CHAPTER **19** Information and communications technology

Internet use continues to increase among Canadians. In 2009, 80% of people aged 16 and older used the Internet for personal reasons at some point during the year. By comparison, 73% of Canadians aged 16 and older went online for personal reasons in 2007.

People in British Columbia and Alberta had the highest rates of Internet use among the provinces, at 85%. Rates were lowest in Newfoundland and Labrador, at 69%.

Among large urban centres, the highest rates of Internet use were reported in Calgary and Saskatoon, at 89%. Edmonton, Ottawa–Gatineau, Vancouver and Victoria each had rates of Internet use at or above 85%.

The majority of Canadian users (96%) are accessing the Internet from home; however, a growing number are going online from work and school. In 2009, 42% of Canadian Internet users went online from work, 21% from school and 15% from a public library.

More high-speed connections

In 2009, 92% of home Internet users had a high-speed connection, an increase from 88% in 2007. High-speed connections are provided by Digital Subscriber Line (DSL), cable modem or satellite connections. High-speed connectivity is considered an important channel for delivering services to the public, and governments are expanding high-speed availability, particularly in rural areas.

Canada ranked seventh in terms of household broadband adoption among Organisation for Economic Co-operation and Development countries in 2008. However, some unevenness remains. Among home users living in communities with a population of 10,000 or more in 2009, 94% accessed the Internet through a high-speed connection, compared with 82% of those living in communities of less than 10,000 people.

Digital divide narrowing

Internet use has become more widespread. From 2007 to 2009, the gap in the rate of Internet use on the basis of income, education and age narrowed.

In 2009, 94% of people in the top 25% of household income used the Internet at some point during the year, compared with 90% in 2007. Among people in the lowest quarter of household income, 56% used the Internet, compared with 48% in 2007.

In 2009, 89% of people with at least some postsecondary education used the Internet, compared with 84% in 2007. Among people with no postsecondary education, 66% used the Internet in 2009, compared with 58% in 2007.

Older people are increasingly moving online. Canadians aged 45 and older have accounted for 60% of all new Internet users since 2007. In 2009, 98% of people aged 16 to 24 went online, a slight increase from 2007. By comparison, 66% of people aged 45 and older went online in 2009, an increase of 10 percentage points from 2007.

A similar proportion of men (81%) and women (80%) used the Internet in 2009.

E-mail most popular

In 2009, 93% of Internet users reported using e-mail from home. General browsing for fun or leisure was the second-most

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cable and satellite television industry, Computer and peripherals price indexes, electronic commerce, innovation analysis, Internet use, radio and television industries, radio broadcasting industry, software development and computer services, telecommunications industry, television broadcasting industry

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popular online activity with 78% of home Internet users doing so.

Online transactions increased in 2009, as 50% of home users reported ordering goods or services over the Internet and 67% went online for electronic banking or bill payment.

Downloading and posting information

In 2009, 31% of home Internet users reported downloading or watching TV or movies, while 27% reported contributing content by writing blogs, posting photographs or joining discussion groups. Rates for these activities varied with characteristics such as age and sex. Among home users aged 30 and younger, 53% went online to download or watch TV or movies, while 45% reported contributing content.

Among home Internet users, 74% of women used the Internet to search for information about health or medical conditions, compared with 66% of men.

Table 19.a Internet orders, by selected products and services, 2009

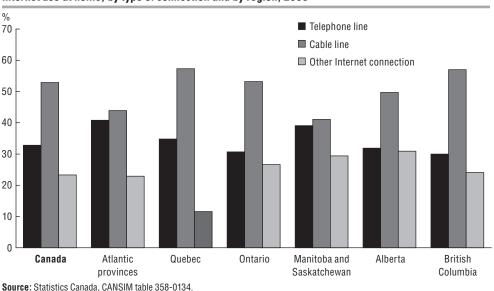
	%
Travel arrangements	48.8
Books, magazines and online newspapers	35.4
Other entertainment products	39.7
Clothing, jewellery and accessories	32.8
Music	25.9
Computer software	21.8
Consumer electronics	20.8
Flowers as gifts	18.0
Toys and games	19.0
Videos and digital video discs (DVDs)	14.5
Computer hardware	13.2
Housewares	12.0
Other health products, beauty and vitamins	10.6
Sports equipment	9.6
Automotive products	8.3
Food, condiments and beverages	5.6

Note: Population aged 16 and older who made online orders, excluding Yukon, Northwest Territories and Nunavut. Source: Statistics Canada, CANSIM table 358-0136.

Meanwhile, 35% of men used the Internet to research investments, compared with 20% of women.

The proportion of Canadian Internet users who searched for government information online rose from 51% in 2007 to 57% in 2009.





Computer services profitable

The operating revenues of Canada's software development and computer services firms rose 6.8% in 2008 to \$39.6 billion the highest revenues ever. From 1998 to 2008, their revenues grew by \$22.3 billion.

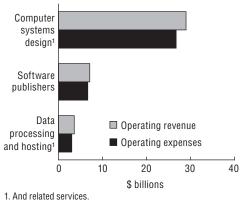
Computer systems design—the largest of the three industries in software development and computer services reached operating revenues of \$29.0 billion in 2008, up 7.1% from 2007. However, the industry's operating profit margin declined slightly from 8.8% in 2007 to 8.4% in 2009.

Software publishing posted operating revenues of \$7.1 billion in 2008, edging up 0.9% from 2007. Their profit margin was 6.3%, up from 5.9% in 2007.

The data processing industry's operating revenues climbed 17.8%—the fastest growth in computer services—to \$3.6 billion on a profit margin of 15.5%, which was up from 9.1% in 2007.

For computer systems designers, business clients accounted for 59.0% of

Chart 19.2 Software development and computer services, operating statistics, 2008



Source: Statistics Canada, CANSIM table 354-0005.

sales, governments and public institutions, 21.0% and clients outside Canada, 19.8%. For software publishers, exports comprised 52.1% of sales and businesses comprised 44.1%. In the data-processing industry, 73.7% of sales were to businesses and 12.1% to clients outside Canada.

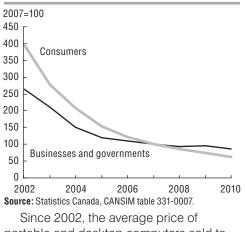
Computer prices continue their decline

From 2002 to 2010, the price of portable and desktop computers sold to Canadian consumers declined 84.8%. The price of monitors declined 53.7% and printers dropped 61.1%.

From 2009 to 2010, consumer computer prices dropped 16.4%. Portable computers decreased 17.3% and desktop computers declined 15.3%.

As consumer computer prices declined, the average cost of computers sold to governments and businesses also declined. Commercial computer prices fell 10.0% from 2009 to 2010. Commercial portable computers declined 9.8% while commercial desktop computers decreased 11.2%.

Chart 19.3 Computer price indexes, by type of purchaser

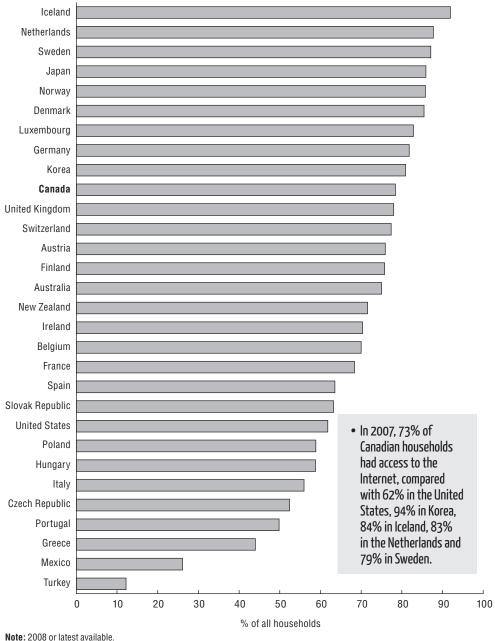


portable and desktop computers sold to Canadian governments and businesses declined 67.4%.

INTERNATIONAL perspective

Chart 19.4

Households with access to a computer, by selected country, 2008



Source: Data based on OECD (2010), *OECD Factbook 2010.*



Table 19.1 Gross domestic product at basic prices, information and cultural industries, 2000 to 2010

	2000	2001	2002	2003
Information and cultural industries	34,007	36,498	38,229	38,631
Publishing industries (excludes Internet)	7,992	8,566	8,566	8,402
Motion picture and sound recording industries	2,715	2,758	2,903	2,604
Broadcasting (excludes Internet)			3,022	3,010
Radio and television broadcasting	2,364	2,419	2,511	2,420
Pay and specialty television			511	591
Telecommunications			21,256	21,935
Cable and other program distribution			2,577	2,759
Telecommunications (excludes program distribution)			18,679	19,172
Other information services			1,012	1,066
Special aggregations				
All information and communications technology industries	45,684	44,592	44,949	47,400
Manufacturing of information and communications technology	13,689	8,877	6,912	6,908
Services in information and communications technology	32,399	35,810	38,036	40,448

Note: North American Industry Classification System (NAICS), 2002.

Source: Statistics Canada, CANSIM table 379-0027.

Table 19.2 Payroll employment, information and cultural industries, 1996 to 2010

	1996	1997	1998	1999	2000	2001
	number of employees					
Information and cultural industries	283,051	288,372	297,503	304,067	318,783	319,987
Publishing industries	69,542	72,250	75,475	76,656	83,152	84,656
Newspaper, periodical, book and database publishers	59,531	60,229	61,348	59,589	62,964	60,495
Software publishers	10,010	12,021	14,127	17,066	20,188	24,161
Motion picture and sound recording industries	26,895	29,912	32,735	34,306	36,622	37,742
Motion picture and video industries	24,944	27,791	30,430	31,954	34,213	35,425
Sound recording industries	1,950	2,121	2,305	2,351	2,409	2,318
Broadcasting (excluding Internet)	37,064	37,008	37,837	37,453	37,634	37,421
Radio and television broadcasting	36,098	36,074	36,897	36,550	36,764	36,017
Pay and specialty television	966	934	941	902	870	1,404
Telecommunications	119,481	119,674	122,521	124,379	127,934	124,652
Wired telecommunications carriers	83,303	83,105	85,002	85,603	86,991	82,189
Wireless telecommunications carriers (excluding satellite)	22,339	22,355	22,367	22,257	22,837	22,611
Satellite telecommunications	2,425	2,502	2,574	2,571	2,641	1,742
Other telecommunications	11,414	11,712	12,578	13,948	15,464	18,110
Data processing, hosting and related services	5,905	7,033	8,248	10,233	11,939	12,460
Other information services	24,165	22,496	20,686	21,040	21,502	23,056

Notes: Annual number of salaried and hourly employees on payroll.

North American Industry Classification System (NAICS), 2007.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours and CANSIM table 281-0024.

2010	2009	2008	2007	2006	2005	2004				
	\$ millions chained 2002									
45,596	45,314	45,372	44,568	43,583	42,039	40,813				
9,794	9,824	10,151	9,897	9,450	9,177	9,061				
2,739	2,780	2,844	2,950	2,895	2,828	2,718				
3,184	3,028	3,076	3,086	3,105	3,079	3,070				
2,387	2,274	2,348	2,395	2,420	2,420	2,438				
771	729	712	683	678	656	631				
26,957	26,755	26,280	25,559	24,972	24,020	23,103				
3,769	3,677	3,589	3,533	3,455	3,244	2,968				
23,130	23,033	22,652	21,979	21,471	20,746	20,127				
1,102	1,118	1,153	1,191	1,237	1,094	1,048				
60,184	58,636	58,782	57,488	55,425	52,507	50,508				
7,392	6,958	7,602	7,757	7,731	7,690	7,435				
52,851	51,746	51,223	49,760	47,713	44,821	43,075				

2010	2009	2008	2007	2006	2005	2004	2003	2002			
	number of employees										
325,006	324,313	331,919	328,833	318,428	314,384	309,494	312,388	318,219			
88,290	88,330	93,286	90,900	86,560	85,027	81,563	Х	86,230			
57,665	58,340	61,960	60,101	58,078	59,001	58,475	Х	62,084			
30,625	29,990	31,326	30,800	28,482	26,026	23,088	22,599	24,146			
35,180	36,064	35,244	34,250	31,652	33,325	32,684	34,905	37,404			
33,566	34,346	33,115	31,991	29,248	30,594	30,065	32,549	35,183			
1,614	1,718	2,128	2,259	2,404	2,731	2,619	2,356	2,222			
43,304	42,214	43,198	42,169	40,568	39,059	39,501	39,058	37,994			
40,955	39,454	40,005	39,547	38,519	37,174	37,564	37,175	36,359			
2,349	2,760	3,194	2,622	2,050	1,885	1,938	1,883	1,635			
115,735	116,608	116,449	116,997	117,974	118,285	118,038	117,134	119,933			
79,893	79,641	78,791	78,529	79,809	80,891	80,894	80,279	81,707			
23,589	23,505	23,240	23,360	23,550	23,113	23,037	23,066	23,104			
1,926	2,904	3,492	3,450	3,370	3,128	2,893	2,371	1,756			
10,328	10,558	10,926	11,657	11,245	11,153	11,214	11,417	13,366			
14,489	13,509	14,814	14,224	13,427	12,443	11,823	10,770	11,582			
28,008	27,589	28,929	30,293	28,248	26,247	25,884	Х	25,077			



Table 19.3 Software development and computer services, summary statistics,1998 to 2008

	1998	1999	2000	2001		
	\$ millions					
Operating revenues						
Software publishers	4,243.0	5,429.1	5,348.6	5,869.2		
Data processing, hosting and related services ¹	1,095.0	1,205.2	1,596.8	2,275.8		
Computer systems design and related services	12,033.0	15,532.8	17,765.6	17,964.9		
Operating expenses						
Software publishers	3,972.0	5,086.7	5,661.2	6,399.7		
Data processing, hosting and related services ¹	1,026.0	1,110.1	1,729.3	2,281.8		
Computer systems design and related services	11,253.0	15,237.0	17,188.1	17,492.1		
		0	6			
Operating profit margin						
Software publishers	6.4	6.3	-5.8	-9.0		
Data processing, hosting and related services ¹	6.3	7.9	-8.3	-0.3		
Computer systems design and related services	6.5	1.9	3.2	2.6		
		nun	nber			
Establishments						
Software publishers	1,745	1,882	1,849	2,306		
Data processing, hosting and related services ¹	563	1,083	930	1,345		
Computer systems design and related services	31,651	41,597	43,874	43,440		

Notes: Data prior to 2006 are not comparable with later years because of changes in methodology.

North American Industry Classification System (NAICS), 2007.

1. Prior to 2002, data refer to data processing services, NAICS, 1997.

Source: Statistics Canada, CANSIM table 354-0005.

Information and communications technology s^{\checkmark}

2008	2007	2006	2005	2004	2003	2002
			\$ millions			
7 000 0	7 000 7	0.000.4	0.050.0	0.070.0	E 010 E	F 000 4
7,086.3	7,022.7	6,268.4	6,358.3	6,276.2	5,810.5	5,383.1
3,556.4	3,018.5	2,495.3	2,815.3	2,675.3	2,650.8	2,591.0
28,983.6	27,063.5	24,725.4	21,567.4	20,727.0	18,836.1	18,205.8
6,639.6	6,606.9	5,980.4	6,231.0	5,992.3	5,924.9	5,438.7
3,005.3	2,743.6	2,222.5	2,652.2	2,451.1	2,539.1	2,439.6
26,756.4	24,668.1	23,121.6	19,923.2	19,777.4	17,741.0	17,241.6
			%			
6.3	5.9	4.6	2.0	4.5	-2.0	-1.0
15.5	9.1	10.9	5.8	8.4	4.2	5.8
7.7	8.8	6.5	7.6	4.6	5.8	5.3
			number			
2,144	2,237	1,762	1,994	2,602	1,946	1,837
1,489	1,421	1,166	1,161	1,342	1,317	1,066
55,156	54,107	51,168	47,479	51,230	45,377	42,790



Table 19.4 Internet use at home by individuals, by type of activity, 2007 and 2009

	2007	2009
	Q	%
E-mail	92.0	93.0
Use an instant messenger	49.9	44.8
Searching for information on Canadian municipal, provincial or federal government	51.4	56.5
Communicating with Canadian municipal, provincial or federal government	25.5	26.9
Searching for medical or health-related information	58.6	69.9
Education, training or school work	49.5	50.3
Travel information or making travel arrangements	66.1	66.2
Searching for employment	32.3	34.9
Electronic banking or paying bills	62.5	66.7
Researching investments	25.5	27.1
Playing games	38.7	42.1
Obtaining or saving music	44.5	46.5
Obtaining or saving software	32.5	35.0
Viewing the news or sports	63.7	67.7
Obtaining weather reports or road conditions	69.8	74.6
Listening to the radio over the Internet	28.1	31.8
Downloading or watching television	15.7	24.7
Downloading or watching a movie	12.5	19.8
Researching community events	44.3	50.0
General browsing (surfing)	76.0	77.7
Contributing content (blogs, photos, discussion groups)	20.3	26.7
Making telephone calls	8.7	13.8
Selling goods or services (through auction sites)	8.9	13.4

Note: Population aged 16 and older who used the Internet in the previous 12 months for personal non-business use from home. Source: Statistics Canada, CANSIM table 358-0130.

Table 19.5 Internet use by individuals, by location of access, 2007 and 2009

	2007	2009
	0/	
Any location	73.2	80.3
Home	68.6	77.1
Work	30.0	33.7
School	14.5	16.6
Public library	10.8	11.7
Other location	22.0	27.4

Note: Proportion of the population aged 16 and older who responded to having used the Internet in the previous 12 months for personal non-business use from any location.

Source: Statistics Canada, CANSIM table 358-0122.

		Any location ¹	
	2005	2007	2009
		% of individuals ²	
Household type			
Single-family households with unmarried children under age 18	80.9	86.4	91.1
Single-family households without unmarried children under age 18	62.5	67.5	76.4
One-person households	48.7	53.0	63.1
Multi-family households	78.8	80.6	86.4
Sex			
Males	68.0	74.1	81.0
Females	67.8	72.3	79.7
Age group			
34 and younger	88.9	93.1	96.5
35 to 54	75.0	79.8	87.8
55 to 64	53.8	60.8	71.1
65 and older	23.8	28.8	40.7
Level of education			
Less than high school	31.2	43.2	50.7
High school or college	72.0	76.8	83.4
University degree	89.4	92.5	94.7
Personal income quartile ^{3,4,5,6}			
Lowest quartile	58.7	68.8	76.2
Second quartile	56.9	60.7	69.9
Third quartile	71.3	75.5	83.1
Highest quartile	83.2	87.9	92.1

Table 19.6 Internet use by individuals, by selected characteristics, 2005 to 2009

1. Includes use from home, school, work, public library or other location. Individuals are counted only once, regardless of use from multiple locations.

Individuals who have used the Internet for personal, non-business reasons in the past 12 months. The target population for the Canadian Internet Use Survey (CIUS) has changed from individuals 18 years of age and older in 2005 to 16 years of age and older in 2007.

3. The Canadian Internet Use Survey (CIUS) divides income into quartiles (or four equal groups) based on the respondent's personal income. Each quartile represents 25% of the income spectrum from highest to lowest.

4. In 2005, the lowest quartile is less than or equal to \$13,000, the second quartile is from \$13,001 to \$26,999, the third quartile is from \$27,000 to \$45,999 and the highest quartile is \$46,000 and higher.

 In 2007, the lowest quartile is less than or equal to \$12,000, the second quartile is from \$12,001 to \$27,999, the third quartile is from \$28,000 to \$48,999 and the highest quartile is \$49,000 and higher.

6. In 2009, the lowest quartile is less than or equal to \$10,000, the second quartile is from \$10,001 to \$29,999, the third quartile is from \$30,000 to \$49,999 and the highest quartile is \$50,000 and higher.

Source: Statistics Canada, CANSIM tables 358-0123, 358-0124, 358-0125 and 358-0126.



Table 19.7 Enterprises' use of information and communications technologies,2002 to 2007

	2002	2003	2004	2005	2006	2007
			% of enter	prises		
E-mail	71.2	73.9	76.6	76.2	77.5	81.1
Wireless communications	57.7	56.5	56.6	59.5	74.0	76.7
Internet	75.7	78.3	81.6	81.6	82.8	86.7
Intranet	14.9	16.4	17.6	18.8	19.7	21.2
Extranet	5.3	6.1	6.3	7.3	7.5	9.4
Sales of goods or services over the Internet	7.6	7.1	7.4	7.3	8.0	8.2
Sales over the Internet to consumers ¹	24.6	32.3	25.2	28.6	32.5	37.7
Purchase of goods or services over the Internet	31.9	37.3	42.5	43.4	44.8	48.5

Notes: Data are for the private sector only.

North American Industry Classification System (NAICS), 2007.

1. As a percentage of total Internet sales.

Source: Statistics Canada, CANSIM tables 358-0007, 358-0010 and 358-0011.

Table 19.8 Cable and wireless distribution industries, 2004 to 2009

	2004	2005	2006	2007	2008	2009
		\$ thousands				
Operating revenue	6,353,454	6,832,982	7,861,805	9,030,580	10,320,489	11,411,862
Cable television	4,998,820	5,362,591	6,202,881	7,179,718	8,268,718	9,203,355
Wireless broadcasting distribution	1,354,634	1,470,391	1,658,925	1,850,861	2,051,771	2,208,507
Operating expenses	5,248,746	5,518,250	6,405,772	7,418,344	8,115,974	8,813,955
Cable television	3,801,166	4,028,240	4,714,810	5,584,414	6,147,492	6,675,675
Wireless broadcasting distribution	1,447,579	1,490,009	1,690,962	1,833,931	1,968,482	2,138,280
Profit before interest and taxes	1,104,708	1,314,733	1,456,033	1,612,236	2,204,515	2,597,907
Cable television	1,197,653	1,334,351	1,488,071	1,595,305	2,121,225	2,527,680
Wireless broadcasting distribution	-92,945	-19,618	-32,038	16,931	83,290	70,227
			thous	ands		
Subscribers						
Basic programming services	9,946	10,121	10,428	10,594	10,753	10,915
Cable television	7,621	7,630	7,799	7,930	8,048	8,141
Wireless broadcasting distribution	2,325	2,492	2,629	2,664	2,705	2,773

Note: North American Industry Classification System (NAICS), 2007.

Source: Statistics Canada, CANSIM table 353-0003.

	2004	2005	2006	2007	2008	2009		
	\$ thousands							
Operating revenues	1,582,919	1,696,713	1,818,651	1,898,314	1,969,590	1,999,220		
Private radio broadcasting	1,234,647	1,344,417	1,420,362	1,511,208	1,595,022	1,511,642		
Public and non-commercial radio broadcasting	348,272	352,297	398,289	387,106	374,568	487,578		
Operating expenses	1,454,694	1,513,415	1,598,504	1,663,433	1,699,339	1,719,290		
Private radio broadcasting	1,011,750	1,059,921	1,136,508	1,211,296	1,258,357	1,240,381		
Public and non-commercial radio broadcasting	442,944	453,494	461,996	452,137	440,982	478,909		
Profit before interest and taxes	128,225	183,298	220,147	234,881	270,252	279,930		
Private radio broadcasting	222,896	284,496	283,854	299,912	336,665	271,261		
Public and non-commercial radio broadcasting	-94,672	-101,198	-63,706	-65,031	-66,414	8,669		

Table 19.9Radio broadcasting industry, financial and operating statistics,
2004 to 2009

Notes: Public and non-commercial radio broadcasting data from 2009 are not comparable with previous years because of changes in methodology.

North American Industry Classification System (NAICS), 2007.

Source: Statistics Canada, CANSIM table 357-0002.

Table 19.10Television broadcasting industry, financial and operating statistics,
2004 to 2009

	2004	2005	2006	2007	2008	2009		
	\$ thousands							
Operating revenue	5,386,295	5,561,900	6,000,598	6,183,405	6,510,720	6,547,501		
Private conventional television	2,082,902	2,166,063	2,163,622	2,187,197	2,147,417	1,981,808		
Public and non-commercial television	1,238,192	1,173,730	1,337,943	1,266,919	1,433,900	1,460,797		
Pay and specialty television	2,065,201	2,222,107	2,499,033	2,729,289	2,929,403	3,104,895		
Pay television	384,375	409,795	482,325	547,553	596,427	695,562		
Specialty television	1,680,826	1,812,312	2,016,708	2,181,736	2,332,976	2,409,333		
Operating expenses	4,930,936	4,899,203	5,468,343	5,525,730	5,995,216	5,946,699		
Private conventional television	1,850,365	1,923,407	2,072,679	2,071,160	2,142,572	2,095,206		
Public and non-commercial television	1,429,466	1,309,461	1,469,512	1,372,882	1,571,463	1,475,261		
Pay and specialty television	1,651,105	1,666,336	1,926,152	2,081,688	2,281,182	2,376,233		
Pay television	298,906	301,812	357,518	431,088	495,372	610,029		
Specialty television	1,352,199	1,364,524	1,568,635	1,650,600	1,785,810	1,766,204		
Profit before interest and taxes	455,359	662,696	532,255	657,675	515,504	600,801		
Private conventional television	232,537	242,656	90,943	116,037	4,845	-113,398		
Public and non-commercial television	-191,274	-135,731	-131,569	-105,963	-137,562	-14,464		
Pay and specialty television	414,095	555,771	572,881	647,600	648,221	728,663		
Pay television	85,469	107,983	124,807	116,465	101,055	85,533		
Specialty television	328,627	447,788	448,074	531,136	547,166	643,130		

Notes: Public and non-commercial radio broadcasting data from 2009 are not comparable with previous years because of changes in methodology.

North American Industry Classification System (NAICS), 2007.

Source: Statistics Canada, CANSIM table 357-0001.