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HIGHLIGHTS

- ▶ In the first quarter 2003, the telecommunications industry contributed \$6.0 billion (1997 constant dollars) to Canadian gross domestic product (GDP), accounting for 2.4% of total economy GDP. This was 2.2% higher than the first quarter of last year (STC, CANSIM II Table 379-0018).
- ▶ Profits before interest and taxes represented 16.2% of revenues for the first three months of 2003, compared to 15.6% the previous year. The wireline segment of the industry had a lower profit margin than in the previous year while the wireless segment of the industry improved its profit margin.
- ▶ Operating revenues in the wireline industry totalled \$5.93 billion in the first quarter, up a modest 0.2% from the previous year. Growth was much stronger in the wireless industry where first quarter revenues were \$1.8 billion, a jump of 13.4% from what was reported one year ago.
- ▶ The industry continued to slash its capital expenditures. In the first three months of 2003 these expenditures were \$835 million, down from \$1.3 billion for the same period in 2002 and \$2.2 billion in the first quarter of 2001.
- ▶ The number of fixed access to the public-switched telephone network (PSTN) wireline access declined to less than 19.5 million lines at the end of the first quarter, a decrease of 1.2% from last year's level. This was the fifth consecutive quarter of year-over-year decline in wireline access.
- ▶ The number of subscribers to mobile telephony was up 9.7% at the end of the first quarter compared to last year. At quarter end 2003, there were over 12.0 million subscribers, and more than three quarters of them were subscribing to digital services.

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Symbols

The following standard symbols are used in Statistics Canada publications:

.	not available for any reference period
..	not available for a specific reference period
...	not applicable
P	preliminary
r	revised figures
x	suppressed to meet the confidentiality requirements of the Statistics Act
E	use with caution
F	too unreliable to be published

Abbreviations

n.e.c.	not elsewhere classified
FTE	Full-time equivalents
VGE	Voice-grade equivalents

North American Industry Classification System - NAICS (catalogue 12-501-XPE)

5133	Telecommunications
51331	Wired Telecommunications
51332	Wireless Telecommunications
51333	Telecommunication Resellers
51334	Satellite Telecommunications (including Satellite Resellers)
51339	Other Telecommunications Services

ANALYTICAL OVERVIEW

National and Industry Indicators

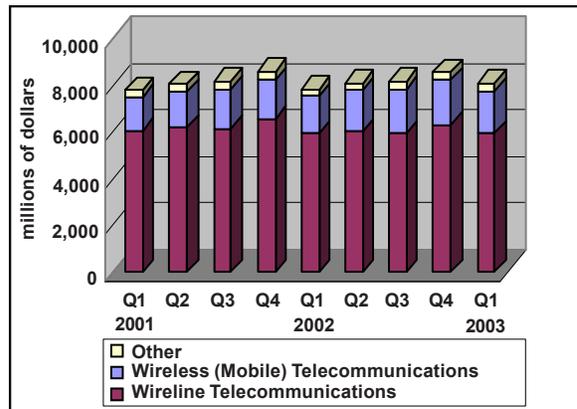
The telecommunications industry's **operating revenues** were \$8.1 billion in the first quarter of 2003 – a increase of 3.1% over the first quarter of 2002. Facilities-based wireline telecommunications services accounted for 71.2% of total industry operating revenues, while wireless, resellers, satellite, and other services accounted for 28.8% of the first quarter total. The share of wireline carriers vis-à-vis wireless service providers and resellers continues to be dominant, but has gradually declined from its share of 80.0% in the first quarter of 1999 (Figure 1).

Operating revenues in the wireline industry totalled \$5.93 billion in the first quarter, up 0.2% from the previous year. **Operating revenues in the wireless industry** have been far more buoyant than in the wireline industry. At \$1.8 billion this quarter, operating revenues are up 13.4% from what was reported one year ago.

Operating profit was \$1.31 billion in the first quarter, or 16.2% of operating revenues. This was up 6.9% from last year. Returns varied widely, however, depending on the telecommunications industry. The operating profit for wireline carriers was 16.9 cents on each revenue dollar, below the 17.9% average for the 1999-2002 period. Wireless carriers reached a profit of nearly 17.1 cents on each revenue dollar, a performance that is in sharp contrast to the previous three years when the combined operating profits for the 1999-2002 period were \$1.02 billion or 4.4% of wireless operating revenues. The reseller, satellite and other industries (NAICS 51333, 4 and 9, respectively) had an estimated operating loss amounting to 0.9 cents on each dollar earned this quarter.

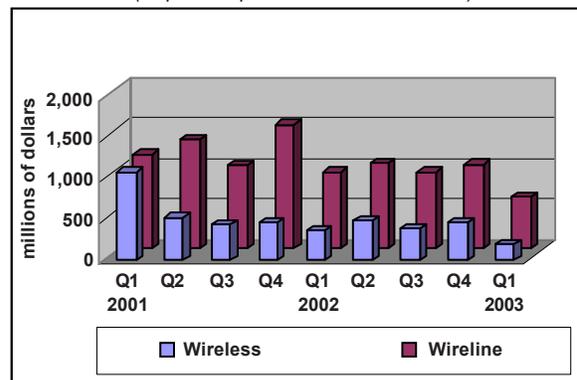
Capital expenditures for the telecommunications industry reached \$835 million, 36.0% lower than what was reported in the first quarter of last year. The wireline and wireless industries had capital outlays of \$635 million and \$200 million, respectively, representing 10.7% and 10.9% of first quarter operating revenues (Figure 2). This was the fifth year-over-year decline of capital expenditures that started in the first quarter of 2002, supporting the proposition that the industry has sufficient network capacity to meet the current and anticipated demand for services.

Figure 1.
The share of wireline carriers vis-à-vis wireless service providers and resellers has been declining slowly over the last few years.
(Revenues \$8.10 billion)



Source: Quarterly Telecommunications Statistics.

Figure 2.
Investments by the industry were down 36.0% in the first quarter of 2003 from the previous year. Both the wireless and wireline sectors of the industry increased their spending.
(Capital expenditures \$0.83 billion)

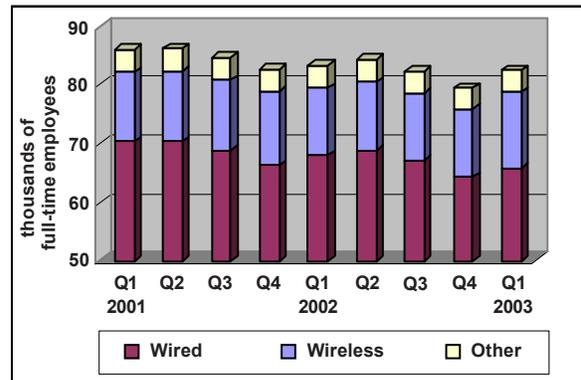


Source: Quarterly Telecommunications Statistics.

Figure 3.

Full-time employment in the telecommunications industries has decreased by 1.0% since first quarter, 2002

There were 82,423 **full-time employees** this quarter. This represents a 1.0% decrease from the first quarter of 2002 (a loss of 809 full-time employees) (Figure 3). Since the first quarter last year, employment in the wireline industry decreased by 2,128 full-time positions, while the wireless industry gained 1,355 full-time employees. **Average annual labour costs** (wages, salaries and benefits) per employee (full-time equivalent) were \$72,495 for the wireline industry and \$63,149 for the wireless industry.



Source: Quarterly Telecommunications Statistics.

Public-switched telephone network (PSTN) **wireline access** was under 19.5 million lines at the end of the first quarter, a decrease of 1.2% from last year's level. This was the fifth consecutive quarter of year-over-year decline in wireline access. This phenomenon may be the early signs of wireless substitution for wireline services, or growing cable penetration in the market for Internet access. Residential lines accounted for 65.4% of the total and business lines represented 34.6% of PSTN lines (Text Table 1).

Each **ISDN (Integrated Service Digital Network) line** is capable of providing multiple access paths to the PSTN, based on their enhanced bandwidth. With ISDN lines converted to their voice-grade bandwidth equivalents (ISDN BRA = 2 lines, ISDN PRA = 23 lines), total fixed access this quarter was under 20.2 million lines, a 1.3% decrease from what was reported one year ago.

Text Table 1. PSTN Network Infrastructure - Wired Access

PSTN Access	First Quarter, 2003		
	Residential	Business	Total
Wired Access Lines (NAICS 51331)			
Individual lines	12,478,922	2,768,571	15,247,493
Party lines	61,709	1,063	62,772
ISDN BRA	70	64,823	64,893
ISDN PRA	...	28,940	28,940
Public telephones	...	162,058	162,058
Centrex	...	2,575,301	2,575,301
Official lines	...	425,257	425,257
Other	-	339,760	339,760
Undercoverage estimate	203,433	366,758	570,191
Total Wired Access Lines	12,744,134 (65.4%)	6,732,531 (34.6%)	19,476,667 (100.0%)
Total voice-grade Equivalents	12,744,206 (63.2%)	7,434,034 (36.8%)	20,178,240 (100.0%)

Source: Quarterly Telecommunications Statistics, 1st Quarter, 2003.

First quarter mobile telephony subscribers were up 9.7% from last year. At quarter end, there were over 12.0 million subscribers, more than one in every three Canadians. Of the 12.0 million wireless subscribers, 78.6% were digital (Text Table 2, Figure 4). This is in contrast to wireline access, which is nearly all digital. The share of digital mobile subscribers, however, has been growing quickly over the last few years.

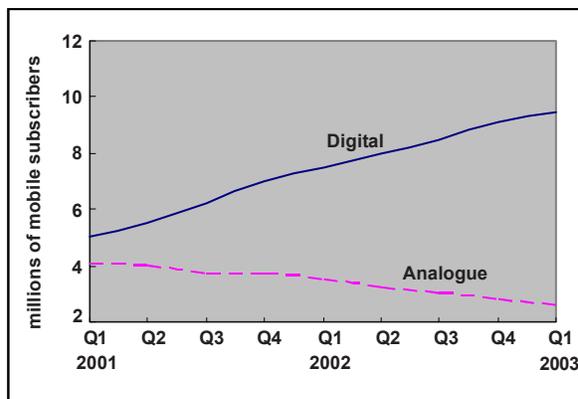
Teledensity measures the penetration of telecommunications services in a given population. For the wireline and wireless industries, there were 64.1 and 38.2 access paths (VGE) per 100 inhabitants, respectively. Total teledensity per 100 inhabitants was 102.3 in the first quarter, up 1.5% from last year's first quarter figure (Text Table 3).

Paging subscriptions have been decreasing over the last year, perhaps due to the strong growth in cellular telecommunications, considered to be a substitute for paging. There were over 1.4 million pagers in service in the first quarter, down from 1.6 million subscribers in the first quarter of 2002 (-9.9%).

Long distance **traffic** is nearly completely undertaken via wireline access, which was 13.8 billion minutes this quarter down 1.8% from the first quarter last year. About 13.7% of total wireline long distance minutes are originating from points outside Canada (Figure 6). Mobile telephony is still primarily used for local communication. However long distance wireless usage has increased by 7.8% to an average of 69 long distance minutes per subscriber. Total billed minutes rose substantially since the first quarter of 2002 (20.6%) to 8.7 billion. Not only is the number of subscribers growing, but billed minutes per subscriber are also rising, suggesting that mobile customers are spending more time on the phone.

Readers should note that wherever possible, survey undercoverage estimates have been included in the industry tables. Please see the *Concepts and Methodology* section for further detail.

Figure 4.



Source: Quarterly Telecommunications Statistics.

Text Table 2. PSTN Network Infrastructure - Mobile Access

PSTN Access	First Quarter, 2003
Mobile Access (NAICS 51332)	
Digital	9,464,521
Analogue	2,570,267
Total Mobile Access	12,034,788

Source: Quarterly Telecommunications Statistics, 1st Quarter, 2003.

Text Table 3. PSTN Network Infrastructure - Total Access

Teledensity	
Total PSTN Access	31,511,455
Total PSTN Access (VGE)	32,213,028
Wired access (VGE) per 100 inhabitants	64.1
Wireless access (VGE) per 100 inhabitants	38.2
Total PSTN (VGE) per 100 inhabitants	102.3

Source: Quarterly Telecommunications Statistics, 1st Quarter, 2003.

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**Telecommunications Industry
(NAICS 5133)**

Summary Tables

TABLE 1. Summary of Operating Indicators, NAICS 5133, Quarterly, 2003

	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		03/02 %		03/02 %		03/02 %		03/02 %		03/02 %
Financial indicators (\$000)										
Operating revenues	8,098,920	3.1							8,098,920	3.1
Operating expenses	6,789,057	2.3							6,789,057	2.3
Operating profit	1,309,863	6.9							1,309,863	6.9
% of operating revenues	16.2	3.7							16.2	3.7
Capital expenditures ¹	834,813	(36.0)							834,813	(36.0)
Employment (persons)										
Full-time	82,423	(1.0)							...	...
Part-time	<u>10,690</u>								...	...
Total	93,114								...	...
% of national industrial employment ²	0.709								...	...
Total (full-time equivalents - FTE)	85,820								...	...
Labour costs (\$000)										
Average Labour costs (\$)	1,518,557								1,518,557	
per FTE employee (annualized)	70,779								...	...
PSTN access paths (fixed and mobile)										
Total	31,511,455	2.7							...	...
Total (voice-grade equivalents - VGE)	32,213,028	2.6							...	...
Teledensity (VGE per 100 inhabitants)	102.3	1.5							...	...

Due to rounding, figures may not sum exactly to totals.

¹ Comprises 51331 (Wireline) and 51332 (Wireless) only.

² Survey of Employment, Payrolls and Hours (SEPH). The target population is composed of all employers in Canada, except those in agriculture, fishing and trapping, private households services, religious organizations and military personnel of defence services. For further information see Statistics Canada Catalogue No. 72-002-XIB.

TABLE 2A. Summary of Operating Indicators, (NAICS 51331, 51332, 51333, 4, 9), First Quarter, 2003

NAICS industries	51331	51332	51333, 4, 9	5133
thousands of dollars				
Operating revenues				
Telecommunications operating revenues	4,734,385	1,716,385	..	..
Other operating revenues ¹	1,002,250	86,535	..	..
Undercoverage estimate	<u>190,248</u>	<u>34,838</u>	<u>334,278</u>	<u>559,365</u>
Total	5,926,883	1,837,758	334,278	8,098,920
% of NAICS 5133	73.2	22.7	4.1	100.0
Operating expenses				
Telecommunications operating expenses	4,443,226	1,339,941	..	..
Other operating expenses	190,195	151,837	..	..
Undercoverage estimate	<u>294,988</u>	<u>31,678</u>	<u>337,192</u>	<u>663,858</u>
Total	4,928,409	1,523,456	337,192	6,789,057
% of NAICS 5133	72.6	22.4	5.0	100.0
Operating profit				
	998,474	314,302	(2,914)	1,309,863
% of operating revenues	16.8	17.1	(0.9)	16.2
Non-operating revenues and expenses (survey units only)				
Non-operating revenues	468,283	X	..	..
Non-operating expenses				
Interest expenses	433,983	69,242	..	..
Other	<u>38,253</u>	<u>X</u>	..	..
Total	472,236	X	..	..
Net income before taxes				
	994,521	135,346	..	..
EBITDA ²	1,950,258	687,773	..	..
Capital expenditures				
	635,016	199,796	..	..
% of operating revenues	10.7	10.9	..	..
Employment (persons)				
Full-time	65,799	12,897	3,727	82,423
Part-time	<u>8,110</u>	<u>2,382</u>	<u>198</u>	<u>10,690</u>
Total	73,910	15,279	3,925	93,114
% of national industrial employment	0.563	0.116	0.030	0.709
Total (full-time equivalents - FTE)	68,375	13,682	3,763	85,820
Labour costs				
Full-time	1,192,525	203,607	62,752	1,458,884
Part-time	<u>46,681</u>	<u>12,390</u>	<u>601</u>	<u>59,672</u>
Total	1,239,206	215,997	63,354	1,518,557
Average Labour costs (\$) per FTE employee (annualized)	72,495	63,149	..	70,779

¹ Other includes: terminal equipment rentals; sale of telecommunications goods; directory services; retail internet access; installations; customer repairs and maintenance, etc.

² EBITDA - Earnings Before Interest, Taxes, Depreciation and Amortization.

X - Confidential to meet secrecy requirements of the Statistics Act.

TABLE 3. Summary of Analytical Indicators, NAICS 51331, 51332, Quarterly, 2003

NAICS industries	51331				51332			
	I	II	III	IV	I	II	III	IV
Financial								
Operating revenue per capita (\$)	188.30				58.39			
Operating profit (% of operating revenues)	16.8				17.1			
Average revenue per long distance minute (cents) ¹	9.31				13.65			
Average revenue per local minute (cents)	...				14.85			
Capital expenditures per capita (\$)	20.17				6.35			
Capital expenditures (% of operating revenues)	10.7				10.9			
Employment/Labour								
Industry employment as a % of national industrial employment ²	0.563				0.116			
Revenue per FTE employee (\$)	86,682				134,321			
PSTN access paths per FTE employee ³	289				880			
Average Labour costs (\$) per FTE employee (annualized)	72,495				63,149			
Labour costs as a % of operating revenues	20.9				11.8			
Teledensity (VGE)								
PSTN access paths per 100 inhabitants	64.1				38.2			
Traffic^{1,4}								
Local minutes per subscriber	...				655			
Local minutes per capita	...				249			
Long distance minutes per access path (VGE) ³	718				69			
Long distance minutes per capita	438				26			

¹ Long distance minutes include domestic and international calls originating in Canada and toll-free calls for wireline carriers, and billed minutes for wireless carriers.

² Survey of Employment, Payrolls and Hours (SEPH). The target population is composed of all employers in Canada, except those in agriculture, fishing and trapping, trapping, private households services, religious organizations and military personnel of defence services. For further information see Statistics Canada Catalogue No. 72-002-XIB.

³ Excludes Official lines

⁴ Calculations do not include undercoverage estimates.

**Wired Telecommunications Carriers
(NAICS 51331)**

Tables and Graphs

TABLE 4. Operating Revenues, NAICS 51331, Quarterly, 2003¹

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date		
	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	
Telecommunications Operating revenues											
Carrier services											
Contribution		F								F	
Interconnection		F								F	
Circuit rentals		F								F	
Other		E								E	
Total		F		F						F	F
Voice services											
Local telephony	1,690,045	(0.5)							1,690,045	(0.5)	
Long distance telephony	1,106,121	(0.5)							1,106,121	(0.5)	
Calling features	334,664	2.2							334,664	2.2	
Connection	<u>73,844</u>	(6.5)							<u>73,844</u>	(6.5)	
Total	3,204,674	(0.4)							3,204,674	(0.4)	
Data and high speed services											
Narrowband packet-switched		F								F	
High speed switched ²		E								E	
Total		F		F						F	F
Non-switched services (private lines)											
Narrowband		F								F	
High speed		E								E	
Total		F		F						F	F
Other telecommunications services		E								E	
Total	4,734,385	(1.9)							4,734,385	(1.9)	
Other Operating revenues											
Terminal equipment rentals	47,295								47,295		
Sale of telecommunications goods	89,605								89,605		
Directory services	3,167								3,167		
Retail Internet services	486,942								486,942		
Other services n.e.c.	<u>375,241</u>								<u>375,241</u>		
Total	1,002,250	11.4							1,002,250	11.4	
Undercoverage estimate	<u>190,248</u>	...							<u>190,248</u>	...	
Total Operating revenues	5,926,883	0.2							5,926,883	0.2	

¹ Some data available in previous issues of this publication can no longer be published due to a classification problem. All or some of these statistics will be made available once the classification issue has been resolved.

² Wideband and broadband circuit- and packet-switched services.

F - too unreliable to be published

TABLE 5. Operating Expenses, NAICS 51331, Quarterly, 2003

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %
Telecommunications Operating expenses										
Carrier services										
Contribution	125,919								125,919	
Interconnection	618,828								618,828	
Circuit rentals	182,402								182,402	
Other	<u>189,167</u>								<u>189,167</u>	
Total	1,116,316	(4.3)							1,116,316	(4.3)
Labour expenses	1,173,775	1.9							1,173,775	1.9
Depreciation	951,784	(3.9)							951,784	(3.9)
Other	<u>1,201,351</u>								<u>1,201,351</u>	
Total	4,443,226	2.1							4,443,226	2.1
Other Operating expenses	190,195	(22.2)							190,195	(22.2)
Undercoverage estimate	<u>294,988</u>	...							<u>294,988</u>	...
Total Operating expenses	4,928,409	0.8							4,928,409	0.8

TABLE 6. Financial and Performance Indicators, NAICS 51331, Quarterly, 2003

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %
Operating revenues	5,926,883	0.2							5,926,883	0.2
Operating expenses	4,928,409	0.8							4,928,409	0.8
Operating profit	998,474	(2.4)							998,474	(2.4)
% of operating revenues	16.8	(2.6)							16.8	(2.6)
EBITDA ¹	1,950,258	(3.1)							1,950,258	(3.1)
Revenue performance² (\$)										
Operating revenue per capita	188.30	(0.7)							188.30	(0.7)
Voice services revenue per PSTN line ³	167.06	1.2							167.06	1.2
Local revenue per PSTN line ³	88.10	1.0							88.10	1.0
Long distance revenue per PSTN line ³	57.66	1.0							57.66	1.0
Average revenue per long distance minute (cents)	9.31	2.2							9.31	2.2

¹ EBITDA - Earnings Before Interest, Taxes, Depreciation and Amortization.² Calculations do not include undercoverage estimates, and where applicable are based on voice-grade equivalent (VGE) PSTN lines.³ Excludes Official telephone lines

TABLE 7. Employment and Labour Costs, NAICS 51331, Quarterly, 2003

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		03/02 %		03/02 %		03/02 %		03/02 %		03/02 %
Employment (persons)										
Full-time	65,799	(3.1)							...	...
Part-time	8,110	(13.0)							...	...
Total	73,910	(4.3)							...	...
% of national industrial employment	0.563								...	...
Total (full-time equivalents - FTE)	68,375	(4.8)							...	...
Revenue (\$) per FTE employee	86,682								...	...
Labour costs¹										
Full-time	1,192,525	(3.2)							1,192,525	(3.2)
Part-time	46,681	(33.4)							46,681	(33.4)
Total	1,239,206	(4.8)							1,239,206	(4.8)
Average Labour costs (\$) per FTE employee (annualized)	72,495	(0.0)							...	...

¹ Includes capitalized labour expenditures.

TABLE 8. Capital Expenditures, NAICS 51331, Quarterly, 2003

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %
Capital expenditures	635,016	(32.4)							635,016	(32.4)
% of operating revenues	10.7	(32.5)							10.7	(32.5)
per capita (\$)	20.17	(33.1)							20.17	(33.1)

TABLE 9. Network Infrastructure, NAICS 51331, Quarterly, 2003

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
		03/02 %		03/02 %		03/02 %		03/02 %
Network infrastructure (access)								
PSTN access lines								
Individual lines (includes PBX)	15,247,493	(0.9)						
Party lines	62,772	(13.2)						
ISDN BRA	64,893	(10.3)						
ISDN PRA	28,940	(3.2)						
Public telephones	162,058	(3.1)						
Centrex	2,575,301	(0.4)						
Official lines	425,257	...						
Other (includes mobile and WATS)	339,760	(21.5)						
Undercoverage estimate	<u>570,191</u>	...						
Total	19,476,667	(1.2)						
Residential (%)	65.4							
Business (%)	34.6							
Total PSTN voice-grade equivalents (VGE)								
	20,178,240	(1.3)						
Residential (%)	63.2							
Business (%)	36.8							
PSTN (VGE) per 100 inhabitants	64.1	(2.3)						
Residential access lines (VGE) per 100 households	106							
Business access lines (VGE) per 100 employed persons ¹	56.6							
PSTN access paths (VGE) per FTE employee ²	289							
Non-PSTN lines³								
Digital	289,757							
Analogue	<u>26,354</u>							
Total	316,111							

¹ Employed persons from SEPH estimate of national industrial employment.² Excludes official telephone lines.³ Calculations do not include undercoverage estimates.

TABLE 10. Long Distance Traffic, NAICS 51331, Quarterly, 2003

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		03/02 %		03/02 %		03/02 %		03/02 %		03/02 %
Traffic statistics (thousands of minutes)¹										
Long distance traffic										
Outbound calls	9,556,001								9,556,001	
Toll-free calls	2,326,691								2,326,691	
Inbound calls to Canada	<u>1,889,102</u>								<u>1,889,102</u>	
Total	13,771,794	(1.8)							13,771,794	(1.8)
Traffic performance (minutes)¹										
Long distance traffic										
Outbound calls										
per access line (VGE) ²	498								498	
per capita	304								304	
Toll-free calls										
per access line (VGE) ²	121								121	
per capita	74								74	
Inbound calls to Canada										
per access line (VGE) ²	98								98	
per capita	60								60	
Total										
per access line (VGE) ²	718	1.7							718	1.7
per capita	438	(2.7)							438	(2.7)

¹ Calculations do not include undercoverage estimates.² Excludes official telephone lines.

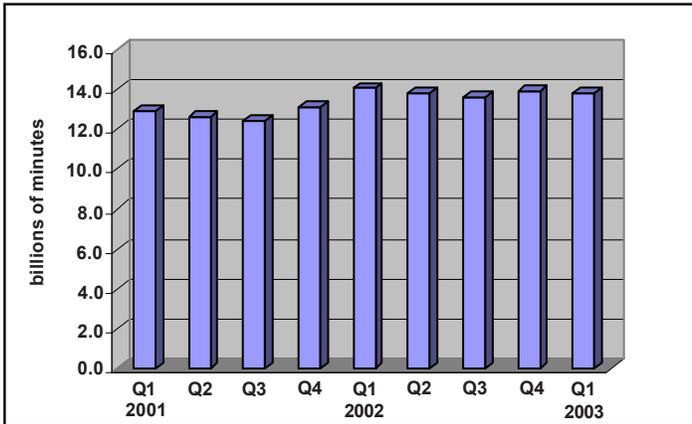


Figure 5.
Wireline traffic - Total long distance minutes
(13.8 billion)

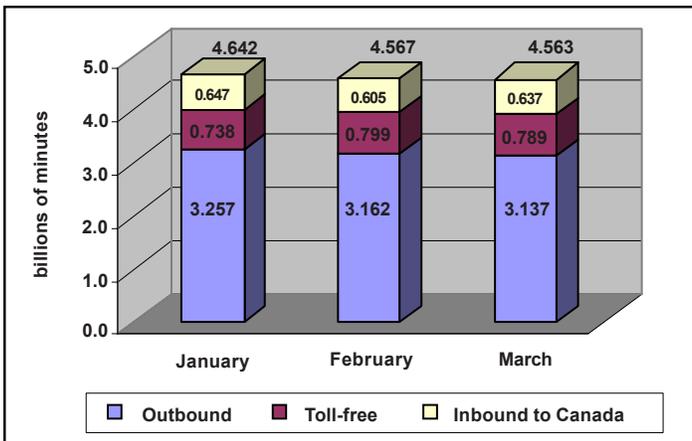


Figure 6.
Monthly wireline long distance minutes,
first quarter, 2003
Total outbound minutes 9.6 billion
Total toll-free minutes 2.3 billion
Total inbound to Canada minutes 1.9 billion

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**Wireless Telecommunications Carriers
(NAICS 51332)**

Tables and Graphs

TABLE 11. Operating Revenues, NAICS 51332, Quarterly, 2003

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %
Telecommunications Operating revenues										
Carrier services	52,498								52,498	
Local telephony										
Fixed (recurrent services)	811,866								811,866	
Air time (measured services)	309,081								309,081	
Other	<u>44,826</u>								<u>44,826</u>	
Total	1,165,773	11.2							1,165,773	11.2
Long Distance telephony										
Air time	112,707								112,707	
Other	<u>0</u>								<u>0</u>	
Total	112,707	6.9							112,707	6.9
Messaging - Paging	32,629								32,629	
Dispatch services (RCC)	4,212								4,212	
Other telecommunications services	<u>348,566</u>								<u>348,566</u>	
Total	1,716,385	13.3							1,716,385	13.3
Other Operating revenues	86,535	16.2							86,535	16.2
Undercoverage estimate	<u>34,838</u>	...							<u>34,838</u>	...
Total Operating revenues	1,837,758	13.4							1,837,758	13.4

TABLE 12. Operating Expenses, NAICS 51332, Quarterly, 2003

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %
Telecommunications Operating expenses										
Carrier services	85,705								85,705	
Labour expenses	221,507								221,507	
Depreciation	373,471								373,471	
Other telecommunications expenses	<u>659,258</u>								<u>659,258</u>	
Total	1,339,941	7.1							1,339,941	7.1
Other Operating expenses	151,837	14.3							151,837	14.3
Undercoverage estimate	<u>31,678</u>	...							<u>31,678</u>	...
Total Operating expenses	1,523,456	7.8							1,523,456	7.8

TABLE 13. Financial and Performance Indicators, NAICS 51332, Quarterly, 2003

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %
Operating revenues	1,837,758	13.4							1,837,758	13.4
Operating expenses	1,523,456	7.8							1,523,456	7.8
Operating profit	314,302	51.5							314,302	51.5
% of operating revenues	17.1	33.6							17.1	33.6
EBITDA ¹	687,773	26.1							687,773	26.1
Revenue performance (\$) ²										
Operating revenue per capita	58.39	12.3							58.39	12.3
Local revenue per subscriber	97.36	1.3							97.36	1.3
Average revenue per local minute (cents)	14.85	(8.0)							14.85	(8.0)
Long distance revenue per subscriber	9.41	(2.7)							9.41	(2.7)
Average revenue per long distance minute (cents)	13.65	(9.4)							13.65	(9.4)
Paging revenue per subscriber	30.36	1.1							30.36	1.1

¹ EBITDA - Earnings Before Interest, Taxes, Depreciation and Amortization.² Calculations do not include undercoverage estimates.

TABLE 14. Employment and Labour Costs, NAICS 51332, Quarterly, 2003

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		03/02 %		03/02 %		03/02 %		03/02 %		03/02 %
Employment (persons)										
Full-time	12,897	11.7							...	...
Part-time	<u>2,382</u>	0.9							...	...
Total	15,279	9.9							...	...
% of national industrial employment	0.116								...	...
Total (full-time equivalents - FTE)	13,682	12.7							...	...
Revenue (\$) per FTE employee	134,321								...	...
Labour costs (\$000)¹										
Full-time	203,607	5.3							203,607	5.3
Part-time	<u>12,390</u>	23.7							<u>12,390</u>	23.7
Total	215,997	6.2							215,997	6.2
Average Labour costs (\$) per FTE employee (annualized)	63,149	(5.8)							...	...

¹ Includes capitalized labour expenditures.

TABLE 15. Capital Expenditures, NAICS 51332, Quarterly, 2003

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %	\$000	03/02 %
Capital expenditures	199,796	(45.2)							199,796	(45.2)
% of operating revenues	10.9	(51.7)							10.9	(51.7)
per subscriber (\$)	16.60	(50.0)							16.60	(50.0)
per capita (\$)	6.35	(45.7)							6.35	(45.7)

TABLE 16. Network Infrastructure, NAICS 51332, Quarterly, 2003

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
		03/02 %		03/02 %		03/02 %		03/02 %
Network infrastructure (access)								
Mobile subscribers								
Digital	9,464,521	26.4						
Analogue	<u>2,570,267</u>	(26.1)						
Total Mobile telephony	12,034,788	9.7						
Mobile telephony penetration								
per 100 inhabitants	38.2	8.5						
PSTN access paths per FTE employee	880							
Paging subscribers								
	1,438,436	(9.9)						
Paging penetration per 100 inhabitants	4.6	(9.8)						

TABLE 17. Traffic Statistics, NAICS 51332, Quarterly, 2003

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		03/02 %		03/02 %		03/02 %		03/02 %		03/02 %
Traffic statistics (thousands of minutes)¹										
Billed minutes										
Local	7,848,494								7,848,494	
Long distance	<u>825,679</u>								<u>825,679</u>	
Total	8,674,173	20.6							8,674,173	20.6
Traffic performance (minutes)¹										
Local minutes per subscriber	655	10.1							655	10.1
Long distance minutes per subscriber	69	7.8							69	7.8
Billed minutes per subscriber	724	9.7							724	9.7

¹ Calculations do not include undercoverage estimates.

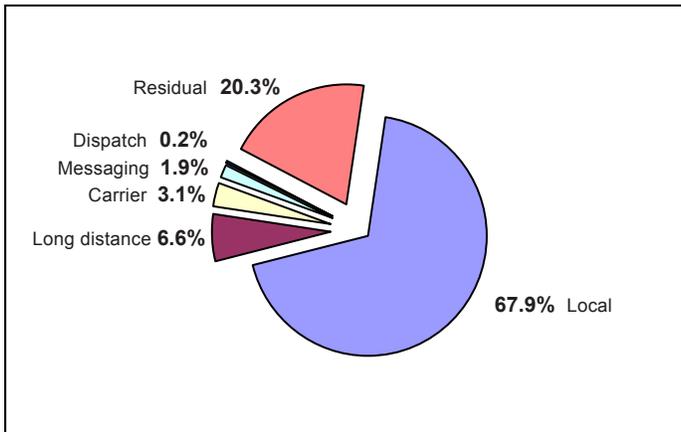


Figure 7.
Wireless telecommunications operating revenue shares
(Revenues \$1.72 billion)

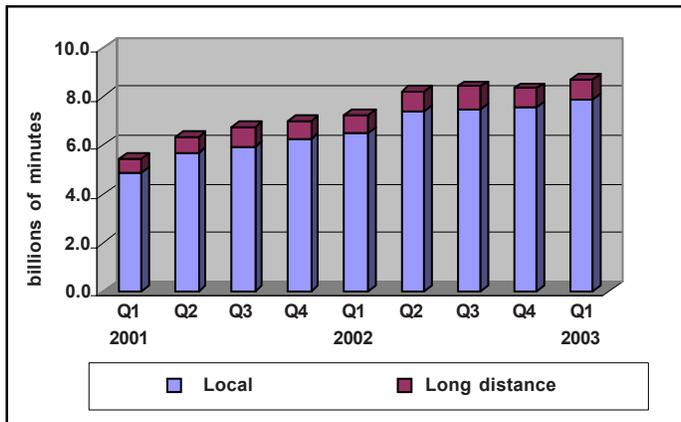


Figure 8.
Wireless traffic billed minutes
(8.7 billion)

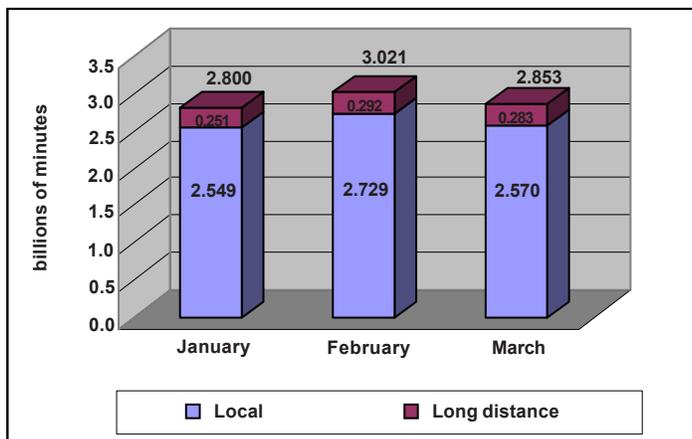


Figure 9.
Monthly wireless billed minutes,
first quarter, 2003
Wireless billed minutes remained over 8.7 billion
in the first quarter of 2003, an increase of 20.6%
from the first quarter last year.
The majority of these were local minutes (7.8 billion)

**Resellers, Satellite, and Other Telecommunications
(NAICS 51333, 51334, 51339)**

Undercoverage Estimates

TABLE 18. Undercoverage estimates, NAICS 51333, 4, 9, Quarterly, 2003

Resellers, Satellite, and Other Telecommunications (NAICS 51333, 51334, 51339)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year to date
Financial indicators (\$000)					
Operating revenues	334,278				334,278
Operating expenses	337,192				337,192
Operating profit margin	(2,914)				(2,914)
% of operating revenues	(0.9)				(0.9)
Employment (persons)					
Full-time	3,727				...
Part-time	<u>198</u>				...
Total	3,925				...
% of national industrial employment	0.030				...
Total (full-time equivalents - FTE)	3,763				...
Labour costs (\$000)					
Full-time	62,752				62,752
Part-time	<u>601</u>				<u>601</u>
Total	63,354				63,354

CONCEPTS AND METHODOLOGY

Survey Objectives

The quarterly survey of telecommunications service providers (NAICS 5133) serves to measure the industry's financial performance, aspects of its network infrastructure, and industry operating characteristics relating to employment, capital expenditures and traffic activity. The survey improves on the monthly survey it replaces by: expanding survey coverage to include the major alternative wireline carriers and the wireless industry; providing undercoverage estimates for those units that make up the industry but are not included in the survey (resellers, satellite and small wireline and wireless service providers); using concepts consistent with the redesigned annual survey introduced in 1997; and, reducing reporting burden on respondents who had previously submitted twelve reports each year.

Survey Coverage

The quarterly survey covers the largest establishments primarily engaged in the provision of telecommunications services and which operate telecommunications facilities (wired and wireless providers). There are 22 companies included in the survey representing every province and territory. Not surveyed are companies providing reselling, satellite and other services n.e.c. Activities for these companies are estimated based on annual surveys.

Industrial Classification

Telecommunications service providers are classified to one of the five North American Industry Classification System (NAICS) telecommunications industries (Wired, Wireless, Resellers, Satellite and Other¹). Released in 1998, NAICS is the most up-to-date industry classification in use, and was jointly developed by Canada, the United States and Mexico. Reporting units are classified

according to the activity in which they are primarily engaged and the main technology they employ. This system allows for more accurate industry classification than the previous 1980 Canadian Standard Industrial Classification (CSIC). For further details about NAICS and for industry concordance between NAICS and the CSIC at all levels, consult the Statistics Canada publication 12-501-XPE, issue number 97001.

Survey Methodology

The quarterly survey collects data from the largest companies corresponding to NAICS industries 51331 (Wired) and 51332 (Wireless), reflecting approximately 99.0% of revenue activity for these industries and 93.0% of revenue activity for the telecommunications industry overall (NAICS 5133) (see Table A). The annual survey, a census of telecommunications service providers, is used to produce undercoverage estimates for those units that are not surveyed in the quarterly, so that total industry activity can be estimated. NAICS telecommunications industries 51333, 51334 and 51339 are not surveyed because their respondents are generally smaller, and the few that are larger tend to dominate their industries, which would pose disclosure problems if they were to be included.

Variables which may be subject to wide variation from period to period, such as capital expenditures and non-operating revenues and expenses, were not estimated for non-surveyed units. In addition, these activities tend to be less significant the smaller the establishment (which is typical of the non-surveyed industries), such that the survey values for these variables are good proxies for total industry aggregates.

¹ NAICS 51331

The wired (wireline) industry comprises establishments primarily engaged in operating and maintaining switching and transmission facilities to provide direct communications via land lines, microwave, or a combination of land lines, microwave and satellite link-ups.

NAICS 51332

The wireless telecommunications industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide direct communications via the airwaves, including cellular, personal communications services (PCS), enhanced specialized mobile radio (ESMR), and messaging (paging).

NAICS 51333

A telecommunications service provider is a reseller if it is primarily engaged in purchasing access and network capacity from owners and operators of telecommunications networks and reselling telecommunications services to their clients.

NAICS 51334

The satellite industry comprises establishments primarily engaged in operating, maintaining and providing access to fixed and mobile satellite telecommunications facilities for the transmission of voice, data, text, sound and full motion videos. Resellers of satellite communications are also included.

NAICS 51339

The 'Other telecommunications' industry includes companies providing telecommunications services not covered by the industries described above (e.g., telemetry, satellite tracking, radar stations operations).

Coverage rates for the 2003 Quarterly survey are calculated by determining how much of total industry activity is attributed to the current quarterly respondents, using the most recent annual data available (2001), taking into consideration buy-outs, mergers and consolidations since 2001, and applying these ratios to the current quarterly data. The table below indicates coverage rates for operating revenues with respect to each NAICS industry. Undercoverage rates for other variables are similar to the rates presented here.

Table A - Coverage rates for Operating Revenues

NAICS	Coverage (%)	Undercoverage (%)	Total (%)
51331	96.8	3.2	100.0
51332	98.0	2.0	100.0
51333,4,9	-	100.0	100.0
5133	92.8	7.2	100.0

Undercoverage estimates for access lines are not adjusted between quarters because the observed growth in surveyed units (large incumbents and entrants) is not expected to be replicated by non-surveyed units (small, often rural, service providers). The undercoverage estimate simply reflects the number of access lines of the non-surveyed units for the most recent annual data available. Mobile subscriber undercoverage has not been adjusted between quarters, not because non-surveyed units are thought to be static, but because these units constitute such a small share of the industry that any change attributable to them would be negligible.

Quality and Limitations of Data

When Statistics Canada receives the completed quarterly questionnaires, they are checked for consistency with previous returns. All unusual occurrences are queried for confirmation and clarified with the respondents concerned. The data are almost always actual amounts, but where circumstances necessitate, best estimates are used from the respondents or derived by Statistics Canada based on the respondent's historical records and current industry trends.

The quarterly survey of telecommunications service providers is not a sample survey and therefore sampling errors do not occur. Non-sampling errors, however may occur. There are potentially four sources of non-sampling error that can be identified in any given survey: coverage error, response error, non-response error and processing error. Unlike sampling error, non-sampling error is not readily quantified. *Coverage error* results from inadequate representation of the intended population. This error may occur during selection of the survey population, or during data collection and processing. There is no evidence of significant coverage error in the 2003 Quarterly Survey of Telecommunications.

Response error may be due to many factors, including faulty design of the questionnaire, interviewers' or respondents' misinterpretation of questions, or respondents' faulty reporting. Frequent changes in company personnel may also lead to response error. The quarterly survey has several features that help respondents to complete the questionnaire, including logic and consistency checks, and a glossary of terms and concepts. Responses are compared from quarter to quarter and any significant deviations are queried by analysts to ensure their accuracy. However, even with these checks, the accuracy of data depends on the respondent's willingness to consult their records.

Non-response error occurs because not all potential respondents cooperate fully. This has not been a concern with the quarterly survey. *Processing errors* may also occur during coding, entry, editing and tabulation of the data. In this survey, procedures for quality control were used during the processing of data, as indicated above, to keep such errors to a minimum.

Revisions

Revisions are necessary as more complete data become available. The nature of the telecommunications industry is such that respondents often contact Statistics Canada to update their data or to report errors in data they had previously reported. Revisions are made each quarter to reflect these changes or corrections in the data. The most recent release of quarterly telecommunications data should always be consulted for the most accurate information.

Readers should note that some revisions have been made to reflect new accounting guidance and industry practice, as well as mergers and consolidations between companies. Communication between Statistics Canada and various companies resulted in improved allocation of wired operating expenses; and wireless operating revenues and expenses.

For more information, or to enquire about the concepts, methods and data quality, please contact Advisory Services Division at 1 800 263-1136; Facsimile 1 877 287-4369; infostats@statcan.ca.

Standards of service to the public

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Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

The development of Statistics Canada's Telecommunications Statistical Infrastructure Program benefited from the advice and financial support of the Spectrum, Information Technologies and Telecommunications Sector, Industry Canada.

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GLOSSARY OF TERMS

Advanced services ratio. The ratio of operating revenues from software enhanced telecommunications services (e.g., calling features), services supporting internet and packet-switched communications, and other high speed applications (switched and non-switched services), and traditional telephony (local and long distance voice, connection and narrowband non-switched or private line services). (*Rapport des services de pointe*)

Alternative providers of long distance services. Non-incumbent (entrant) facilities-based and non-facilities-based (resellers) companies providing long distance telecommunications services. (*Rapport*)

Average labour costs per FTE employee (annualized). Total industry labour costs (wages, salaries and benefits paid to full-time and part-time employees) divided by the number of full-time equivalent employees. This calculation is a moving average, such that previous quarter data is included in the current quarter calculation, and adjusted to arrive at an annual estimate. The first quarter estimate is multiplied by four, the second quarter estimate is calculated by summing labour costs for the first two quarters divided by the average number of FTE employees for both quarters, and multiplying that result by two, etc. (*Coûts moyens de la main-d'oeuvre par employés à plein temps ou l'équivalent (annualisés)*)

Average revenue per long distance minute. Long distance operating revenues divided by long distance outbound minutes (including toll-free). (*Revenu moyen par minute de service interurbain*)

Broadband access. High capacity two-way links between end-user and suppliers networks (central offices) such as hybrid-fibre-coaxial-cable systems, fibre-to-the-curb and fibre-to-the-home systems for residential users, with speed in one direction exceeding 1.544 Mbps. (*Accès à large bande*)

Calling Features. Specialized software and database applications linked to telecommunications networks such as call waiting, call forwarding, caller identification, three way calling, speed dialing, etc.; call management services: call display, call return, call screen, call blocking, automatic call-back, etc.; and, tele-messaging: call answer, extension call answer, voice mail, voice menus, etc. These features are commonly offered on a per-use, or on fixed monthly charge basis. Calling features are also referred to as optional or enhanced local services). (*Options de gestion*)

Calls/messages, Outbound. Calling/messaging units originating in Canada and terminating in Canada, the United States, and overseas (foreign countries other than the United States). (*Appels ou messages de départ en provenance du Canada*)

Calls/messages, Incoming/Inbound. Calls/messages from either the United States or overseas (foreign countries other than the United States) and terminating in Canada. (*Appels ou messages d'arrivée internationaux à destination du Canada*)

Capital expenditures per subscriber. Dollar amount of wireless capital expenditures for every wireless subscriber. (*Dépenses en immobilisations par abonnés*)

Carrier services. Services provided to other telecommunication service providers (common carriers or resellers). This includes contribution, interconnection and other services provided to telecommunications service providers such as co-location, access to support structures, data base access, the recovery of start-up costs, other unbundled elements associated with the provision of dial tone, etc. (*Services aux entreprises de télécommunications*)

Cellular telecommunications. A telecommunications system that uses radio frequencies in the 800 MHz (megahertz) frequency band to provide mobile access to the PSTN (public switched telephone network). Cellular telecommunication can use either analogue or digital transmission technology over a multi-cell architecture. (*Cellulaire de télécommunications*)

Circuit. A facility consisting of the equipment and apparatus required to form a path suitable for the transmission of voice, text, audio, video or data communication between telephones and other communication equipment in the telecommunications network. (*Circuit*)

Connection. The one-time activation of telecommunications subscribers by connecting or reconnecting them to the PSTN. This does not include premises wiring. (*Connexion*)

Contribution. Payments (per minute or per circuit) derived from domestic and international long-distance telecommunications revenues to cover the revenue shortfall in the provision of local/access services. (*Contribution*)

Conversation minutes. The actual elapsed period in minutes a respondent's switches, circuits, lines or groups of lines are in use, or in the case of rebillers, the actual conversation time their customers use for calls and messages. Billing increments other than conversation time were converted to conversation minutes and reported by respondents accordingly. (*Minutes de conversation*)

Data and high speed services. This includes all wideband and broadband services (greater than 64 kbps), as well as narrowband packet-switched services. Wholesale internet services are not reported separately, and are included here. (*Services de données et à haute vitesse*)

Dispatch services. Non-switched services provided by radio common carrier (RCC) license holders for the provision of radio communications services (e.g., dispatch services for taxis or field service personnel, mobile data for police departments, etc.). (*Service de dépêche*)

Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA). For this survey, this is calculated by summing operating profit and depreciation. (*Bénéfices avant intérêts, impôts, dépréciation et amortissement (BAIDA)*)

Employee. Any person drawing pay for services rendered or for paid absences and for whom an employer must complete a Canada Customs and Revenue Agency T4 Supplementary Form. This includes full-time (work performed or paid absence of 30 or more hours in a typical work week) and part-time employees (work performed or paid absence of less than 30 hours a week), working owners, directors, partners and other officers of unincorporated businesses. It excludes owners or partners of unincorporated businesses, the self employed, unpaid family workers, persons outside Canada and casual workers for whom a T4 is not required. (*Employés*)

Enhanced Specialized Mobile Radio (ESMR). A telecommunications system that uses radio frequencies primarily in the 800 MHz frequency band to provide mobile dispatch services and mobile access to the wireline PSTN. ESMR uses digital transmission technology over a multi-cell network architecture. Its activity is reported as part of mobile telephony. (*Services de radiocommunications mobiles spécialisés (SRMS)*)

Establishment. A telecommunications service provider which is an operating entity capable of reporting basic elements of financial and network statistics, such as revenues, (wireless) operated. (*Établissement*)

Facilities-based operator. A telecommunications service provider that owns or operates any transmission facility (wire, cable, radio, optical, or other electromagnetic system, or any similar technical system) for the transmission of

intelligence (signs, signals, writing, images, sounds or intelligence of any nature) between network termination points. (*Fournisseurs de télécommunications exploitant leurs propres installations*)

Fixed wireless. The use of radio frequencies for the provision of telecommunication services from a fixed place. This is used for access to the PSTN in remote areas or for alternative access to the PSTN in built-up areas. In these circumstances, fixed wireless is known as wireless local loop (WLL). Fixed wireless can use either digital or analogue transmission technology. (*Sans fil fixe*)

Fringe benefits. Employer contributions to pension plans, medical and other welfare plans, unemployment insurance, Canada and Quebec Pension Plans and workers compensation. Not included are non-taxable benefits provided by an employer such as premiums under a private health plan, recreational facilities, moving expenses and certain employee counselling services. Reported with **Labour costs**. (*Avantages sociaux*)

Full-time equivalent (FTE) employees. Full-time employees plus part-time employees converted to full-time equivalents. For this survey, this is calculated by dividing total part-time labour costs by the average full-time salary (full-time labour costs divided by full-time employees). (*Employés à plein temps ou l'équivalent (EPT)*)

Interconnection. Services and facilities beyond the point of interconnection (such as switching and aggregation) to terminate traffic on behalf of an originating telecommunications service provider. This includes transiting or transport where provided pursuant to an interconnection tariff or agreement. Interconnection occurs between local exchange carriers (LEC s) and interexchange service providers (IXC s), including alternative providers of long distance services (APLDS), LEC s and wireless service providers (WSP s), and between domestic and foreign service providers. (*Interconnexion*)

Labour costs. The total remuneration paid to employees before deductions (the equivalent to the taxable employment income reported in Box 14 of the employees Canada Customs and Revenue Agency T4 slips). This includes regular wages and salaries, overtime pay, paid leave, taxable allowances and benefits, gratuities, director's fees, vacation pay and special payments such as bonuses and commissions, retroactive and accumulated wage payments, termination/ severance payments, cost of living adjustments and working owner's draws, for expensed or capitalized labour. This also includes fringe benefits (see **Fringe benefits**). Readers should note that the amount reported as part of Operating expenses may differ from what is reported in the labour cost section, since the latter may include payments for labour that are capitalized. (*Coûts de la main-d'oeuvre*)

Local switched telecommunications. The switching and transmission of voice, data, image and video messages over the PSTN within local calling areas. (*Télécommunications commutées locales*)

Long-distance switched telecommunications. The switching and transmission of voice, data, image and video messages over the PSTN between local calling areas. (*Télécommunications commutées interurbaines*)

Messaging. An interactive telecommunications service that provides for information interchange among users by means of store-and-forward, electronic mail, or message-handling functions such as paging and narrowband PCS. Telephone answering services are not included. (*Messagerie*)

National industrial employment. Total national employment from Statistics Canada's Survey of Employment, Payrolls and Hours (SEPH). The target population is composed of all employers in Canada, except those in agriculture, fishing and trapping, private households services, religious organizations and military personnel of defence services. This figure does not include self-employment. For further information see Statistics Canada Catalogue No. 72-002-XPB. (*Emploi industriel national*)

Narrowband PCS. A telecommunication system that uses radio frequencies in the 900 MHz frequency band to provide one or two-way messaging services. This service uses digital transmission technology with radio frequency channels of 50 kHz (kilohertz) or less. (*Bande étroite (SCP)*)

Net income before taxes. Total revenues (operating revenues plus non-operating revenues) less total expenses (operating expenses plus non-operating expenses). (*Revenu net avant impôt*)

Network access service. Primary connection to a company owned network for the purpose of telecommunications, regardless of the physical characteristics of the link. This includes individual and party line circuits; trunks connecting company facilities with switching devices located on customers premises; licensed radio-telephones; primary connections within networks (i.e., drops); WATS; and primary special services circuits. (*Services d'accès au réseau*)

Non-switched telecommunications. Dedicated communication lines or paths between specified points for the exclusive use of the lessees or owners typically not involving the PSTN for routing or switching the communication, e.g., private voice and data networks linking multiple business locations, dedicated links for transferring high-resolution video, etc. (*Télécommunications sans commutation*)

Non-PSTN Lines. Telecommunications lines not connected to the PSTN, e.g., non-switched transport services such as low-speed data links for automated teller machines; private voice and data networks linking multiple business locations; and dedicated links for transferring high-resolution video. Analogue lines (voice, sub-voice) are typically used for alarm monitoring, traffic control, point-of-sale terminals, etc. (*Télécommunications sans commutation*)

Operating profit. Total operating revenues less total operating expenses. (*Bénéfice d'exploitation*)

Operating revenue per capita. Industry operating revenue per person based on the quarterly population estimate. (*Revenus d'exploitation par personne*)

Packet switched telecommunications. Voice, data or video telecommunications that are divided into packets of fixed or variable length to be routed along non-reserved circuits to their destination. Each packet is addressed and numbered so it can be routed to its proper destination and reassembled in its proper sequence upon its arrival. These packets typically follow various routes depending on what is available at the time, which maximizes the network's operating efficiency. (*Commutation par paquets*)

Paging. A one-way telecommunications system that provides signaling or information transfer by such means as tone, tone-voice, tactile, or optical read-out. Analogue or digital transmission technology may be used. (*Radiomessagerie*)

Paging revenue per subscriber. Paging revenues per paging subscribers (does not include undercoverage estimate). (*Revenus de messagerie par abonné*)

Personal Communications Services (PCS). Mobile telecommunications using radio frequencies in the 1900 MHz frequency band connected access to the PSTN. PCS uses digital transmission technology over a multi-cell network architecture. (*Services de commutations personnelles (SCP)*)

Public Switched Telephone Network (PSTN). The worldwide dial-up telephone network (switching, circuits, transmission and access services), or a portion of that network, used to establish voice and non-voice (text, audio, video or data) communications carried over a path initially established using normal telephone signaling and ordinary switched long-distance telephone circuits. (*Réseau téléphonique public commuté (RTPC)*)

PSTN, Centrex access lines. A business telephone service offered by a service provider that permits direct inward dialing to a customer's extensions, transfer of incoming calls from one extension to another, and

identification of extension telephones for billing of long-distance calls. Centrex is based on switching equipment usually located on the service providers premises. (*Lignes d'accès Centrex (RTPC)*)

PSTN, Individual access line. A subscriber line arranged to serve one main telephone. This includes PBX (private branch exchange) lines for businesses that have corresponding dedicated ports in the telephone exchange equipment. (*Ligne d'accès individuelle (RTPC)*)

PSTN, ISDN access line (Integrated Services Digital Network). A high capacity digital line the equivalent of 2 (BRA) or 23 (PRA) voice grade lines. These are counted as single lines despite their greater capacity. See voice-grade equivalents for a measure that is frequently used to take into account the enhanced capacity of these lines. (*RTPC, Réseau numérique d'intégration de services (RNIS)*)

BRA (Basic Rate Access) access lines deliver two 64 kbps channels (B channels) and one 16 kbps channel (D channel) over a standard twisted-pair loop. The 64 kbps channels are capable of transmitting voice or data simultaneously while the D channel transmits call control messages and packet data at 9.6 kbps. (*Accès à débit de base ADB*)

PRA (Primary Rate Access) lines can transmit at 1.544 Mbps (T1 trunk facility) consisting of 23 64 kbps B channels and one 64 kbps D channel. The B channels carry voice and data at 64 kbps while the D channel carries out-of-band signaling for one or more primary rate links. (*Accès à débit primaire ADP*)

PSTN access paths per FTE employee. Access lines for the wireline industry and mobile subscribers for the wireless industry, per full-time equivalent employee in the respective industries. (*Voies d'accès RTPC par employé à plein temps ou l'équivalent*)

PSTN, Other access lines. Wireline access lines not specified by any of the defined categories (individual, ISDN, public, centrex) such as WATS, Mobile access lines (this is not the same as mobile telephony subscribers). (*Autres accès (RTPC)*)

PSTN, Party access line. A subscriber line arranged to serve two or more main telephones (e.g., residential party lines). (*Partagés (RTPC)*)

PSTN, Public telephones. Coin or card payphones including semi-public phones (payphones available to the public on a restricted basis owing to their location, e.g., those on private premises such as restaurants). (*Téléphones publics (RTPC)*)

Reseller. A telecommunications service provider primarily engaged in purchasing access and network capacity from owners and operators of telecommunications networks and reselling telecommunications services to their clients. Resellers may own some network facilities such as switching equipment or apparatus to manipulate and control intelligence but do not operate or maintain a full network, nor own transmission facilities such as wire, cable, radio or optical systems. (*Revendeur*)

Retail Internet services. The value reported in these quarterly reports represents only a small part of retail internet services in Canada, as most telecom companies have subsidiary companies or separate operating divisions (ISP's - Internet Service Providers), which are not telecommunications industries according to the North American Industry Classification System (NAICS). (*Services Internet de détail*)

Revenue per FTE employee. Total operating revenues per full-time equivalent employee. (*Revenu par employé à plein temps ou l'équivalent*)

Satellite, fixed. Communications via satellite transmission in which the terrestrial terminal points are fixed. (*Satellite (Fixe)*)

Satellite, mobile. Communications via satellite transmission in which the terrestrial terminal point can be mobile. (*Satellite (Mobile)*)

Subscriber. A customer of a wireline or wireless telecommunications service provider having unique access to the PSTN. (*Abonné*)

Switching equipment. Digital and analogue equipment and related software used to switch traffic over the PSTN. PBX's used as public switches are included whereas PC's used as switches are excluded. (*Équipement de commutation*)

Telecommunications. Any transmission, emission or reception of signs, signals writing images, sounds or intelligence of any nature, by wire, radio, visual or other electro-magnetic system. (*Télécommunications*)

Telecommunications, wireline (wired). Establishments primarily engaged in operating and maintaining switching and transmission facilities to provide direct communications via land lines, microwave, or a combination of land lines, microwave and satellite link-ups. (*Télécommunications par fil*)

Telecommunications, wireless. Establishments engaged in operating and maintaining switching and transmission facilities to provide direct communications via the airwaves. (*Télécommunications sans fil*)

Telecommunications, other. Establishments primarily engaged in providing specialized telecommunications services such as satellite tracking, communications telemetry and radar station operation. The includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. (*Autres services de télécommunications*)

Teledensity. A measure of the number of phone lines (fixed access lines and mobile subscribers) per 100 of population. Between 40 and 50 lines per 100 of population indicates fairly good density. The OECD average was 48.9 in 1997. Teledensity is a measure of a country's economic development. (*Télédensité*)

Telemetry. The measurement or recording of an activity from a distance by monitoring equipment connected to a telecommunications network. (*Téléométrie*)

Telephone. A compact unit containing the parts necessary for the transmission and reception of speech and for ringing or signalling the party called, and which can be interconnected to any other such unit in the general telephone network. (*Téléphone*)

Terminal equipment. Equipment on customer premises connected to telecommunications lines: e.g., PBX's not used for public switching, telephone sets, routers, modems in customer sites, key systems, etc. (*Équipement de terminal*)

Voice services. Services generally associated with voice communication, narrowband or voice-grade communication, including voice telephony, fax, PSTN access, etc. (*Services de transmission de la voix*)

Voice-grade. A voice-grade access line can transmit voice or data at 64 kbps. They also transmit communications in an audio frequency range between 300 and 3000 Hz, typical of the human voice. (*Qualité téléphonique*)

Voice-grade equivalents ('B channel' equivalents). Refer to how many voice-grade lines would be needed to provide the same or equivalent bandwidth to the line in question. ISDN BRA lines (bandwidth = 144 kbps) are the equivalent of 2 voice-grade lines while ISDN PRA (bandwidth = 1.544 Mbps) are the equivalent of 23 voice-grade lines. (*Équivalent qualité téléphonique (équivalent « canal B »)*)

Wide area telephone service (WATS). Service provided by a telephone company enabling a subscriber to dial certain distant exchanges on either a flat rate or a measured time charge basis. (*Services interurbain planifié (WATS)*)

Wideband. Telecommunications of bandwidth greater than 64 kbps up to and including 1.544 Mbps. A telecommunications path with 2 way capabilities with speed in at least one direction fitting the criteria described above. (*Large bande*)

Wireless Broadband Services. A multipoint telecommunications systems that use radio frequencies to allow the transmission and/or reception of information such as multimedia, data, and video over radio frequency channels of 50 kHz or greater (e.g., LMCS). Either digital or analogue transmission technology is used. (*Service sans fil à large bande*)