



Canadian Radio-television and  
Telecommunications Commission

Conseil de la radiodiffusion et des  
télécommunications canadiennes

Canada

# COMMUNICATIONS MONITORING REPORT 2018

TELECOMMUNICATIONS  
OVERVIEW

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## Telecommunications Overview








The Telecommunications Overview provides a glimpse into various aspects of telecommunications in Canada. Section i: The competitive landscape provides a description of the entities supplying telecommunications services; Section ii: Telecommunications sectors provides revenue details for the six sectors (local and access, long distance, data, private line, fixed Internet and mobile); Section iii: Financial performance reports various metrics such as capital expenditures and earnings before interest, taxes, depreciation and amortization; Section iv: Retail revenue growth sources provides insight into the sources of revenue growth; Section v: Consumer voices highlights customer contacts and Section vi: Sector summaries provides summaries of the six sectors, with longer-form descriptions available in subsequent sections of the 2018 *Communications Monitoring Report* (for retail fixed Internet and retail mobile).

Unless otherwise noted, the first three sections deal with total revenues (retail plus wholesale), while Section vi: Sector summaries deals with retail revenues (except for the wholesale section).

## i The competitive landscape

Total Canadian telecommunications revenues reached \$50.3 billion in 2017 as Canadians used ever-increasing amounts of data through both fixed Internet and mobile services (“data usage” includes the use of data for video streaming services such as Netflix and YouTube, as well as for audio streaming services such as Spotify and various radio applications via mobile devices or fixed Internet services).

Infographic 4.1

Sector	2017 total revenues	Growth 2016-2017
 Local and access	\$7.1 B	↓ 2.4%
 Long distance	\$1.5 B	↓ 14.5%
 Data	\$3.2 B	↓ 0.3%
 Private line	\$1.3 B	↓ 4.9%
 Fixed Internet	\$11.5 B	↑ 7.0%
 Mobile	\$25.8 B	↑ 5.4%
 TOTAL telecommunications revenues	\$50.3 B	↑ 3.2%

Source: CRTC data collection

*Total telecommunications revenues is calculated from exact amounts and may appear to differ from total sector revenues due to rounding.*

Service providers are divided in two broad categories: Incumbent telecommunications service providers (TSPs), i.e. the companies which provided local telecommunications services on a monopoly basis prior to the introduction of competition, and alternative service providers, which encompasses all other types of entities.

Alternative service providers include cable-based carriers, which are the former cable monopolies that currently also provide telecommunications services; other facilities-based service providers; and resellers, which are companies providing services primarily using other companies' facilities.

Incumbent TSPs, along with cable-based carriers, own and operate the majority of the infrastructure used by other service providers.

Please see Table 4.9 in the [appendix](#) for more details.

Infographic 4.2

Type of TSP	2017 total revenue share (%)
Large incumbent TSPs	58.2%
Small incumbent TSPs	1.0%
Cable-based carriers	34.0%
Other service providers	3.2%
Resellers	3.6%

Source: CRTC data collection

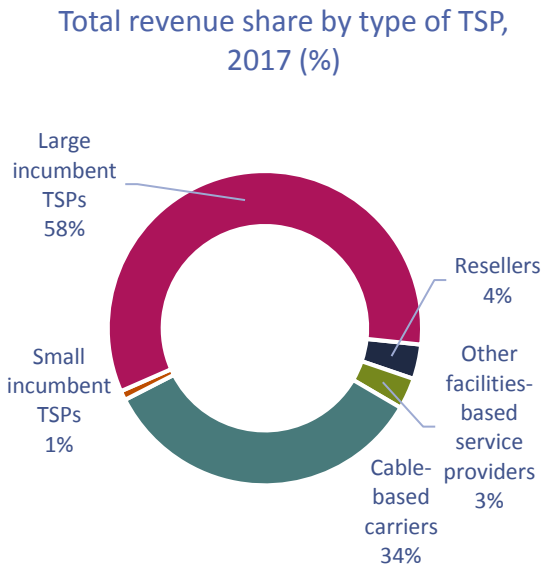
Grouping companies in order to include their affiliates, the five largest providers of telecommunications services accounted for 87% of total revenues in 2017. These company groups are Bell, Quebecor, Rogers, Shaw and TELUS, and are a mix of incumbent TSPs and cable-based carriers – though all are facilities-based service providers. The percentage of revenues represented by the top five changes slightly from year to year as revenues grow, but more significant changes are usually due to larger factors such as occasional ownership transfers. One recent example is the BCE's acquisition of MTS in 2017, which contributed to the growth of the revenue share of Canada's largest providers.

Generally, since 2013, the incumbent TSPs' (large and small) share of revenues has been declining by about one percentage point per year, to 59% in 2017.

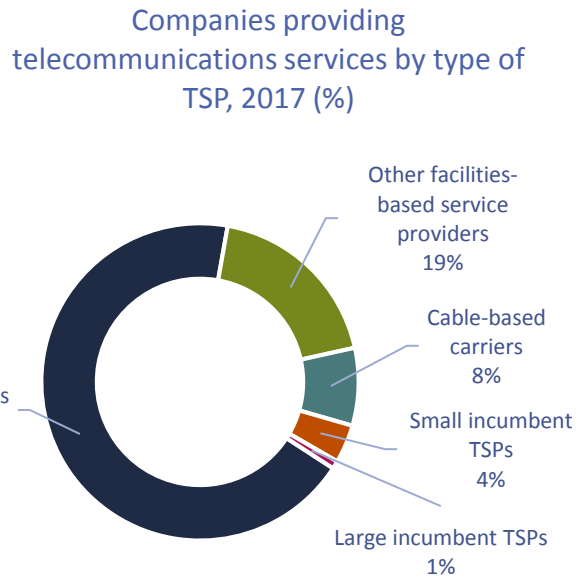
While the large incumbent TSPs represented only 1% of the number of telecommunications providers<sup>1</sup> in 2017, they generated 58% of revenues. The cable-based carriers made up 8% of the total number of companies and generated 34% of revenues. With relatively low barriers to entry, especially in the long distance sector, resellers comprised nearly 69% of service providers while generating only 4% of revenues.

Figure 4.1 Total revenue share by type of TSP, 2017 (%)

Figure 4.2 Companies providing telecommunications services by type of TSP, 2017 (%)



Source: CRTC data collection



Source: CRTC data collection

<sup>1</sup> Based on the number of entities submitting data to the CRTC.

## ii Telecommunications sectors

In the *Communications Monitoring Report*, telecommunications services are divided into six sectors:

Infographic 4.3 Telecom sectors and revenue shares

Type	Sub-type	Sector	2013 total revenue share (%)	2017 total revenue share (%)
Wireline	Wireline voice	<b>Local and access</b>	<b>18.7</b>	<b>14.1</b>
		Long distance	5.3	3.0
	Wireline data	Data	5.0	6.3
		Private line	5.6	2.5
		<b>Fixed Internet</b>	<b>18.2</b>	<b>22.9</b>
Mobile	Mobile voice and data	<b>Mobile</b>	<b>47.2</b>	<b>51.2</b>

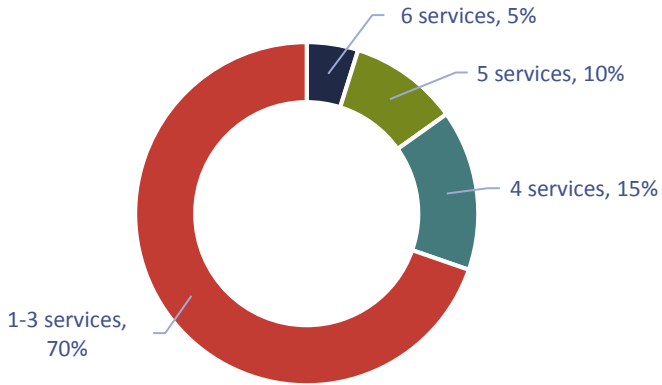
Source: CRTC data collection

In 2017, eight companies offered services in all six telecommunications sectors, accounting for 86% of total telecommunications revenues in Canada. These large, facilities-based entities tend to offer a wider array of services than their smaller counterparts. At the other end of the spectrum, companies providing one to three services generally offered Internet access, local, or long distance phone services. These smaller entities, often resellers, represented 70% of the number of TSPs, but garnered 4% of telecommunications revenues in 2017.

Figure 4.3 Distribution of TSPs by the number of services offered, 2017

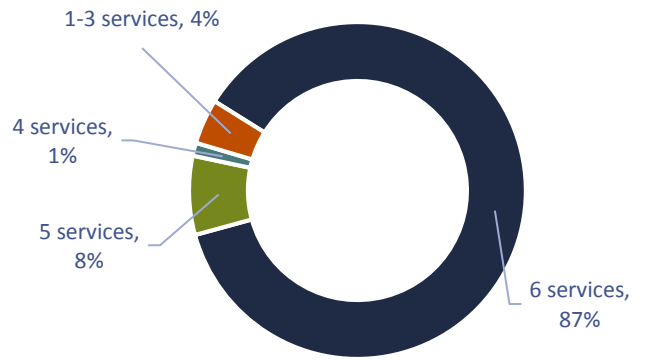
Figure 4.4 TSPs' revenue share grouped by the number of services offered, 2017

Distribution of TSPs by the number of services offered, 2017



Source: CRTC data collection

TSPs' revenue share grouped by the number of services offered, 2017





Source: CRTC data collection



## Revenues – Retail versus wholesale

Revenues from telecommunications services are derived from sales to residential and business consumers (retail) and to other carriers (wholesale).

Infographic 4.4

Category	Description of service	Type of TSP	2017 total revenue share (%)
 Retail	Services provided directly to the end-user	Retail services are generally provided by all TSPs	92
 Wholesale	Services provided by one TSP to another, then to the end-user	Wholesale services are provided by facilities-based TSPs	8

Source: CRTC data collection

Retail revenues accounted for 92% of total telecommunications revenues in 2017, a percentage that remained constant over the 2013-2017 period. 95% of mobile revenues were generated from retail services, compared to 89% for wireline, numbers that have remained virtually unchanged since 2013.

## Revenues – Forborne services

Over time, the Commission has refrained from regulation when it finds that a service is subject to sufficient competition or where refraining is consistent with the Canadian telecommunications policy objectives, as outlined in section 7 of the *Telecommunications Act*. This is referred to as forbearance. Where a service is forborne from regulation, the provider is generally relieved of the obligation to provide the service pursuant to a Commission-approved tariff. For example, the retail rates for mobile services are forborne from regulation, whereas the rates for wholesale high-speed access (HSA) services (i.e. fixed Internet access) are not. HSA rates are based on Commission-approved tariffs.

Table 4.1 Percentage of telecommunications revenues generated by forborne services

Sector	2013	2014	2015	2016	2017
Local and access	78	79	80	82	83
Long distance	99	98	98	98	98
Fixed Internet	97	97	96	97	97
Data	91	96	96	96	96
Private line	71	71	71	72	72
Mobile	100	100	100	100	100
Overall	94	94	95	95	96

Source: CRTC data collection

Since 2013, approximately 96% of telecommunications revenues have been generated from forborne services. In 2017, the percentage of revenues derived from forborne services ranged from a low of 83% in local and access to a high of 100% in mobile.

## Revenues – Canadian ownership

Section 16 of the *Telecommunications Act* addresses the eligibility of Canadian companies to operate as telecommunications common carriers.

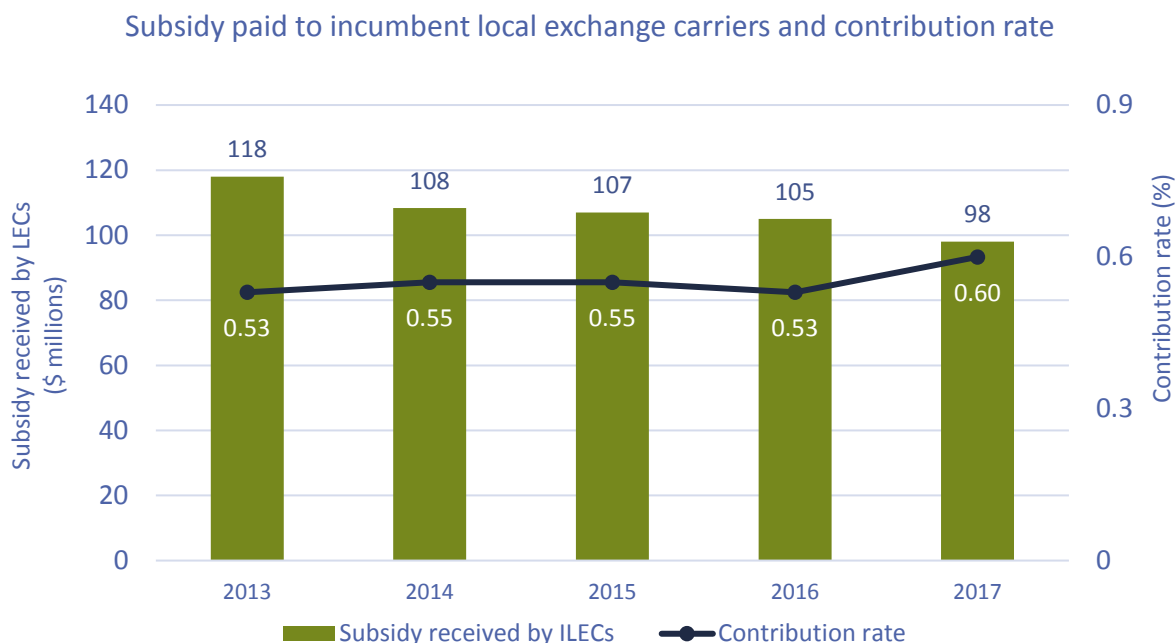
Subject to certain exceptions, section 16 requires that telecommunications companies that own or operate telecommunications transmission equipment and have Canadian telecommunications revenues greater than \$5 billion (i.e. 10% of total Canadian telecommunications revenues) be Canadian-owned and controlled.

For the purposes of applying the provisions of section 16, the Commission has determined that total annual revenues from the provision of telecommunications services in Canada was \$50.3 billion in 2017.

## Revenues – Contribution

The total amount of subsidies paid to local exchange carriers (LECs) was \$98 million in 2017, down from \$105 million (7.1%) in 2016.

Figure 4.5 Subsidy paid to incumbent local exchange carriers and contribution rate



Sources: CRTC data collection and decisions

This subsidy represents revenue contributions toward the provision of residential telephone service in high-cost serving areas (HCSAs) by TSPs, or groups of related TSPs, that have a minimum of \$10 million in annual Canadian telecommunications revenues. HCSAs are areas where the cost of providing service is substantially higher than other parts of an incumbent LEC's territory. HCSAs are often remote areas or rural areas. In 2017, 32 companies received subsidies (unchanged from 2016).

In Telecom Regulatory Policy 2016-496, the Commission stated that in order to help meet the new universal service objective, it would begin to shift the focus of its regulatory frameworks from wireline voice services to broadband Internet access services.

### iii Financial performance

#### Infographic 4.5

Metric	Category	2013	2017
<b>Capital expenditures (\$ billions)</b>	Wireline	\$6.9 B	\$9.7 B
	Mobile	\$2.0 B	\$2.3 B
<b>Capital intensity (%)</b>	Mobile providers	9.8%	9.1%
	Incumbents TSPs	33.0%	42.8%
	Cable-based carriers and other facilities-based services	26.8%	47.2%
<b>EBITDA margin (%)</b>	Wireline	32.9%	37.0%
	Mobile	43.3%	\$39.5 M
<b>Investment in spectrum (\$ millions)</b>	Mobile	\$277.4 M	\$442.4 M

Source: CRTC data collection

#### Capital expenditures and capital intensity

Capital expenditures, or CAPEX, are major investments made primarily to maintain or upgrade telecommunications networks. In 2017, TSPs with over \$100 million in revenues spent \$12.1 billion on capital expenditures, \$9.7 billion of which was spent on wireline networks.

While wireline capital expenditures grew at an annual rate of 9% over the 2013-2017 period, the large incumbent TSPs' share of CAPEX declined from 71% in 2013 to 60% in 2017, as the cable-based carriers' share correspondingly increased from 28% in 2013 to 38% in 2017.

Capital intensity (the ratio of capital expenditures to revenues) was on the rise for the incumbent TSPs and cable-based carriers, going from about 30% in 2013 to 45% in 2017. In contrast, mobile providers were in the 10% range over the 2013-2017 period.

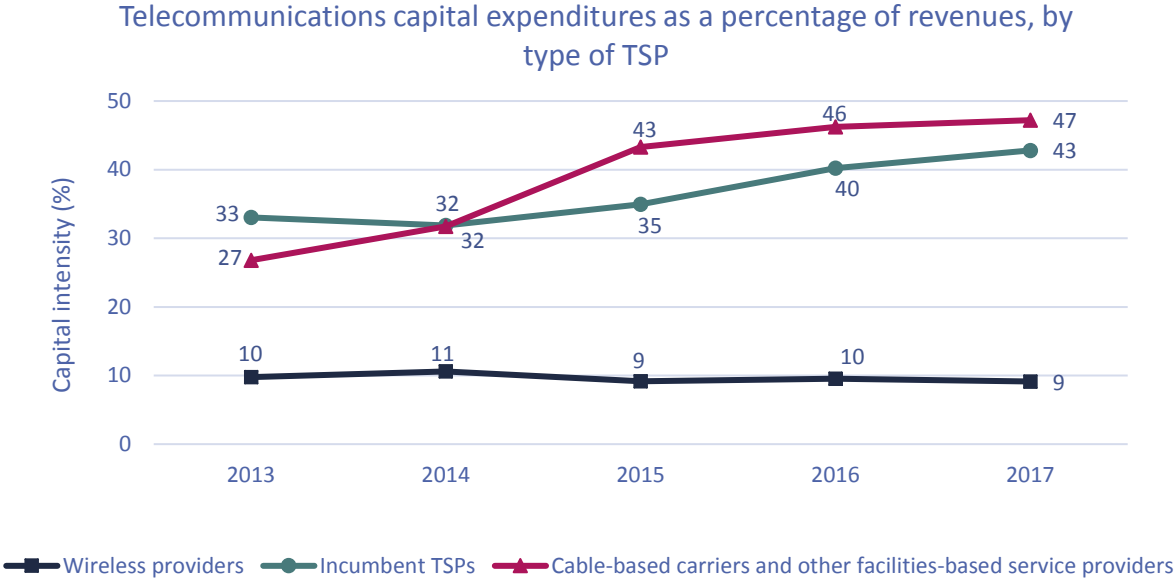
At 40%, capital intensity for telecommunications in 2017 was second only to utilities at 79.2% (and well above the all-industries average of 6.6%) due to the requirement to maintain and upgrade extensive network infrastructure.

#### Infographic 4.6 Capital intensity for industries with the highest capital intensity ratios for 2017

Industry	Capital intensity (%)
Utilities	79.2
<b>Telecommunications</b>	<b>40.0</b>
Mining, quarrying, and oil and gas extraction	27.8
Educational, health care and social assistance services	26.1
Transportation and warehousing	16.2
Arts, entertainment and recreation	15.8
Real estate and rental and leasing	11.7
Information and cultural industries	10.5
Agriculture, forestry, fishing and hunting	8.7
Accommodation and food services	4.0
<b>Average of all industries</b>	<b>6.6</b>

Source: CRTC data collection and Statistics Canada Tables 34-10-0035-01 and 33-10-0007-01

Figure 4.6 Telecommunications capital expenditures as a percentage of revenues, by type of TSP



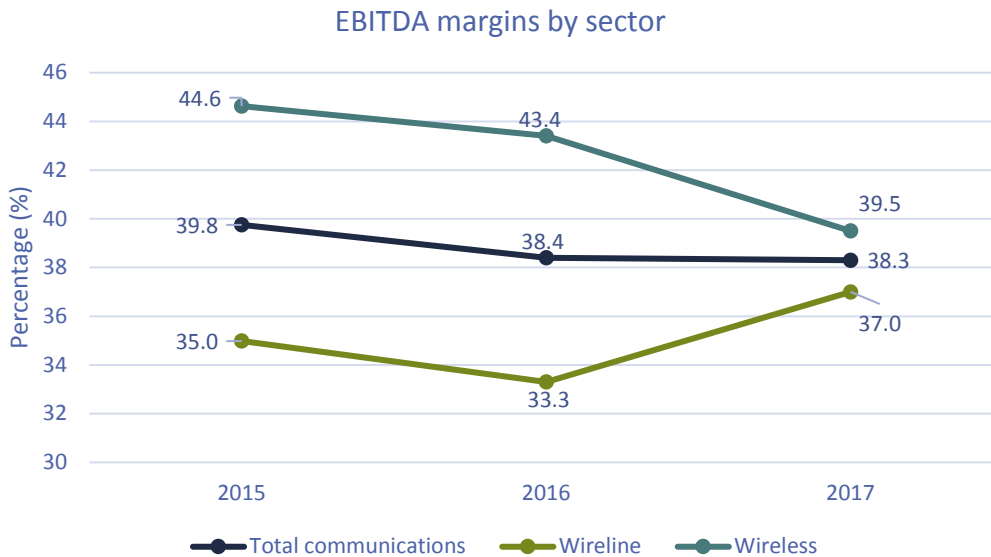
Source: CRTC data collection

## Earnings before interest, taxes, depreciation and amortization (EBITDA)

EBITDA margins (EBITDA as a percentage of total telecommunications revenues) are instrumental in assessing the financial performance of a company or group of companies. Margins are calculated for TSPs with at least 80% of their total revenues represented by telecommunications services.

Over the 2014-2017 period, margins for mobile services were consistently above those for wireline, with the difference widening slightly to 10% as mobile margins reached 41% in 2017.

Figure 4.7 EBITDA margins by provider type (%)



Source: CRTC data collection

Over the 2014-2017 period, EBITDA margins were quite stable at 45% for the cable-based carriers and 38% for the incumbents.

## Investment in spectrum

Annual investments in spectrum from 2013 to 2016 were \$0.28 billion, \$5.26 billion, \$2.96 billion, and \$0.15 billion, respectively (to reduce regulatory burden, only TSPs with revenues over \$100 million were surveyed). The amounts reported in 2013 reflect investments made mainly by satellite carriers.

Investments made from 2014 to 2016 reflect investments made by mobile carriers to acquire AWS-3 (advanced wireless services), 700 megahertz (MHz), and 2500 MHz spectrum.

#### iv Retail revenue growth sources

Total Canadian telecommunications revenues reached \$50.3 billion in 2017, growing by 3.2%, slightly faster than the five-year average annual growth rate of 2.9%. Total retail telecommunications revenues, which represent the vast majority of the telecommunications revenues, totaled \$46.3 billion in 2017, growing 3.6% from 2016 to 2017, and 3.0% annually on average from 2013 to 2017.

Infographic 4.7

Sector (2017)	Fixed Internet	Mobile
Retail revenues	\$11.0 B	\$24.5 B
Retail revenue growth	7.7%	5.3%
Retail subscribers	14.0 M	31.7 M
Retail subscriber growth	3.9%	3.1%

Source: CRTC data collection

In terms of retail revenues, the sources of revenue growth in 2017, and over the 2013-2017 period, were the fixed Internet and mobile sectors, which grew by 7.7% and 5.3%, respectively, in 2017. These sectors accounted for 77% of retail revenues in 2017, compared to 68% in 2013.

#### Sources of retail revenue growth – Fixed Internet and mobile

Fixed Internet revenues continued to grow as Canadians subscribed to Internet services that contained more data in their monthly allowance.

In 2017, fixed Internet and mobile revenue growth exceeded subscriber growth. Average mobile revenue per subscriber increased from \$59.97 in 2013 to \$65.33 in 2017 as subscribers used (and paid for) more data, while average residential fixed Internet revenue per subscriber increased from \$44.50 in 2013 to \$58.49 in 2017.

Additional data and descriptions for fixed Internet and mobile can be found in [vi Sector summaries](#).

## v Consumer voices

In 2016-2017, CRTC Client Services and the Commission for Complaints for Telecom-television Services (CCTS) logged 35,000 communications with Canadians regarding telecommunications services. Of these, 48% were with the CRTC and 52% were with the CCTS. Common reasons for contacting the CRTC in 2017 were related to mobile services (25%), Internet services (22%) and telemarketing (22%). Mobile service billing errors were the subject of 46% of complaints received by the CCTS in 2016-2017, followed by Internet access issues (31%) and local telephone issues (20%).

### Infographic 4.8

Mobile and Internet services were the subject of the most contacts when combining CRTC and CCTS data:

- **Mobile services** were the subject of **36% of all logged communications** with the CRTC and the CCTS.
- **Internet services** were the subject of **27% of all logged communications** with the CRTC and the CCTS.

Source: CRTC data collection, CCTS

**What is the CCTS?** The CCTS is an independent organization dedicated to resolving customer complaints about telecommunications and television 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 telephone, mobile, Internet, and VoIP services. The CCTS is also responsible for administering the Wireless Code. Additional information on the CCTS can be found at [www.ccts-cprst.ca](http://www.ccts-cprst.ca)



Table 4.2 Number of telecommunications-related contacts received by the CRTC by type of issue and subject, 2017

Subject	CRTC policies/decisions	Billing/rates	Quality of service	Provision of service	Terms of service	Other	Total
<b>Telecommunications services</b>	1,505	1,151	1,258	214	264	123	4,515
<b>Mobile services</b>	895	1,196	1,236	151	726	39	4,243
<b>Internet services</b>	1,234	581	1,119	478	228	40	3,680
<b>Telemarketing</b>	3,579	7	4	0	0	69	3,659
<b>Incumbent TSPs</b>	63	167	120	12	78	1	441
<b>Competitive local exchange carriers</b>	23	30	30	5	30	2	120
<b>VoIP services</b>	22	11	18	12	6	0	69
<b>Alternative providers of long distance service</b>	10	12	8	2	8	0	40
<b>Pay telephone services</b>	6	11	16	4	0	1	38
<b>Total</b>	<b>7,336</b>	<b>3,166</b>	<b>3,809</b>	<b>878</b>	<b>1,340</b>	<b>275</b>	<b>16,805</b>

Source: CRTC correspondence tracking system

Table 4.3 Summary of issues raised in telecommunications complaints handled by the CCTS (2016-2017)

Service	Billing error	Contract dispute	Service delivery	Credit management	Total
<b>Mobile</b>	3,826	2,907	1,368	442	8,543
<b>Internet</b>	2,156	2,009	1,454	144	5,763
<b>Local telephone</b>	1,356	1,491	815	104	3,766
<b>Long distance</b>	204	79	80	5	368
<b>Directory assistance</b>	6	1	-	-	7
<b>White page directories</b>	1	-	-	-	1
<b>Operator services</b>	-	-	-	-	-
<b>Total</b>	<b>7,549</b>	<b>6,487</b>	<b>3,717</b>	<b>695</b>	<b>18,448</b>

Source: CCTS annual report

## vi Sector summaries

## Retail mobile sector

## Infographic 4.9

Mobile– Retail	2013	2017
Revenues (\$ billions)	\$20.2 B	\$24.5 B
Subscribers (millions)	28.4 M	31.7 M
Annual revenue growth (%)	3.4%	5.3%
Revenue CAGR 2013-2017 (%)	n/a	4.9
Canadians with access to LTE-A (%) 2016, 2017	83% (2016)	92%
Major roads and highways covered by LTE (%)	n/a	86%
Subscribers with data plans (%)	62%	83%
Average monthly data usage (GB)	0.96 GB (2014)	2.0 GB
Monthly ARPU (\$)	\$59.97	\$65.33
Blended prepaid/postpaid average churn rate of Canada's Top 3 mobile service providers (%)	1.6%	1.3%

Source: CRTC data collection

Churn is 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.

Table 4.4 Retail mobile and paging service revenue components (\$ millions)

Component	2013	2014	2015	2016	2017	Growth (%) 2016-2017	CAGR <sup>2</sup> (%) 2013-2017
Basic voice	8,818.7	8,665.5	8,689.0	8,834.3	9,219.7	4.4	1.1
Long distance	1,160.3	880.4	656.1	547.0	481.9	-11.9	-19.7
Paging	18.4	17.3	12.6	11.1	8.9	-19.5	-16.6
Terminal equipment (including handheld devices)	1,501.5	1,673.7	2,129.8	1,911.1	1,896.1	-0.8	6.0
Data	7,546.1	8,672.6	10,034.9	10,980.5	11,832.4	7.8	11.9
Roaming and other	1,152.8	1,035.7	1,001.9	960.0	1,047.2	9.1	-2.4
Data, roaming, and other – Subtotal	8,698.8	9,708.3	11,036.8	11,940.4	12,879.6	7.9	10.3
Total	20,197.7	20,945.2	22,524.3	23,243.9	24,486.2	5.3	4.9

Source: CRTC data collection

With revenues of \$24.5 billion, and a 5.3% growth rate compared to 2016, mobile wireless remained the largest sector, representing over 52% of all retail telecommunications revenues in 2017.

Mobile subscribers reached 31.7 million in 2017, with mobile networks covering approximately one-fifth of Canada's geographic land mass and reaching 99% of Canadians. In 2017, advanced wireless networks

<sup>2</sup> Compound annual growth rate

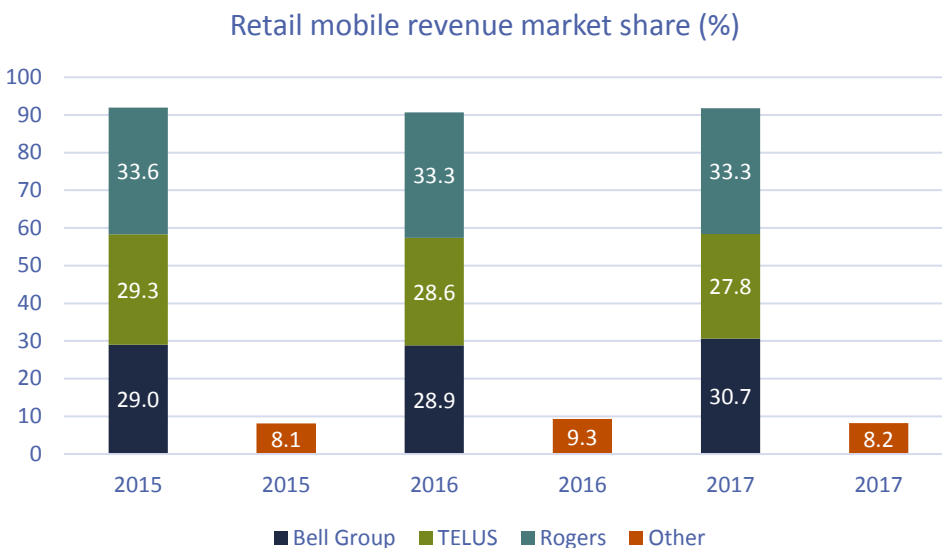
such as long-term evolution – advanced (LTE-A) delivered higher speeds than previous generation networks. LTE-A was available to approximately 92% of Canadians, compared to 83% in 2016. In 2017, LTE was available to 99% of Canadians, compared to 98.5% in 2016.

Average monthly data usage per data subscriber was over 2.0 GB, compared to 0.96 GB in 2014. From 2016 to 2017, there was a 30% increase in data usage.

In 2017, the average revenue per user (ARPU) reached \$65.33 per month, compared to \$59.97 in 2013. In 2017, Alberta recorded the highest monthly ARPU at \$73.60, while the lowest ARPU was in Quebec, at \$56.07.

The mobile sector continued to be dominated by the three largest mobile service providers (“the Top 3”), and increasingly so. In 2017, these entities accounted for 92% of retail mobile revenues, compared to 90% in 2015 and 91% in 2016. The Top 3 held the majority revenue share in each province/territory except for Saskatchewan, where the other providers captured 62% of the sector, a decrease from 68% in 2013. The Top 3 consists of the Bell Group,<sup>3</sup> Rogers and TELUS.

Figure 4.8 Retail mobile revenue market share (%)



Source: CRTC data collection

*Other mobile providers include SaskTel, Freedom Mobile, Videotron, and Bragg Communications and resellers.*

More data on mobile and other telecommunications services can be found in Open Data.

<sup>3</sup> The Bell Group includes Bell Canada, Bell Mobility, KMTS, Latitude Wireless, NorthernTel, Northwestel Mobility, and Télébec. In 2017, MTS Inc. was incorporated into the Bell Group.

## Retail fixed Internet sector

Infographic 4.10

Retail fixed Internet		2013	2017
Retail fixed Internet revenues (\$ billions)		\$7.7 B	\$11.0 B
Retail fixed Internet subscribers (millions)		12.3 M	14.0 M
Revenue (%)		7.3%	7.7%
Revenue CAGR 2013-2017 (%)		n/a	9.2%
Households with access to 50/10 Mbps speeds with an unlimited data option (%)		n/a	84%

Residential fixed Internet		2013	2017
Households with a fixed Internet subscription (%)		80%	86%
Average download speed (GB)		15.6 GB	68.3 GB
Subscribers to 50+ Mbps service (%)		5.0%	38.6%
Average monthly data usage (GB)		50.8 GB	166.2 GB
Monthly ARPU (\$)		\$44.50	\$58.49

Source: CRTC data collection

Table 4.5 Retail Internet service revenues (\$ millions)

Type	Subtype	2013	2014	2015	2016	2017	Growth (%) 2016-2017	CAGR (%) 2013-2017
Residential	Access	5,938	6,554	7,265	8,091	8,804	8.8	10.3
	Applications, equipment, and other Internet-related services	160	162	210	289	314	8.5	18.3
	Total	6,098	6,716	7,475	8,380	9,118	8.8	10.6
Business	Access and transport	1,243	1,320	1,394	1,442	1,502	4.1	4.8
	Applications, equipment, and other Internet-related services	384	378	380	356	347	-2.6	-2.5
	Total	1,626	1,698	1,774	1,798	1,849	2.8	3.3
All	Total	7,725	8,414	9,249	10,178	10,967	7.7	9.2

Source: CRTC data collection

More Canadians (86%) are subscribing to Internet services. Canadians continue to use more data, subscribe to faster, larger packages and allocate more money to Internet access services.

In 2017, fixed Internet was the fastest-growing sector, with revenues growing by 7.7% and subscriptions growing by 3.9%. From 2013 to 2017, fixed Internet grew by an average annual rate of 9.2%.

In 2017, Internet services were provided by a variety of Internet service providers (ISPs), including incumbent TSPs and cable-based carriers, fixed wireless service providers, and resellers. Residential subscribers reached 12.8 million, a 3.9% increase from 2016 and approximately three times higher than the population growth rate. Cable-based carriers and incumbent TSPs accounted for the majority of subscribers (87%) while other entities accounted for (13%) up from 10% in 2013.

Canadians are increasingly subscribing to faster Internet services. Subscriptions to services with download speeds slower than 16 Mbps represented 68% of the total in 2013 compared to 35% in 2017, while subscriptions to services including speeds of 50 Mbps and higher increased from just 5% of residential high-speed subscriptions in 2013 to 39% in 2017.

Canadians are also using more data. The average monthly data amounts downloaded by residential subscribers increased by 36% annually from 2013 to 2017, and by 31% from 2016 to 2017 to 153GB per month. Average upload amounts also increased by 14.8% in 2017, reaching 13GB per month

Fibre deployment continued in 2017, increasing the availability of fibre to the home to 35% of households from 28% in 2016. These deployments were mainly in large urban areas.

## Retail wireline voice sector

Infographic 4.11

	2013	2017
Retail wireline voice revenues	\$9.5 B	\$7.5 B
Retail wireline voice subscribers	18.3 M	14.5 M
Revenue growth	-3.4%	-4.4%
Revenue CAGR 2013-2017	n/a	-5.8%

Source: CRTC data collection

Table 4.6 Local and long distance retail revenues (\$ millions)

Metric	2013	2014	2015	2016	2017	Growth (%) 2016-2017	CAGR (%) 2013-2017
Gross local revenues	7,661	7,441	7,146	6,635	6,474	-2.4	-4.1
Less: Contribution	118	108	107	105	98	-7.1	-4.5
Retail local revenues	7,544	7,333	7,039	6,529	6,376	-2.3	-4.1
Long distance revenues	1,949	1,755	1,506	1,287	1,095	-15.0	-13.6
Total local and long distance retail revenues	9,493	9,088	8,545	7,817	7,471	-4.4	-5.8

Source: CRTC data collection

In 2017, the retail wireline voice sector reported \$7.5 billion in revenues, with approximately a 6% annual decline since 2013. Local revenues (excluding contribution) accounted for 85% of retail wireline revenues in 2017. Long distance revenues were \$1.1 billion, declining by an average annual rate of 14% since 2013.

From 2013 to 2017, residential wireline voice revenues per line decreased by \$2.97 to \$36.28 per month, while business revenues decreased by \$6.28 to \$52.38 per month.

The incumbent carriers accounted for approximately 63% of retail wireline revenues in the residential sector and 81% in the business sector, dropping slightly since 2013 as the revenue shares for the cable-based providers increased over the same period.

While the introduction of access-independent VoIP services<sup>4</sup> has opened the wireline voice sector to non-traditional providers, access-independent VoIP has failed to show subscriber growth in recent years. There were approximately 600,000 subscribers to access-independent VoIP in 2017, representing 4% of retail local telephone lines. This percentage has remained constant since 2013.

There were approximately 45,000 payphones in 2017, generating an average of \$430 in annual revenues per unit, compared to 85,000 payphones generating \$560 per unit in 2013. The number of payphones dropped by 12,000 or 21% in 2017 from 2016, while the average revenue per phone increased by \$45 or approximately 12%.

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<sup>4</sup> Access-independent VoIP services are VoIP services delivered through the public Internet as opposed to a dedicated or managed network.

## Retail data and private line sector

Infographic 4.12

	<b>2013</b>	<b>2017</b>
<b>Retail data and private line revenues</b>	\$3.6 B	\$3.3 B
<b>Revenue growth</b>	2.9%	-1.8%
<b>Revenue CAGR 2013-2017</b>	n/a	-2.2%

Source: CRTC data collection

Table 4.7 Data and private line retail revenues (\$ millions)

Sector	Subsector	2013	2014	2015	2016	2017	Growth (%) 2016-2017	CAGR (%) 2013-2017
Data	Data protocols	1,917	1,952	1,920	1,870	1,864	-0.3	-0.7
	Other	832	857	779	731	694	-5.0	-4.4
	Total	2,749	2,809	2,699	2,600	2,558	-1.6	-1.8
Private line	Total	834	784	754	738	721	-2.3	-3.6
<b>Total</b>	<b>Total</b>	<b>3,583</b>	<b>3,593</b>	<b>3,453</b>	<b>3,339</b>	<b>3,279</b>	<b>-1.8</b>	<b>-2.2</b>

Source: CRTC data collection

Data and private line services refers to services sold by TSPs to business customers for the transmission of data, video and voice traffic. These services provide private, highly secure communications channels between locations. Data and private line revenues have been in decline since 2014.

Data services are packet-based services that intelligently switch data through carrier networks. They make use of newer data protocols such as Ethernet and Internet Protocol (IP), or legacy data protocols such as X.25, asynchronous transfer mode (ATM), and frame relay to transmit data<sup>5</sup>. Legacy services make up less than 1% of revenues. The Other subcategory includes network management and networking equipment.

<sup>5</sup> See telecommunications glossary for definitions and examples: <https://crtc.gc.ca/eng/dcs/glossaryt.htm>



Private line services provide non-switched, dedicated communications connections between two or more points to transport data, video and/or voice traffic.

Although incumbent TSPs accounted for only approximately 15% of the entities providing data and private line services, they captured 65% of retail revenues.

## Wholesale

### Infographic 4.13

	2013	2017
Wholesale revenues	\$3.7 B	\$4.0 B
Revenue growth	-1.0%	-0.9%
Revenue CAGR 2013-2017	n/a	2.1%

Source: CRTC data collection

Table 4.8 Wholesale telecommunications revenues by sector (\$ millions)

Type	Sub-type	Sector	2013	2014	2015	2016	2017	Growth (%) 2016-2017	CAGR (%) 2013-2017
Wireline	Voice	Local and access	704	646	603	615	599	-2.6	-4.0
		Long distance	433	414	423	458	407	-11.2	-1.5
		Subtotal	1,137	1,060	1,026	1,073	1,006	-6.3	-3.0
	Non-voice	Internet	434	481	556	589	558	-5.3	6.5
		Data	525	576	604	600	634	5.6	4.8
		Private line	657	628	615	593	546	-8.0	-4.5
		Subtotal	1,616	1,685	1,776	1,782	1,737	-2.5	1.8
All	Wireline	2,753	2,745	2,801	2,855	2,743	-3.9	-0.1	
Mobile	All	Mobile	953	1,038	1,123	1,200	1,277	6.4	7.6
All	Total	Total	3,706	3,783	3,925	4,055	4,020	-0.9	2.1

Source: CRTC data collection

Wholesale services are services provided by one TSP to another, usually when the latter doesn't have facilities of its own.

In 2017, the wholesale telecommunications sector was worth \$4 billion, of which 32% was for the provision of mobile services and 68% for wireline services. Wholesale mobile services are an increasingly important part of the telecommunications landscape. From 2013 to 2017, wholesale mobile revenues increased at an average annual rate of 7.6%, compared to a decrease of 0.1% for wholesale wireline revenues.

Independent 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 voice revenues declined, on average, by 3.0% annually from 2013 to 2017, whereas wireline non-voice revenues increased, on average, by 1.8% annually during the same period.

With 70% of wholesale revenues, the incumbent TSPs had the largest share of the wholesale sector, which they have maintained since 2013 – although their share has decreased slightly, due in part to ownership changes. The majority of wholesale revenues come from mobile roaming.

## vii Appendix

Table 4.9 Types of TSPs, descriptions and examples

Type of TSP (alphabetical order)	Description	Examples (partial list)
<b>Alternative service provider</b>	Any entity that is not an Incumbent TSP.	Rogers, Shaw, Videotron, Distributel, TekSavvy
<b>Cable-based carrier</b>	The former cable monopolies currently providing telecommunications services.	Rogers, Shaw, Videotron
<b>Facilities-based service provider</b>	Any entity which has its own facilities.	Rogers, Shaw, Videotron, Bell Canada, SaskTel, TELUS,
<b>Fixed wireless service provider</b>	An entity that provides its services over a wireless network that uses either licensed or unlicensed spectrum to provide communications services, where the service is intended to be used in a fixed location.	Xplornet, Corridor Communications
<b>Incumbent local exchange carrier</b>	Incumbent entities providing local voice services.	Bell Canada, SaskTel, TELUS, Sogotel, Execulink Telecom
<b>Incumbent TSP</b>	Companies providing local telecommunications services on a monopoly basis prior to the introduction of competition.	
<ul style="list-style-type: none"> <li>• <b>Large incumbent TSP</b></li> </ul>	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.	Bell Canada, SaskTel, TELUS
<ul style="list-style-type: none"> <li>• <b>Small incumbent TSP</b></li> </ul>	Small incumbent providers serve relatively small geographical areas. 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.	Sogetel, Execulink Telecom
<b>Other facilities-based service provider</b>	Other facilities-based service providers include utility providers (such as electricity or gas) and carriers that own physical transmission facilities.	Zayo, Hydro One Telecom
<b>Reseller</b>	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.	Distributel Communications, TekSavvy Solutions, and Verizon Canada
<b>Telecommunications service provider (TSP)</b>	Any entity providing telecommunications services.	
<b>Wireless service provider (WSP)</b>	Any entity providing wireless services.	Rogers, Shaw, Videotron Bell Canada, SaskTel, TELUS
<b>Wireline service provider</b>	Entities providing wireline services.	Rogers, Shaw, Videotron Bell Canada, SaskTel, TELUS
<b>Independent ISP</b>	Non-Incumbent, non-cable-based carriers providing Internet services	TekSavvy, Xplornet, Distributel, Verizon Canada