mbps availability, and LTE for 5 to 9.9 Mbps availability.

Satellite services are excluded since they have a national footprint.

Technology	Language market	2012	2013	2014	2015	2016
	Anglophones	38	44	51	57	60
internet i v	Francophones	39	44	42	2015 57 49 39 29 50 37 22 15 45 45 43 34 34 34 19 19	54
Watch an entire 30 or 60 minute TV	Anglophones	24	31	37	39	53
program on the internet	Francophones	21	26	29	29	44
	Anglophones	14	23	38	50	51
Internet video on cell/smartphone	Francophones	8	16	27	2015 57 49 39 29 50 37 22 15 45 45 43 34 34 34 34 19 19	44
Watched TV Online on smoothbone	Anglophones	7	12	n/a	22	23
watched iv Online on smartphone	Francophones	4	7	n/a	2015 57 49 39 29 50 37 22 15 45 45 43 43 43 43 4 34 34 19	21
Internet use on tablet	Anglophones	29	37	44	45	47
internet use on tablet	Francophones	15	28	37	43	48
Internet video on toblet	Anglophones	11	20	26	34	36
Internet video on tablet	Francophones	7	16	25	2015 57 49 39 29 50 37 22 15 45 45 43 34 34 34 19 19	37
Watched Online TV on Tablet	Anglophones	6	12	n/a	19	22
watched Online IV on Tablet	Francophones	4	10	n/a	57       49       39       29       50       37       22       15       45       43       34       34       19       19	21

Table 5.3.17 Adoption of various video technologies in Canada (% of households)

#### Source: MTM [Media Technology Monitor] 2012-2016 (Respondents: Canadians 18+)

This table shows the rates of adoption and growth of various video technologies among Canadian consumers. Over the past five years, the popularity of video and television streaming to personal electronic devices has grown greatly.

Table 5.3.18 Adoption of various video technologies in Canada, by age group (%), 2016

Technology	18-34	35-49	50-64	65+
Internet TV	80	68	47	28
Watch an entire 30 or 60 minute TV program on the internet	75	59	38	22
Internet video on cell/smartphone	79	66	33	11
Watched TV Online on smartphone	41	30	11	4
Internet use on tablet	45	60	48	31
Internet video on tablet	36	47	36	22
Watched Online TV on Tablet	24	30	18	11

Source: MTM [Media Technology Monitor] 2016 (Respondents: Canadians 18+)

## 5.4 Data and private line retail sector \$3.3 billion

Retail telecommunications revenues in 2016

\$44.7 billion 🕨



Data and private line



"Data and private line services" refers to services sold by telecommunications service providers (TSPs) to business customers for the transmission of data, video, and/or voice traffic. These services provide private, highly secure communications channels between locations.

Data services are packet-based services that intelligently switch data through carrier networks. They make use of (a) newer data protocols such as Ethernet and IP, or (b) legacy protocols such as X.25, asynchronous transfer mode (ATM), and frame relay to transmit data.

Canadian businesses were served by approximately 191 entities offering data and private line services in 2016. Of these, incumbent telecommunications service providers (incumbent TSPs or incumbent providers) accounted for approximately 15%, and alternative service providers, such as cable-based carriers, utility telcos, and resellers, accounted for the remaining 85%.

These services are provided by both incumbent TSPs and their competition, with competitors having around 36% of the total market, including network management and equipment. Notable is the increase in the activity of cable-based carriers in the newer protocol space.

Private line services provide a non-switched dedicated communications connection between two or more points to transport data, video, and/or voice traffic. These services include high-capacity digital transmission services and digital data systems, as well as voice-grade and other analog systems. Transmission facilities include copper wire and fibre-optic cable. Private line services make use of transmission facilities such as OC-3 fibre optic lines and DS-1 copper facilities.

The private line market is dominated by the incumbent TSPs. Of the alternative service providers, the independent operator category is the largest provider category.
## i Revenues

Category	Subcategory	2012	2013	2014	2015	2016	Growth (%) 2014-2015	CAGR (%) 2012-2015
	Data protocols	1,893	1,917	1,952	1,919	1,869	-2.6	-0.3
Data	Other	796	832	857	779	730	-6.2	-2.1
	Total	2,689	2,749	2,809	2,698	2,600	-3.6	-0.8
Private line	Total	793	834	784	754	738	-2.0	-1.8
Total	Total	3,482	3,583	3,593	3,452	3,338	-3.3	-1.1

Table 5.4.1 Data and private line retail revenues (\$ millions)

Source: CRTC data collection

This table shows retail data and private line revenues for the years from 2012 to 2016. Data services were classified into one of two categories: (a) services making use of data protocols such as Ethernet and IP, X.25, ATM, and frame relay; or (b) other services such as network management and networking equipment.

Due to a change in company reporting in 2015, other data revenues may not be comparable to previous years. This creates a loss of approximately 6% of other revenues in 2015.

Category	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Newer protocols	1,826	1,868	1,920	1,898	1,857	-2.2	0.4
Legacy protocols	67	49	32	21	12	-42.8	-34.9
Total	1,893	1,917	1,952	1,919	1,869	-2.6	-0.3

Table 5.4.2 Retail data service revenues by classification of data protocol used (\$ millions)

Source: CRTC data collection

This table shows the retail data service revenues earned by service providers. The data services were classified as services making use of (a) newer data protocols such as Ethernet and IP or (b) legacy protocols such as X.25, ATM, and frame relay. The table charts growth in these revenues over the period from 2012 to 2016.



#### Figure 5.4.1 Breakdown of newer data service revenues, by protocol used

*This chart shows the breakdown of data service revenues as reported by the larger companies (they account for 92% of newer protocol revenues). IP-based data services have become even more dominant from 2012 to 2016.* 

Туре	Subtype	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) (2012-2016)
Incumbent TSPs	Total	652	683	634	604	548	-9.3	-4.2
Alternative service	Cable-based carriers	49	54	61	62	65	3.8	7.2
providers	Others	92	97	90	87	125	43.8	8.0
	Total	141	151	150	149	190	27.1	7.7
Total	Total	793	834	784	754	738	-2.0	-1.8

Table 5.4.3 Private line retail revenues by type of service provider (\$ millions)

Source: CRTC data collection

Other alternative service providers are service providers that are not incumbent TSPs or cable-based carriers; they include resellers. A large portion of the significant growth in alternative service providers' revenues reflects ownership transactions.

# ii Competitive landscape

Although incumbent TSPs accounted for only approximately 15% of the entities providing data and private line services, they captured 66% of retail revenues. The remaining 85% of entities providing these services, consisting of cable-based carriers, other carriers, and resellers, accounted for 34% of retail revenues.

Retail data and private line revenue market share (%),



Figure 5.4.2 Retail data and private line revenue market share (%), by type of TSP

#### Source: CRTC data collection

Some of the significant growth in alternative service providers' revenues (referred to as "Others" in Figures 5.4.2 and 5.4.3) is due to recent ownership transactions.

Figure 5.4.3 Retail data service revenue market share (%), by type of TSP



### Retail data service revenue market share (%), by type of TSP

Source: CRTC data collection

Table 5.4.4 Retail data service revenue market share (%), by type of service provider and classification of data protocol used

Protocol	Type of service provider	Service provider subtype	2012	2013	2014	2015	2016
	Incumbent TSPs	Total	67	66	66	66	56
Newer data		Cable-based carriers	10	12	12	13	13
protocols	Alternative service	Others	23	22	22	21	30
	providers	Total	33	34	34	34	44
Logacy data	Incumbent TSPs	Total	62	61	63	67	61
protocols	Alternative service providers	Total	38	39	37	33	39
All data	Incumbent TSPs	Total	67	66	66	66	57
protocols	Alternative service providers	Total	33	34	34	34	43

Source: CRTC data collection

This table shows the percentage of retail data revenues for different types of service provider, broken down into newer and legacy data protocols.

#### Table 5.4.5 Retail private line revenue market share (%)

Service provider type	2012	2013	2014	2015	2016
Incumbent TSPs	82	82	81	80	74
Cable-based carriers	6	6	8	8	9
Others	12	12	11	12	17

Source: CRTC data collection

This table shows the revenue market shares of the incumbent TSPs when providing service to their business customers, both within and outside their traditional serving territories, and for alternative service providers (i.e. cable-based carriers, utility telcos, and resellers), for the years from 2012 to 2016.

Incumbent TSPs continue to dominate in this service category.

# 5.5 Wireless retail sector \$23.2 billion

Retail telecommunications revenues in 2016

\$44.7 billion 🕨



Wireless retail revenues

Subscriber Market Share of the top 3 wireless service providers Average Revenue per Subscriber per Month Percent of Canadian Subscribers Subscribing to at least 1 GB Data Plan

# \$23.2 B

# 89%

# \$64

48%

Increase of 3.2% from 2015 Decrease of 0.1% from 2015

Up from 46% in 2015

The wireless retail market remained the largest communications market sector, with revenues of \$23.2 billion in 2016. This included growth of 3.2% or \$720 million from 2015.

Canada's wireless networks enable Canadians to access services that are comparable to wireline services. Wireless service providers (WSPs) provide voice, data, Internet, and video services. The differentiating factors for these services tend to be mobility and price. Based on MTM's 2016 statistics, the three most popular activities by Canadian smartphone owners were text messages, Internet access, and email.

Wireless networks cover approximately 20% of Canada's geographic land mass and reach 99% of Canadians. The advanced wireless networks such as long-term evolution (LTE) and LTE-advanced (LTE-A), which deliver even higher speeds than previous generation networks, is available to approximately 98.5% and 83.0% of Canadians, respectively. Not only were these networks serving over 30.7 million Canadian subscribers, there were also over 3.0 million machine-to-machine connections reported in 2016.

In addition to advanced wireless networks such as LTE that provide broadband Internet access, WSPs significantly increased the number of publicly available WiFi hotspot locations (free and for-pay) across the country, from 14,000 at the end of 2014 to over 27,900 by the end of 2016. This provided Canadians with an additional method of accessing voice and data communications services on their handheld and other wireless communication devices. WiFi hot spots also provide wireless subscribers a means to minimize potential roaming charges.

In terms of provider choice, Canadians were served by three large national WSPs, collectively accounting for 89% of wireless service subscribers. A number of smaller, regional, facilities-based WSPs and a small number of mobile virtual network operators and resellers accounted for the remaining 11%. In both urban centres and rural communities, Canadians generally had a choice of between two and five WSPs.

In 2013, <u>the Wireless Code</u> came into effect, ensuring that consumers of wireless services could better understand their contracts, establishing consumer-friendly business practices, significantly limiting the early cancellation fees that were previously sought by retail WSPs; and enabling consumers to take advantage of competitive offers at least every two years. In 2016, approximately 91% of post-paid plan subscribers had contracts that were equal to or less than two years in length, compared to 67% in 2014 and 44% in 2013. After the 700 megahertz (MHz) spectrum auction in 2014, the Government of Canada took additional measures in early 2015 to encourage greater competition in the wireless market by releasing 50 MHz of spectrum in an auction for advanced wireless services (AWS-3) in the bands of 1755-1780 MHz and 2155-2180 MHz. As a result, five companies invested \$2.1 billion in AWS-3 spectrum and 39 licences were issued that year. In 2016, the amount of capital investment as a percentage of total wireless revenues, or capital intensity, dropped to 10%, compared to 22% in 2015 and 35% in 2014. This was largely due to higher investment spending on spectrum in 2014.

In 2015, the Commission published *Telecom Regulatory Policy* 2015-177, in which it determined that it is necessary to regulate rates that Bell Mobility, Rogers, and TELUS charge other wireless carriers for domestic Global System for Mobile communications (GSM)-based wholesale roaming. These regulations will facilitate sustainable competition and provide benefits to Canadians, such as reasonable prices and innovative services, as well as continued innovation and investment in high-quality mobile wireless networks. In the decision, the Commission expressed its intent to monitor the competitive conditions in the mobile wireless services market.

In late 2016, the CRTC launched the first review of the Wireless Code since it came into effect in December 2013. The review looked at consumer concerns surrounding issues such as bill shock, unlocking fees on all devices, and trial periods. As a result of the review, many Canadians will benefit from the revisions that were set out in mid-2017 in Telecom Regulatory Policy 2017-200. For more details regarding the review, see section 2.0.

Furthermore, the Commission issued Telecom Regulatory Policy <u>2016-496</u>, in which it established a universal service objective (USO) framework that aims to help Canadians participate in the digital economy and society. One of the key components in the USO is the importance of wireless services. The goal is for Canadians, in urban areas as well as in rural and remote areas, to have access to voice services and broadband Internet access services, on both fixed and mobile wireless networks.

### i Revenues



Figure 5.5.1 Wireless service revenue and subscriber growth rates (excluding paging)

#### Source: CRTC data collection

This table shows revenue and subscriber growth rates for WSPs from 2012 to 2016. In 2016, the wireless revenue growth rate slipped below its five-year average of 4.8% to 3.2%, and subscriber growth rate moved slightly lower to 3.3%. In 2015, strong growth in data, roaming, and other revenues, as well as in terminal equipment revenues, culminated in a 7.6% increase in wireless revenues.

#### Table 5.5.1 Retail wireless and paging service revenues (\$ millions)

Туре	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Wireless	19,504.8	20,179.3	20,927.9	22,511.7	23,232.8	3.2	4.5
Paging	21.8	18.4	17.3	12.6	11.1	-12.2	-15.6
Total revenues	19,526.6	20,197.7	20,945.2	22,524.3	23,243.9	3.2	4.5

Source: CRTC data collection

This table shows the revenues for the wireless and paging service markets from 2012 to 2016. Annual growth rates for wireless services (excluding paging) can be found in figure 5.5.1.

Туре	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Basic voice	9,486.8	8,818.7	8,665.5	8,689.0	8,834.3	1.7	-1.8
Long distance	1,255.6	1,160.3	880.4	656.1	547.0	-16.6	-18.8
Paging	21.8	18.4	17.3	12.6	11.1	-12.2	-15.6
Terminal equipment (including handheld devices)	1,532.8	1,501.5	1,673.7	2,129.8	1,911.1	-10.3	5.7
Data	6,233.2	7,546.1	8,672.6	10,034.9	10,980.5	9.4	15.2
Roaming and other	996.3	1,152.8	1,035.7	1,001.9	960.0	-4.2	-0.9
Data, roaming, and other – Subtotal	7,229.5	8,698.8	9,708.3	11,036.8	11,940.4	8.2	13.4
Total	19,526.6	20,197.7	20,945.2	22,524.3	23,243.9	3.2	4.5

Table 5.5.2 Retail wireless and paging service revenue components (\$ millions)

Source: CRTC data collection

This table shows the service revenue components of the wireless market from 2012 to 2016. These components include voice, long distance, paging, hardware, data, roaming, and other. Mobile TV revenues are included within data revenues.

Table 5.5.3 Prepaid and postpaid retail wireless service revenues (basic voice, long distance, and data) (\$ millions)

Туре	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Prepaid	877.3	790.4	871.6	879.8	932.4	6.0	1.5
Postpaid	15,762.3	16,303.6	17,179.5	18,345.8	19,306.2	5.2	5.2
Total	16,639.6	17,094.0	18,051.1	19,225.6	20,238.6	5.3	5.0

Source: CRTC data collection

Canadians have a choice of either prepaid or postpaid wireless services. With prepaid services, a significant portion of services and usage is paid for prior to consuming the services. With postpaid services, a significant portion of services and usage is paid for subsequent to consuming the services.

In 2016, of companies that reported data overage charges, approximately 6.0% of their total retail mobile revenues were reported to be directly from revenues collected from subscribers who exceeded allowable monthly data limits; the revenues excluded charges for flex-type plans, domestic and international roaming, and text messaging services.



#### Figure 5.5.2 Roaming revenues by type and destination, 2016

Roaming revenues by type and destination, 2016

#### Source: CRTC data collection

WSPs extend their coverage area to areas where they do not have facilities by making arrangements with other WSPs that do have facilities in those areas to offer service to their end-users. When a subscriber uses the facilities of another WSP, the subscriber is said to be "roaming." This graph shows the percentage of roaming revenues that were derived within Canada, the United States, and internationally. SMS and Multimedia Messaging Service (MMS) revenues were excluded from the data revenue component of this figure.

While 56% of voice roaming and 44% of data roaming happens within Canada (as shown in Figure 5.5.29), the revenues come mainly from roaming in the United States (66%).

## ii Subscriber data

Table 5.5.4 Number of wireless subscriptions (thousands)

Туре	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Wireless	27,720.6	28,363.8	28,788.9	29,765.4	30,752.0	3.3	2.6

Source: CRTC data collection

From 2012 to 2016, there was a steady increase in wireless subscriptions.

Table 5.5.5 Postpaid wireless service subscribers as a percentage of total wireless service subscribers (%)

Туре	2012	2013	2014	2015	2016
Postpaid	81	83	86	86	87

Source: CRTC data collection

Canadians subscribing to wireless services favour postpaid services.

Figure 5.5.3 Percentage of wireless service plans with contracts, by duration



Percentage of wireless plans with contracts, by duration

#### Source: CRTC data collection

This chart shows the percentage of postpaid plans that were without contract, under contract for one to two years, and under contract for more than two years.

With the implementation of the Wireless Code in 2013, the percentage of postpaid plans under contracts of more than two years has declined significantly. While customers can still sign contracts more than two years in length, no cancellation fees can be incurred after 24 months.

#### Figure 5.5.4 Total and daily number of SMS and MMS messages



Total and daily SMS and MMS messages

#### Source: CRTC data collection

This table shows the number of messages sent and received by Canadians via SMS and MMS per day and annually for the period 2012 to 2016.

**Short message service (SMS)** enables the transmission of text messages of up to 160 characters in length between subscribers.

**Multi-media messaging service (MMS)** is similar to SMS, but it enables the transmission of multimedia content, such as pictures and videos, between subscribers.

Metric	2014	2015	2016	Growth (%) 2015-2016
Average data usage per subscriber (MB/month)	641	981	1,225	24.9
Average data usage per subscriber with a data plan (MB/month)	988	1,390	1,570	12.9
Average number of SMS/MMS per subscriber (messages/month)	547	548	545	-0.6
Courses CDTC data collection				

Source: CRTC data collection

This table shows the average mobile data usage across all retail subscribers and the average data usage among those subscribers who subscribed to a data plan.

The average wireless data usage per subscriber, and per subscriber who subscribed to a data plan, was calculated by dividing total retail data usage (upload/download data) for the year by the average number of subscribers at the beginning and at the end of the year. Subscribers who subscribed to a data plan were classified as those who subscribed to voice and data or data-only plans. The 2015 average data usage per subscriber with a data plan were restated to include estimates that were overlooked.

Table 5.5.7 Average revenue per 1 GB data/month (\$)

Metric	2015	2016	Growth (%) 2015-2016
1 GB of data usage	28.0	24.5	-12.5
a			

Source: CRTC data collection

This table shows the average revenues generated from 1 GB of data usage per month. Only companies that provided both data traffic and revenues were included in the calculation. The 2015 figure was restated to reflect additional and more accurate data.

# iii Competitive landscape

Figure 5.5.5 TSPs' wireless subscriber market share



#### Source: CRTC data collection

These charts show the percentage of subscribers to wireless services in 2015 and 2016 for Canada's three major TSPs: the Bell Group of companies (Bell Group), Rogers, and TELUS. Collectively, these companies had 90% and 89% of wireless subscribers in 2015 and 2016, respectively.

The "Other" category includes TSPs such as MTS Inc. (MTS), SaskTel, other small TSPs as well as, the remaining new entrants that acquired spectrum in Industry Canada's (now Innovation, Science and Economic Development Canada [ISED}) 2008 AWS spectrum auction and were still operating as a competitor to the Bell Group, Rogers, and/or TELUS in 2015.

Bell Group includes Bell Canada; Bell Mobility; KMTS; Latitude Wireless; NorthernTel, Limited Partnership; Northwestel Mobility; and Télébec, Limited Partnership. As of 2013, Public Mobile's figures were included with those of TELUS. In 2015, Data & Audio Visual Enterprises Wireless Inc.'s (Mobilicity) figures were included with those of Rogers.





Source: CRTC data collection

These charts show the percentage of revenues from wireless services in 2015 and 2016 for Canada's three major TSPs: the Bell Group, Rogers, and TELUS. Collectively, they had 92% and 91% of all wireless revenues in 2015 and 2016, respectively.

Figure 5.5.7 Percentage of revenues and subscribers derived via primary brands, flanker brands, and resellers/rebillers



Percentage of revenues and subscribers derived via primary brands, flanker brands, and resellers/rebillers

#### Source: CRTC data collection

Canadian WSPs market wireless services through primary and flanker brands. By marketing their services through various market segments, they are able to differentiate service offerings to potentially affect the competitive landscape in regional markets. This graph depicts the revenues and subscribers garnered through primary brands, flanker brands, and reseller/rebiller arrangements.

- **Flanker brands** are brand names created by companies to serve specific customer needs. These names are in addition to the companies' established or primary brand. Some Canadian flanker brands include Fido, Solo, and Koodo.
- **Resellers/rebillers** are companies that rely mainly on the large, facilities-based operators to package, market, bill, and deliver their mobile services, e.g., PC Mobile, Petro-Canada Mobility, and 7-Eleven SpeakOut.

Province/territory	Bell Group	TELUS	Rogers	Other
British Columbia	20	41	38	0
Alberta	25	52	23	0
Saskatchewan	17	13	5	64
Manitoba	9	7	38	47
Ontario	30	21	47	2
Quebec	30	27	28	15
New Brunswick	55	26	19	0
Nova Scotia	53	34	13	0
Prince Edward Island	56	31	13	0
Newfoundland and Labrador	69	28	2	1
The North	86	10	0	3

#### Table 5.5.8 Wireless service subscriber market share by province and territory (2016) (%)

Source: CRTC data collection

Canada's major WSPs have different shares of the provincial/territorial wireless markets. This table displays the market shares owned by the major WSPs, excluding Freedom Mobile and Eastlink/Bragg, in Canada's provinces and territories. Other service providers include (but are not limited to) SaskTel, MTS, and Videotron.

The three major WSPs have the largest market share across all provinces and territories except Saskatchewan and Manitoba.

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

Service provider	2012	2013	2014	2015	2016
Bell Mobility	1.7	1.6	1.5	1.5	1.4
Rogers	1.8	1.7	1.6	1.6	1.6
TELUS	1.5	1.4	1.3	1.3	1.2

#### Table 5.5.9 Average monthly churn rates (%)

Source: Companies' annual reports and CRTC data collection

This table shows the average churn rate for three major WSPs from 2012 to 2016. Customers may leave their WSP for a number of reasons, including dissatisfaction with the service, taking advantage of competitive offers, and pricing issues.

**The average churn rate** is a measure of subscriber turnover. It is derived by dividing the number of subscribers that have left a wireless service by the total number of wireless service subscribers. The higher the number, the more people are leaving the provider.

# iv Technology indicators

The following tables and charts indicate the extent to which Canadians are adapting to a digital communication system. Smartphones, tablets, and other wireless devices that provide access to the Internet are continually increasing demand for wireless capacity.



#### Figure 5.5.8 Mobile device penetration

Source: MTM 2016 (Respondents: Canadians aged 18+)

This figure shows the percentage of Canadians, 18 years of age and older, who owned regular cellphones, smartphones, and tablets, from 2012 to 2016. In this figure, smartphones are a subset of cellphones. The use of smartphones and tablets increases the volume of data traffic on the network.

#### Table 5.5.10 Mobile device penetration, by linguistic group (%)

Mobile device	20	)12	20	)13	2014		2015		2016	
	Anglo	Franco								
Cellphone	83	71	86	74	86	75	89	78	89	81
Smartphone	55	39	66	49	69	54	77	61	80	68
Tablet	28	17	42	30	51	41	53	48	55	52

Source: MTM 2016 (Respondents: Canadians aged 18+)

This table shows the percentage of Francophones and Anglophones in Canada who own cellphones, smartphones, and tablets, from 2012 to 2016. Cellphone owners include people who own either a regular cellphone or a smartphone.



#### Figure 5.5.9 Mobile device penetration, by region, 2016

Source: MTM 2016 (Respondents: Canadians aged 18+)

Canadians who reside in the western provinces are generally more likely to adopt smartphones and tablets than Canadians who reside in the eastern provinces, although adoption rates are high throughout Canada.

	201	15	20	Growth	
Province/territory	Number of subscribers with a data plan (000's)	Percentage of national total (%)	Number of subscribers with a data plan (000's)	Percentage of national total (%)	(%) of number of subscribers with a data plan
British Columbia	3,021	14	3,505	14	16.0
Alberta	3,069	14	3,460	14	12.7
Saskatchewan	720	3	791	3	9.9
Manitoba	900	4	955	4	6.1
Ontario	8,825	40	9,923	40	12.4
Quebec	4,099	19	4,769	19	16.4
New Brunswick	403	2	447	2	10.9
Nova Scotia	552	3	612	2	10.9
Prince Edward Island	80	0	88	0	10.9
Newfoundland and Labrador	327	1	358	1	9.4
The North	62	0	66	0	5.6

#### Table 5.5.11 Number of subscribers with a data plan, by province and territory

Source: CRTC data collection

The number of individuals who subscribed to a data plan is a measure of the extent to which Canadians are participating in the digital economy, and provides an indication of the extent to which Canadians are adopting advanced handheld devices such as smartphones and tablets.

This table shows the number of individuals who subscribed to a data plan in each region of the country in 2015 and 2016, as well as the number of subscribers with a data plan expressed as a percentage of all mobile data plan subscribers in Canada.

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



#### Figure 5.5.10 Mobile data-only plan revenues and subscribers by data plan capacity, 2016

Source: CRTC data collection

These charts show the percentages of WSPs' revenues and subscribers by data plan capacity in 2016. Of the total number of subscribers, 6% were reported to be data-only subscribers.

Data-only plans include built-in and portable access devices, such as hubs, sticks, dongles, and laptops.

Figure 5.5.11 Percentage of mobile revenues from voice vs. voice and data vs. data-only plans, 2016



Percentage of mobile revenues from voice vs. voice and data vs. data-only plans, 2016

#### Source: CRTC data collection

This chart shows the percentage of revenues that WSPs derived from customers who subscribed to voice plans, voice and data plans, and data-only plans in 2016.

Туре	Metric	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
	Number of subscribers (millions)	13.0	16.1	17.7	20.2	23.0	13.6	15.3
voice and data	Percentage of all subscribers (%)	47	57	61	68	75	10.0	12.6
Data anki	Number of subscribers (millions)	1.3	1.5	1.6	1.8	2.0	10.4	11.0
Data-only	Percentage of all subscribers (%)	5	5	6	6	7	6.8	8.3
Total	Number of subscribers (millions)	14.3	17.6	19.3	22.0	25.0	13.3	15.0
TOLAI	Percentage of all subscribers (%)	51	62	67	74	81	9.7	12.2

#### Table 5.5.12 Mobile broadband subscribers by type of plan

Source: CRTC data collection

From 2012 to 2016, Canadians increasingly used broadband technology on mobile devices.

Figure 5.5.12 Percentage of mobile wireless subscribers with a data plan



## Percentage of mobile wireless subscribers with a data plan

#### Source: CRTC data collection

The data reported in this bar chart represents over 90% of total mobile wireless subscribers. The chart shows the percentage of subscribers with a data plan.





Source: CRTC data collection

The chart shows the percent distribution of subscribers with a data plan, excluding data-only plans, by size of the plan. However, due to the inconsistent reporting of subscribers from group/family/corporate sharing plans, the distribution of data plan subscribers by size of data plan may have been under represented.

Figure 5.5.14 Percentage of mobile wireless subscribers with voice plans, by size of voice plan, 2016



Percentage of mobile wireless subscribers with voice plans, by size of plan, 2016

#### Source: CRTC data collection

The chart shows the percent distribution of mobile wireless subscribers with a voice plan by the number of voice minutes allotted to the plan.

Unlimited voice plans are the most common type of voice plan in Canada.





Percentage of mobile wireless subscribers with SMS plans by size of plan, 2016

#### Source: CRTC data collection

The chart shows the distribution of subscribers with an SMS plan by the number of messages allotted to the plan.

Figure 5.5.16 Popular Internet and mobile activities performed by Canadians on their smartphone, 2016



Popular Internet and mobile activities performed by Canadians on

#### Source: MTM 2016, spring 2017 (Respondents: Canadians aged 18+)

This graph shows the activities that Francophones and Anglophones carry out using their smartphones.



Figure 5.5.17 Popular Internet and mobile activities performed by Canadians on their tablet, 2016

Source: MTM 2016, spring 2017 (Respondents: Canadians aged 18+)

# v Performance indicators

Table 5.5.13 Av	verage wireless	service revenue	per subscriber
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Metric	2012	2013	2014	2015	2016	CAGR (%) 2012-2016
Average wireless service revenue per subscriber (\$/month)	59.6	60.0	61.0	64.1	64.0	1.8
Annual growth (%)	1.6	0.7	1.8	5.0	-0.1	

Source: CRTC data collection

Average wireless service revenue per subscriber is a useful measure of the revenues WSPs receive per subscriber. Conversely, from a consumer perspective, it is a measure of consumers' expenditures on wireless services. This table shows the average revenue per subscriber for wireless services from 2012 to 2016.

The **average wireless service revenue per subscriber** was calculated by dividing total annual wireless service revenues by the average number of subscribers during the year. The result was then divided by twelve to obtain a monthly result. The average number of subscribers was determined by dividing the sum of the number of subscribers at the beginning and at the end of the year by two.

Province/territory	2012	2013	2014	2015	2016	CAGR (%) 2012-2016
British Columbia	62.55	63.42	62.48	67.32	65.16	1.0
Alberta	72.82	74.10	75.01	76.48	72.62	-0.1
Saskatchewan	57.83	58.72	62.16	64.45	68.14	4.2
Manitoba	54.99	59.42	60.97	63.21	64.10	3.9
Ontario	60.60	58.93	59.50	61.56	66.84	2.5
Quebec	51.46	53.69	53.58	56.92	55.36	1.8
New Brunswick	54.62	55.65	55.56	58.95	63.22	3.7
Nova Scotia	57.22	58.15	56.98	63.02	63.78	2.8
Prince Edward Island	55.47	52.86	51.62	57.73	61.08	2.4
Newfoundland and Labrador	58.70	60.61	61.18	68.90	70.49	4.7
The North	94.31	135.44	81.09	92.37	92.86	-0.4

Table 5.5.14 Average wireless service revenues per subscriber, by province and territory (excluding paging) (\$)

Source: CRTC data collection

This table shows the average revenue per user for WSPs in each region of the country from 2012 to 2016 based on provincial revenue and subscriber data reported, but excludes Freedom Mobile and Eastlink/Bragg's revenues and subscribers. Estimates were made for companies that were not required to provide provincial and territorial data.

## vi Price

The price structure of wireless services is based on usage. To assess the price of wireless services in urban centres and in rural communities, four baskets are used, and both flanker and primary service brands were considered. These baskets were adopted from the report *Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions* (2014) and were modified in 2016 to increase the amount of Internet data included per month in baskets 2, 3, and 4.

- The **Level 1** mobile service basket represents introductory or low-usage types of plans that offer 150 minutes of voice service per month, with no SMS or Internet data.
- The Level 2 mobile service basket encompasses low- to mid-tier types of plans that provide customers with at least 450 minutes of voice service, 300 SMS, and 1 GB of Internet data per month.
- The Level 3 mobile service basket comprises plans representative of a typical smartphone user, offering at least 1200 minutes of voice service, 300 SMS, and 2 GB of Internet data per month.
- The Level 4 mobile service basket is geared towards smartphone users who want access to unlimited minutes of voice service and SMS, along with 5 GB of Internet data per month.

# What is Price Comparisons of Wireline, Wireless and Internet Services in Canada and with Foreign Jurisdictions?

This report provides a 2016 update to the previous annual telecommunications price comparison studies conducted over the period from 2008 to 2016 for the CRTC and Innovation, Science and Economic Development Canada (ISED).

The individual services covered by the study include wireline, mobile wireless, broadband Internet, and mobile Internet services.

For more information, please consult the following link:

http://www.crtc.gc.ca/eng/publications/reports/compar/compar2016.htm

### Urban centres

Urban centres with four or more WSPs generally had the largest variance between the lowest and highest prices reported, as well as the lowest prices in each of the four service baskets. The variance between the lowest and highest prices across all service baskets in any given urban centre was wide, ranging from a low of \$3 to a high of \$60. The price variances that were most pronounced were found in service baskets 3 and 4. The average price variances between lowest and highest prices for the Level 1, 2, 3, and 4 service baskets were \$13, \$17, \$21, and \$46, respectively.

Figures 5.5.18 to 5.5.21 display the range in the monthly price of a Level 1, Level 2, Level 3, and Level 4 wireless service basket in 24 urban centres in Canada. The number at the end of each bar is the highest price. The number appearing in parentheses along the vertical axis after the name of each urban centre represents the number of local WSPs.

Figure 5.5.18 Price of a Level 1 basket wireless service (\$/month) and number of companies providing the service in a number of select cities, 2016



### Price of a Level 1 basket wireless service (\$/month) and number of companies providing the service in a number of select cities, 2016

■ Variance between highest and lowest price

Figure 5.5.19 Price of a Level 2 basket wireless service (\$/month) and number of companies providing the service in a number of select cities, 2016



Price of a Level 2 basket wireless service (\$/month) and number of companies providing the service in a number of select cities, 2016

■ Variance between highest and lowest price

Figure 5.5.20 Price of a Level 3 basket wireless service (\$/month) and number of companies providing the service in a number of select cities, 2016



# Price of a Level 3 basket wireless service (\$/month) and number of companies providing the service in a number of

■ Variance between highest and lowest price

Figure 5.5.21 Price of a Level 4 basket wireless service (\$/month) and number of companies providing the service in a number of select cities, 2016



Price of a Level 4 basket wireless service (\$/month) and number of companies providing the service in a number of select cities, 2016

■ Variance between highest and lowest price

### Price comparison of urban and rural wireless services

To assess the price of wireless services in rural Canada, 54 rural communities were selected, and the price of wireless services in these communities was compared to that in urban centres.

The price of wireless services in rural communities, across all service baskets, was generally equal to or higher than that in urban centres, with the exception of Quebec. In the province of Quebec, the highest price for the level 4 basket in the urban communities were \$5 more than in the rural communities. Price differences were more pronounced for level 3 and 4 baskets, especially in Ontario and Alberta, where the minimum price varied by approximately \$30 between rural and urban communities. The highest price for the level 4 basket in Ontario and Manitoba showed a notable variance of \$45 between rural and urban communities.

The variance between the lowest and highest price of wireless services across all service baskets in rural communities, by province and territory, was wide, ranging between \$3 and \$67. Across all rural and urban communities, the average price variance in the level 1 and level 4 basket was \$11 and \$41, respectively.

The average price variances among rural communities for Level 1, 2, 3, and 4 service baskets were \$11, \$22, \$22, and \$46, respectively. In the urban centres for the identical service baskets, the price variances were \$11, \$12, \$19, \$36, respectively.

Which rural communities were included? 54 rural communities were selected to assess the price of wireless services (see Appendix 9). These communities met the following criteria:

- they were not part of one of the census metropolitan areas of the 24 urban centres;
- they had population densities of fewer than 400 people per square kilometre, or their population centres had fewer than 1,000 people;
- the number of communities in each province/territory was proportional to the population of the province/territory; and
- the communities were not clustered together.

Figures 5.5.22 to 5.5.25 display the range in the monthly price of wireless services in urban centres and rural communities in Canada, by province and territory. The number at the end of each bar is the highest price. The number appearing in parentheses along the vertical axis after the name of each province and territory represents the number of local WSPs.

Figure 5.5.22 Price of a Level 1 basket wireless service (\$/month) and number of companies providing the service in urban centres and rural communities, 2016







Figure 5.5.23 Price of a Level 2 basket wireless service (\$/month) and number of companies providing the service in urban centres and rural communities, 2016



Price of a Level 2 basket wireless service (\$/month) and number of companies providing the service in urban centres and rural communities, 2016

■ Variance between highest and lowest price

Figure 5.5.24 Price of a Level 3 basket wireless service (\$/month) and number of companies providing the service in urban centres and rural communities, 2016



Price of a Level 3 basket wireless service (\$/month) and number of companies providing the service in urban centres and rural

■ Variance between highest and lowest price

Figure 5.5.25 Price of a Level 4 basket wireless service (\$/month) and number of companies providing the service in urban centres and rural communities, 2016



### Price of a Level 4 basket wireless service (\$/month) and number of companies providing the service in urban centres and rural communities, 2016

■ Variance between highest and lowest price

## Historical price comparison

The historical price analysis was conducted using the previously defined price baskets as summarized below and covers the period between 2013 and 2015. Due to methodology changes, namely in the composition of the service baskets, 2016 data is not comparable to previous year data and is excluded from the following analysis.

- **Basket 1:** this mobile service basket represents introductory or low-usage types of plans that offer 150 minutes of voice service per month, with no SMS or Internet data.
- **Basket 2:** this mobile service basket encompasses low- to mid-tier types of plans that provide customers with at least 450 minutes of voice service and 300 SMS per month, and no Internet data.
- **Basket 3:** this mobile service basket comprises plans representative of a typical smartphone user, offering at least 1200 minutes of voice service, 300 SMS, and 1 GB of Internet data per month.
- **Basket 4:** this mobile service basket is geared towards smartphone users who want access to unlimited voice and SMS, along with 2 GB of Internet data per month.
#### Combined urban and rural pricing

Figure 5.5.26 displays the average price of each of the four baskets across all 80 urban centres and rural communities. Between 2013 and 2015, mobile prices generally declined, with the most significant price reductions for baskets 2 and 3 in 2014.



Figure 5.5.26 Average prices for mobile services, 2013-2015

#### Source: CRTC data Collection

All centres:

- The average **Basket 1** price decreased 9% over the 2013-2015 period, going from \$31.31 in 2013 to \$28.43 in 2015.
- The average **Basket 2** price decreased 17% over the same period, from \$43.39 in 2013 to \$35.83 in 2015.
- The average **Basket 3** price decreased 16% over the same period, from \$69.27 in 2013 to \$58.00 in 2015.
- The average **Basket 4** price increased by 2% in 2015, from \$61.14 in 2014 to \$62.23 in 2015.

Overall, from 2013 to 2015, the average price for basket 1 to 3 mobile service plans declined by 15%, while the price of the 4<sup>th</sup> basket slightly increased (2%) from 2014 to 2015.

#### Urban vs. rural pricing

In terms of urban-rural comparisons, price declines were higher in rural areas than in urban centres. The percentage price decrease in urban centres was approximately half the decrease found in rural areas for baskets 1 and 2 in 2015. During the same period, the price decrease in urban centres was about 70% of the price decrease in rural areas for basket 3, and the price increase for basket 4 was equivalent in both urban and rural areas.





#### Source: CRTC data collection

Urban centres:

- The average **Basket 1** price decreased 5% over the 2013-2015 period, going from \$29.80 in 2013 to \$28.16 in 2015.
- The average **Basket 2** price decreased 10% over the same period, from \$39.59 in 2013 to \$35.66 in 2015.
- The average **Basket 3** price decreased 13% over the same period, from \$64.68 in 2013 to \$56.51 in 2015.
- The average **Basket 4** price increased by 2% in 2015, from \$59.03 in 2014 to \$60.06 in 2015.

Overall, in urban areas, from 2013 to 2015, the average price for basket 1 to 3 mobile service plans declined by 10%, while the price of the 4<sup>th</sup> basket slightly increased (2%) from 2014 to 2015.





#### Source: CRTC data collection

Rural areas:

- The average **Basket 1** price decreased 11% from 2013-2015, going from \$31.94 in 2013 to \$28.55 in 2015.
- The average **Basket 2** price decreased 20% over the same period, from \$44.96 in 2013 to \$35.90 in 2015.
- The average **Basket 3** price decreased 18% over the same period, from \$71.17 in 2013 to \$58.64 in 2015.
- The average **Basket 4** price increased by 2% in 2015, from \$62.06 in 2014 to \$63.17 in 2015.

Overall, in rural areas, from 2013 to 2015, the average price for basket 1 to 3 mobile service plans declined by 17%, while the price of the 4<sup>th</sup> basket slightly increased (2%) from 2014 to 2015.

# vii Coverage/availability details

Table 5.5.15 Wireless coverage, penetration, and average revenue per user (ARPU) by province and territory, 2016

Duovince (termitem)		Coverage	e (%)		Penetration	ARPU
Province/territory	Wireless	HSPA+	LTE	LTE-A	rate (%)	(\$/month)
British Columbia	98.8	98.8	98.6	93.1	87.8	65.16
Alberta	99.8	99.8	99.8	96.3	91.5	72.62
Saskatchewan	99.5	99.5	86.2	44.4	83.8	68.14
Manitoba	98.4	98.4	93.1	59.3	79.6	64.10
Ontario	99.8	99.8	99.7	95.0	81.6	66.84
Quebec	99.3	99.3	98.7	61.4	73.5	55.36
New Brunswick	99.6	99.6	98.8	74.5	75.2	63.22
Nova Scotia	99.7	99.7	99.4	83.2	76.1	63.78
Prince Edward Island	99.9	99.9	99.9	92.4	72.4	61.08
Newfoundland and Labrador	96.1	96.1	94.4	76.3	81.6	70.49
The North	86.3	86.3	63.5	41.4	64.5	92.86
Canada	99.4	99.4	98.5	83.0	84.3	64.91

#### Source: CRTC data collection

This table shows wireless coverage and penetration rates for various wireless technologies, such as LTE and HSPA+, by percentage of population for each province and the territories. The table also shows the monthly ARPU in each region. Provincial penetration rates and ARPU exclude data from Freedom Mobile and Eastlink/Bragg however, Canada's penetration rate includes the data from Freedom Mobile and Eastlink/Bragg.

Penetration rates represent the number of subscriptions divided by the population.

Table 5.5.16 Percentage of population covered by number of different wireless networks, by province and territory, (%), 2016

Province/territory	None	1 network	2 networks	3 networks	4 or more networks
British Columbia	1	1	41	57	0
Alberta	0	0	37	62	0
Saskatchewan	0	20	77	3	0
Manitoba	1	1	20	77	0
Ontario	0	0	16	74	9
Quebec	1	3	5	20	71
New Brunswick	0	3	66	30	0
Nova Scotia	0	3	13	84	0
Prince Edward Island	0	0	13	87	0
Newfoundland and Labrador	4	45	13	38	0
The North	9	28	64	0	0
Canada	1	3	22	54	20

#### Source: CRTC data collection

This table represents the number of different wireless networks, in terms of radio access facilities, in each of the provinces and territories. In many provinces, facilities-based WSPs that own spectrum share the same radio access facilities to offer telecommunications services to the public. Some adjustments were made to more accurately reflect the coverage in the North.



#### Figure 5.5.29 Roaming voice and data traffic by destination, 2016

WSPs extend their coverage area to areas where they do not have facilities by making arrangements with other WSPs that do have facilities in those areas to offer service to their end-users. When a subscriber uses the facilities of another WSP, the subscriber is said to be "roaming." This dual chart shows the percentage of voice minutes and data traffic, excluding MMS and SMS, derived from roaming within Canada, the United States, and internationally.

Figure 5.5.30 Established carriers' coverage and penetration vs. new entrants' coverage and penetration (% of population), 2016



#### Established carriers' vs. new entrants' coverage and penetration

#### Source: CRTC data collection

Canada's wireless service market is dominated by established carriers. These companies offer significantly more coverage and achieve higher subscriber penetration rates than the new entrants.



#### Figure 5.5.31 Number of WiFi hotspot locations

#### Source: CRTC data collection

WiFi hotspots are an important service that TSPs use to attempt to differentiate their services from each other, as well as to extend their brand. Hotspots are locations where Internet access via 802.11 WiFi technology is provided to the public. "Free" is defined as having no charge for at least 1/2 hour of access, even if access requires being a paid customer at the location. Major providers in western Canada have moved towards providing free hotspots, as shown in the above chart.

Only hotspots provided by the major TSPs are included, which may exclude independently run free hotspots provided by hotels, restaurants, and other public facilities.

Data for the Atlantic Provinces and the North is not reported due to the confidentiality of the data.



#### Figure 5.5.32 Number of free and pay-for-use WiFi hotspot locations in Canada, 2016

#### Source: CRTC data collection

The above chart shows the number of free and pay-for-use WiFi hotspots provided by major TSPs in Canada. Free is defined as having no charge for at least 1/2 hour of access, even if access requires being a paid customer to the location.

This chart does not include hotspots that only provide access to a TSP's existing customers.

Map 5.5.1 Wireless service availability by number of facilities-based WSPs, 2016

Wireless service coverage by number of facilities-based WSPs, 2016



Source: CRTC data collection

This map shows the cross-country availability of wireless services from facilities-based WSPs.

Map 5.5.2 Wireless HSPA+ service availability by incumbent and new-entrant facilities-based WSPs, 2010 and 2016



HSPA+ network coverage 2010 vs. 2016

Source: CRTC data collection

This map shows the cross-country availability of wireless HSPA+ networks by incumbent and new-entrant facilities-based WSPs, as well as the expansion of the incumbents' wireless HSPA+ networks in 2010 and 2016.

Map 5.5.3 Wireless LTE service availability between 2013 and 2016



# Expansion of LTE coverage since 2013

#### Source: CRTC data collection

This map shows the expansion of wireless LTE coverage in Canada over the past four years.

Map 5.5.4 Wireless LTE-Advanced service availability, 2016

# LTE Advanced Coverage, 2016



#### Source: CRTC data collection

This map shows wireless LTE-Advanced coverage in Canada.

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# 5.6 Wholesale telecommunications sector \$4.1 billion



Wholesale services are services provided by a TSP (telecommunications service provider) to another provider of telecommunication services for use in the provision of telecommunications services. Providers of telecommunications services rely on wholesale services to varying degrees. Resellers of telecommunications services depend more on wholesale services than companies that have their own facilities to provide service. In 2016, for the purposes of providing wireline services, resellers spent 45 cents of every revenue dollar on wholesale services, compared to around 6 cents for facilities-based service providers.

The availability of wholesale services is a major factor that ultimately provides greater choice to Canadians in the telecommunications service market. In 2016, the wholesale telecommunications market was worth \$4.1 billion, of which 30% was for the provision of wireless services and 70% for wireline services.

Independent Internet service providers (ISPs) frequently depend on access services offered by the incumbent TSPs and the cable-based carriers to connect to their customers. Over the years, sales of cable-based access services, known as third-party Internet access (TPIA) services, to independent ISPs have increased.

Wholesale wireless services are an increasingly important part of the telecommunications landscape. Joint network building by several large carriers allows them to minimize overall costs and maximize the use of networks. Since 2012, wireless wholesale revenues have increased at an average annual rate of 9.3%.

# i Revenues

Table 5.6.1	Wholesale	telecommunications	revenues (\$ billions)
-------------	-----------	--------------------	------------------------

Sector	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Wireline	2.9	2.8	2.7	2.8	2.9	1.9	-0.4
Wireless	0.8	1.0	1.0	1.1	1.2	6.9	9.3
Total	3.7	3.7	3.8	3.9	4.1	3.3	2.0

Source: CRTC data collection

The table shows that wireline wholesale revenues have been stable since 2012, while wireless wholesale revenues have been increasing. The wireless wholesale market excludes fixed-wireless services.

#### Table 5.6.2 Wholesale telecommunications revenues by market sector (\$ millions)

Sector	Category	Subcategory	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
		Local and access	751	704	646	603	615	2.0	-4.9
	Voice	Long distance	552	433	414	423	458	8.2	-4.6
		Voice subtotal	1,303	1,137	1,059	1,026	1,073	4.5	-4.7
		Internet	426	434	481	556	589	5.8	8.4
		Newer data protocols	355	400	454	495	514	3.8	9.7
Wirolino	Non	Legacy data protocols	35	30	24	20	16	-21.7	-18.1
wirenne	NOII-	Other data services	88	94	99	89	70	-21.0	-5.5
	voice	Data subtotal	478	525	576	604	600	-0.7	5.9
		Private line	695	657	628	615	593	-3.5	-3.9
		Non-voice subtotal	1,599	1,616	1,685	1,776	1,782	0.4	2.8
	Total	Total voice and non- voice	2,901	2,753	2,744	2,802	2,855	1.9	-0.4
Wireless	All	All	840	953	1,038	1,123	1,200	6.9	9.3
All	Total	All	3,742	3,706	3,783	3,925	4,055	3.3	2.0

Source: CRTC data collection

Voice wholesale revenues have declined 4.7% annually since 2012, whereas wireline non-voice revenues have increased 2.8%. The strongest revenue growth was in newer services such as Internet and mobile wireless services, and data services using newer data protocols such as Ethernet and IP. These services have increased between 8.4% and 9.7% annually since 2012.

#### Figure 5.6.1 Wholesale telecommunications revenues, by market sector



Wholesale telecommunications revenues, by market sector

Source: CRTC data collection



Figure 5.6.2 Percentage distribution of wholesale telecommunications revenues, by market sector (2012 vs. 2016)

#### Source: CRTC data collection

These charts compare the percentage distribution of wholesale telecommunications revenues between 2012 and 2016. During this period, revenues from wholesale mobile wireless services have increased as a percentage of total wholesale revenues, from 22% in 2012 to 30% 2016. They make up the largest percentage of wholesale revenues, followed by local and access and private line.

Newer data protocols include Ethernet and Internet Protocol-Virtual Private Network (IP-VPN).

Component	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Interconnection	220	212	198	192	184	-4.3	-4.4
Centrex, PSTN access	403	368	340	313	353	13.0	-3.2
Unbundled loops	47	44	40	37	33	-10.8	-8.5
Other revenues	44	42	52	42	18	-56.6	-19.9
Total	714	665	629	584	589	0.8	-4.7

#### Table 5.6.3 Local wholesale telecommunications revenues, by major component (\$ millions)

Source: CRTC data collection

This table displays local and access wholesale revenues by major component. Telecom service providers use these components to provide retail telecommunications service. For example, unbundled loops can be used by an alternative service provider to provide local telephone service to its retail customers. In addition, interconnection enables the customers of one service provider to contact the customers of another service provider.

**PSTN** refers to the public switched telephone network, which is the worldwide set of interconnected switched voice telephone networks that deliver fixed telephone services to the general public and are usually accessed by telephones, key telephone systems, private branch exchange trunks, and certain data arrangements, transmitting voice, other audio, video, and data signals.

**Centrex** is a business telephone service offered by a TSP that permits direct inward dialling to a customer's extension, the transfer of incoming calls from one extension to another, and identification of extension telephones for the billing of long-distance calls.

Province	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012– 2016
British Columbia	60	44	59	53	51	-3.2	-3.8
Alberta	58	58	45	62	60	-3.5	0.8
Saskatchewan	8	9	8	8	8	-5.5	-1.4
Manitoba	31	28	19	15	14	-6.9	-18.1
Ontario	341	302	274	247	246	-0.4	-7.8
Quebec	174	176	174	159	165	3.9	-1.3
New Brunswick	17	17	16	20	21	6.1	5.7
Nova Scotia	22	24	29	25	18	-28.6	-5.1
Prince Edward Island	2	3	3	1	3	151.4	5.9
Newfoundland and Labrador	9	10	10	10	11	14.4	6.2
Yukon	1	1	1	1	1	-32.4	-9.3
<b>Northwest Territories</b>	1	1	1	1	1	6.6	1.6
Nunavut	0	0	0	0	0	-	-
Total	725	674	638	602	599	-0.5	-4.7

#### Table 5.6.4 Local wholesale telecommunications revenues, by province (\$ millions)

Source: CRTC data collection

This table shows local wholesale telecommunications revenues by province by companies with annual revenues greater than \$100 million. Revenues include wholesale revenues from the sale and rental of terminal equipment.



#### Figure 5.6.3 Wholesale high-speed access (HSA) based subscriptions across Canada, 2015 vs. 2016

#### Source: CRTC data collection

The Commission mandated that DSL, cable, and fibre facilities be made available to third-party providers operating under the wholesale HSA service framework. The usage of these services varies greatly depending on the region, with wholesale facilities-based competition from independent ISPs being much more prevalent in Ontario and Quebec.

Type of service	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Higher capacity access and transport	42	42	54	51	55	7.5	6.8
Lower capacity access	303	336	369	447	450	0.6	10.4
Other wholesale services	81	56	58	58	84	44.4	1.0
Total	426	434	481	556	589	5.8	8.4

#### Table 5.6.5 Internet-related wholesale revenues by type of service (\$ millions)

Source: CRTC data collection

Internet-related wholesale revenues consist of services that provide access to the Internet for TSPs, to enable TSPs to connect directly to their subscribers, or to provide Internet-related equipment, applications, or other miscellaneous services. In the above table, they are divided into three categories.

- "Higher capacity access and transport" refers to fibre-based Internet access services (such as FTTP) and the transfer of Internet traffic between networks.
- "Lower capacity access" includes services that connect TSPs directly to their end-users, typically for the purpose of providing Internet access. This includes most wholesale digital subscriber line (DSL) and cable (TPIA) services under the wholesale high-speed access (HSA) service framework, including FTTN. It also includes sales of non-fibre Internet connectivity options between TSPs.
- "Other wholesale services" includes sales and rentals of equipment, applications, and other Internetrelated services between TSPs. Some revenues under the wholesale HSA framework may be included here.

Due to changes in company reporting, "other wholesale services" in 2016 may not be comparable to previous years.

					Growth (%)	CAGR (%)
Service component	2013	2014	2015	2016	2015-2016	2013-2016
Access	200	213	250	264	5.6	9.6
Capacity	40	84	128	129	0.8	47.1
Interface and other	37	31	29	35	20.2	-1.9
Total	277	328	406	427	5.1	15.5

#### Table 5.6.6 Wholesale HSA revenues by service component (\$ millions)

Source: CRTC data collection

The Commission has mandated that DSL and cable facilities be made available to third-party providers operating under the wholesale HSA service framework. Wholesale HSA service includes the following components:

- "Access," which is paid per month for each end-user customer that the third party serves via wholesale HSA service. It may include a charge for the assumed amount of capacity a user may use.
- "Capacity" is a charge that can be levied by the facility owner for capacity on its network in increments of 100 Mbps.
- Other charges include "interface," which is the basic connection to the carrier, and other fees for services such as installation and modem equipment.

Totals may not exactly match previous tables due to the use of different data sources.

Type of service	2012	2013	2014	2015	2016	Growth (%) 2015- 2016	CAGR (%) 2012-2016
Cable-enabled subscriptions	187	305	393	454	502	10.5	28.0
DSL-enabled subscriptions	458	462	480	561	577	3.0	5.9
Total	645	767	873	1,015	1,079	6.4	13.7

#### Table 5.6.7 DSL and cable wholesale HSA service subscriptions by type of service (thousands)

Source: CRTC data collection

The vast majority of the above subscriptions are covered by the wholesale HSA framework, as described above. Over time, TSPs have been making increased use of wholesale DSL-based and cable-based facilities to connect to their end-users.

#### Table 5.6.8 DSL and cable wholesale HSA monthly revenue per enabled subscription (\$)

Service component	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2013-2016
Access	23.61	21.66	22.04	20.98	-4.8	-3.9
Capacity	4.76	8.53	11.26	10.23	-9.2	29.0
Other	4.35	3.12	2.56	2.77	8.3	-14.0
Total	32.73	33.31	35.87	33.98	-5.3	1.3

Source: CRTC data collection

This table shows the average monthly revenue per enabled subscription from wholesale HSA services. The changes are due mainly to the transition to the capacity-based billing (CBB) regulatory regime.

#### Figure 5.6.4 Wholesale HSA-enabled subscriptions by service speed in Mbps (thousands)



Wholesale HSA enabled-subscriptions

0 up to 4 Mbps 5 to 9 Mbps 10 to 15 Mbps 16 to 49 Mbps 50 Mbps and up

#### Source: CRTC data collection

Wholesale HSA services are available at various speeds for end-user access. Over time, TSPs have availed themselves of higher-speed services to enable connectivity to their end-users. The above subscriptions are for residential and business end-user locations. Totals may not exactly match previous tables due to the use of different data sources.

Category	Subcategory	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Newer protocols	Ethernet	229	269	309	325	327	0.7	9.3
	IP	99	102	116	142	159	12.0	12.6
	Other	27	29	28	28	28	-1.4	1.1
	Total newer protocols	355	400	454	495	514	3.8	9.7
Legacy protocols	Total	35	30	24	20	16	-21.7	-18.1
Total	Total	389	431	477	515	530	2.8	8.0

#### Table 5.6.9 Data protocol wholesale revenues, by service category (\$ millions)

Source: CRTC data collection

The data services were classified as services making use of newer data protocols such as Ethernet and IP, or legacy protocols such as X.25, ATM, and frame relay. This table displays the revenues from wholesale data services by the protocol used in the service from 2012 to 2016.

#### Table 5.6.10 Wholesale mobile wireless revenues, by type of service (\$ millions)

Type of service	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012-2016
Roaming	732	573	599	648	694	7.1	-1.3
Mobile interconnect, spectrum, and other services	109	380	439	475	506	6.6	46.9
Total	840	953	1,038	1,123	1,200	6.9	9.3

Source: CRTC data collection

Interconnection and roaming services are sold to other wireless service providers to enable them to exchange their traffic and extend their geographic coverage area. Other services mainly consist of, but are not limited to, arrangements for a wireless provider to provide wireless services to another company's customers.

# ii Subscriber data

Table 5.6.11 Local and access lines, by type of TSP (thousands)

Type of TSP	Subtype	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012–2016
Incumbent TSPs	Total	742	683	658	598	497	-16.9	-9.5
Alternative TSPs	Cable-based carriers	33	5	4	5	6	29.9	-33.4
	Other	267	149	68	55	127	130.7	-17.0
Total	Total	1,042	837	730	657	630	-4.1	-11.8

Source: CRTC data collection

This table displays the number of wholesale local and access lines by type of service provider, as well as growth rates and the percentage of wholesale lines by type of service provider from 2012 to 2016. Over this period, incumbent TSPs' share of wholesale lines increased from 72% in 2012 to 79% in 2016.

# iii Competitive landscape

Table 5.6.12 Wireline wholesale telecommunications revenue market share, by type of TSP (%)

Type of TSP	Subtype	2012	2013	2014	2015	2016
Incumbent TSPs	Total	85	84	82	80	69
Alternative service	Facilities-based (including cable- based carriers)	12	13	14	17	25
	Resellers	3	4	4	4	6
providers	Total	15	16	18	20	31

Source: CRTC data collection

This table displays wireline wholesale revenues market share by type of TSPs from 2012 to 2016. Over this period, Incumbent TSPs maintained the largest share of the market, although their share has since decreased partly because of ownership transactions. With a 69% share of wholesale revenues, they have the largest share of the wholesale market.

#### Table 5.6.13 Local and access revenues, by type of TSP (\$ millions)

Туре	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012–2016
Incumbent TSPs	708	657	625	580	563	-2.9	-5.6
Alternative TSPs (excluding cable-based carriers)	34	36	12	16	40	150.9	4.2
Cable-based carriers	10	11	9	8	12	48.8	4.5
Total	751	704	646	603	615	2.0	-4.9

Source: CRTC data collection

This table displays revenues from wholesale local and access services by type of service provider, as well as growth rates and the percentage of wholesale revenues by type of service provider from 2012 to 2016.

	Туре	2012	2013	2014	2015	2016	Growth (%) 2015-2016	CAGR (%) 2012–2016
	Incumbent TSPs	461	360	322	343	285	-16.9	-11.3
	Alternative TSPs							
	(excluding cable-	72	59	81	71	166	134.3	23.3
	based carriers)							
(	Cable-based carriers	18	13	11	9	7	-27.7	-22.5
	Total	552	433	414	423	458	8.3	-4.6

Table 5.6.14 Wholesale long distance revenues by type of TSP (\$ millions)

Source: CRTC data collection

This table displays revenues from wholesale long distance services by type of TSP, as well as revenue growth rates and the percentage of wholesale revenues by type of TSP from 2012 to 2016. Wholesale long distance service includes the resale of long distance minutes that one service provider has acquired from another. Providers of prepaid long distance calling cards rely on these services.

### iv Forbearance

Figure 5.6.5 Wholesale telecommunications service revenues, by type of tariff, 2016 (%)



#### Source: CRTC data collection

Approximately 77% of wholesale revenues were from non-tariff services and from services where the parties have agreed to an alternative price (off-tariff services).

Tariff services are services whose rates, terms, and conditions are set out in a Commission-approved tariff.

Non-tariff services are those telecommunications services whose rates, terms, and conditions are not set out in a Commission-approved tariff.

Off-tariff services are those whose prices are filed with the Commission but for which parties have agreed to an alternative price.

Tariff service revenues exclude revenues from off-tariff services.



#### Figure 5.6.6 Wholesale wireline telecommunications service revenues by type of service, 2016 (%)

#### Source: CRTC data collection

This chart displays the percentage of revenues from wholesale services by type of wholesale service. For the purposes of this chart, support structure revenue was included in wholesale revenues.

Type of service	2012	2013	2014	2015	2016
Local and access	61	61	59	58	65
Long distance	99	99	97	98	98
Internet	53	45	43	42	45
Data	86	87	86	87	87
Private line	53	53	54	64	56
Wireless	100	100	100	100	97

Table 5.6.15 Percentage of wholesale telecommunications revenues generated by forborne services (%)

Source: CRTC data collection

This table displays the percentage of wholesale telecommunications revenues from services that are not provisioned in accordance with a Commission-approved tariff.

## v Inter-provider expenses

Wholesale service revenues are the inter-provider expenses incurred by TSPs acquiring these services. All TSPs purchase telecommunications services from other carriers. The extent to which service providers rely on these services depends on the nature of their operations.





#### Interprovider expenses per revenue dollar for wireline services

#### Source: CRTC data collection

This table shows the extent to which various TSPs rely on wholesale services.

#### "SILECs" refers to Small ILECs

Inter-provider expense per revenue dollar compares the expenses incurred by a TSP in acquiring wholesale services to its telecommunications revenues for wireline services. It is derived by dividing total annual interprovider expenses by annual telecommunications revenues. This calculation includes all revenues from telecommunications services, including revenues from telecommunications services requiring limited dependency on wholesale services.

#### A number of providers that omitted inter-provider expenses were eliminated from consideration.

In total, facilities-based service providers spend around 6 cents of every revenue dollar on wholesale telecommunications services, whereas resellers – service providers that do not own or operate transmission facilities – are very dependent. They spend 45 cents of every dollar on these services.

# A.1 Methodology

This report is based on (1) the responses from broadcasting and telecommunications undertakings to the CRTC's annual surveys, issued jointly by Statistics Canada and the CRTC (referred to collectively as "CRTC data collection"); (2) data collected from other sources, including Statistics Canada, Innovation, Science and Economic Development Canada (ISED), the Spam Reporting Centre, company-specific financial reports, Numeris, and the Media Technology Monitor (MTM) reports; (3) information previously filed with the CRTC in the context of regulatory proceedings. Unless otherwise noted, all broadcasting data in this report are for the 12-month period ending 31 August for the years quoted, whereas all telecommunications data, including Internet service data, are for the 12-month period ending 31 December for the years quoted; and (4) data from the Unsolicited Telecommunications Rules (UTR) database.

Broadcasting-related data is reported as collected, while some telecommunications data may be adjusted or estimated for underreporting.

With respect to residential broadband availability data, the Commission coordinates with ISED to collect data on the availability of broadband Internet access services to Canadians. The Commission has collaborated with the provincial and territorial governments, as well as other federal government agencies and departments, to identify communities that do not have access to broadband services. The resulting data will assist the federal, provincial, and territorial governments in analyzing the broadband availability performance in both urban and rural communities. Combining these data collection initiatives enables the reporting burden on the industry to be reduced, uniform definitions and methodologies to be employed, and the quality of the data presented in this report to be enhanced.

Certain figures published in previous years' monitoring reports have been restated in this year's report to better reflect the developments in the markets or industry and to allow for a more meaningful comparison. Other figures may have changed as a result of service providers resubmitting previous years' data.

# A.2 Data collection and analysis

# i Data collection

Statistics Canada collects data under the authority of the *Statistics Act*, and the CRTC collects data under the authority of the *Broadcasting Act* and the *Telecommunications Act*. Statistics Canada uses the data to develop national accounts. The CRTC uses them to monitor the broadcasting and telecommunications industries' performance and adherence to regulations, as well as the overall effectiveness of the CRTC's regulatory frameworks. The data are used in the development of policy and regulation by a variety of stakeholders. Data collected are used to measure the financial performance of broadcasting and telecommunications service providers and to maintain and update the CRTC's data on the administration of broadcasting and telecommunications fees. Data are collected, to varying degrees, from all broadcasting and telecommunications service providers under the regulation and supervision of the CRTC. These service providers operate private and public radio, television, and broadcasting distribution services; pay, pay-perview, video-on-demand, and specialty services; and wireline and wireless telecommunications services.

Broadcasting service providers (also known as broadcasting licensees) and telecommunications service providers complete annual surveys outlining financial information and quantitative data for each broadcast and calendar year, respectively. The data collected are published in annual financial and statistical summaries of revenues and, in the case of broadcasting licensees, expenditures, such as expenditures on Canadian programming. Summaries of broadcasting licensees' data are prepared and published on the CRTC's website at <a href="http://www.crtc.gc.ca/eng/stats.htm">http://www.crtc.gc.ca/eng/stats.htm</a>. The data collected are also used to produce the CRTC's *Communications Monitoring Report*.

Broadcasting regulations require broadcasting service providers to complete an annual survey. The *Telecommunications Act* requires providers of telecommunications services to provide data upon request by the CRTC. Both types of service providers access and submit the survey forms electronically using the CRTC's secure web-based Data Collection System (DCS).

The broadcasting survey covers the 12-month period ending 31 August of each year. All broadcasting service providers have until 30 November to complete and submit their annual survey forms. The telecommunications survey covers the 12-month period ending 31 December of each year. Telecommunications survey forms that request data about facilities and the price of services are launched in January, and the respondents have until 28 February to complete and submit them. The remaining telecommunications survey forms are launched in February, and the respondents have until 30 March to complete and submit them.

As part of the broadcasting survey, commercial radio broadcasters must report on their contributions to Canadian content development (CCD). Broadcasting distribution undertakings (BDUs) must submit information regarding their contributions to the creation and production of Canadian programming. This information enables the CRTC to ensure that broadcasters are complying with their conditions of licence or regulatory requirements in this regard.

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As part of the telecommunications survey, the CRTC requires providers of telecommunications services to maintain and update their data on registration lists, and to provide data for the operation of the revenue-based contribution regime and the assessment of telecommunications fees. The total annual revenues from the provision of telecommunications services in Canada are also used to assess the eligibility of carriers to operate as telecommunications common carriers under section 16 of the *Telecommunications Act*.

# ii Data analysis

The CRTC analyzes the survey data to ensure that the information provided is accurate and complete. Yearover-year comparisons are made to identify any significant or unexplained changes, and the CRTC follows up with respondents as required to resolve or obtain explanations of any anomalies. The CRTC also subjects the data to computerized edits designed to ensure accuracy and internal consistency. When necessary, the CRTC compares reported data with audited financial information. The data or their derivatives (such as average revenues per line or per minute) are also compared with established benchmarks.

The objectives of this analysis are as follows:

- To ensure the accuracy and validity of the data collected in order to (a) provide Canadians with highquality data to support their participation in CRTC processes and their informed decision making, and (b) support the CRTC's evidence-based decision-making process;
- To allow for the analysis of trends in the major categories of revenue and expenditures listed in the annual forms over a five-year period, particularly with reference to the previous year;
- To allow the Commission to reconcile actual expenditures with regulatory requirements;
- To ensure that the summary of financial data for operations connected to broadcasting licensees, included in the annual returns, corresponds to the data presented in the financial statements required of broadcasting licensees in accordance with the regulations referenced in Circular No. 404; and
- To maintain up-to-date registration lists of providers of telecommunications services on the CRTC website.

Revisions may be made to the data submitted, and to this report, after they are published. These revisions are generally the result of late receipt of data, modifications made by the respondents to previously filed data, or errors detected following data publication. Finally, certain figures published in the *Communications Monitoring Report* from previous years may be restated for consistency purposes. By way of example, such restatements can result from reclassifications undertaken with a view to better reflect market segments or industry developments. Historically, revisions have generally not had a major impact on the results of the data collection process.

Most of the tables and figures included in this report are derived from the data submitted via the DCS, while others are derived using data from Statistics Canada and Innovation, Science and Economic Development Canada (ISED) or from other third-party reports. Inconsistencies may arise between data sources, given that the companies surveyed, the definitions used, and the level of detail requested may differ for each source. The data source is therefore identified beneath each table and figure in the report.

# A.3 Glossary

Disclaimer: these definitions are provided for information purposes only and are not legally binding.

# i Broadcasting

**Abusive comment:** A comment that, when taken in context, tends to or is likely to expose an individual or a group or class of individuals to hatred or contempt on the basis of race, national or ethnic origin, colour, religion, sex, sexual orientation, age or mental or physical disability.

Advertising Standards Canada: A national, not-for-profit advertising self-regulatory body that responds to complaints by consumers and special interest groups regarding advertising with respect to all media subject to the Canadian Code of Advertising Standards, the principal instrument of advertising self-regulation. In addition, it undertakes pre-clearance functions in five industry categories, which consist of reviewing advertisements based on applicable legislation, regulations, and/or industry codes and guidelines. Additional information on the ASC can be found at: <a href="http://www.adstandards.com/en/">www.adstandards.com/en/</a>

**Affiliation payment:** The remuneration that providers of discretionary programming services receive from broadcasting distribution undertakings that distribute their services.

**Audio services:** Includes multi-channel subscription (satellite radio) services, pay and specialty audio services, over-the-air radio stations, and video services broadcast over cable and the Internet.

**Basic services**: Basic service is the service distributed in a licensed area by a broadcasting distribution undertaking as a package consisting of programming services whose distribution is required by the Commission.

**Broadcasting sector:** Radio, television and distribution undertakings, comprised of public, private and community elements.

Broadcaster: An entity that controls an undertaking that broadcasts programming.

**Broadcasting distribution undertaking:** Providers of subscription television service to Canadians by redistributing programming from conventional over-the-air television and radio stations. They also distribute pay audio, pay television, pay-per-view, video-on-demand, and speciality services. Examples include cable (delivered through coaxial cables), satellite, and Internet Protocol Television (IPTV).

**Canada Media Fund (CMF):** A fund that fosters, promotes, develops and finances the production of Canadian content and relevant applications for all audiovisual media platforms. Its financing is obtained from government and private sources. Additional information on the CMF can be found at: <u>http://www.cmf-fmc.ca/</u>

**Canadian Broadcast Standards Council:** An independent organization created by the Canadian Association of Broadcasters to administer standards established by Canada's private broadcasters. Its membership includes more than 790 private-sector radio and television stations, specialty services, pay services, and networks from across Canada, broadcasting in English, French, and third languages. Additional information on the CBSC can be found at: <u>http://www.cbsc.ca/</u>

**Canadian content development (CCD) contributions:** Financial contributions made by broadcasters to initiatives that aid in the development and promotion of Canadian musical and spoken word content for broadcast.

**Canadian programming expenditures (CPE):** The proportion of gross annual broadcasting related revenues that a licensee is required, by condition of licence, to spend on the production of Canadian programming for broadcast.

**Category A/B/C services:** *Category A* – A service that focuses on a specific genre (for example, music, children's programming, weather, comedy programming). It is protected from competition from non-Canadian services and Category B services. All broadcasting distribution undertakings must carry these services. *Category B* – A service that focuses on a specific genre, that is not competitive with any Category A or Category C service. Category B services do not have any specific carriage rights. *Category C* – A service that operates in either of the competitive genres of national news or mainstream sports. There are no specific carriage rights for Category C Sports services. Category C News services must be made available in the best possible discretionary package consistent with their genre. They must also be made available to subscribers on a stand-alone basis.

**"Cut the cord":** The process of cutting cable connections to change to low-cost television through over-theair free broadcast via antenna or online video service broadcast over the Internet.

**Discretionary services:** A programming service that is not included in the basic service and that is distributed to subscribers on a discretionary basis for a fee separate from and in addition to the fee charged for the basic service.

**Independent production funds:** Established third-party funds that support creators of a variety of programming and other content. They help ensure that creators have access to financial and other support, including support for national and international promotion, across all audiovisual platforms. Canadian independent production funds are certified by the Commission according to criteria announced in Contributions to Canadian programming by broadcasting distribution undertakings, Broadcasting Regulatory Policy CRTC 2010-833, 9 November 2010.

Internet audio: Listening or streaming audio services available over the Internet.

**Internet Protocol television (IPTV):** Internet Protocol television is a system through which television services are delivered using Internet protocol over a private, managed network as opposed to traditional over-the-air (OTA), cable television or satellite.

Internet radio: Listening or streaming AM/FM radio stations available over the Internet.
**Local Programming Improvement Fund (LPIF):** A fund designed to improve the quality of local programming in non-metropolitan television markets across Canada. It was discontinued in August 2014.

**Multi-channel subscription service (MDS):** In the context of the Communications Monitoring Report, refers to subscription satellite radio services.

**Non basic services**: Non basic service is the service distributed in a licensed area by a broadcasting distribution undertaking consisting of programming services whose distribution is not required by the Commission.

**Numeris:** A Canadian audience measurement organization; the primary provider of viewership numbers for television and radio outlets in Canada (formerly the Bureau of Broadcast Measurement, or BBM Canada).

**Offensive comment:** A comment expressing offensive humour or other comments that do not fall under the "abusive comment" provision in CRTC regulations.

Offensive language: Offensive language in song lyrics or in spoken word programming.

**On-Demand services:** A system that allows users to select and watch/listen to video or audio content when they choose to, rather than having to watch at a specific broadcast time (for example, a video-on-demand or pay-per-view service).

**Over-the-air (OTA) television service:** A television service that may be accessed by Canadians with the use of an over-the-air antenna.

**Pay television services:** Generally, a service that provides commercial-free movies and series programming, and that is only available from broadcasting distribution undertakings.

**Personal video recorder (PVR):** A consumer electronics device or application software that records video in a digital format to a disk drive, USB flash drive, SD memory card, SSD or other local or networked mass storage device (also known as digital video recorder, or DVR).

**Portable people meter (PPM):** A system that measures how many people are exposed or listening to individual radio stations and television stations. The PPM is worn like a pager and detects hidden audio tones within a station or network's audio stream, logging each time it finds such a signal.

**Programs of national interest (PNI):** The CRTC has defined programs of national interest (PNI) as including drama and comedy, long-form documentary, and specific Canadian award shows that celebrate Canadian creative talent. For French-language broadcasters, PNI also include music video and variety programs. For the purposes of this report, PNI expenditures include expenditures in any of the following programming categories:

- long-form documentary (category 2b);
- drama and comedy (category 7);
- French-language music, dance, and variety programming (categories 8 and 9); and
- English-language award shows (subset of category 11).

Service bundle: A group of related services that are sold as a package and provide financial gain.

**Tangible benefits**: In the absence of a competitive process relating to changes of ownership or effective control of radio or television programming services, the applicant is required to make financial contributions (called "tangible benefits") that will yield measurable and significant improvements to the Canadian broadcasting system as a whole and to the communities served by the service(s) in question.

Tangible benefits are proportionate to the size and nature of the transaction and must be incremental to the normal cost of doing business. As a general rule, applicants are expected to make tangible benefit contributions representing a percentage (6% for radio and 10% for television services) of the value of the transaction and are usually paid over a five to seven period.

Tangible benefits is one means, used by the Commission, of ensuring the best possible proposal by the applicant and that approval is in the public interest, consistent with the overall objectives of the Broadcasting Act.

**Video-on-demand (VOD):** A service that allows viewers to choose the program they wish to watch and the time they wish to watch it, and for which a fee is generally charged. This type of service is available from service providers, such as cable or satellite companies, and is increasingly becoming available over the Internet.

### ii Telecommunications

**Access services:** The facilities required to connect a subscriber to a communications network. Examples include local telephone lines and broadband access facilities that connect to subscribers' premises.

Broadband Internet: High-speed Internet, with access of at least 1.5 Mbps.

**Churn rate**: A measure of the number of customers a service provider loses on a monthly basis relative to that service provider's total subscriber base. It is calculated by dividing the numbers of customers that have cancelled service in a month by the total number of subscribers for that service provider.

**Canada's Anti-Spam Legislation (CASL):** The purpose of this Act is to promote the efficiency and adaptability of the Canadian economy by regulating commercial conduct that discourages the use of electronic means to carry out commercial activities. Under subsection 62 of CASL, the Commission has the authority to regulate certain forms of electronic contact consisting of the sending of commercial electronic messages (CEMs), the alteration of transmission data in electronic messages, and the installation of computer programs on another person's computer system during the course of a commercial activity. The fundamental underlying principle is that such activities can only be carried out with consent.

**Commissioner for Complaints for Telecommunications Services (CCTS):** The CCTS is an independent organization dedicated to working with consumers and service providers to resolve complaints about telephone and Internet services. Its structure and mandate were approved by the CRTC. The CCTS handles complaints about most telecommunications services provided to individuals and small businesses, including home phone, wireless, Internet, and VoIP services. CCTS is also responsible for administering the Wireless Code. Additional information on the CCTS can be found at: <a href="https://www.ccts-cprst.ca/">https://www.ccts-cprst.ca/</a>

**Connections**: Access to one or more communications services, such as local telephone services, Internet access service, wireless service, and broadcast distribution services. Wireless service can be either mobile or fixed. Broadcast distribution can be cable, satellite direct-to-home, or IPTV.

**Dedicated mobile broadband user**: A user who subscribes to a data-only plan for access data services on a mobile network. These data plan subscriptions are purchased separately from voice services, either as a stand-alone service subscription (hub, dongle, stick, or cellular modem) or as a separate subscription data package to a voice service plan.

**Fixed-wireless**: A wireless network that uses either licensed or unlicensed spectrum to provide communications services (voice and/or data), where the service is intended to be used in a fixed location.

Forbearance: The action of refraining from regulation.

**HSPA/HSPA+/LTE:** High-Speed Packet Access (HSPA) and Long-Term Evolution (LTE) are the protocols or standards used for communications between a mobile phone and cell towers in mobile networks. HSPA is also referred to as 3G (third generation) cellular while LTE is referred to a 4G (fourth generation) cellular. LTE is the current standard that is now widely deployed in most mobile networks. HSPA+, or evolved High-Speed Packet Access, is a form of HSPA that uses technical measures to provide faster transmission speeds.

Latency: Delay between transmission and receipt of signal.

**Machine-to-machine (M2M) communication**: Networking of intelligent communications-enabled remote devices that permit information to be automatically collected or exchanged without human intervention. For example, vending machines reporting inventory levels.

**Megabits per second (Mbps)**: A theoretical unit of measurement of the speed for data transfer over a transmission medium (e.g. copper, co-axial cable, fibre optics, or wireless), consisting of 1,000,000 bits per second or 125,000 bytes per second where a byte consists of 8 bits.

**National Do Not Call List (DNCL):** The National DNCL provides Canadians with the ability to reduce the number of telemarketing calls received, by permanently registering residential, wireless, fax, or VoIP telephone number(s) on the National Do Not Call List (DNCL).

**Network-related capital expenditures**: Money that is spent on communications networks (e.g. landline, cable, and wireless) for equipment, labour, software, etc. that, in accordance with accounting practices, can be capitalized in a company's financial records.

**Packet:** A unit of data formatted for transmission on a network. Data is broken up into packets for sending over a packet switching network. Each packet has a header containing its source and destination, a block of data content, and an error-checking code. All the data packets related to a message may not take the same route to get to their destination; they are reassembled once they have arrived.

**Paging**: A service that allows transmitting a signal via radio from any telephone in the PSTN to a personal, portable receiving device in a defined operating area. More sophisticated systems provide audible or visual display messages.

**Peering**: A settlement-free exchange of routing announcements between two Internet service providers for the purpose of ensuring that traffic from the first can reach customers of the second, and vice-versa.

**Private line**: A transmission facility that carries dedicated communications between two or more points. A private line is not connected to the PSTN (public switched telephone network) and the communications carried over the private line are not switched.

**Roaming**: A service offered by mobile communications network operators which allows a subscriber to use her or his terminal while in the service area of another service provider. Usually measured by minute or by message, roaming normally involves at least two charges, an end-user retail charge paid by the end-user to a service provider, and an intercarrier retail charge paid from one service provider to another for network use.

**Satellite Internet services:** Access to the Internet can be facilitated in remote areas by using satellite transport in two ways. One is a direct-to-home service where a subscriber has a small antenna (typically in the Ka-band) at their premises. The other is where a provider of telecommunications services has an agreement with a satellite operator for satellite transport services (typically in the C-band, which requires large antennas) that is connected to a terrestrially-based distribution system in a community. Typically, access to Internet services via satellite is only used in communities where there is no suitable terrestrially-based transmission service.

**Spam Reporting Centre (SRC):** The SRC provides Canadians with the ability to register a report on suspected violations under CASL through the Government of Canada's public facing website, www.fightspam.gc.ca.

Short Message Service (SMS)/Multi-media Messaging Service (MMS): SMS is a text messaging service that uses standardized communications protocols to allow phones (typically mobile phones) to exchanges short text messages. Due to the methodology used to transmit text messages over mobile wireless networks, these messages are restricted in length to 140 octets (where an octet is 8 bits). Messages of a longer length are broken down by the sending device into SMS of 140 octets that are subsequently reassembled into the complete message by the receiving device. MMS expands the core SMS capability to allow the sending of multi-media content such as pictures, short video clips, news and entertainment content, or marketing material such as coupons and product images.

**Standard mobile broadband user**: An individual who owns a smartphone or a regular cellphone with a subscription to a data and voice plan. (Mobile phone plans with browsing only are excluded from this category.)

**Tariff/Non-tariff/Off-tariff services**: *Tariff* services are services whose rates, terms, and conditions are set out in a Commission-approved tariff. *Non-tariff* services are those telecommunications services whose rates, terms, and conditions are not set out in a Commission-approved tariff. *Off-tariff* services are those whose prices are filed with the Commission but for which the parties have agreed to an alternate price.

**Unsolicited Telecommunications Rules (UTR):** The Commission regulates unsolicited telecommunications pursuant to sections 41 to 41.7 and 72.01 to 72.15 of the Telecommunications Act which specifies that the Commission may, by order, prohibit or regulate the use by any person of the telecommunications facilities of a Canadian carrier for the provision of unsolicited telecommunications to the extent that the Commission considers it necessary to prevent undue inconvenience or nuisance, giving due regard to freedom of expression. In Telecom Decision 2007-48, the Commission established a framework for telemarketing calls and other unsolicited telecommunications received by Canadians. The framework includes rules for a National Do Not Call List (DNCL), as well as rules regarding telemarketing and the use of automatic dialing-announcing devices (ADADs). Collectively, these rules are referred to as the Unsolicited Telecommunications Rules (UTRs).

**Voice over Internet Protocol (VoIP)**: VoIP is a digital communications technology that makes use of IP packets carried over packet-switched network(s). There are generally two types of networks used for VoIP services. The first is the open/public Internet and the other is dedicated or managed IP networks operated by carriers such as cable companies, usually referred to as access-dependent VoIP. When the public Internet network is used for VoIP service, this is referred to as access-independent VoIP.

**Wholesale services:** In the context of telecommunications services, provision of a telecommunications service or facility to a service provider, regardless of whether that service provider rebills the service or facility to another entity, or uses that service or facility internally to support the services it bills.

**WiFi hotspot**: A physical location that offers, through a local area wireless computer networking (Wi-Fi) technology, Internet access over a wireless local area network through the use of a router connected to a link to an Internet service provider.

### iii Other

**Compound annual growth rate (CAGR):** The year-over-year growth rate of an amount over a specified period of time.

**Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA):** EBITDA is an accounting measure calculated using a company's net earnings before deducting interest, taxes, depreciation, and amortization. EBITDA is a measure of the performance of a company's current operations with its current assets, as it is a measure of a company's profitability before the effects of financing are considered.

# A.4 List of acronyms used in the report

ARPU	average revenue per user	
ASC	Advertising Standards Canada	
ATM	asynchronous transfer mode	
AWS	advanced wireless service	
BDU	Broadcasting distribution undertaking	
CAGR	compound annual growth rate	
Capex	capital expenditure	
CASL	Canada's Anti-Spam Legislation	
CBC	Canadian Broadcasting Corporation	
CBSC	Canadian Broadcast Standards Council	
CCD	Canadian Content Development	
CCTS	Commissioner for Complaints for Telecommunications Services	
CMF	Canadian Media Fund	
СРЕ	Canadian programming expenditures	
СРІ	Consumer Price Index	
CRTC, the Commission	Canadian Radio-television and Telecommunications Commission	
DCS	Data collection system	
DSL	digital subscriber line	
DNCL	Do Not Call List	
DTH	direct-to-home	
EBITDA	earnings before interest, taxes, depreciation and amortization	
FTTH	fibre-to-the-home	
FTTP	fibre-to-the-premises	
FTTN	fibre-to-the-node	
GB	gigabyte	
HSA	high speed access	
HSDS	high-speed digital service	
HSPA	high-speed packet access	
HSPA+	evolved high-speed packet access	
ICT	Information and communications technology	
IP	Internet Protocol	
IPTV	Internet Protocol television	

IP-VPN	Internet Protocol – virtual private network
ISDN	integrated services digital network
ISP	Internet service provider
Kbps	kilobits per second
LAN	local area network
LPIF	Local programming improvement fund
LTE	long-term evolution
LTE-A	long-term evolution advanced
MB	Megabyte
Mbps	megabits per second
MDS	multipoint distribution service
MMS	multimedia messaging service
MTM	Media Technology Monitor
MVNO	mobile virtual network operator
M2M	Machine-to-machine
n/a	not available
NAS	Network access service
PBIT	profit before interest and taxes
PNI	programs of national interest
PPM	portable people meter
PPV	pay-per-view
PSTN	public switched telephone network
PVR	personal video recorder
RDU	radiocommunication distribution undertaking
SMS	short message service
SRC	Spam Reporting Centre
ТРІ	telephone price index
ΤΡΙΑ	third-party Internet access
TSP	telecommunications service provider
ТТҮ	teletypewriter
UTR	Unsolicited Telecommunications Rules
VOD	video-on-demand
VoIP	voice over Internet Protocol
WAN	wide area network

WSP	wireless service provider
3G	third-generation
4G	fourth-generation

## A.5 Circulars, decisions, public notices, orders, notices of consultation, regulatory policies and codes referenced in the report

Circular No. 404	Requirements for the Filing of Financial Statements with the Broadcasting Annual Return, Circular No. 404, 23 August 1994
Broadcasting Decision 2010-782	Change in the effective control of Canwest Global Communications Corp.'s licensed broadcasting subsidiaries, Broadcasting Decision CRTC 2010-782, 22 October 2010
Broadcasting Decision CRTC 2010-942	Transfer of effective control of various commercial radio programming undertakings from Corus Entertainment Inc. to Cogeco inc., Broadcasting Decision CRTC 2010-942, 17 December 2010
Broadcasting Decision CRTC 2011-163	Change in effective control of CTVglobemedia Inc.'s licensed broadcasting subsidiaries, Broadcasting Decision CRTC 2011-163, 7 March 2011
Broadcasting Decision CRTC 2012-394	Global News Plus BC – Specialty Category B service, Broadcasting Decision CRTC 2012-394, 20 July 2012
Broadcasting Decision 2013-207	<i>The Score – Change in effective control and licence renewal and amendment,</i> Broadcasting Decision CRTC 2013-207, 30 April 2013
Broadcasting Decision 2013-283	<i>TVtropolis – Acquisition of assets</i> , Broadcasting Decision CRTC 2013-283, 11 June 2013
Broadcasting Decision 2013-310	Astral broadcasting undertakings – Change of effective control, Broadcasting Decision CRTC 2013-310, 27 June 2013
Broadcasting Decision 2013-530	CityNews Channel (formerly known as CITY News (Toronto)) – Revocation of licence, Broadcasting Decision CRTC 2013-310, 1 October 2013
Broadcasting Decision 2013-737	TELETOON/TÉLÉTOON, TELETOON Retro, TÉLÉTOON Rétro and Cartoon Network – Change of effective control; TELETOON/TÉLÉTOON, TELETOON Retro and TÉLÉTOON Rétro – Licence renewal and amendment, Broadcasting Decision CRTC 2013-373, 20 December 2013
Broadcasting Decision 2013-738	Historia and Séries+ – Acquisition of assets and change in effective control Broadcasting Decision CRTC 2013-738, 20 December 2013
Broadcasting Decision 2014-62	Change of effective control – Follow-up to the Astral-BCE transaction, Broadcasting Decision CRTC 2014-62, 17 February 2014

Broadcasting Decision 2014-388	Change in the effective control of Disney Junior, Disney XD and Family Channel from Bell Media Inc. to DHX Media Ltd. and licence amendments, Broadcasting Decision CRTC 2014-388, 24 July 2014
Broadcasting Decision 2014-465	MusiquePlus and MusiMax - Change in effective control and licence amendments, Broadcasting Decision CRTC 2014-465, 11 September 2014
Broadcasting Order 2011-60	Exemption order for small video-on-demand undertakings, Broadcasting Order CRTC 2011-60, 31 January 2011
Broadcasting Public Notice 1990-89	Native Broadcasting Policy, Broadcasting Public Notice CRTC 1990-89, 20 September 1990
Broadcasting Public Notice 1999-117	<i>Ethnic Broadcasting Policy</i> , Broadcasting Public Notice CRTC 1999-117, 16 July 1999
Broadcasting Public Notice 2006-143	Exemption order respecting certain network operations, Broadcasting Public Notice CRTC 2006-143, 10 November 2006
Telecom Regulatory Policy 2013-271	<i>The Wireless Code,</i> Telecom Regulatory Policy CRTC 2013-271, 3 June 2013
Telecom Regulatory Policy 2016-496	Modern telecommunications services – The path forward for Canada's digital economy, Telecom Regulatory Policy CRTC 2016-496, 21 December 2016
Telecom Regulatory Policy 2017-200	Review of the Wireless Code, Telecom Regulatory Policy CRTC 2017-200, 15 June 2017

# A.6 List of Canadian companies referenced in the report and their full names

Access Communications	Access Communications Co-operative Limited	
Astral	Astral Media Inc.	
BCE	Bell Canada Enterprises	
Bell Aliant	Bell Aliant Regional Communications, Limited Partnership	
Bell Mobility	Bell Mobility Inc.	
Bragg	Bragg Communications Incorporated	
CBC	Canadian Broadcasting Corporation	
Cogeco	Cogeco Data Services Inc., Cogeco Cable Canada LP, Cogeco Cable Québec General Partnership, Cogeco Cable Canada General Partnership	
Corus	Corus Entertainment Inc.	
Distributel	Distributel Communications Limited	
EastLink	EastLink Inc.	
Lansdowne	Lansdowne Rural Telephone Co. Ltd	
MTS Allstream	MTS Allstream Inc.	
Northwestel	Northwestel Inc.	
Québecor	Québecor Media Inc.	
Primus	Primus Telecommunications Canada Inc.	
Remstar	Remstar Broadcasting Inc. (V)	
Rogers	Rogers Media Inc., Broadcasting Limited, Rogers Communications Partnership	
SaskTel	Saskatchewan Telecommunications	
Shaw	Shaw Communications Inc.	
Sogetel	Sogetel inc	
SRC	Société Radio-Canada	
TELUS	TELUS Communications Company, TELUS Services Inc.	
Télébec	Télébec, Limited Partnership	
Télé-Québec	Société de télédiffusion du Québec	
Videotron	Videotron Ltd., Videotron G.P.	
WIND	WIND Mobile Corp.	
Xplornet	Xplornet Broadband Inc., Xplornet Communications Inc.	
Yak	YAK Communications (Canada) Corp.	

# A.7 Telecommunications market sector description

### A) Wireline voice

Wireline voice-related telecommunications services can be divided into two broad market segments: (i) local and access services, and (ii) long distance services.

### i. Local and access services

The local and access segment is composed of wireline services relating to access and connectivity to the public switched telephone network (PSTN), and includes services used by both retail and wholesale customers.

Local wireline telephone service enables customers to place unlimited calls within a defined local calling area for a basic monthly fee. This service is either access-dependent or access-independent. Access-dependent service includes managed wireline access from the telecommunications service provider to the customer, a connection to the PSTN, and a telephone number. Access-independent service does not include the managed wireline access component. Customers of access-independent service must subscribe to broadband Internet service, which serves as the access component.

Local wireline telephone service includes automated call answering, business Centrex, and Integrated Services Digital Network (ISDN) services, as well as other ancillary services such as inside wiring, installation and repair, teleconferencing, and miscellaneous local services.

Local and access services include (a) local services provided to other providers of telecommunications services on a wholesale basis, and (b) access services for interconnection between carriers and other service providers, including switching and aggregation.

### ii. Long distance services

Retail long distance services encompass wireline voice traffic to locations outside the local calling area. These services are sold in a variety of ways, such as through a standard per-minute charge, a monthly subscription plan, calling cards, or in a bundle with other services.

Wholesale long distance services are provided (a) under connection arrangements between a facilities-based telecommunications service provider and a long distance service provider to transit long distance minutes, or (b) on a wholesale, bulk, long-distance-minute basis by facilities-based telecommunications service providers to resellers of long distance services.

### B) Internet

Internet-related telecommunications services can be divided into two broad market segments: (i) Internet access and transport, and (ii) Internet applications and other Internet-related services.

### i. Internet access and transport

Internet access service involves the provision of an Internet Protocol connection to an end-user, which enables the end-user to exchange application traffic with Internet hosts and other end-users. Internet access service consists of the following three major components:

a) data connection between a modem at the end-user's location (such as a residential dwelling) and the Internet service provider (ISP);

- b) ISP facilities, which include
- routers, to switch traffic between ISP end-users and the Internet at large;
- servers, to provide in-house ISP services, such as email; and
- network management elements; and
- c) a connection from the ISP to the Internet.

Internet access services are available at a variety of speeds. Low-speed, or narrowband, access services operate at speeds of up to 64 kilobits per second and are typically provided using dial-up access lines. High-speed access services, including wideband [up to 1.5 megabits per second (Mbps)] and broadband (faster than 1.5 Mbps), generally operate using digital subscriber line (DSL) technologies, coaxial cables, terrestrial wireless technologies, satellites, or fibre-optic cables.

Internet transport service is a type of Internet connectivity service typically sold to ISPs and some larger business customers. Internet transport capacity is provided over Internet backbone facilities that carry aggregated traffic across domestic and international links between Internet traffic switches or routers. Internet transport service provides partial control over the movement of customers' Internet traffic. In some cases, peering arrangements between Internet backbone service providers substitute for the outright purchase of Internet transport by one ISP from another.

ii. Internet applications and other Internet-related services

A growing number of Internet application services, including email and Web hosting, piggyback on Internet connectivity services. Internet application services are typically bundled together with Internet access services. However, telecommunications service providers also participate in emerging stand-alone business Internet application service markets, which include services such as premium Web hosting services, Internet data centre and off-site data storage services, and security and firewall services.

### C) Data and private line

Data services include managed local area network (LAN) and wide area network (WAN) services for data, video, and voice networks within a metropolitan area or on a national or international scale. Data services include legacy protocols such as X.25 (packet switched WAN communication), Asynchronous Transfer Mode (ATM), and frame relay; newer protocols such as Ethernet and Internet Protocol-Virtual Private Network (IP-VPN); and the provisioning and management of networks and related equipment.

Private line services provide the capability to link two or more locations over dedicated facilities for the purpose of transporting data, video, or voice traffic. These services include high-capacity digital transmission services (at speeds ranging up to gigabit speeds over fibre), as well as voice-grade and other analogue services. Transmission facilities for private line services include copper wire, fibre-optic cable, and satellite facilities.

### D) Wireless

Wireless services are composed of telecommunications services provided via mobile wireless access facilities. These services include mobile telephony, mobile data (such as text and multimedia messaging), roaming, wireless Internet access, and paging services. Data and private line services by satellite are included in the "Data and private line" section of this report, while mobile telephone services are included in the "Wireless" section of this report.

In addition to enabling voice communications over wireless networks, new wireless technologies are enabling users to send text messages and multimedia messages, including photos, graphics, videos, and audio clips, from one device to another and from one carrier to another. Data usage is expected to continue to grow as existing and new carriers forge network agreements and expand and upgrade their networks, and as terminal equipment makers introduce new devices.

# A.8 Classification of Canadian TSPs

For the purposes of monitoring and reporting on the state of competition in the telecommunications market sectors, providers of telecommunications services operating in Canada are classified into two broad categories: incumbent providers and alternative providers. The category into which a given provider falls may change from one year to the next as a result of mergers or acquisitions in the industry. For example, if a provider acquires or establishes a company that provides mobile (wireless) service, the wireless company takes the same classification as the parent provider. Companies providing telecommunications services are classified according to the structure set out below.

- 1. *Incumbent providers* are the companies that provided local telecommunications services on a monopoly basis prior to the introduction of competition. Incumbent providers are subdivided into large and small providers.
  - a) Large incumbent providers serve relatively large geographical areas, usually including both rural and urban populations, and provide wireline voice, Internet, data and private line, wireless, and other services. The large incumbent providers are Bell Aliant; Bell Canada; MTS Allstream; Northwestel, SaskTel; Télébec, and TELUS.
  - b) Small incumbent providers serve relatively small geographical areas (mostly municipal areas generally located in less densely populated regions) in Ontario, Quebec, and, in one instance, British Columbia. Due to the limited size of their serving areas, these companies do not typically provide facilities-based long distance services. However, they provide a range of wireline voice, Internet, data and private line, and wireless services. Examples of small incumbent providers are Lansdowne in Ontario and Sogetel in Quebec.

2. *Alternative providers* are providers of telecommunications services that are not incumbent providers as described in 1) above. Alternative providers are subdivided into facilities-based and non-facilities-based providers.

Facilities-based alternative providers own and operate telecommunications networks.

- a) Facilities-based non-incumbent providers are further subdivided into cable-based carriers, utility telcos, and other carriers.
  - *Cable-based carriers* are the former cable monopolies that also provide telecommunications services (e.g. wireline voice, Internet, data and private line, and wireless services). These providers include such companies as Bragg, Cogeco, Rogers, Shaw, and Videotron.
  - Utility telcos are providers of telecommunications services whose market entry, or whose corporate group's market entry, into telecommunications services was preceded by a group-member company's operations in the electricity, gas, or other utility business.
  - *Other carriers* own physical transmission facilities (e.g. intercity, intra-city, or local transmission facilities). These service providers include such companies as Xplornet.
- b) Non-facilities-based alternative providers generally do not own or operate a telecommunications network. These companies are referred to as resellers, since they generally acquire telecommunications services from other providers and either resell those services or create their own network from which to provide services to their customers. Examples of non-facilities-based alternative providers are Distributel, Primus, Yak, and independent Internet service providers. For the purpose of this report, a company that owns a small amount of facilities but has the vast majority of its operations on leased facilities may also be classified as non-facilities-based.

# A.9 Rural communities included in service price assessment

According to the 2011 Census, approximately 19% of Canadians lived in rural communities. To assess the price of communications services for this segment of the population, 54 rural communities were selected. These communities represented 3% of Canadians living in rural communities and were selected based on the following criteria:

- The community was not part of one of the census metropolitan areas of the 24 urban centres listed in Table A.4.2 below;
- The community had a population density of fewer than 400 people per square kilometre, or its population centres had fewer than 1,000 people per centre;
- The number of communities selected in each province/territory reflected that province's or territory's proportion of the total population of Canada; and
- The communities were not geographically clustered.

### Table A.9.1 List of rural communities

Province	Community	Province	Community
	Barriere		L'Islet
	Bowser		La Guadeloupe
	Cobble Hill		Lac-Des-Écorces
British Columbia	Hazelton	Quebec	New Carlisle
	Kaslo		Laterrière
	Keremeos		Rock Island
	Thrums		Saint-Honoré (Témiscouata)
	Cremona		Cap-Pelé
	Evansburg	New Brunswick	Florenceville
Alberta	Glendon		Lamèque
	Hythe		Crapaud
	Wabasca	Prince Edward Island	Hunter River
	Broadview		Morell-St. Peters
	Gull Lake		Bear River
Saskatchewan	Naicam	Nova Scotia	Mahone Bay
	Redvers		Wedgeport
	Spiritwood		Burin
	Ashern	Newfoundland and	Harbour Main
	La Broquerie	Labrador	New Harbour
Manitoba	Norway House		
	Pine Falls	Territory	Community
	Southport		Dawson City
	Bayfield	Yukon	Dawson City
	Ripley		Мауо
	Bancroft		Fort Simpson
Ontario	Echo Bay	Northwest Territories	Fort Smith
	Emsdale		Cape Dorset
	Ingleside	Nunavut	
	Lion's Head		Igiooiik

Province	Urban centre	Province	Urban centre
British Columbia	Vancouver		Montréal
	Victoria	Quebec	Wontreal
Alborta	Calgary		Québec
Alberta	Edmonton	New Brunswick	Fredericton
Saskatchewan	Saskatoon	Prince Edward Island	Charlottetown
Jaskatenewan	Regina		
Manitoba	Winnipeg	Nova Scotia	Halifax
	Toronto	Newfoundland and	St John's
	Ottawa – Gatineau	Labrador	31: 101113
	Hamilton		
	London	Territory	Community
Ontario	Kitchener – Waterloo		
	St. Catharines –	Yukon	Whitehorse
	Niagara	<b>Northwest Territories</b>	Yellowknife
	Windsor		
	Oshawa	Nunavut	Iqaluit

### Table A.9.2 List of urban centres

Major centre boundaries are defined using Statistics Canada's census metropolitan area and census agglomeration definitions.

## A.10 About broadband measurement

### i Methodology

To collect data for this report, the CRTC used a test environment that aims to replicate how a typical consumer would utilize online streaming and real-time communications services. The services were accessed by a typical wireline residential broadband service, and a national LTE cellular data network, using mainstream off-the-shelf consumer electronics: Android- and iOS-based tablets and phones, smart TVs, Windows- and Linux-based laptop and desktop computers, and various set-top streaming devices. A web browser was used to access the streaming services on the PCs, and official applications (apps) were used on the other devices.

To measure the data consumed by these services on the wireline connection, a specially-configured Linuxbased computer was inserted between the upstream Internet connection and the local network. Using industry-standard data collection tools, all data flowing between the test device and the Internet was captured for analysis. For the LTE connection, traffic was recorded using the same tools, but from a virtual interface on a computer that mirrors the LTE interface on the test device. This process is completely transparent to the streaming services and test devices.

The maximum speeds of the wireline and LTE Internet connections were tested, and found to be significantly higher than the maximum observed speeds of the streaming services tested; in other words, the Internet connections did not limit the speed of the streams in any way. To ensure accuracy, multiple measurements were taken for each service and quality level (where this setting was available), and background data usage (i.e. the usage of background apps and services, other than the one being tested) was minimized.

### ii Automatic bit rates

On a consumer's network, multiple applications and devices contend for access to a limited amount of bandwidth. Assuming that the bandwidth of the consumer's Internet package is high enough, multiple applications can share a connection without any noticeable drop in quality. However, on connections that are constrained by low bandwidth or those that have too many applications running simultaneously, the quality of the consumer's experience will be impacted.

To avoid interruptions, and to provide the best user experience given the aforementioned constraints, many applications will dynamically adjust the quality of their stream. A decrease in the quality of the stream means lower demand for instantaneous bandwidth, and less data usage overall. Conversely, higher stream qualities require more instantaneous bandwidth and will use more data. Figure A.10.1 shows the range of bitrates for some common video streaming services.



Ranges of bit rates

#### Figure A.10.1 Ranges of bit rates for some video streaming services

Gigabytes per hour (GB/h) Combined download and upload

#### Source: CRTC Technology Resource Centre

Additionally, streaming services have different patterns of data delivery; some deliver fixed-size blocks of data however quickly the Internet connection can accept them (most video streaming services), while others send a constant stream of data at a fixed rate (predominantly audio streaming and real-time communications services). The difference in bandwidth usage is detailed in Figures A.10.2 and A.10.3.



#### Figure A.10.2 Example data rate graph of a fixed-size chunk streaming service



#### Figure A.10.3 Example data rate graph of a fixed-rate streaming service

While the bandwidth usage characteristics of a streaming service doesn't affect its overall data usage, it may impact other activities for subscribers who share an Internet connection, or who have multiple devices. As the number of simultaneous streams increases, the likelihood of saturating a household's Internet connection increases; saturating the connection results in dropped packets and may interrupt streams to buffer data.

### iii Effect of Compression on Data Usage

When audio and video are streamed over the Internet, they are sent in a compressed format. The *codec* determines the format of the media, and directly affects the data usage of its stream. Although audio compression has not changed much in recent years, the proliferation of UHD video has spurred the development of more efficient video compression standards.<sup>36</sup> Newer codecs allow the same video to be more efficiently compressed, resulting in a lower streaming bit rate for video of the same quality. This means consumers will be able to view higher-quality video without needing to increase the speed of their Internet connection or their data usage.

<sup>&</sup>lt;sup>36</sup> H.264/MPEG-4 Advanced Video Coding (AVC) is a video codec standard defined by the Moving Picture Experts Group (MPEG) that has become the *de facto* compression method for many streaming video services. However, when H.264 is used with high-resolution UHD video, the stream's bit rate often exceeds the speed of typical residential Internet connections. For this reason, some streaming services have started using newer, more efficient codecs to stream their data, like H.264's successor H.265 High Efficiency Video Coding (HEVC).