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HIGHLIGHTS

- ▶ Operating revenues for the telecommunications industry were \$7.88 billion in the third quarter of 2000, a 9.8% increase from third quarter, 1999.
- ▶ Operating profit totalled \$1.24 billion in the third quarter, 15.7% of operating revenues and 8.6% above last year.
- ▶ Capital expenditures were \$1.65 billion this quarter (\$1.15 billion in the wireline industry and \$504 million in the wireless industry). This is 18.8% and 34.5% of wireline and wireless operating revenues respectively.
- ▶ Per capita wireline investment this quarter was \$37.36, while wireless capital expenditures amounted to \$16.40 per capita and \$62.60 for each mobile subscriber.
- ▶ The telecommunications industry employed 91,834 persons this quarter; 79,339 in full-time positions and 12,495 in part-time positions.
- ▶ Full-time employment increased 2.0% from the third quarter of last year. This entailed a gain of 768 full-time employees in the wireline industry, while 1,069 full-time positions were added to the wireless industry over the same period.
- ▶ Just over 28.7 million voice-grade access paths were connected to the public-switched telephone network (PSTN), comprising 20.7 million public access lines and 8.1 million mobile telephone subscribers.
- ▶ Most of the recent growth in PSTN access has come from wireless or mobile services, which increased 26.9% this quarter, from the third quarter of 1999.

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Symbols

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- .. 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 steady growth in gross **operating revenues**, reaching \$7.88 billion in the third quarter of 2000 – an increase of 9.8% from third quarter, 1999. Wireline telecommunications services accounted for 77.7% of total industry operating revenues, while wireless, resellers, satellite, and other services accounted for 22.3% of the third quarter industry total (Figure 1).

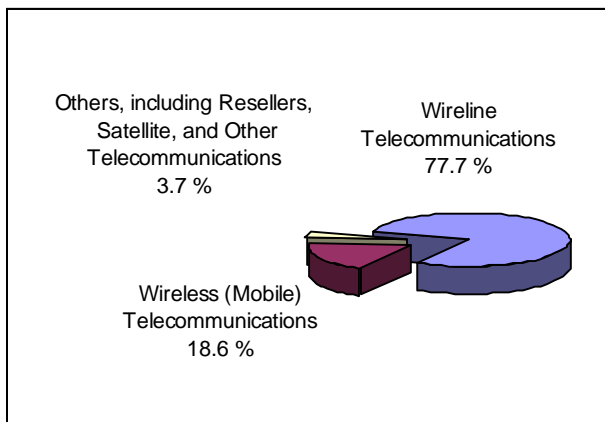
Local services (\$1.80 billion) continued to represent the largest share (29.4%) of total quarterly **wireline operating revenues** (\$6.13 billion), followed by long distance services and carrier services. They were \$1.40 billion (22.8%) and \$774 million (12.6%), respectively, of the total reported.

Operating revenues in the wireless industry were \$1.46 billion this quarter, up 21.2% from last year and 8.1% 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 operating revenues (63.4%, \$927 million). Local revenues have shown real strength for the mobile carriers, increasing 16.2% this quarter and 15.4% last quarter from their respective quarters last year.

Operating profit totalled \$1.24 billion in the third quarter, or 15.7% of operating revenues. Returns varied widely, however, depending on the telecommunications industry. The operating profit for wireline carriers was about 19 cents on each revenue dollar, compared to only 3.5 cents on each revenue dollar for the wireless carriers. The wireless industry has reported two quarters of operating profits after four consecutive quarters of losses. Lower profit levels in the wireless industry undoubtedly reflect the 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 nearly 2 cents for each dollar earned this quarter.

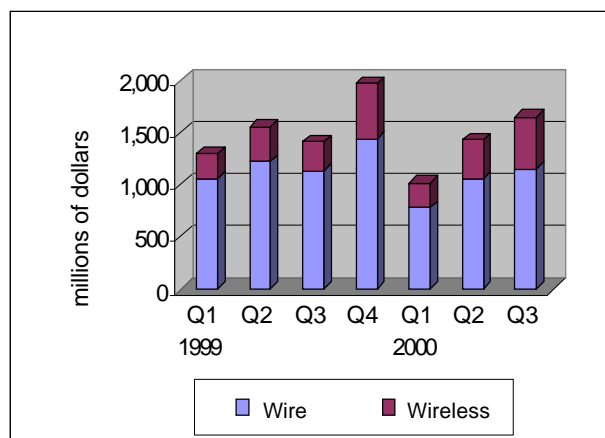
The telecommunications industry’s on-going demand for high-technology, capital-intensive applications can be seen in this quarter’s strong **capital expenditures**. The wireline and wireless industries had capital outlays of over \$1.15 billion and \$504 million, respectively, representing 18.8% and 34.5% of third quarter operating revenues (Figure 2). Total capital expenditures have increased by 17.2% from third quarter last year (\$1.65 billion compared to \$1.43 billion). Capital expenditures have grown by a remarkable 62.0% since the first quarter of this year.

Figure 1.
The wireless, satellite and reseller industries generated 22.3% of total operating revenues
(Revenues \$7.88 billion)



Source: Quarterly Telecommunications Statistics, 3rd Quarter, 2000.

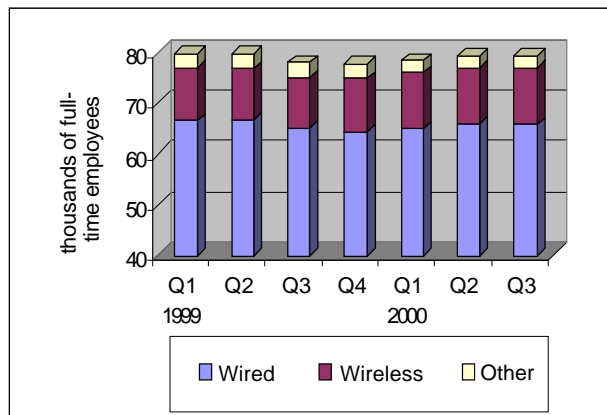
Figure 2.
Capital expenditures in the wired and wireless industries dropped substantially in the first quarter of 2000, but have been expanding in the second and third quarters
(Capital expenditures \$1.65 billion)



Source: Quarterly Telecommunications Statistics, 3rd Quarter, 2000.

There were 79,339 **full-time employees** this quarter, a 0.2% increase from the second quarter, and a 2.0% increase from the third quarter of 1999 (a gain of 1,490 full-time employees) (Figure 3). Full-time employment has been expanding this year, but until now was below its 1999 levels. Since the third quarter last year, 768 full-time positions were added to the wireline industry, while the wireless industry gained 1,069 full-time employees. Counter to this trend, the 'other' telecommunications industries lost 347 full-time employees over the same period. **Average annual labour costs** (wages, salaries and benefits) per employee (full-time equivalent) were up marginally from last quarter for the wireline industry (\$66,409) and down \$99 on average in the wireless industry (\$63,086).

Figure 3.
Full-time employment in the telecommunications industries has expanded by 2.0% since third quarter, 1999



Source: Quarterly Telecommunications Statistics, 3rd Quarter, 2000.

Public-switched telephone network (PSTN) **wireline access** reached just over 19.9 million lines at the end of the third quarter, an increase of 4.2% from last year's level. 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 just over 20.7 million lines, a 4.6% 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.

Text Table 1. PSTN Network Infrastructure - Wired Access

PSTN Access	Third Quarter, 2000		
	Residential	Business	Total
Wired Access Lines (NAICS 51331)			
Individual lines	12,558,284	3,190,100	15,748,384
Party lines	91,006	1,524	92,530
ISDN BRA	264	82,779	83,043
ISDN PRA	...	30,930	30,930
Public telephones	...	174,480	174,480
Centrex	...	2,468,379	2,468,379
Other	-	562,177	562,177
Undercoverage estimate	528,613	287,843	816,456
Total Wired Access Lines	13,178,167 (66.0%)	6,798,212 (34.0%)	19,976,379 (100%)
Total voice-grade equivalents	13,178,431 (63.5%)	7,561,451 (36.5%)	20,739,882 (100%)

Source: Quarterly Telecommunications Statistics, 3rd Quarter, 2000.

Third quarter mobile telephony subscribers were up 26.9% from last year and increased by 4.8% over last quarter. At quarter end, there were nearly 8.1 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 46.6% of wireless access was digital, representing nearly 3.8 million mobile subscribers (Text Table 2).

Teledensity measures the penetration of telecommunications services in a given population. For the wireline and wireless industries, there were 67.4 and 26.2 access paths (VGE) per 100 inhabitants, respectively. Total teledensity per 100 inhabitants was 93.6 in the third quarter, up an impressive 9.1% from last year's third quarter figure (Text Table 3).

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 third quarter, a 25.6% increase over the third quarter of last year.

Long distance **traffic** is nearly completely undertaken via wireline access, which stood at 12.4 billion minutes this quarter. About 10.9% 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 third quarter of 1999 (33.8%) to over 4.8 billion.

Text Table 2. PSTN Network Infrastructure - Mobile

PSTN Access	Third Quarter, 2000
Mobile Access (NAICS 51332)	
Digital	3,753,640
Analogue	4,301,374
Total Mobile Access	8,055,014

Source: Quarterly Telecommunications Statistics, 3rd Quarter, 2000.

Text Table 3. PSTN Network Infrastructure - Total Access

Teledensity	
Total PSTN Access	28,031,393
Total PSTN Access (VGE)	28,794,896
Wired access (VGE) per 100 inhabitants	67.4
Wireless access (VGE) per 100 inhabitants	26.2
Total PSTN (VGE) per 100 inhabitants	93.6

Source: Quarterly Telecommunications Statistics, 3rd Quarter, 2000.

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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 %
Financial indicators (\$000)										
Operating revenues	7,408,406	9.3	7,552,131	5.3	7,880,129	9.8			22,840,666	8.0
Operating expenses	6,147,115	10.5	6,314,229	4.6	6,643,571	10.0			19,104,914	8.2
Operating profit	1,261,291	4.0	1,237,903	9.1	1,236,558	8.6			3,735,752	7.2
% of operating revenues	17.0	(4.8)	16.4	3.6	15.7	(1.0)			16.4	(0.8)
Capital expenditures ¹	1,020,078	(21.4)	1,430,747	(8.3)	1,653,036	17.2			4,103,862	(1.6)
Employment (persons)										
Full-time	78,347	(1.8)	79,216	(0.4)	79,339	2.0			...	...
Part-time	<u>12,387</u>		<u>13,387</u>		<u>12,495</u>				...	...
Total Employment	90,734		92,603		91,834				...	...
% of national industrial employment ²	0.762		0.744		0.739				...	...
Total Full-time equivalents (FTE)	84,936		86,020		86,310				...	...
Labour costs										
Total Labour costs (\$000)	1,411,415		1,404,668		1,444,250				4,260,333	
Average Labour costs (\$) per FTE employee (annualized)	66,470		65,890		66,326				...	
PSTN access paths (fixed and mobile)										
Total fixed lines and mobile subscribers	27,039,391	10.2	27,521,788	10.2	28,031,393	9.8			...	...
Total voice-grade equivalents (VGE)	27,746,370	10.6	28,246,561	10.5	28,794,896	10.0			...	...
Teledensity (VGE per 100 inhabitants)	90.7	9.7	92.2	9.4	93.6	9.1			...	...

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-XPB.

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

NAICS industries	51331	51332	51333, 4, 9	5133
thousands of dollars				
Operating revenues				
Telecommunications operating revenues	5,177,302	1,132,988	..	..
Other operating revenues ¹	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
Operating expenses				
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>439,877</u>
Total operating expenses	4,620,970	1,260,655	265,489	6,147,115
% of total industry	75.2	20.5	4.3	100.0
Operating profit				
	1,275,642	(23,607)	9,256	1,261,291
% of operating revenues	21.6	(1.9)	3.4	17.0
Non-operating revenues and expenses (survey units only)				
Non-operating revenues	190,508	5,488	..	..
Non-operating expenses				
Interest expenses	341,445	143,383	..	..
Other	<u>26,848</u>	<u>1,620</u>	..	..
Total Non-operating expenses	368,293	145,003	..	..
Net income before taxes				
	1,097,857	(163,122)	..	..
Capital expenditures				
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	..	..
Employment (persons)				
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>392</u>
Total Part-time	9,813	2,499	76	12,387
Total Employment	74,744	13,488	2,503	90,734
% 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
Labour costs				
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

¹ 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				
Operating revenues				
Telecommunications operating revenues	5,157,769	1,226,772	..	..
Other operating revenues ¹	583,957	86,271	..	..
Undercoverage estimate	<u>178,214</u>	<u>39,069</u>	<u>280,080</u>	<u>497,362</u>
Total operating revenues	5,919,940	1,352,112	280,080	7,552,131
% of total industry	78.4	17.9	3.7	100.0
Operating expenses				
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>451,825</u>
Total operating expenses	4,740,193	1,301,328	272,707	6,314,229
% of total industry	75.1	20.6	4.3	100.0
Operating profit				
	1,179,747	50,783	7,373	1,237,903
% of operating revenues	19.9	3.8	2.6	16.4
Non-operating revenues and expenses (survey units only)				
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	..	..
Net income before taxes				
	848,415	(108,455)	..	..
Capital expenditures				
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	27.6	..	..
Employment (persons)				
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	0.021	0.744
Total Full-time equivalents (FTE)	71,642	11,890	2,488	86,020
Labour costs				
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

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

TABLE 2C. Telecommunications Industries Summary, Third Quarter, 2000

NAICS industries	51331	51332	51333, 4, 9	5133
thousands of dollars				
Operating revenues				
Telecommunications operating revenues	5,339,501	1,335,898	..	..
Other operating revenues ¹	602,152	83,674	..	..
Undercoverage estimate	<u>184,419</u>	<u>42,238</u>	<u>292,247</u>	<u>518,904</u>
Total operating revenues	6,126,072	1,461,810	292,247	7,880,129
% of total industry	77.7	18.6	3.7	100.0
Operating expenses				
Telecommunications operating expenses	4,624,327	1,270,619	..	..
Other operating expenses	173,422	99,878	..	..
Undercoverage estimate	<u>148,437</u>	<u>39,953</u>	<u>286,934</u>	<u>475,325</u>
Total operating expenses	4,946,186	1,410,450	286,934	6,643,571
% of total industry	74.5	21.2	4.3	100.0
Operating profit				
	1,179,886	51,360	5,312	1,236,558
% of operating revenues	19.3	3.5	1.8	15.7
Non-operating revenues and expenses (survey units only)				
Non-operating revenues	112,543	(13,218)	..	..
Non-operating expenses				
Interest expenses	384,333	160,238	..	..
Other	<u>56,503</u>	<u>7,221</u>	..	..
Total Non-operating expenses	440,836	167,459	..	..
Net income before taxes				
	851,593	(129,317)	..	..
Capital expenditures				
Survey data	1,113,875	494,309	..	..
Undercoverage estimate	<u>34,802</u>	<u>10,051</u>	..	..
Total Capital expenditures	1,148,677	504,360	..	..
% of operating revenues	18.8	34.5	..	..
Employment (persons)				
Full-time - Survey data	63,138	10,622	..	..
Undercoverage estimate	<u>2,607</u>	<u>514</u>	<u>2,458</u>	<u>5,579</u>
Total Full-time	65,745	11,136	2,458	79,339
Part-time - Survey data	9,871	2,221	..	..
Undercoverage estimate	<u>312</u>	<u>14</u>	<u>77</u>	<u>403</u>
Total Part-time	10,183	2,235	77	12,495
Total Employment	75,928	13,371	2,535	91,834
% of national industrial employment	0.611	0.108	0.020	0.739
Total Full-time equivalents (FTE)	71,611	12,199	2,500	86,310
Labour costs				
Full-time - Survey data	1,059,782	164,762	..	..
Undercoverage estimate	<u>45,584</u>	<u>10,322</u>	<u>47,145</u>	<u>103,051</u>
Total	1,105,366	175,084	47,145	1,327,595
Part-time - Survey data	93,914	16,436	..	..
Undercoverage estimate	<u>4,709</u>	<u>281</u>	<u>1,315</u>	<u>6,305</u>
Total	98,623	16,717	1,315	116,655
Total Labour costs	1,203,989	191,801	48,460	1,444,250
Average Labour costs (\$) per FTE employee (annualized)	66,409	63,086	76,780	66,326

¹ 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, Third Quarter, 2000

NAICS industries	51331				51332			
	I	II	III	IV	I	II	III	IV
Financial								
Operating revenue per capita (\$)	192.66	193.04	199.22		40.42	44.00	47.50	
Operating profit (% of operating revenues)	21.6	19.9	19.3		(1.9)	3.8	3.5	
Average revenue per long distance minute (cents) ¹	11.64	11.50	12.60		26.00	22.50	19.60	
Capital expenditures per capita (\$)	25.34	34.48	37.36		7.99	12.17	16.40	
Capital expenditures (% of operating revenues)	13.2	17.9	18.8		19.8	27.6	34.5	
Employment/Labour								
Industry employment as a % of national industrial employment ²	0.628	0.617	0.611		0.113	0.106	0.108	
Revenue per FTE employee (\$)	83,960	82,633	85,547		101,094	113,717	119,828	
PSTN access paths per FTE employee	292	287	290		589	646	660	
Average Labour costs (\$) per FTE employee (annualized)	66,246	65,983	66,409		65,643	63,185	63,086	
Labour costs as a % of operating revenues	19.7	19.9	19.7		16.2	13.3	13.1	
Teledensity (VGE)								
PSTN access paths per 100 inhabitants	67.1	67.1	67.4		23.6	25.1	26.2	
Traffic^{1,3}								
Long distance minutes per access path (VGE)	666	666	624		52	58	73	
Long distance minutes per capita	429	428	405		12	15	19	

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-XPB.

³ Calculations do not include undercoverage estimates.

**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 %
Operating revenues										
Telecommunications Operating revenues										
Carrier services										
Contribution	193,681		199,726		225,607				619,014	
Interconnection	499,180		482,791		468,911				1,450,882	
Circuit rentals	14,112		12,963		14,037				41,112	
Other	<u>32,948</u>		<u>52,499</u>		<u>65,866</u>				<u>151,313</u>	
Total Carrier services	739,921	(11.3)	747,979	(7.8)	774,421	2.0			2,262,321	(5.9)
Voice services										
Local telephony	1,704,788	3.2	1,770,934	4.5	1,803,744	6.9			5,279,466	4.9
Long distance telephony	1,384,133	(0.2)	1,371,019	(10.8)	1,395,178	(4.8)			4,150,330	(5.5)
Calling features	265,339	17.1	241,383	5.3	243,719	1.9			750,441	8.0
Connection	<u>91,838</u>	41.1	<u>94,898</u>	29.7	<u>109,220</u>	(0.3)			<u>295,956</u>	19.4
Total Voice services	3,446,098	3.5	3,478,234	(1.6)	3,551,861	1.4			10,476,193	1.1
Data and high speed services										
Narrowband packet-switched	223,384		228,728		231,340				683,452	
High speed switched ¹	<u>170,289</u>		<u>181,386</u>		<u>202,366</u>				<u>554,041</u>	
Total Data and high speed services	393,673		410,114		433,706				1,237,493	
Non-switched services (private lines)										
Narrowband	216,350		211,502		228,544				656,396	
High speed	<u>27,311</u>		<u>23,446</u>		<u>27,632</u>				<u>78,389</u>	
Total Non-switched services	243,661		234,948		256,176				734,785	
Other telecommunications services	<u>353,949</u>		<u>286,494</u>		<u>323,337</u>				<u>963,780</u>	
Total	5,177,302	6.6	5,157,769	2.1	5,339,501	7.0			15,674,572	(5.2)
Other Operating revenues										
Terminal equipment rentals	69,266		72,726		68,979				210,971	
Sale of telecommunications goods	106,942		114,210		104,611				325,763	
Directory services	53,484		74,633		71,930				200,047	
Retail Internet services	55,129		66,501		77,004				198,634	
Other services n.e.c.	<u>256,978</u>		<u>255,887</u>		<u>279,628</u>				<u>792,493</u>	
Total	541,799	14.0	583,957	(3.0)	602,152	4.3			1,727,908	4.4
Undercoverage estimate	<u>177,511</u>	...	<u>178,214</u>	...	<u>184,419</u>	...			<u>540,144</u>	...
Total Operating revenues	5,896,612	8.8	5,919,940	3.0	6,126,072	8.3			17,942,624	6.6
Revenue performance² (\$)										
Operating revenue per capita	192.66	7.9	193.04	2.1	199.22	7.4			584.92	5.7
Voice services revenue per PSTN line	174.78	0.8	176.15	(3.7)	178.28	(0.9)			529.21	(1.1)
Local revenue per PSTN line	86.47	0.6	89.69	2.3	90.53	6.3			266.69	2.6
Long distance revenue per PSTN line	70.2	(2.8)	69.43	(12.7)	70.03	(5.3)			209.66	(7.5)
Average revenue per long distance minute(cents)	11.64	(22.8)	11.50	(29.6)	12.60	(12.5)			11.90	(22.0)
Advanced services ratio ³ (%)	20.2	61.8	19.6	60.4	19.9	48.5			19.9	56.7

¹ Wideband and broadband circuit- and packet-switched services.² Calculations do not include undercoverage estimates, and where applicable are based on voice-grade equivalent (VGE) PSTN lines.³ 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 %
Operating expenses										
Telecommunications Operating expenses										
Carrier services										
Contribution	297,009		310,734		306,201				913,944	
Interconnection	586,611		626,831		716,125				1,929,567	
Circuit rentals	204,460		228,311		243,460				676,231	
Other	<u>149,881</u>		<u>172,145</u>		<u>177,839</u>				<u>499,865</u>	
Total - Carrier services	1,237,961	18.3	1,338,021	32.5	1,443,625	35.5			4,019,607	28.8
Labour expenses	1,098,225	15.1	1,083,233	11.5	1,108,934	4.0			3,290,392	10.0
Depreciation	993,115	0.1	1,014,380	0.9	1,026,000	(1.2)			3,033,495	(0.1)
Other	<u>986,799</u>		<u>1,003,456</u>		<u>1,045,768</u>				3,036,023	
Total	4,316,100	8.4	4,439,090	3.3	4,624,327	9.2			13,379,517	6.9
Other Operating expenses	166,193	3.2	158,848	(17.6)	173,422	(2.1)			498,463	(6.1)
Undercoverage estimate	<u>138,677</u>	...	<u>142,255</u>	...	<u>148,437</u>	...			<u>429,370</u>	...
Total Operating expenses	4,620,970	9.8	4,740,193	3.9	4,946,186	10.3			14,307,350	7.9
Operating profit	1,275,642	5.4	1,179,747	(0.3)	1,179,886	0.6			3,635,275	1.9
% of operating revenues	21.6	(3.1)	19.9	(3.4)	19.3	(7.1)			20.3	(4.5)
Capital expenditures										
Survey data	751,982		1,025,386		1,113,875				2,891,243	
Undercoverage estimate	<u>23,495</u>	...	<u>32,037</u>	...	<u>34,802</u>	...			<u>90,334</u>	...
Total Capital expenditures	775,477	(26.8)	1,057,423	(13.4)	1,148,677	1.3			2,981,577	(12.7)
% of operating revenues	13.2	(32.7)	17.9	(15.8)	18.8	(6.5)			16.6	(18.1)
per capita (\$)	25.34	(27.4)	34.48	(14.1)	37.36	0.4			97.18	(13.4)
Employment (persons)										
Full-time - Survey data	62,356		63,345		63,138				...	...
Undercoverage estimate	<u>2,575</u>	...	<u>2,616</u>	...	<u>2,607</u>	...			...	...
Total	64,931	(2.4)	65,961	(1.3)	65,745	1.2			...	...
Part-time - Survey data	9,512		10,568		9,871				...	...
Undercoverage estimate	<u>301</u>	...	<u>334</u>	...	<u>312</u>	...			...	...
Total	9,813		10,902		10,183				...	...
Total Employment	74,744		76,863		75,928				...	...
% of national industrial employment	0.628		0.617		0.611				...	...
Total Full-time equivalents (FTE)	70,231		71,642		71,611				...	...
Revenue (\$) per FTE employee	83,960		82,633		85,547				...	...
Labour costs¹										
Full-time - Survey data	1,031,009		1,039,139		1,059,782				3,129,930	
Undercoverage estimate	<u>44,346</u>	...	<u>44,696</u>	...	<u>45,584</u>	...			<u>134,626</u>	...
Total	1,075,355		1,083,835		1,105,366				3,264,556	
Part-time - Survey data	83,586		88,884		93,914				266,384	
Undercoverage estimate	<u>4,191</u>	...	<u>4,456</u>	...	<u>4,709</u>	...			<u>13,356</u>	...
Total	87,777		93,340		98,623				279,740	
Total Labour costs	1,163,132		1,177,175		1,203,989				3,544,296	
Average Labour costs (\$) per FTE employee (annualized)	66,246		65,983		66,409				...	

¹ includes capitalized labour expenditures.

TABLE 4 continued...

Wired Telecommunications (NAICS 51331)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter		Year to date	
		00/99 %		00/99 %		00/99 %		00/99 %		00/99 %
Network infrastructure (access)										
PSTN access lines										
Individual lines (includes PBX)	15,653,807	0.5	15,642,566	0.7	15,748,384	0.9			...	...
Party lines	99,915	(14.7)	97,068	(25.4)	92,530	(15.3)			...	...
ISDN BRA	82,333	13.7	82,835	10.7	83,043	7.7			...	...
ISDN PRA	28,393	28.7	29,179	23.5	30,930	21.0			...	...
Public telephones	175,940	(1.7)	175,905	(2.4)	174,480	(2.5)			...	...
Centrex	2,386,760	21.1	2,418,629	12.5	2,468,379	7.8			...	...
Other (includes mobile and WATS)	582,259	(18.0)	574,804	(9.0)	562,177	(10.2)			...	...
Undercoverage estimate	<u>816,456</u>	...	<u>816,456</u>	...	<u>816,456</u>	...			...	...
Total PSTN access lines	19,825,863	4.8	19,837,442	4.5	19,976,379	4.2			...	...
Residential (%)	66.0		65.8		66.0				...	...
Business (%)	34.0		34.2		34.0				...	...
Total PSTN voice-grade equivalents (VGE)	20,532,842	5.5	20,562,215	5.0	20,739,882	4.6			...	...
Residential (%)	63.8		63.5		63.5				...	...
Business (%)	36.2		36.5		36.5				...	...
PSTN (VGE) per 100 inhabitants	67.1	4.6	67.1	4.2	67.4	3.8			...	...
Residential access lines (VGE) per 100 households	113		112		113				...	...
Business access lines (VGE) per 100 employed persons ¹	62.5		60.3		60.9				...	...
PSTN access paths (VGE) per FTE employee	292		287		290				...	...
Non-PSTN lines										
Digital - Survey data	93,566		91,994		280,646				...	...
Analogue - Survey data	<u>26,789</u>		<u>22,488</u>		<u>17,498</u>				...	...
Total Non-PSTN lines	120,355		114,482		298,144				...	...
Traffic statistics (thousands of minutes)										
Long distance traffic										
Outbound calls	10,320,414		10,345,376		9,396,961				30,062,751	
Toll-free calls	1,573,583		1,576,584		1,677,645				4,827,812	
Inbound calls to Canada	<u>1,242,593</u>		<u>1,221,462</u>		<u>1,357,808</u>				<u>3,821,863</u>	
Total Long distance	13,136,590	31.7	13,143,422	28.8	12,432,414	12.1			38,712,426	23.8
Traffic performance (minutes)²										
Long distance traffic										
Outbound calls										
per access line (VGE)	523		524		472				1,519	
per capita	337		337		306				906	
Toll-free calls										
per access line (VGE)	80		80		84				244	
per capita	51		51		55				157	
Inbound calls to Canada										
per access line (VGE)	63		62		68				193	
per capita	41		40		44				125	
Total Long distance										
per access line (VGE)	666	28.2	666	26.1	624	11.5			1,956	21.1
per capita	429	30.5	428	27.5	405	11.3			1,262	22.7

¹ Employed persons from SEPH estimate of national industrial employment.

² Calculations do not include undercoverage estimates.

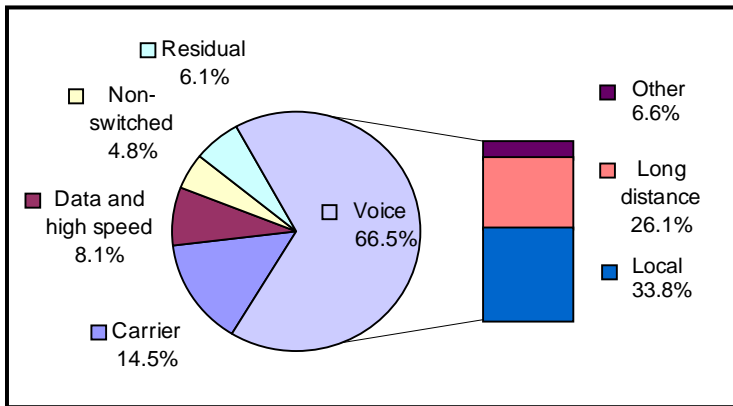


Figure 4.
Wired telecommunications operating revenue shares
(Revenues \$ 5.34 billion)

* Calling features and connection charges.

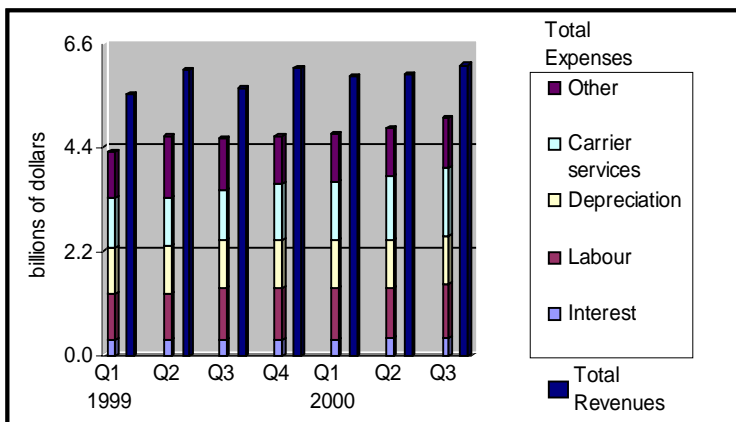


Figure 5.
Total revenues (operating and non-operating) continued to exceed total expenses in the wireline industry.
The difference between total revenues and total expenses represents net income before taxes.

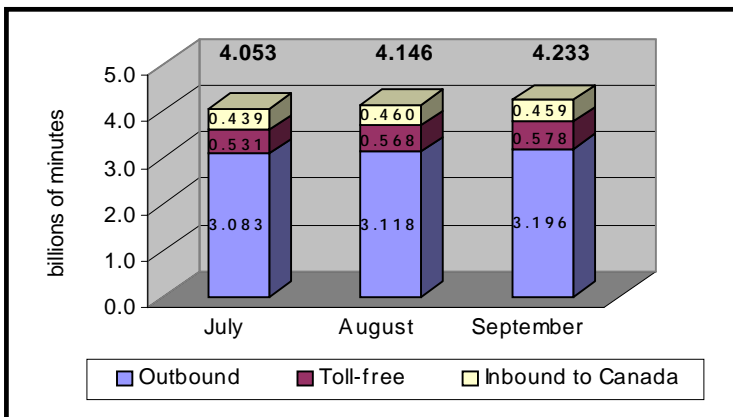


Figure 6.
Monthly wireline long distance minutes, third quarter 2000
Total outbound minutes 9.4 billion
Total toll-free minutes 1.7 billion
Total inbound to Canada minutes 1.4 billion

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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 %
Operating revenues										
Telecommunications Operating revenues										
Carrier services	85,158		104,004		141,603				330,765	
Local telephony										
Fixed (recurrent services)	527,831		553,836		606,009				1,687,676	
Air time (measured services)	227,081		259,004		268,354				754,439	
Other local telephony	<u>54,776</u>		<u>58,631</u>		<u>52,522</u>				<u>165,929</u>	
Total Local telephony	809,688	16.6	871,471	15.4	926,885	16.2			2,608,044	16.0
Long Distance telephony										
Air time	92,203		95,216		109,507				296,926	
Other long distance telephony	<u>4,873</u>		<u>4,720</u>		<u>5,091</u>				<u>14,684</u>	
Total - Long Distance Telephony	97,076	15.8	99,936	11.5	114,598	1.5			311,610	8.8
Messaging - Paging	52,247		52,471		49,822				154,540	
Dispatch services (RCC)	12,756		16,214		17,057				46,027	
Other telecommunications services	<u>76,063</u>		<u>82,676</u>		<u>85,933</u>				<u>244,672</u>	
Total	1,132,988	23.4	1,226,772	20.4	1,335,898	20.6			3,695,658	21.4
Other Operating revenues	68,316	(42.0)	86,271	25.2	83,674	17.1			238,261	(7.7)
Undercoverage estimate	<u>35,744</u>	...	<u>39,069</u>	...	<u>42,238</u>	...			<u>117,051</u>	...
Total Operating revenues	1,237,048	16.8	1,352,112	21.6	1,461,810	21.2			4,050,970	19.9
Revenue performance (\$)¹										
Operating revenue per capita	40.42	15.8	44.00	20.3	47.50	20.2			131.92	19.3
Local revenue per subscriber	112.81	(9.2)	113.95	(10.1)	115.59	(8.5)			342.35	(9.3)
Average revenue per local minute (cents)	21.90	(27.2)	20.08	(22.5)	21.92	(15.5)			21.26	(21.5)
Long distance revenue per subscriber	13.53	(9.8)	13.07	(13.1)	14.29	(20.1)			40.89	(14.7)
Average revenue per long distance minute (cents)	26.00	(23.3)	22.50	(22.5)	19.60	(36.9)			22.20	(28.6)
Paging revenue per subscriber	37.56	0.3	37.40	1.1	35.37	(6.7)			110.33	(1.8)
Operating expenses										
Telecommunications Operating expenses										
Carrier services	97,184		103,189		122,601				322,974	
Labour expenses	182,553		176,495		176,858				535,906	
Depreciation	280,379		288,773		302,791				871,943	
Other telecommunications expenses	<u>581,002</u>		<u>600,000</u>		<u>668,369</u>				<u>1,849,371</u>	
Total	1,141,118	29.9	1,168,457	15.0	1,270,619	15.7			3,580,194	19.6
Other Operating expenses	83,827	(37.5)	96,009	9.2	99,878	18.4			279,714	(8.7)
Undercoverage estimate	<u>35,710</u>	...	<u>36,862</u>	...	<u>39,953</u>	...			<u>112,525</u>	...
Total Operating expenses	1,260,655	21.9	1,301,328	15.4	1,410,450	19.3			3,972,433	17.9
Operating profit	(23,607)	(194.2)	50,783	430.6	51,360	3218.4			78,536	874.4
% of operating revenues	(1.9)	(179.2)	3.8	372.0	3.5	2673.0			1.9	712.5
Capital expenditures (\$000)										
Survey data	239,727		365,885		494,309				1,099,921	
Undercoverage estimate	<u>4,874</u>	...	<u>7,439</u>	...	<u>10,051</u>	...			<u>22,364</u>	...
Total Capital expenditures	244,601	2.3	373,324	10.1	504,360	82.7			1,122,285	31.4
% of operating revenues	19.8	(12.4)	27.6	(8.8)	34.5	50.7			27.7	9.5
per subscriber (\$)	33.91	(20.3)	48.58	(14.2)	62.60	44.0			145.09	1.7
per capita (\$)	7.99	1.4	12.17	9.1	16.40	81.1			36.56	30.2

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	
		00/99 %		00/99 %		00/99 %		00/99 %		00/99 %
Employment (persons)										
Full-time - Survey data	10,481		10,302		10,622					...
Undercoverage estimate	<u>508</u>	...	<u>499</u>	...	<u>514</u>	...				...
Total	10,989	5.5	10,801	8.6	11,136	10.6				...
Part-time - Survey data	2,483		2,388		2,221					...
Undercoverage estimate	<u>16</u>	...	<u>15</u>	...	<u>14</u>	...				...
Total	2,499		2,403		2,235					...
Total Employment	13,488		13,204		13,371					...
% of national industrial employment	0.113		0.106		0.108					...
Total Full-time equivalents (FTE)	12,237		11,890		12,199					...
Revenue (\$) per FTE employee	101,094		113,717		119,828					...
Labour costs (\$000)¹										
Full-time - Survey data	169,712		154,127		164,762					488,601
Undercoverage estimate	<u>10,633</u>	...	<u>9,656</u>	...	<u>10,322</u>	...				<u>30,611</u>
Total	180,345		163,783		175,084					519,212
Part-time - Survey data	20,130		16,238		16,436					52,804
Undercoverage estimate	<u>344</u>	...	<u>278</u>	...	<u>281</u>	...				<u>903</u>
Total	20,474		16,516		16,717					53,707
Total Labour costs	200,819		180,299		191,801					572,919
Average Labour costs (\$) per FTE employee (annualized)	65,643		63,185		63,086					...
Network infrastructure (access)										
Mobile subscribers										
Digital - Survey data	2,915,954		3,349,523		3,743,516					...
Undercoverage estimate	<u>10,124</u>	...	<u>10,124</u>	...	<u>10,124</u>	...				...
Total	2,926,078	78.5	3,359,647	76.9	3,753,640	73.3				...
Analogue - Survey data	4,261,328		4,298,577		4,275,252					...
Undercoverage estimate	<u>26,122</u>	...	<u>26,122</u>	...	<u>26,122</u>	...				...
Total	4,287,450	7.7	4,324,699	5.7	4,301,374	2.9				...
Total Mobile telephony	7,213,528	28.3	7,684,346	28.3	8,055,014	26.9				...
Mobile telephony penetration per 100 inhabitants	23.6	27.2	25.1	27.4	26.2	25.8				...
PSTN access paths per FTE employee	589		646		660					...
Paging subscribers										
Paging - Survey data	1,390,851		1,403,073		1,408,456					...
Undercoverage estimate	<u>388,833</u>	...	<u>388,833</u>	...	<u>388,833</u>	...				...
Total Paging	1,779,684	30.0	1,791,906	27.7	1,797,289	25.6				...
Paging penetration per 100 inhabitants	5.8	28.9	5.8	25.7	5.8	24.6				...
Traffic statistics (thousands of minutes)										
Billed minutes										
Local	3,697,485		4,340,381		4,228,705					12,266,571
Long distance	<u>373,030</u>		<u>444,793</u>		<u>584,308</u>					<u>1,402,131</u>
Total Billed minutes	4,070,515	52.5	4,785,174	42.3	4,813,013	33.8				13,668,702
Traffic performance (minutes)²										
Local minutes per subscriber	515	24.7	568	16.1	527	8.3				1,610
Long distance minutes per subscriber	52	17.5	58	11.9	73	26.6				183
Billed minutes per subscriber	567	18.8	626	10.9	600	5.4				1,793

¹ Includes capitalized labour expenditures.

² Calculation does not include undercoverage estimate.

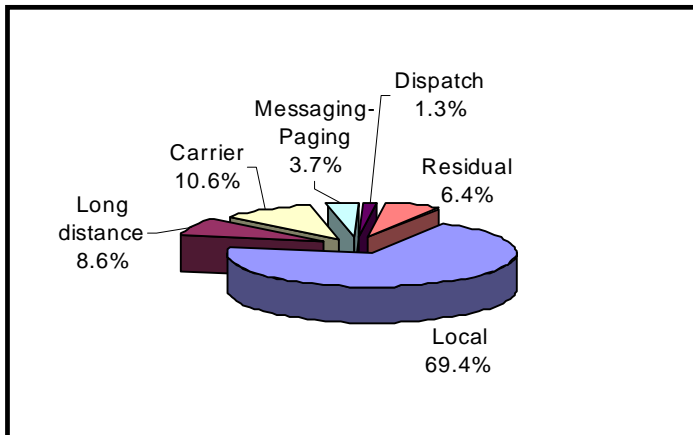


Figure 7.
Wireless telecommunications operating revenue shares
(Revenues \$1.34 billion)

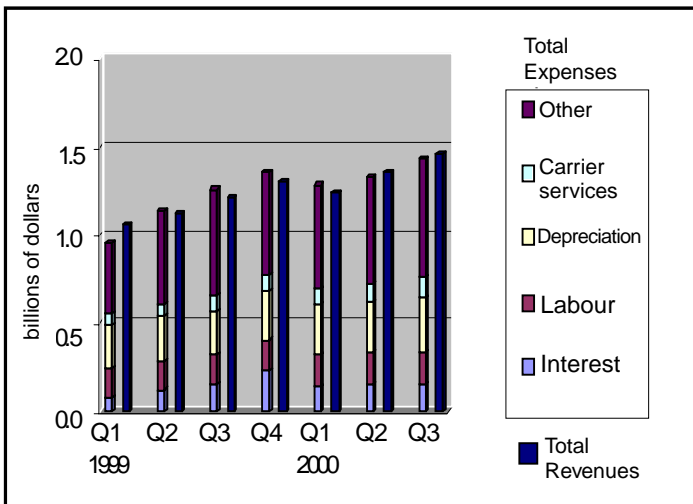


Figure 8.
Total wireless revenues exceeded total expenses
(operating and non-operating) by \$51 million in the
third quarter of 2000.

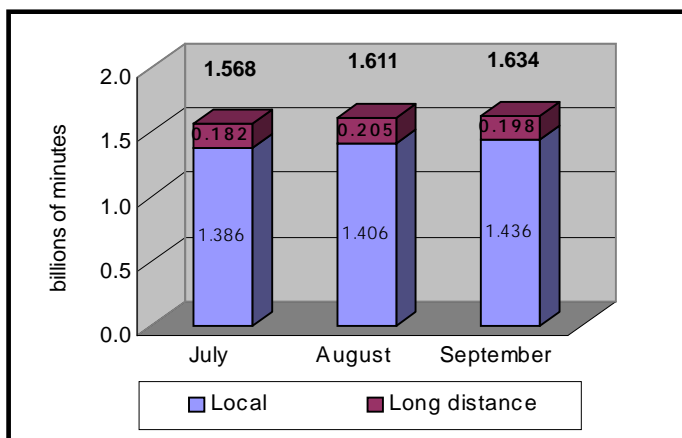


Figure 9.
Monthly wireless billed minutes, third quarter 2000.
Wireless billed minutes increased to 4.8 billion in the third
quarter of 2000, an increase of 33.8% from third quarter
last year. The majority of these were local minutes
(4.2 billion)

**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
	thousands of dollars				
Financial indicators					
Operating revenues	274,746	280,080	292,247		847,072
Operating expenses	265,489	272,707	286,934		825,131
Operating profit margin	9,256	7,373	5,312		21,941
% of operating revenues	3.4	2.6	1.8		2.6
Employment (persons)					
Full-time	2,427	2,454	2,458		...
Part-time	<u>76</u>	<u>82</u>	<u>77</u>		...
Total Employment	2,503	2,536	2,535		...
% of national industrial employment	0.021	0.021	0.020		...
Total Full-time equivalents (FTE)	2,468	2,488	2,500		...
Labour costs					
Full-time	46,228	45,941	47,145		139,313
Part-time	<u>1,236</u>	<u>1,253</u>	<u>1,315</u>		<u>3,804</u>
Total Labour costs	47,464	47,194	48,460		143,118
Average Labour costs (\$) per FTE employee (annualized)	76, 927	76,399	76,780		...

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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 Other¹).

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 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 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.

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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.

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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 providers 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 electro-magnetic 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.