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HIGHLIGHTS

- ▶ Telecommunications operating revenues totalled \$7.93 billion in the first quarter of 2002, 1.1% higher than what was reported one year ago.
- ▶ In the first quarter, the telecommunications industry contributed \$6.62 billion (1997 constant dollars) to Canadian gross domestic product (GDP), accounting for 2.8% of total economy GDP. This was an increase of 10.1% over the first quarter of last year (STC, CANSIM II, Table 379-0018).
- ▶ Operating expenses (\$6.60 billion) decreased by 3.7% from what was reported one year ago (\$6.86 billion). First quarter 2002 operating profits (\$1.33 billion/16.8% of operating revenues) increased by a substantial 33.7% from their first quarter 2001 level. This cost-cutting measure and the resulting impact on operating profits were apparent across all segments of the telecommunications industry, but were most pronounced in the wireless sector.
- ▶ Capital expenditures slumped to \$1.30 billion, down by more than 40% from the first quarter of 2001 (\$2.25 billion). This decline reflects the recent economic slowdown and the excess network capacity that many carriers have built up. Capital spending accounted for 16.2% and 21.2% of wireline and wireless operating revenues respectively.
- ▶ Wireline investment per capita declined by more than seven dollars (\$30.09) from first quarter last year, while wireless capital expenditures fell by more than twenty-three dollars to \$11.72 per capita.
- ▶ Since the first quarter of 2001, 2,768 full-time positions were lost in the telecommunications industry, a decrease of 3.3%. Of the 91,253 employees, there were 79,870 in full-time positions and 11,384 in part-time positions.
- ▶ Public-switched telephone network (PSTN) access is near parity with the population – there are 99.8 voice grade access paths per 100 persons. The 31.1 million voice-grade access paths consist of over 10.9 million mobile access paths (cellular subscribers) and 20.2 million fixed access paths (19.4 million single access lines and 105,911 lines with multiple access).
- ▶ Strong growth in PSTN access has come mainly from mobile services. Mobile subscriptions increased 20.6% this quarter, from the first quarter of 2001. Fixed access continued to decline into the first quarter of 2002, down 0.2% from both last quarter and last year's level.

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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 \$7.93 billion in the first quarter of 2002 – an increase of 1.1% from first quarter, 2001. Facilities-based wireline telecommunications services accounted for 73.2% of total industry operating revenues, while wireless, resellers, satellite, and other services accounted for 26.9% of the first quarter total. The dominance of wireline carriers vis-à-vis wireless service providers and resellers has been relatively unchanged over the previous 8 quarters (Figure 1).

Operating revenues in the wireline industry totalled \$5.80 billion in the first quarter, down 2.5% from first quarter last year. Local services (\$1.70 billion) continued to represent the largest share (29.3%) of wireline operating revenues, followed by long distance services (\$1.11 billion / 19.2% of the total) and carrier services (\$698 million / 12.0% of the total).

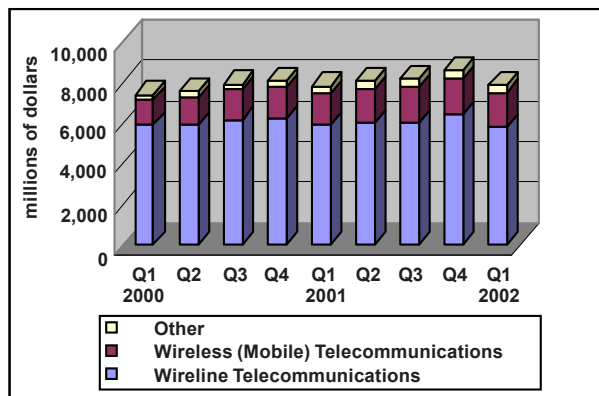
Operating revenues in the wireless industry have been far more buoyant than in the wireline industry. At \$1.73 billion this quarter, operating revenues are up 15.2% from what was reported one year ago. As with wireline carriers, local services are the wireless industry's major source of revenues, but account for a greater share of total operating revenues (\$1.06 billion / 61.6%).

Operating profit totalled \$1.33 billion in the first quarter, or 16.8% of operating revenues. Returns varied widely, however, depending on the telecommunications industry. The operating profit for wireline carriers was about 20 cents on each revenue dollar. Wireless carriers also started the year 2002 with strong profits (13 cents on each revenue dollar), after losses in the first and fourth quarters of 2001. The reseller, satellite and other industries (NAICS 51333, 4 and 9, respectively) had an estimated operating loss amounting to nearly 7 cents on each dollar earned this quarter.

Capital expenditures for the telecommunications industry fell by 41.9% over the first quarter of last year (\$1.30 billion compared to \$2.25 billion). The wireline and wireless industries had capital outlays of \$938 million and \$366 million, respectively, representing 16.2% and 21.2% of first quarter operating revenues (Figure 2). High capital spending in the first quarter of 2001 was related to the one-time spectrum auction for wireless carriers. Otherwise, the decline in investment reflects the recent economic slowdown and the excess network capacity that many carriers have built up.

Figure 1.

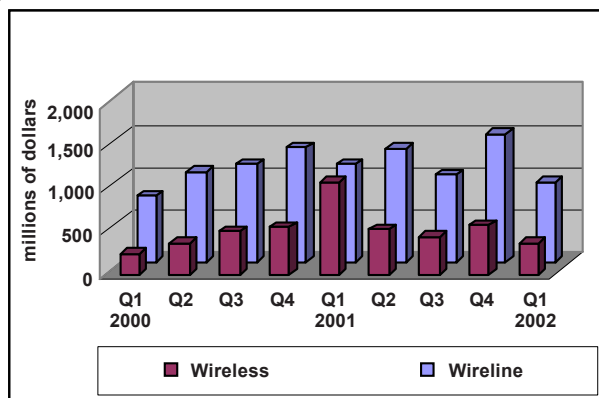
The dominance of wireline carriers vis-à-vis wireless service providers and resellers has been relatively unchanged over the previous 8 quarters.
(Revenues \$7.93 billion)



Source: Quarterly Telecommunications Statistics.

Figure 2.

Capital expenditures in the wired and wireless industries were slashed in the first quarter of 2002 after record spending last year.
(Capital expenditures \$1.30 billion)

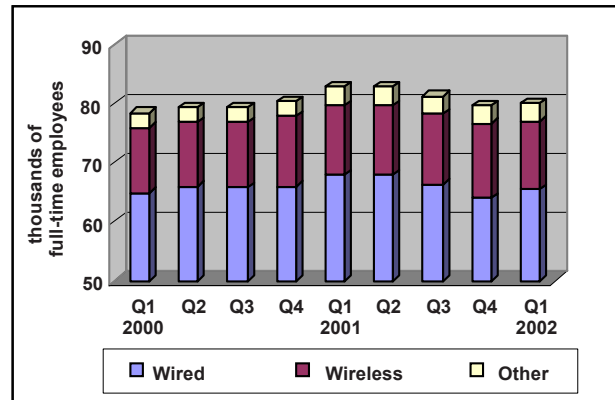


Source: Quarterly Telecommunications Statistics.

Figure 3.

Full-time employment in the telecommunications industries has decreased by 3.3% since first quarter, 2001.

There were 79,870 **full-time employees** this quarter. This represents a 3.3% decrease from the first quarter of 2001 (a loss of 2,768 full-time employees) (Figure 3). Since the first quarter last year, employment in the wireline industry decreased by 2,360 full-time positions, while the wireless industry lost 302 full-time employees. The “other” telecommunications industries lost 106 full-time employees over the same period. **Average annual labour costs** (wages, salaries and benefits) per employee (full-time equivalent) were up significantly from what was reported last year – \$72,541 (compared to \$66,517 last year) for the wireline industry and \$69,654 (compared to \$61,118 last year) for the wireless industry. This increase may be attributed to a rise in employee severance packages and voluntary departure incentives.



Source: Quarterly Telecommunications Statistics.

Text Table 1. PSTN Network Infrastructure - Wired Access

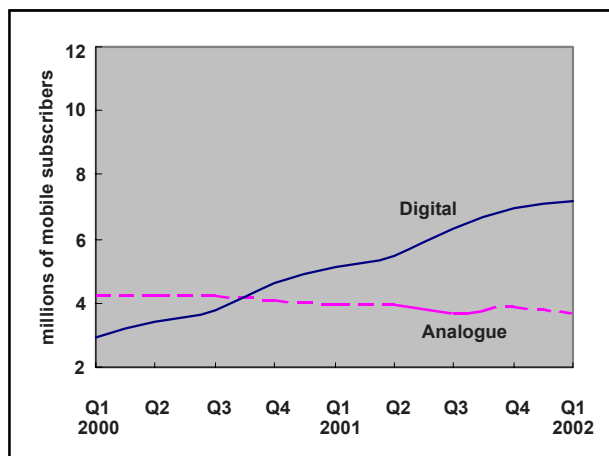
Public-switched telephone network (PSTN) **wireline access** was just over 19.4 million lines at the end of the first quarter, a decrease of 0.2% from last year’s level. The quarter over quarter declines, reflected in each quarter last year, are continuing into 2002. This new phenomenon may be the early signs of wireless substitution for wireline services, or growing cable penetration in the market for Internet access. Residential lines accounted for 66.0% of the total and business lines represented 34.0% 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 20.2 million lines, a 0.4% decrease from what was reported one year ago.

	First Quarter, 2002		
PSTN Access	Residential	Business	Total
Wired Access Lines (NAICS 51331)			
Individual lines	12,538,396	2,975,207	15,513,603
Party lines	71,025	1,267	72,292
ISDN BRA	109	74,416	74,525
ISDN PRA	...	31,386	31,386
Public telephones	...	167,205	167,205
Centrex	...	2,624,123	2,624,123
Official lines	...	...	207,490
Other	-	449,949	449,949
Undercoverage estimate	194,124	75,772	269,896
Total Wired Access Lines	12,803,654 (66.0%)	6,606,815 (34.0%)	19,410,469 (100.0%)
Total voice-grade equivalents	12,803,763 (63.5%)	7,371,723 (36.5%)	20,175,486 (100.0%)

Source: Quarterly Telecommunications Statistics, 1st Quarter, 2002.

Figure 4.



Source: Quarterly Telecommunications Statistics.

First quarter mobile telephony subscribers were up 20.6% from last year. At quarter end, there were over 10.9 million subscribers, more than one in every three Canadians. Digital wireless access stands at 66.1%, representing just over 7.0 million mobile subscribers (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 64.7 and 35.1 access paths (VGE) per 100 inhabitants, respectively. Total teledensity per 100 inhabitants was 99.8 in the first quarter, up 5.1% 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 just under 1.7 million pagers in service in the first quarter, down from 1.9 million subscribers in the first quarter of 2001 (-9.6%).

Long distance **traffic** is nearly completely undertaken via wireline access, which reached 13.1 billion minutes this quarter (Figure 6). About 7.2% of total wireline long distance minutes are originating from points outside Canada. Mobile telephony is primarily used for local communication. Total billed minutes rose substantially since the first quarter of 2001 (29.7%) to just over 7.0 billion.

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.

Text Table 2. PSTN Network Infrastructure - Mobile Access

PSTN Access	First Quarter, 2002
Mobile Access (NAICS 51332)	
Digital	7,237,520
Analogue	3,716,362
Total Mobile Access	10,953,882

Source: Quarterly Telecommunications Statistics, 1st Quarter, 2002.

Text Table 3. PSTN Network Infrastructure - Total Access

Teledensity	
Total PSTN Access Paths	30,364,351
Total PSTN Access Paths (VGE)	31,129,368
Wired Access (VGE) per 100 inhabitants	64.7
Wireless Access (VGE) per 100 inhabitants	35.1
Total PSTN Access VGE per 100 inhabitants	99.8

Source: Quarterly Telecommunications Statistics, 1st Quarter, 2002.

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**Telecommunications Industry
(NAICS 5133)**

Summary Tables

TABLE 1. Summary of Operating Indicators, NAICS 5133, Quarterly, 2002

	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		02/01 %		02/01 %		02/01 %		02/01 %		02/01 %
Financial indicators (\$000)										
Operating revenues	7,934,890	1.1							7,934,890	1.1
Operating expenses	6,601,661	(3.7)							6,601,661	(3.7)
Operating profit	1,333,229	33.7							1,333,229	33.7
% of operating revenues	16.8	32.3							16.8	32.3
Capital expenditures ¹	1,303,962	(41.9)							1,303,962	(41.9)
Employment (persons)										
Full-time	79,870	(3.3)							...	...
Part-time	<u>11,384</u>								...	...
Total	91,253								...	...
% of national industrial employment ²	0.718								...	...
Total (full-time equivalents - FTE)	84,372								...	...
Labour costs (\$000)										
Average Labour costs (\$)	1,548,190								1,548,190	
per FTE employee (annualized)	72,888								...	...
PSTN access paths (fixed and mobile)										
Total	30,364,351	6.4							...	...
Total (voice-grade equivalents - VGE)	31,129,368	6.1							...	...
Teledensity (VGE per 100 inhabitants)	99.8	5.1							...	...

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

¹ Comprises 51331 (Wireline) and 51322 (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, 2002

NAICS industries	51331	51332	51333, 4, 9	5133
thousands of dollars				
Operating revenues				
Telecommunications operating revenues	4,824,052	1,610,707	..	..
Other operating revenues ¹	899,820	81,107	..	..
Undercoverage estimate	<u>81,002</u>	<u>35,951</u>	<u>402,251</u>	<u>519,204</u>
Total	5,804,874	1,727,765	402,251	7,934,890
% of NAICS 5133	73.2	21.8	5.1	100.0
Operating expenses				
Telecommunications operating expenses	4,353,742	1,370,733	..	..
Other operating expenses	244,484	107,134	..	..
Undercoverage estimate	<u>70,851</u>	<u>26,464</u>	<u>428,253</u>	<u>525,568</u>
Total	4,669,077	1,504,331	428,253	6,601,661
% of NAICS 5133	70.7	22.8	6.5	100.0
Operating profit				
	1,135,797	223,434	(26,002)	1,333,229
% of operating revenues	19.6	12.9	(6.5)	16.8
Non-operating revenues and expenses (survey units only)				
Non-operating revenues	81,574	1,111	..	..
Non-operating expenses				
Interest expenses	437,703	115,952	..	..
Other	<u>36,549</u>	<u>113,764</u>	..	..
Total	474,252	229,716	..	..
Net income before taxes				
	743,119	(5,171)	..	..
EBITDA ²	2,126,034	569,152	..	..
Capital expenditures				
	938,373	365,589	..	..
% of operating revenues	16.2	21.2	..	..
Employment (persons)				
Full-time	65,456	11,351	3,063	79,870
Part-time	<u>9,240</u>	<u>1,953</u>	<u>190</u>	<u>11,384</u>
Total	74,696	13,304	3,253	91,253
% of national industrial employment	0.587	0.105	0.026	0.718
Total (full-time equivalents - FTE)	69,326	11,870	3,177	84,963
Labour costs				
Full-time	1,187,047	197,661	81,248	1,465,957
Part-time	<u>70,191</u>	<u>9,030</u>	<u>3,012</u>	<u>82,233</u>
Total	1,257,238	206,692	84,260	1,548,190
Average Labour costs (\$) per FTE employee (annualized)	72,541	69,654	..	72,888

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.

TABLE 3. Summary of Analytical Indicators, NAICS 51331, 51332, Quarterly, 2002

NAICS industries	51331				51332			
	I	II	III	IV	I	II	III	IV
Financial								
Operating revenue per capita (\$)	186.14				55.40			
Operating profit (% of operating revenues)	19.6				12.9			
Average revenue per long distance minute (cents) ¹	9.11				14.73			
Average revenue per local minute (cents)	...				16.78			
Capital expenditures per capita (\$)	30.09				11.72			
Capital expenditures (% of operating revenues)	16.2				21.2			
Employment/Labour								
Industry employment as a % of national industrial employment ²	0.587				0.105			
Revenue per FTE employee (\$)	83,733				145,562			
PSTN access paths per FTE employee ³	288				923			
Average Labour costs (\$) per FTE employee (annualized)	72,541				69,654			
Labour costs as a % of operating revenues	21.7				12.0			
Teledensity (VGE)								
PSTN access paths per 100 inhabitants	64.7				35.1			
Traffic^{1,4}								
Local minutes per subscriber	...				581			
Local minutes per capita	...				203			
Long distance minutes per access path (VGE) ³	668				66			
Long distance minutes per capita	422				23			

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, 2002

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %
Telecommunications Operating revenues										
Carrier services										
Contribution	91,668								91,668	
Interconnection	426,833								426,833	
Circuit rentals	39,753								39,753	
Other	<u>139,697</u>								<u>139,697</u>	
Total	697,951	(4.9)							697,951	(4.9)
Voice services										
Local telephony	1,698,750	(0.9)							1,698,750	(0.9)
Long distance telephony	1,111,728	(12.6)							1,111,728	(12.6)
Calling features	327,496	12.6							327,496	12.6
Connection	<u>79,007</u>	(8.4)							<u>79,007</u>	(8.4)
Total	3,216,981	(4.4)							3,216,981	(4.4)
Data and high speed services										
Narrowband packet-switched	235,477								235,477	
High speed switched ¹	<u>100,522</u>								<u>100,522</u>	
Total	335,999	(35.3)							335,999	(35.3)
Non-switched services (private lines)										
Narrowband	290,219								290,219	
High speed	<u>45,870</u>								<u>45,870</u>	
Total	336,089	16.7							336,089	16.7
Other telecommunications services	<u>237,032</u>								<u>237,032</u>	
Total	4,824,052	(6.8)							4,824,052	(6.8)
Other Operating revenues										
Terminal equipment rentals	61,580								61,580	
Sale of telecommunications goods	100,959								100,959	
Directory services	9,599								9,599	
Retail Internet services	320,212								320,212	
Other services n.e.c.	<u>407,470</u>								<u>407,470</u>	
Total	899,820	29.8							899,820	29.8
Undercoverage estimate	<u>81,002</u>	...							<u>81,002</u>	...
Total Operating revenues	5,804,874	(2.5)							5,804,874	(2.5)

¹ Wideband and broadband circuit- and packet-switched services.

TABLE 5. Operating Expenses, NAICS 51331, Quarterly, 2002

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %
Telecommunications Operating expenses										
Carrier services										
Contribution	179,657								179,657	
Interconnection	553,700								553,700	
Circuit rentals	180,146								180,146	
Other	<u>251,755</u>								<u>251,755</u>	
Total	1,165,258	(1.9)							1,165,258	(1.9)
Labour expenses	1,151,861	2.7							1,151,861	2.7
Depreciation	990,237	(1.9)							990,237	(1.9)
Other	<u>1,046,386</u>								<u>1,046,386</u>	
Total	4,353,742	(4.5)							4,353,742	(4.5)
Other Operating expenses	244,484	21.7							244,484	21.7
Undercoverage estimate	<u>70,851</u>	...							<u>70,851</u>	...
Total Operating expenses	4,669,077	(3.4)							4,669,077	(3.4)

TABLE 6. Financial and Performance Indicators, NAICS 51331, Quarterly, 2002

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %
Operating revenues	5,804,874	(2.5)							5,804,874	(2.5)
Operating expenses	4,669,077	(3.4)							4,669,077	(3.4)
Operating profit	1,135,797	1.4							1,135,797	1.4
% of operating revenues	19.6	4.0							19.6	4.0
EBITDA ¹	2,126,034	(0.2)							2,126,034	(0.2)
Revenue performance² (\$)										
Operating revenue per capita	186.14	(3.5)							186.14	(3.5)
Voice services revenue per PSTN line ³	163.31	(2.9)							163.31	(2.9)
Local revenue per PSTN line ³	86.24	0.6							86.24	0.6
Long distance revenue per PSTN line ³	56.44	(11.3)							56.44	(11.3)
Average revenue per										
long distance minute (cents)	9.11	(15.5)							9.11	(15.5)
Advanced services ratio ⁴ (%)	22.3	(11.9)							22.3	(11.9)

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 lines⁴ Ratio of operating revenues from new services compared to traditional telecommunications services (%).

TABLE 7. Employment and Labour Costs, NAICS 51331, Quarterly, 2002

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		02/01 %		02/01 %		02/01 %		02/01 %		02/01 %
Employment (persons)										
Full-time	65,456	(3.5)							...	...
Part-time	<u>9,240</u>	(6.7)							...	...
Total	74,696	(3.9)							...	...
% of national industrial employment	0.587								...	...
Total (full-time equivalents - FTE)	69,326	(4.6)							...	...
Revenue (\$) per FTE employee	83,733								...	...
Labour costs¹										
Full-time	1,187,047	5.3							1,187,047	5.3
Part-time	<u>70,191</u>	(13.5)							<u>70,191</u>	(13.5)
Total	1,257,238	4.0							1,257,238	4.0
Average Labour costs (\$) per FTE employee (annualized)	72,541	9.1							...	...

¹ Includes capitalized labour expenditures.

TABLE 8. Capital Expenditures, NAICS 51331, Quarterly, 2002

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %
Capital expenditures	938,373	(18.5)							938,373	(18.5)
% of operating revenues	16.2	(16.4)							16.2	(16.4)
per capita (\$)	30.09	(19.4)							30.09	(19.4)

TABLE 9. Network Infrastructure, NAICS 51331, Quarterly, 2002

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
		02/01 %		02/01 %		02/01 %		02/01 %
Network infrastructure (access)								
PSTN access lines								
Individual lines (includes PBX)	15,513,603	(1.5)						
Party lines	72,292	(15.6)						
ISDN BRA	74,525	(10.6)						
ISDN PRA	31,386	(5.7)						
Public telephones	167,205	(1.8)						
Centrex	2,624,123	4.4						
Official lines	207,490	...						
Other (includes mobile and WATS)	449,949	(17.1)						
Undercoverage estimate	<u>269,896</u>	...						
Total	19,410,469	(0.2)						
Residential (%)	66.0							
Business (%)	34.0							
Total PSTN voice-grade equivalents (VGE)	20,175,486	(0.4)						
Residential (%)	63.5							
Business (%)	36.5							
PSTN (VGE) per 100 inhabitants	64.7	(1.4)						
Residential access lines (VGE) per 100 households	107							
Business access lines (VGE) per 100 employed persons ¹	57.9							
PSTN access paths (VGE) per FTE employee ²	288							
Non-PSTN lines³								
Digital	285,533							
Analogue	<u>25,665</u>							
Total	311,198							

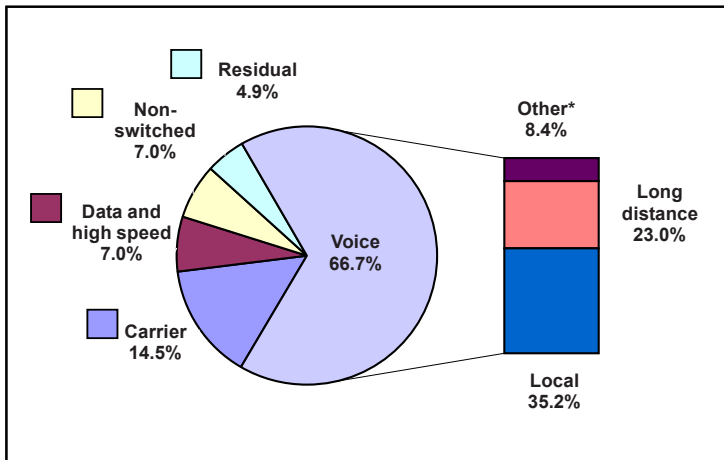
¹ Employed persons from SEPH estimate of national industrial employment.² Excludes official telephone lines.³ Calculations do not include undercoverage estimates.

TABLE 10. Long Distance Traffic, NAICS 51331, Quarterly, 2002

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		02/01 %		02/01 %		02/01 %		02/01 %		02/01 %
Traffic statistics (thousands of minutes)¹										
Long distance traffic										
Outbound calls	10,624,150								10,624,150	
Toll-free calls	1,577,139								1,577,139	
Inbound calls to Canada	<u>947,792</u>								<u>947,792</u>	
Total	13,149,081	5.4							13,149,081	5.4
Traffic performance (minutes)¹										
Long distance traffic										
Outbound calls										
per access line (VGE) ²	539								539	
per capita	341								341	
Toll-free calls										
per access line (VGE) ²	80								80	
per capita	51								51	
Inbound calls to Canada										
per access line (VGE) ²	48								48	
per capita	30								30	
Total										
per access line (VGE) ²	668	7.1							668	7.1
per capita	422	4.5							422	4.5

¹ Calculations do not include undercoverage estimates.

² Excludes official telephone lines.



* Calling features and connection charges.

Figure 5.
Wired telecommunications operating revenue shares
(Revenues \$ 4.82 billion)

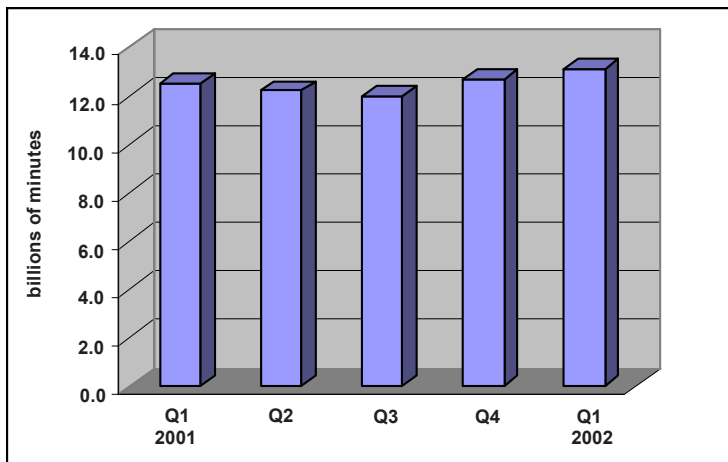


Figure 6.
Wireline traffic - Total long distance minutes
(13.1 billion)

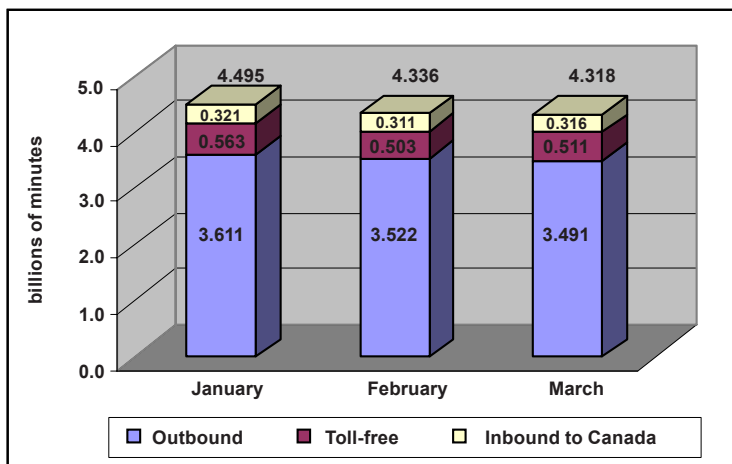


Figure 7.
Monthly wireline long distance minutes,
first quarter, 2002
Total outbound minutes 10.6 billion
Total toll-free minutes 1.6 billion
Total inbound to Canada minutes 948 million

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**Wireless Telecommunications Carriers
(NAICS 51332)**

Tables and Graphs

TABLE 11. Operating Revenues, NAICS 51332, Quarterly, 2002

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %
Telecommunications Operating revenues										
Carrier services	144,062								144,062	
Local telephony										
Fixed (recurrent services)	729,586								729,586	
Air time (measured services)	315,171								315,171	
Other	<u>18,785</u>								<u>18,785</u>	
Total	1,063,542	14.6							1,063,542	14.6
Long Distance telephony										
Air time	105,693								105,693	
Other	<u>0</u>								<u>0</u>	
Total	105,693	4.2							105,693	4.2
Messaging - Paging	43,317								43,317	
Dispatch services (RCC)	12,450								12,450	
Other telecommunications services	<u>241,643</u>								<u>241,643</u>	
Total	1,610,707	15.1							1,610,707	15.1
Other Operating revenues	81,107	15.8							81,107	15.8
Undercoverage estimate	<u>35,951</u>	...							<u>35,951</u>	...
Total Operating revenues	1,727,765	15.2							1,727,765	15.2

TABLE 12. Operating Expenses, NAICS 51332, Quarterly, 2002

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %
Telecommunications Operating expenses										
Carrier services	141,034								141,034	
Labour expenses	200,591								200,591	
Depreciation	345,718								345,718	
Other telecommunications expenses	<u>683,390</u>								<u>683,390</u>	
Total	1,370,733	(6.1)							1,370,733	(6.1)
Other Operating expenses	107,134	19.5							107,134	19.5
Undercoverage estimate	<u>26,464</u>	...							<u>26,464</u>	...
Total Operating expenses	1,504,331	(4.6)							1,504,331	(4.6)

TABLE 13. Financial and Performance Indicators, NAICS 51332, Quarterly, 2002

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %
Operating revenues	1,727,765	15.2							1,727,765	15.2
Operating expenses	1,504,331	(4.6)							1,504,331	(4.6)
Operating profit	223,434	392.2							223,434	392.2
% of operating revenues	12.9	353.7							12.9	353.7
EBITDA ¹	569,152	78.7							569,152	78.7
Revenue performance (\$) ²										
Operating revenue per capita	55.40	14.0							55.40	14.0
Local revenue per subscriber	97.51	(5.0)							97.51	(5.0)
Average revenue per										
local minute (cents)	16.78	(11.8)							16.78	(11.8)
Long distance revenue per subscriber	9.69	(13.6)							9.69	(13.6)
Average revenue per										
long distance minute (cents)	14.73	(18.3)							14.73	(18.3)
Paging revenue per subscriber	35.15	2.9							35.15	2.9

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, 2002

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		02/01 %		02/01 %		02/01 %		02/01 %		02/01 %
Employment (persons)										
Full-time	11,351	(2.6)							...	...
Part-time	<u>1,953</u>	1.5							...	...
Total	13,304	(2.0)							...	...
% of national industrial employment	0.105								...	...
Total (full-time equivalents - FTE)	11,870	(5.3)							...	...
Revenue (\$) per FTE employee	145,562								...	...
Labour costs (\$000)¹										
Full-time	197,661	11.0							197,661	11.0
Part-time	<u>9,030</u>	(32.6)							<u>9,030</u>	(32.6)
Total	206,692	8.0							206,692	8.0
Average Labour costs (\$) per FTE employee (annualized)	69,654	14.0							...	...

¹ Includes capitalized labour expenditures.

TABLE 15. Capital Expenditures, NAICS 51332, Quarterly, 2002

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %	\$000	02/01 %
Capital expenditures	365,589	(66.6)							365,589	(66.6)
% of operating revenues	21.2	(71.0)							21.2	(71.0)
per subscriber (\$)	33.38	(72.3)							33.38	(72.3)
per capita (\$)	11.72	(66.9)							11.72	(66.9)

TABLE 16. Network Infrastructure, NAICS 51332, Quarterly, 2002

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
		02/01 %		02/01 %		02/01 %		02/01 %
Network infrastructure (access)								
Mobile subscribers								
Digital	7,237,520	42.8						
Analogue	<u>3,716,362</u>	(7.5)						
Total Mobile telephony	10,953,882	20.6						
Mobile telephony penetration								
per 100 inhabitants	35.1	19.4						
PSTN access paths per FTE employee	923							
Paging subscribers	1,687,176	(9.6)						
Paging penetration per 100 inhabitants	5.4	(10.0)						

TABLE 17. Traffic Statistics, NAICS 51332, Quarterly, 2002

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		02/01 %		02/01 %		02/01 %		02/01 %		02/01 %
Traffic statistics (thousands of minutes)¹										
Billed minutes										
Local	6,339,233								6,339,233	
Long distance	<u>717,477</u>								<u>717,477</u>	
Total	7,056,710	29.7							7,056,710	29.7
Traffic performance (minutes)¹										
Local minutes per subscriber	581	7.8							581	7.8
Long distance minutes per subscriber	66	6.5							66	6.5
Billed minutes per subscriber	647	7.5							647	7.5

¹ Calculations do not include undercoverage estimates.

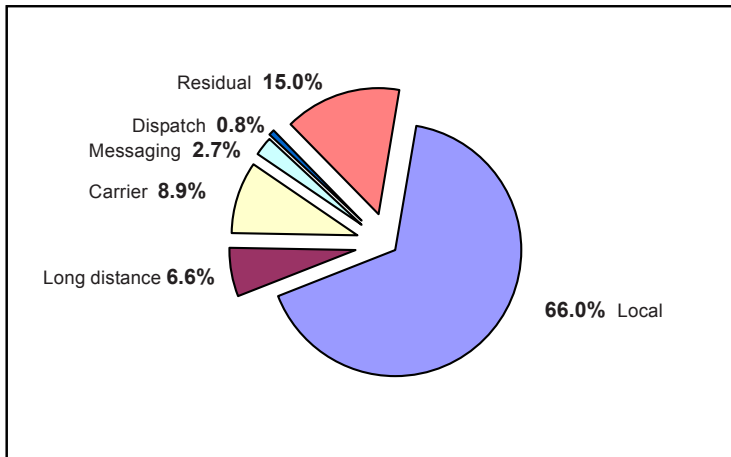


Figure 8.
Wireless telecommunications operating revenue shares
(Revenues \$1.61 billion)

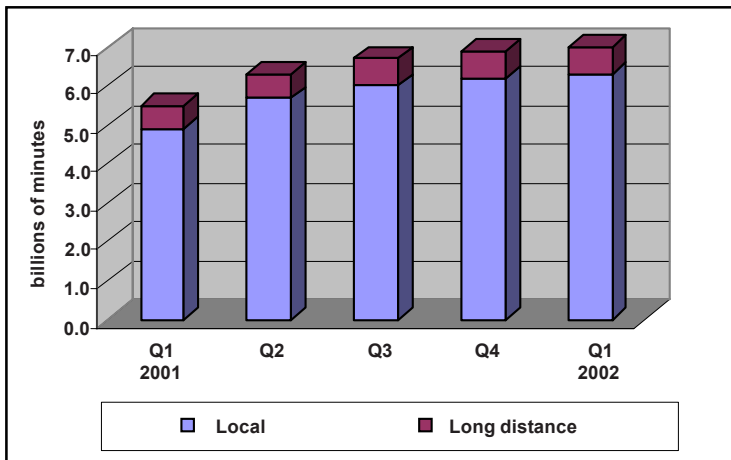


Figure 9.
Wireless traffic billed minutes
(7.0 billion)

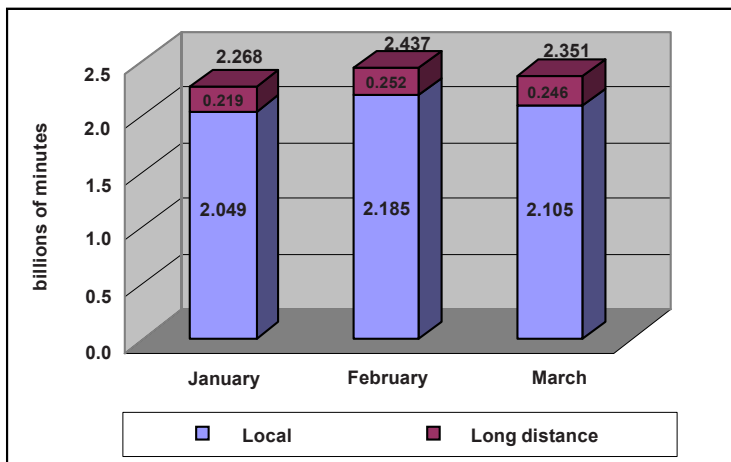


Figure 10.
Monthly wireless billed minutes,
first quarter, 2002
Wireless billed minutes increased to just over 7.0 billion
in the first quarter of 2002, an increase of 29.7%
from first quarter last year.
The majority of these were local minutes (6.3 billion)

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

Undercoverage Estimates

TABLE 18. Undercoverage estimates, NAICS 51333, 4, 9, Quarterly, 2002

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	402,251				402,251
Operating expenses	428,253				428,253
Operating profit margin	(26,002)				(26,002)
% of operating revenues	(6.5)				(6.5)
Employment (persons)					
Full-time	3,063				...
Part-time	<u>190</u>				...
Total	3,253				...
% of national industrial employment	0.026				...
Total (full-time equivalents - FTE)	3,177				...
Labour costs (\$000)					
Full-time	81,248				81,248
Part-time	<u>3,012</u>				<u>3,012</u>
Total	84,260				84,260

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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 92.5% 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 2002 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 (1999), taking into consideration buy-outs, mergers and consolidations since 1999, 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	98.6	1.4	100.0
51332	99.0	1.0	100.0
51333,4,9	-	100.0	100.0
5133	92.5	7.5	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.

When 2000 annual data is processed (Fall of 2002), 2000 quarterly estimates will be adjusted to reflect the final 2000 compilations. Once updated by the annual data, historical quarterly series will be directly comparable to published annual series. The assumptions for calculating quarterly undercoverage rates have been reviewed now that 1999 annual data has been processed, and will be presented in a future bulletin.

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 2002 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. Some changes in PSTN access lines are due to the inclusion of official lines which were not previously collected. Official lines are part of teledensity measures but are not included in performance measures such as access lines per employee or revenues per PSTN access line.

For further information, or to enquire about the concepts, methods and data quality, please contact: Heidi Ertl (613) 951-1891 or Jo Anne Lambert (613) 951-6673, Science, Innovation and Electronic Information Division.

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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*)