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### HIGHLIGHTS

- ▶ Operating revenues for the telecommunications industry were \$7.5 billion in the second quarter of 2000, a 5.1% increase from second quarter, 1999.
- ▶ Operating profit totalled \$1.2 billion in the second quarter (16.3% of operating revenues), and 8.3% above last year.
- ▶ Capital expenditures were \$1.4 billion this quarter (\$1.1 billion in the wireline industry and \$373 million in the wireless industry). This is 17.9% and 27.8% of wireline and wireless operating revenues respectively.
- ▶ Per capita wireline investment this quarter was \$34.48, while wireless capital expenditures amounted to \$48.58 for each mobile subscriber.
- ▶ There were 79,216 full-time employees this quarter.
- ▶ Full-time employment declined 0.5% from the second quarter of last year. This entailed a loss of 836 full-time employees in the wireline industry, however 860 full-time positions were added to the wireless industry over the same period.
- ▶ Just over 28.2 million voice-grade access paths were connected to the public-switched telephone network (PSTN), comprising 20.5 million public access lines and 7.7 million mobile telephone subscribers.
- ▶ Most of the recent growth in PSTN access has come from wireless or mobile services, which increased 28.3% this quarter from the second quarter of 1999.

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## Symbols

The following standard symbols are used in Statistics Canada publications:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- r revised figures.
- x confidential to meet secrecy requirements of the Statistics Act.
- () negative value.

## 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 posted gross **operating revenues** of \$7.5 billion in the second quarter of 2000, an increase of 5.1% from second quarter, 1999. Wireline telecommunications services accounted for 78.5% of total industry operating revenues, while wireless, resellers, satellite, and other services accounted for 21.5% of the industry total (Figure 1).

Local services (\$1.8 billion) continued to represent the largest share (29.9%) of total quarterly **wireline operating revenues** (\$5.9 billion). Long distance services were next. They were \$1.4 billion (23.2%) of the total reported.

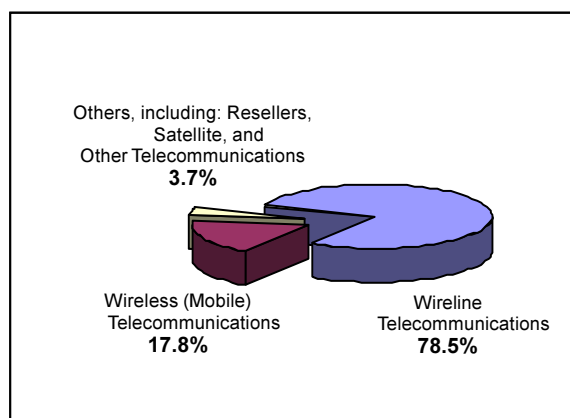
**Operating revenues in the wireless industry** were \$1.3 billion this quarter, up 20.8% from last year and 8.6% from last quarter. As with wireline carriers, local services are the wireless industry's major source of revenues - but account for a greater share of total revenue (64.9%, \$871 million). Local revenues have shown real strength for the mobile carriers, increasing 15.4% this quarter and 16.6% last quarter from their respective quarters last year.

**Operating profit** totalled \$1.2 billion in the second quarter, or 16.3% of operating revenues. Returns varied widely, however, depending on the telecommunications industry. The operating profit for wireline carriers was nearly 20 cents on each revenue dollar. The wireless industry, which had been in a loss position since the second quarter of 1999, reported a profit of about 3 cents per revenue dollar. The wireless industry's lower profit levels undoubtedly reflect this industry's on-going roll-out costs for new services and for establishing each service provider's presence in a highly dynamic and competitive market. The reseller, satellite and other industries (NAICS 51333, 4 and 9, respectively) had an estimated operating profit amounting to two and a half cents for each dollar earned.

Telecommunications on-going demand for high-technology, capital-intensive applications can be seen in this quarter's strong **capital expenditures**. The wireline and wireless industries had capital outlays of over \$1.0 billion and \$373 million, respectively, representing 17.9% and 27.8% of second quarter wireline and wireless operating revenues (Figure 2). Although this represents an 8.3% decrease from the red hot results posted in the second quarter of last year, when overall spending was \$1.6 billion (21.3% and 30.5% of wireline and wireless operating revenues), capital expenditures increased by a remarkable 40.3% over the first quarter of this year.

**Figure 1.**

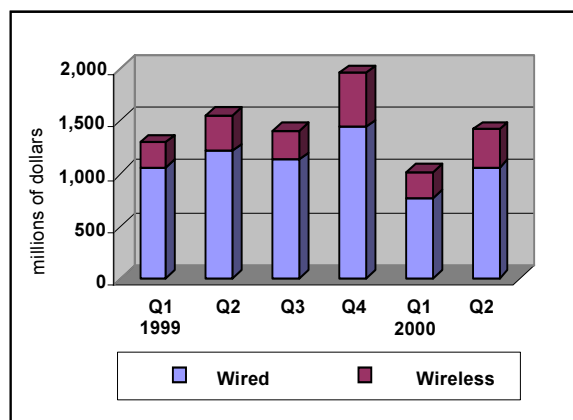
**The wireless, satellite and reseller industries generated 21.5% of total operating revenues**  
(Revenues \$7.5 billion)



Source: Quarterly Telecommunications Statistics, 2<sup>nd</sup> Quarter, 2000.

**Figure 2.**

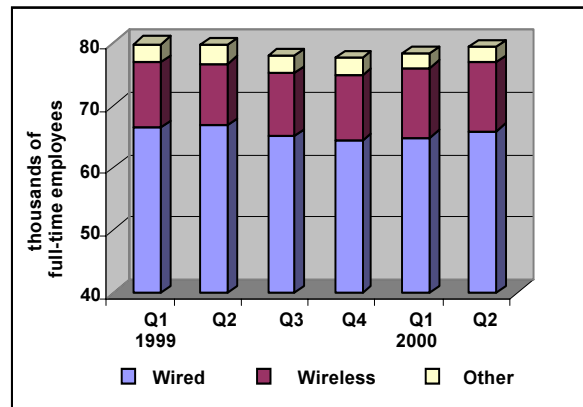
**Capital expenditures in the wired and wireless industries dropped substantially in the first quarter of 2000, but expanded again in the second quarter**  
(Capital expenditures \$1.4 billion)



Source: Quarterly Telecommunications Statistics, 2<sup>nd</sup> Quarter, 2000.

**Figure 3.**  
**Full-time employment in the telecommunications industries has contracted by 0.5% since second quarter, 1999**

There were 79,216 **full-time employees** this quarter, a 1.1% increase from the first quarter, but a 0.5% decline from the second quarter of 1999 (a loss of 391 full-time employees) (Figure 3). Since the second quarter last year, the wireline industry lost 836 full-time employees, while the 'other' telecommunications industries lost 415. Counter to this trend, 860 full-time positions were added to the wireless industry over the same period. **Average annual labour costs** (wages, salaries and benefits) per employee (full-time equivalent) were down marginally from last quarter for the wireline industry (\$65,983) and off \$2,800 on average in the wireless industry (\$63,185).



Source: Quarterly Telecommunications Statistics, 2<sup>nd</sup> Quarter, 2000.

Public-switched telephone network (PSTN) **wireline access** reached 19.8 million lines at the end of the second quarter, an increase of 4.5% from last year's level. Residential lines accounted for 65.8% of the total and business lines represented 34.2% 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 just over 20.5 million lines, a 5.0% increase from what was reported one year ago. This represents strong growth in a market that not too long ago would have been considered to be very mature, and therefore unlikely to post much year over year change. (Readers should note that first quarter 2000 fixed access lines have been revised due to changes in respondent reporting).

**Text Table 1. PSTN Network Infrastructure - Wired Access**

PSTN Access	Second Quarter, 2000		
	Residential	Business	Total
<b>Wired Access Lines (NAICS 51331)</b>			
Individual lines	12,432,199	3,210,367	15,642,566
Party lines	95,496	1,572	97,068
ISDN BRA	305	8,253	82,835
ISDN PRA	...	29,179	29,179
Public telephones	...	175,905	175,905
Centrex	...	2,418,629	2,418,629
Other	-	574,804	574,804
Undercoverage estimate	528,613	287,843	816,456
<b>Total Wired Access Lines</b>	<b>13,056,613 (65.8%)</b>	<b>6,780,829 (34.2%)</b>	<b>19,837,442 (100%)</b>
<b>Total voice-grade equivalents</b>	<b>13,056,918 (63.5%)</b>	<b>7,505,297 (36.5%)</b>	<b>20,562,215 (100%)</b>

Source: Quarterly Telecommunications Statistics, 2<sup>nd</sup> Quarter, 2000.

Mobile telephony subscribers grew at the same pace as was reported in the first quarter, up 28.3% from last year and a 6.5% increase over last quarter. At quarter end, there were nearly 7.7 million subscribers, just over one in every four Canadians. Although the wireless telecommunications industry is outpacing the wireline sector when it comes to expanding access to the PSTN, judging by the continued growth in fixed access lines, consumers still seem to consider mobile telephony as a complement to, rather than a substitute for, their wireline PSTN access. In contrast to wireline access, which is nearly all digital, only 43.7% of wireless access was digital, representing about 3.4 million mobile subscribers (Text Table 2).

**Text Table 2. PSTN Network Infrastructure - Mobile**

PSTN Access	Second Quarter, 2000
<b>Mobile Access (NAICS 51332)</b>	
Digital	3,359,647
Analogue	4,324,699
<b>Total Mobile Access</b>	<b>7,684,346</b>

Source: Quarterly Telecommunications Statistics, 2<sup>nd</sup> Quarter, 2000.

**Teledensity** measures the penetration of telecommunications services in a given population. For the wireline and wireless industries, there were 67.1 and 25.1 access paths (VGE) per 100 inhabitants, respectively. Total teledensity per 100 inhabitants was 92.1 in the second quarter, up 9.4% from last year's second quarter figure (Text Table 3).

**Text Table 3. PSTN Network Infrastructure - Total Access**

<b>Teledensity</b>	
Total PSTN Access	27,521,788
Total PSTN Access (VGE)	28,246,561
Wired access (VGE) per 100 inhabitants	67.1
Wireless access (VGE) per 100 inhabitants	25.1
<b>Total PSTN (VGE) per 100 inhabitants</b>	<b>92.1</b>

Source: Quarterly Telecommunications Statistics, 2<sup>nd</sup> Quarter, 2000.

**Paging subscribers** also showed impressive growth this quarter despite the strong growth in cellular telecommunications, considered by some to be a substitute for paging. There were nearly 1.8 million pagers in service in the second quarter, a 27.7% increase over the second quarter of last year.

Long distance **traffic** is nearly completely undertaken via wireline access, which reached just under 13.0 billion minutes this quarter. About 9% of total wireline long distance minutes are originating from points outside Canada (Figure 6). Mobile telephony is primarily used for local communication. Total billed minutes rose substantially since the second quarter of 1999 (42.3%) to over 4.7 billion.

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**Telecommunications Industry  
(NAICS 5133)**

**Summary Tables**

**TABLE 1. Telecommunications Industry Group (NAICS 5133) Summary, Quarterly, 2000**

	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		00/99 %		00/99 %		00/99 %		00/99 %		00/99 %
<b>Financial Indicators (\$000)</b>										
Operating revenues	7,408,406	9.3	7,543,320	5.1					14,951,726	7.1
Operating expenses	6,147,114	10.4	6,314,228	4.5					12,461,342	7.3
Operating profit	1,261,292	(4.8)	1,229,092	8.3					2,490,384	6.1
% of operating revenues	17.0	4.0	16.3	3.0					16.7	(0.6)
Capital expenditures <sup>1</sup>	1,020,078	(21.4)	1,430,747	(8.3)					2,450,825	8.7
<b>Employment (persons)</b>										
Full-time	78,347	(1.9)	79,216	(0.5)					...	...
Part-time	12,388		13,387						...	...
Total Employment	90,735		92,603						...	...
% of national industrial employment <sup>2</sup>	0.762		0.744						...	...
Total Full-time Equivalents (FTE)	84,936		86,020						...	...
<b>Labour Costs</b>										
Total Labour costs (\$000)	1,411,415		1,404,668						2,816,083	
Average labour costs (\$) per FTE employee (annualized)	66,470		65,890						...	
<b>PSTN Access Paths (fixed and mobile)</b>										
Total Fixed Lines and Mobile Subscribers	27,039,391	10.2	27,521,788	10.2					...	...
Total Voice-grade Equivalents (VGE)	27,746,370	10.6	28,246,561	10.5					...	...
Teledensity (VGE per 100 inhabitants)	90.7	9.7	92.1	9.4					...	...

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

<sup>1</sup> Comprises 51331 (Wireline) and 51322 (Wireless) only.

<sup>2</sup> 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-XPB.



**TABLE 2A. Telecommunications Industries Summary, First Quarter, 2000**

NAICS Industries	51331	51332	51333, 4, 9	5133
	thousands of dollars			
<b>Operating revenues</b>				
Telecommunications operating revenues	5,177,302	1,132,988	..	..
Other operating revenues <sup>1</sup>	541,799	68,316	..	..
Undercoverage estimate	<u>177,511</u>	<u>35,744</u>	<u>274,746</u>	<u>488,001</u>
Total operating revenues	5,896,612	1,237,048	274,746	7,408,406
% of total industry	79.6	16.7	3.7	100.0
<b>Operating expenses</b>				
Telecommunications operating expenses	4,316,100	1,141,118	..	..
Other operating expenses	166,193	83,827	..	..
Undercoverage estimate	<u>138,677</u>	<u>35,710</u>	<u>265,489</u>	<u>439,876</u>
Total operating expenses	4,620,970	1,260,655	265,489	6,147,114
% of total industry	75.2	20.5	4.3	100.0
<b>Operating profit</b>				
	1,275,642	-23,607	9,257	1,261,292
% of operating revenues	21.6	-1.9	3.4	17.0
<b>Non-operating revenues and expenses (survey units only)</b>				
Non-operating revenues	190,508	5,488	..	..
Non-operating expenses				
Interest expenses	341,445	143,383	..	..
Other	26,848	1,620	..	..
Total - Non-operating expenses	368,293	145,003	..	..
<b>Net income before taxes</b>				
	1,097,857	(163,122)	..	..
<b>Capital expenditures</b>				
Survey data	751,982	239,727	..	..
Undercoverage estimate	<u>23,495</u>	<u>4,874</u>	..	..
Total Capital expenditures	775,477	244,601	..	..
% of operating revenues	13.2	19.8	..	..
<b>Employment (persons)</b>				
Full-time - Survey data	62,356	10,481	..	..
Undercoverage estimate	<u>2,575</u>	<u>508</u>	<u>2,427</u>	<u>5,510</u>
Total Full-time	64,931	10,989	2,427	78,347
Part-time - Survey data	9,512	2,483	..	..
Undercoverage estimate	<u>301</u>	<u>16</u>	<u>76</u>	<u>393</u>
Total Part-time	9,813	2,499	76	12,388
Total Employment	74,744	13,488	2,503	90,735
% of national industrial employment	0.628	0.113	0.021	0.762
Total Full-time equivalents (FTE)	70,231	12,237	2,468	84,936
<b>Labour costs</b>				
Full-time - Survey data	1,031,009	169,712	..	..
Undercoverage estimate	<u>44,346</u>	<u>10,633</u>	<u>46,228</u>	<u>101,207</u>
Total	1,075,355	180,345	46,228	1,301,928
Part-time - Survey data	83,586	20,130	..	..
Undercoverage estimate	<u>4,191</u>	<u>344</u>	<u>1,236</u>	<u>5,771</u>
Total	87,777	20,474	1,236	109,487
Total Labour costs	1,163,132	200,819	47,464	1,411,415
Average Labour costs (\$) per FTE employee (annualized)	66,246	65,643	76,927	66,470

<sup>1</sup> Other includes: terminal equipment rentals; sale of telecommunications goods; directory services; retail internet access; installations; customer repairs and maintenance.

**TABLE 2B. Telecommunications Industries Summary, Second Quarter, 2000**

NAICS Industries	51331	51332	51333, 4, 9	5133
	thousands of dollars			
<b>Operating Revenues</b>				
Telecommunications operating revenues	5,157,769	1,218,533	..	..
Other operating revenues <sup>1</sup>	583,957	86,271	..	..
Undercoverage estimate	<u>178,214</u>	<u>38,823</u>	<u>279,753</u>	<u>496,790</u>
Total Operating Revenues	5,919,940	1,343,627	279,753	7,543,320
% of total industry	78.5	17.8	3.7	100.0
<b>Operating Expenses</b>				
Telecommunications operating expenses	4,439,090	1,168,457	..	..
Other operating expenses	158,848	96,009	..	..
Undercoverage estimate	<u>142,255</u>	<u>36,862</u>	<u>272,707</u>	<u>451,824</u>
Total Operating Expenses	4,740,193	1,301,328	272,707	6,314,228
% of total industry	75.1	20.6	4.3	100.0
<b>Operating Profit</b>				
	1,179,747	42,299	7,046	1,229,092
% of operating revenues	19.9	3.1	2.5	16.3
<b>Non-Operating Revenues and Expenses (Survey Units Only)</b>				
Non-operating revenues	40,671	4,027	..	..
Non-operating expenses				
Interest expenses	355,169	156,552	..	..
Other	16,834	6,713	..	..
Total Non-operating Expenses	372,003	163,265	..	..
<b>Net Income Before taxes</b>				
	848,415	(116,939)		
<b>Capital Expenditures</b>				
Survey data	1,025,386	365,885	..	..
Undercoverage estimate	<u>32,037</u>	<u>7,439</u>	..	..
Total Capital Expenditures	1,057,423	373,324	..	..
% of operating revenues	17.9	27.8	..	..
<b>Employment (Persons)</b>				
Full-time - Survey data	63,345	10,302	..	..
Undercoverage estimate	<u>2,616</u>	<u>499</u>	<u>2,454</u>	<u>5,569</u>
Total Full-time	65,961	10,801	2,454	79,216
Part-time - Survey data	10,568	2,388	..	..
Undercoverage estimate	<u>334</u>	<u>15</u>	<u>82</u>	<u>431</u>
Total Part-time	10,902	2,403	82	13,387
Total Employment	76,863	13,204	2,536	92,603
% of national industrial employment	0.617	0.106	0.02	0.744
Total Full-time Equivalents (FTE)	71,642	11,890	2,488	86,020
<b>Labour Costs</b>				
Full-time - Survey data	1,039,139	154,127	..	..
Undercoverage estimate	<u>44,696</u>	<u>9,656</u>	<u>45,941</u>	<u>100,293</u>
Total	1,083,835	163,783	45,941	1,293,559
Part-time - Survey data	88,884	16,238	..	..
Undercoverage estimate	<u>4,456</u>	<u>278</u>	<u>1,253</u>	<u>5,987</u>
Total	93,340	16,516	1,253	111,109
Total Labour Costs	1,177,175	180,299	47,194	1,404,668
Average labour costs (\$) per FTE employee (annualized)	65,983	63,185	76,399	65,890

<sup>1</sup> Other includes: terminal equipment rentals; sale of telecommunications goods; directory services; retail internet access; installations; customer repairs and maintenance.

**TABLE 3. Summary of Telecommunications Industries Analytical Indicators, Second Quarter, 2000**

NAICS industries	51331				51332			
	I	II	III	IV	I	II	III	IV
<b>Financial</b>								
Operating revenue per capita (\$)	192.66	193.04			40	44		
Operating profit (% of operating revenues)	21.6	19.9			(1.9)	3.1		
Average revenue per long distance minute (cents) <sup>1</sup>	11.76	11.65			26.00	22.5		
Capital expenditures per capita (\$)	25.34	34.48			7.99	12.17		
Capital expenditures (% of operating revenues)	13.2	17.9			19.8	27.8		
<b>Employment/Labour</b>								
Industry employment as a % of national industrial employment <sup>2</sup>	0.628	0.617			0.113	0.106		
Revenue per FTE employee (\$)	83,960	82,632			101,091	113,005		
PSTN access paths (VGE) per FTE employee	292	287			589	646		
Average labour costs (\$) per FTE employee (annualized)	66,246	65,983			65,643	63,185		
Labour costs as a % of operating revenues	19.7	19.9			16.2	13.4		
<b>Teledensity (VGE)</b>								
PSTN access paths per 100 inhabitants	67.1	67.1			23.6	25.1		
<b>Traffic<sup>1,3</sup></b>								
Long distance minutes per access path (VGE)	660	658			52	58		
Long distance minutes per capita	425	423			12	15		

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

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

<sup>3</sup> Calculations do not include undercoverage estimates.

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**Wired Telecommunications Carriers  
(NAICS 51331)**

**Tables and Graphs**

**TABLE 4. Wired Telecommunications Carriers (NAICS 51331), Quarterly, 2000**

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %
<b>Operating Revenues</b>										
<b>Telecommunications Operating Revenues</b>										
Carrier services										
Contribution	193,681		199,726						393,407	
Interconnection	499,180		482,791						981,971	
Circuit rentals	14,112		12,963						27,075	
Other	32,948		52,499						85,447	
Total Carrier Services	739,921	(11.3)	747,979	(7.8)					1,487,900	(9.6)
Voice services										
Local telephony	1,704,788	3.2	1,770,934	4.5					3,475,722	3.9
Long distance telephony	1,384,133	(0.2)	1,371,019	(10.8)					2,755,152	(5.8)
Calling features	265,339	17.1	241,383	5.3					506,722	11.2
Connection	91,838	41.1	94,898	29.7					186,736	35.1
Total Voice Services	3,446,098	3.5	3,478,234	(1.6)					6,924,332	0.9
Data and high speed services										
Narrowband packet-switched	223,384		228,728						452,112	
High speed switched <sup>1</sup>	170,289		181,386						351,675	
Total Data and High Speed Services	393,673		410,114						803,787	
Non-switched services (private lines)										
Narrowband	216,350		211,502						427,852	
High speed	27,311		23,446						50,757	
Total Non-switched Services	243,661		234,948						478,609	
<b>Other telecommunications services</b>	353,949		286,494						640,443	
Total	5,177,302	6.6	5,157,769	2.1					10,335,071	4.3
<b>Other Operating Revenues</b>										
Terminal equipment rentals	69,266		72,726						141,992	
Sale of telecommunications goods	106,942		114,210						221,152	
Directory services	53,484		74,633						128,117	
Retail Internet services	55,129		66,501						121,630	
Other services n.e.c.	256,978		255,887						512,865	
Total	541,799	14.0	583,957	(3.0)					1,125,756	4.5
Undercoverage estimate	<u>177,511</u>	...	<u>178,214</u>	...					<u>355,725</u>	...
<b>Total Operating Revenues</b>	<b>5,896,612</b>	<b>8.8</b>	<b>5,919,940</b>	<b>3.0</b>					<b>11,816,552</b>	<b>5.8</b>
<b>Revenue Performance<sup>2</sup> (\$)</b>										
Operating revenue per capita	192.66	7.9	193.04	2.1					385.70	4.9
Voice services revenue per PSTN line	174.78	(0.8)	176.15	(3.7)					350.94	(1.5)
Local revenue per PSTN line	86.47	0.6	89.69	2.3					176.16	1.4
Long distance revenue per PSTN line	70.2	(2.8)	69.43	(12.7)					139.63	(8.0)
Average revenue per long distance minute (cents)	11.76	(22.0)	11.65	(28.7)					12.55	(20.2)
Advanced services ratio <sup>3</sup> (%)	20.2	61.8	19.6	60.4					19.9	61.4

<sup>1</sup> Wideband and broadband circuit- and packet-switched services.<sup>2</sup> Calculations do not include undercoverage estimates, and where applicable are based on voice-grade equivalent (VGE) PSTN lines.<sup>3</sup> Ratio of operating revenues from new services compared to traditional telecommunications services (%).

TABLE 4. Continued...

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %
<b>Operating Expenses</b>										
<b>Telecommunications Operating Expenses</b>										
Carrier services										
Contribution	297,009		310,734						607,743	
Interconnection	586,611		626,831						1,213,442	
Circuit rentals	204,460		228,311						432,771	
Other	<u>149,881</u>		<u>172,145</u>						<u>322,026</u>	
Total Carrier Services	1,237,961	18.3	1,338,021	32.5					2,575,982	25.3
Labour expenses	1,098,225	15.1	1,083,233	11.5					2,181,458	13.3
Depreciation	993,115	0.1	1,014,380	0.9					2,007,495	0.5
Other	<u>986,799</u>		<u>1,003,456</u>						<u>1,990,255</u>	
Total	4,316,100	8.4	4,439,090	3.3					8,755,190	5.8
<b>Other Operating Expenses</b>	166,193	3.2	158,848	(17.6)					325,041	(8.1)
Undercoverage estimate	<u>138,677</u>	...	<u>142,255</u>	...					<u>280,932</u>	...
<b>Total Operating Expenses</b>	<b>4,620,970</b>	<b>9.8</b>	<b>4,740,193</b>	<b>3.9</b>					<b>9,361,163</b>	<b>6.7</b>
<b>Operating Profit</b>	1,275,642	5.4	1,179,747	-0.3					2,455,389	2.5
% of operating revenues	21.6	(3.1)	19.9	(3.4)					20.8	(3.1)
<b>Capital Expenditures</b>										
Survey data	751,982		1,025,386						1,777,368	
Undercoverage estimate	<u>23,495</u>	...	<u>32,037</u>	...					<u>55,532</u>	...
Total Capital Expenditures	775,477	(26.8)	1,057,423	(13.4)					1,832,900	(19.6)
% of operating revenues	13.2	(32.7)	17.9	(15.8)					15.5	(24.0)
Per capita (\$)	25.34	(27.4)	34.48	(14.1)					59.83	(20.3)
<b>Employment (Persons)</b>										
Full-time - Survey data	62,356		63,345						...	
Undercoverage estimate	<u>2,575</u>	...	<u>2,616</u>	...					...	
Total	64,931	(2.4)	65,961	(1.3)					...	
Part-time - Survey data	9,512		10,568						...	
Undercoverage estimate	<u>301</u>	...	<u>334</u>	...					...	
Total	9,813		10,902						...	
Total Employment	74,744		76,863						...	
% of national industrial employment	0.628		0.617						...	
Total Full-time Equivalents (FTE)	70,231		71,642						...	
Revenue (\$) per FTE employee	83,960		82,632						...	
<b>Labour Costs<sup>1</sup></b>										
Full-time - Survey data	1,031,009		1,039,139						2,070,148	
Undercoverage estimate	<u>44,346</u>	...	<u>44,696</u>	...					<u>89,042</u>	...
Total	1,075,355		1,083,835						2,159,190	
Part-time - Survey data	83,586		88,884						172,470	
Undercoverage estimate	<u>4,191</u>	...	<u>4,456</u>	...					<u>8,647</u>	...
Total	87,777		93,340						181,117	...
Total Labour Costs	1,163,132		1,177,175						2,340,307	
Average Labour costs (\$) per FTE employee (annualized)	66,246		65,983						...	

<sup>1</sup> Includes capitalized labour expenditures.

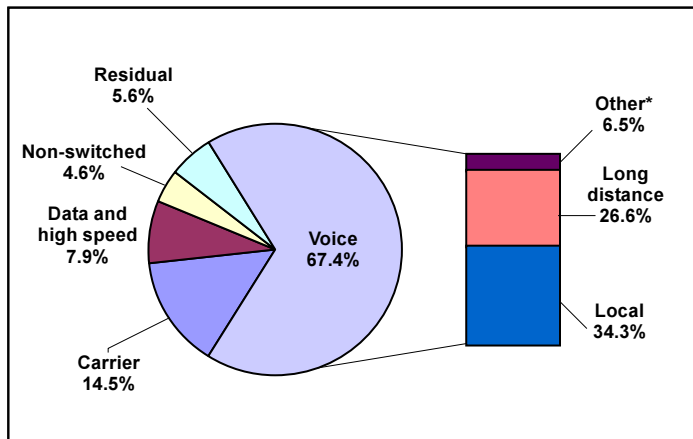
**TABLE 4. continued...**

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %
<b>Network Infrastructure (Access)</b>										
<b>PSTN access lines</b>										
Individual lines (includes PBX)	15,653,807	0.5	15,642,566	0.7						...
Party lines	99,915	(14.7)	97,068	(25.4)						...
ISDN BRA	82,333	13.7	82,835	10.7						...
ISDN PRA	28,393	28.7	29,179	23.5						...
Public telephones	175,940	(1.7)	175,905	(2.4)						...
Centrex	2,386,760	21.1	2,418,629	12.5						...
Other (includes mobile and WATS)	582,259	(18.0)	574,804	(9.0)						...
Undercoverage estimate	<u>816,456</u>	...	<u>816,456</u>	...						...
<b>Total PSTN Access Lines</b>	<b>18,825,863</b>	<b>4.8</b>	<b>19,837,442</b>	<b>4.5</b>						
Residential (%)	66.0		65.8							
Business (%)	34.0		34.2							
<b>Total PSTN Voice-Grade Equivalents (VGE)</b>	<b>20,532,842</b>	<b>5.5</b>	<b>20,562,215</b>	<b>5.0</b>						...
Residential (%)	63.8		63.5							...
Business (%)	36.2		36.5							...
PSTN (VGE) per 100 inhabitants	67.1	4.6	67.1	4.2						...
Residential access lines per 100 households	113		112							...
Business access lines per 100 employed persons <sup>1</sup>	62.5		60.3							...
PSTN access paths (VGE) per FTE employee	292		287							...
<b>Non-PSTN lines</b>										
Digital - Survey data	93,566		91,994							...
Analogue - Survey data	26,789		22,488							...
<b>Total Non-PSTN Lines</b>	<b>120,355</b>		<b>114,482</b>							...
<b>Traffic Statistics (Thousands of Minutes)</b>										
Long distance traffic										
Outbound calls	10,195,022		10,190,607						20,385,629	
Toll-free Calls	1,571,616		1,574,328						3,145,944	
Inbound calls to Canada	<u>1,244,560</u>		<u>1,223,718</u>						<u>2,468,278</u>	
Total Long Distance	13,011,198	30.4	12,988,653	27.2					25,999,851	28.8
<b>Traffic Performance (Minutes)<sup>2</sup></b>										
Long distance traffic										
<b>Outbound Calls</b>										
Per access line (VGE)	517		516						1,033	
Per capita	333		332						665	
<b>Toll-Free Calls</b>										
Per access line (VGE)	80		80						160	
Per capita	51		51						102	
<b>Inbound Calls to Canada</b>										
Per access line (VGE)	63		62						125	
Per capita	41		40						81	
<b>Total Long Distance</b>										
Per access line (VGE)	660	27.1	658	24.5					1318	25.8
Per capita	425	29.3	423	26.0					848	27.7

<sup>1</sup> Employed persons from SEPH estimate of national industrial employment.

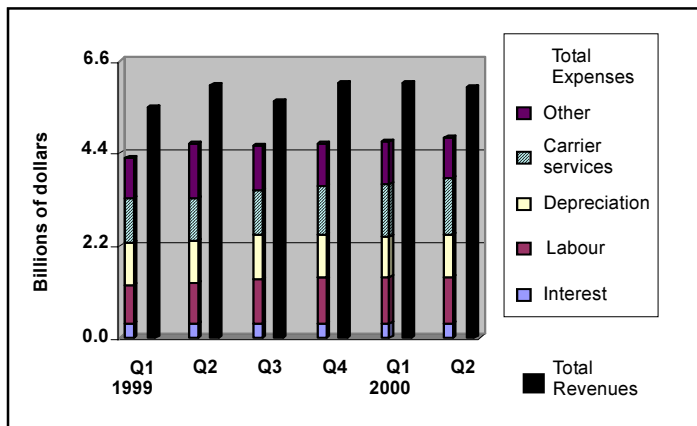
<sup>2</sup> Calculations do not include undercoverage estimates.



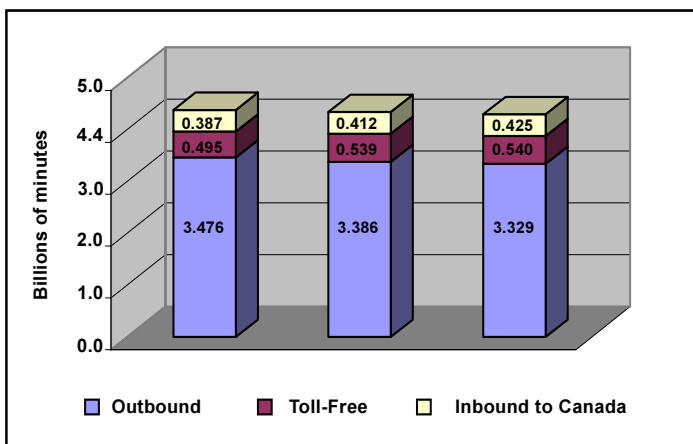


\* Calling features and connection charges.

**Figure 4.**  
Wired telecommunications operating revenue shares  
(Revenues \$ 5.2 billion)



**Figure 5.**  
Total revenues (operating and non-operating) continued to exceed total expenses in the wireline industry.  
The difference between total revenues and total expenses represents net income before taxes.



**Figure 6.**  
Monthly wireline long distance minutes, second quarter 2000  
Total outbound minutes 10.2 billion  
Total toll-free minutes 1.6 billion  
Total inbound to Canada minutes 1.2 billion

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**Wireless Telecommunications Carriers  
(NAICS 51332)**

**Tables and Graphs**

**TABLE 5. Wireless Telecommunications Carriers (NAICS 51332), Quarterly, 2000**

Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %
<b>Operating Revenues</b>										
<b>Telecommunications Operating Revenues</b>										
Carrier services	85,158		104,004						189,162	
Local telephony										
Fixed (recurrent services)	527,831		553,836						1,081,667	
Air time (measured services)	227,081		259,004						486,085	
Other local telephony	<u>54,776</u>		<u>58,631</u>						<u>113,407</u>	
Total Local Telephony	809,688	16.6	871,471	15.4					1,681,159	15.9
Long distance telephony										
Air time	92,203		95,216						187,419	
Other long distance telephony	<u>4,873</u>		<u>4,720</u>						<u>9,593</u>	
Total - Long Distance Telephony	97,076	15.8	99,936	11.5					197,012	13.6
Messaging - Paging	52,247		44,232						96,479	
Dispatch services (RCC)	12,756		16,214						28,970	
Total	1,132,988	23.4	1,218,533	19.6					2,351,521	21.4
<b>Other Operating Revenues</b>	68,316	(42.0)	86,271	25.2					154,587	(17.2)
Undercoverage estimate	<u>35,744</u>	...	<u>38,823</u>	...					<u>74,567</u>	...
<b>Total Operating Revenues</b>	<b>1,237,048</b>	<b>16.8</b>	<b>1,343,627</b>	<b>20.8</b>					<b>25,806,755</b>	<b>18.8</b>
<b>Revenue Performance (\$)¹</b>										
Operating revenue per capita	40.00	15.8	44.00	20.3					84.00	17.5
Local revenue per subscriber	112.81	(9.2)	113.95	(10.1)					226.76	(9.7)
Average revenue per local minute (cents)	21.9	(27.2)	20.08	(22.5)					20.9	(24.7)
Long distance revenue per subscriber	13.53	(9.8)	13.07	(13.1)					26.6	(11.5)
Average revenue per long distance minute (cents)	26.00	(23.3)	22.5	(22.5)					24.1	(22.8)
Paging revenue per subscriber	37.56	0.3	31.53	(14.8)					69.09	(7.2)
<b>Operating Expenses</b>										
<b>Telecommunications Operating Expenses</b>										
Carrier services	97,184		103,189						200,373	
Labour expenses	182,553		176,495						359,048	
Depreciation	280,379		288,773						569,152	
Other telecommunications expenses	<u>581,002</u>		<u>600,000</u>						<u>1,181,002</u>	
Total	1,141,118	29.9	1,168,457	15.0					2,309,575	21.9
<b>Other Operating Expenses</b>	83,827	(37.5)	96,009	9.2					179,836	(19.0)
Undercoverage estimate	<u>35,710</u>	...	<u>36,862</u>	...					<u>72,572</u>	...
<b>Total Operating Expenses</b>	<b>1,260,655</b>	<b>21.9</b>	<b>1,301,328</b>	<b>15.4</b>					<b>2,561,983</b>	<b>18.5</b>
<b>Operating Profit</b>	<b>(23,607)</b>	<b>(194.2)</b>	<b>42,299</b>	<b>375.4</b>					<b>18,692</b>	<b>92.6</b>
% of operating revenues	(1.9)	(179.2)	3.1	321.4					0.7	62.0
<b>Capital Expenditures (\$000)</b>										
Survey data	239,727		365,885						605,612	
Undercoverage estimate	<u>4,874</u>	...	<u>7,439</u>	...					<u>12,313</u>	...
Total Capital Expenditures	244,601	2.3	373,324	10.1					617,925	6.9
% of operating revenues	19.8	(12.4)	27.8	(8.8)					23.9	(10.1)
Per subscriber (\$)	33.91	(20.3)	48.58	(14.2)					82.49	(16.8)
Per capita (\$)	7.99	1.4	12.17	9.1					20.16	5.9

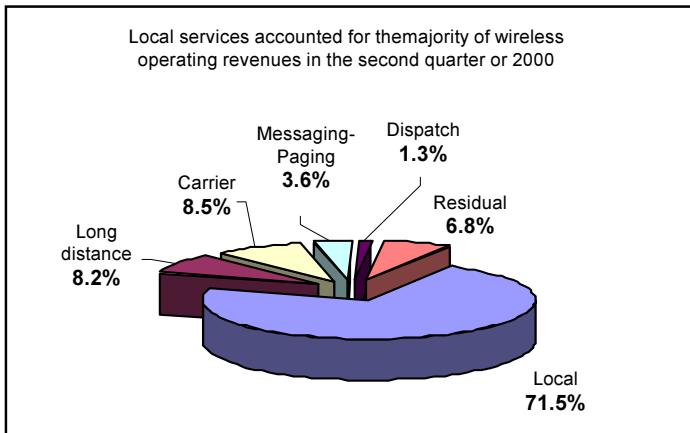
¹ Calculations do not include undercoverage estimates.

**TABLE 5. continued...**

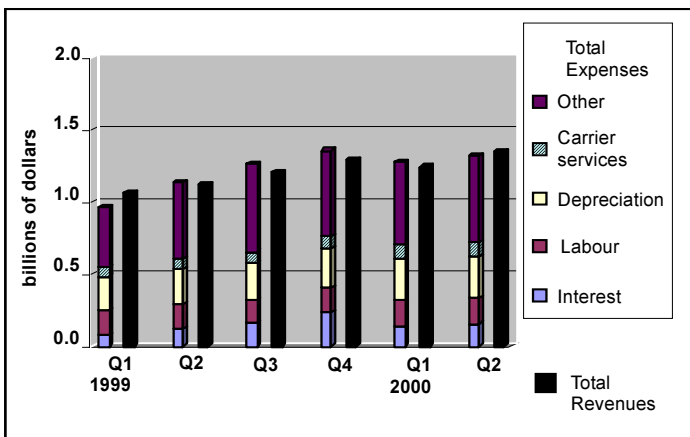
Wireless Telecommunications (NAICS 51332)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %	\$000	00/99 %
<b>Employment (Persons)</b>										
Full-time - Survey data	10,481		10,302							...
Undercoverage estimate	<u>508</u>	...	<u>499</u>	...						...
Total	10,989	5.5	10,801	8.7						...
Part-time - Survey data	2,483		2,388							...
Undercoverage estimate	<u>16</u>	...	<u>15</u>	...						...
Total	2,499		2,403							...
Total Employment	13,488		13,204							...
% of national industrial employment	0.113		0.106							...
Total Full-time Equivalents (FTE)	12,237		11,890							...
Revenue (\$) per FTE employee	101,091		113,005							...
<b>Labour Costs (\$000)<sup>1</sup></b>										
Full-time - Survey data	169,712		154,127							323,839
Undercoverage estimate	<u>10,633</u>	...	<u>9,656</u>	...						<u>20,289</u>
Total	180,345		163,783							344,128
Part-time - Survey data	20,130		16,238							36,368
Undercoverage estimate	<u>344</u>	...	<u>278</u>	...						<u>622</u>
Total	20,474		16,516							36,990
Total Labour Costs	200,819		180,299							381,118
Average Labour costs (\$) per FTE employee (annualized)	65,643		63,185							...
<b>Network Infrastructure (Access)</b>										
Mobile subscribers										
Digital - Survey data	2,915,954		3,349,523							...
Undercoverage estimate	<u>10,124</u>	...	<u>10,124</u>	...						...
Total	2,926,078	78.5	3,359,647	76.9						...
Analogue - Survey data	4,261,328		4,298,577							...
Undercoverage estimate	<u>26,122</u>	...	<u>26,122</u>	...						...
Total	4,287,450	7.7	4,324,699	5.7						...
<b>Total MobileTelephony</b>	<b>7,213,528</b>	<b>28.3</b>	<b>7,684,346</b>	<b>28.3</b>						...
Mobile telephony penetration per 100 inhabitants	23.6	27.2	25.1	27.4						...
PSTN access paths per FTE employee	589		646							...
<b>Paging Subscribers</b>										
Paging - Survey data	1,390,851		1,403,073							...
Undercoverage estimate	<u>388,833</u>	...	<u>388,833</u>	...						...
<b>Total Paging</b>	<b>1,779,684</b>	<b>30</b>	<b>1,791,906</b>	<b>27.7</b>						...
Paging penetration per 100 inhabitants	5.8	28.9	5.8	25.7						...
<b>Traffic Statistics (Thousands of Minutes)</b>										
Billed minutes										
Local	3,697,485		4,340,381							8,037,866
Long distance	373,030		444,793							817,823
Total Billed Minutes	4,070,515	52.5	4,785,174	42.3						8,855,689 46.8
<b>Traffic Performance (Minutes)<sup>2</sup></b>										
Local minutes per subscriber	515	24.7	568	16.1						1,083 19.7
Long distance minutes per subscriber	52	17.5	58	11.9						110 14.5
Billed minutes per subscriber	567	18.8	626	10.9						1,193 14.5

<sup>1</sup> Includes capitalized labour expenditures.

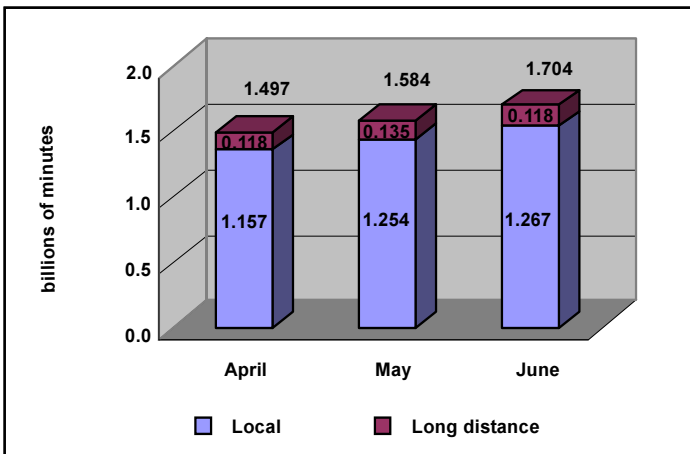
<sup>2</sup> Calculation does not include undercoverage estimate.



**Figure 7.**  
Wireless telecommunications operating revenue shares  
(Revenues \$1.2 billion)



**Figure 8.**  
Total wireless revenues exceeded total expenses (operating and non-operating) by \$42 million in the second quarter of 2000.



**Figure 9.**  
Monthly wireless billed minutes, second quarter 2000.  
Wireless billed minutes increased to 4.8 billion in the second quarter of 2000, an increase of 42.3% from second quarter last year. The majority of these were local minutes (4.3 billion)

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

**Undercoverage Estimates**

**TABLE 6. Undercoverage Estimates-Telecommunications Carriers (NAICS 51333, 51334, 51339), Quarterly 2000**

Resellers, Satellite, and Other Telecommunications (NAICS 51333, 51334, 51339)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year to date
	millions of dollars				
<b>Financial Indicators</b>					
Operating revenues	274,746	279,753			554,499
Operating expenses	265,489	272,707			538,196
Operating profit margin	9,257	7,046			16,303
% of operating revenues	3.4	2.5			2.9
<b>Employment (persons)</b>					
Full-time	2,427	2,454			...
Part-time	<u>76</u>	<u>82</u>			...
Total Employment	2,503	2,536			...
% of national industrial employment	0.021	0.02			...
Total Full-time Equivalents (FTE)	2,468	2,488			...
<b>Labour Costs</b>					
Full-time	46,228	45,941			92,169
Part-time	<u>1,236</u>	<u>1,253</u>			<u>2,489</u>
Total Labour Costs	47,464	47,194			94,658
Average Labour costs (\$) per FTE employee (annualized)	76, 927	76,399			...

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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). Telecommunications service providers are classified to one of the five NAICS telecommunications industries (Wired, Wireless, Resellers, Satellite and Other<sup>1</sup>).

### Industrial Classification

The North American Industry Classification System (NAICS) was 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, to reflect the industrial structure of the North American economy for reference year 1997. 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 97.0% 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 of lines are in use, or in the case of rebillers, the actual 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.

<sup>1</sup> 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.

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).

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.

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.

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 2000 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 (1998), taking into consideration buy-outs, mergers and consolidations since 1998, and applying these ratios to the current quarterly data. The table below indicates coverage rates for operating revenues with respect to each NAICS industry. The undercoverage rate is simply the difference between the coverage rate and 100%. Undercoverage rates for other variables are very similar to the rates presented here.

**Table A - Coverage rates for Operating Revenues**

NAICS	Coverage (%)	Undercoverage (%)	Total (%)
51331	96.9	3.1	100.0
51332	97.1	2.9	100.0
51333,4,9	-	100.0	100.0
5133	93.4	6.6	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 1999 annual data is processed (Spring of 2001), 1999 quarterly estimates will be adjusted to reflect the final 1999 compilations. Once updated by the annual data, historical quarterly series will therefore be directly comparable to published annual series. In addition, the assumptions for calculating quarterly undercoverage rates will be reviewed once the 1999 annual data has been processed, since 1999 will be the first year for which there is annual and quarterly data.

## 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 2000 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 becomes 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.

For further information, or to enquire about the concepts, methods and data quality, please contact: Heidi Ertl (613) 951-1891, Haig McCarrell (613) 951- 5948 or Jo Anne Lambert (613) 951-6673, Science, Innovation and Electronic Information Division.

### **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).

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

**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.

**Average revenue per long distance minute.** Long distance operating revenues divided by long distance outbound minutes (including toll-free).

**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.

**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).

**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).

**Calls/messages, Incoming/Inbound.** Calls/messages from either the United States or overseas (foreign countries other than the United States) and terminating in Canada.

**Capital expenditures per subscriber.** Dollar amount of wireless capital expenditures for every wireless subscriber.

**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.

**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.

**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.

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

**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.

**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.

**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.

**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.).

**Employee.** Any person drawing pay for services rendered or for paid absences and for whom an employer must complete a Revenue Canada 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.

**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.

**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.

**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.

**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.

**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**.

**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).

**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.

**Labour costs.** The total remuneration paid to employees before deductions (the equivalent to the taxable employment income reported in Box 14 of the employees Revenue Canada 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.

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

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

**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.

**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.

**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.

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

**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.

**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.

**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.

**Operating profit.** Total operating revenues less total operating expenses.

**Operating revenue per capita.** Industry operating revenue per person based on the quarterly population estimate.

**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.

**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.

**Paging revenue per subscriber.** Paging revenues per paging subscribers (does not include undercoverage estimate).

**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.

**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.

**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 provider's premises.

**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.

**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.

**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.

**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.

**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.

**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).

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

**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).

**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.

**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).

**Revenue per FTE employee.** Total operating revenues per full-time equivalent employee.

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

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

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

**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.

**Telecommunications.** Any transmission, emission or reception of signs, signals writing images, sounds or intelligence of any nature, by wire, radio, visual or other electromagnetic system.

**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.

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

**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.

**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.

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

**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.

**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.

**Voice services.** Services generally associated with voice communication, narrowband or voice-grade communication, including voice telephony, fax, PSTN access, etc.

**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.

**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.



**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.

**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.

**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.