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The Canadian Telecommunications Service Industries

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An Overview

Part 1: The Domestic Situation

1994 / 1995 edition

November 1994

Aussi disponible en français

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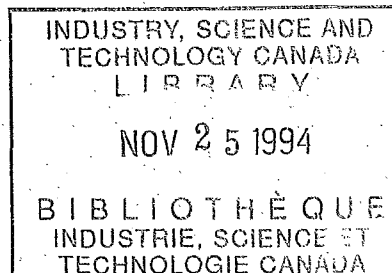
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The Canadian Telecommunications Service Industries

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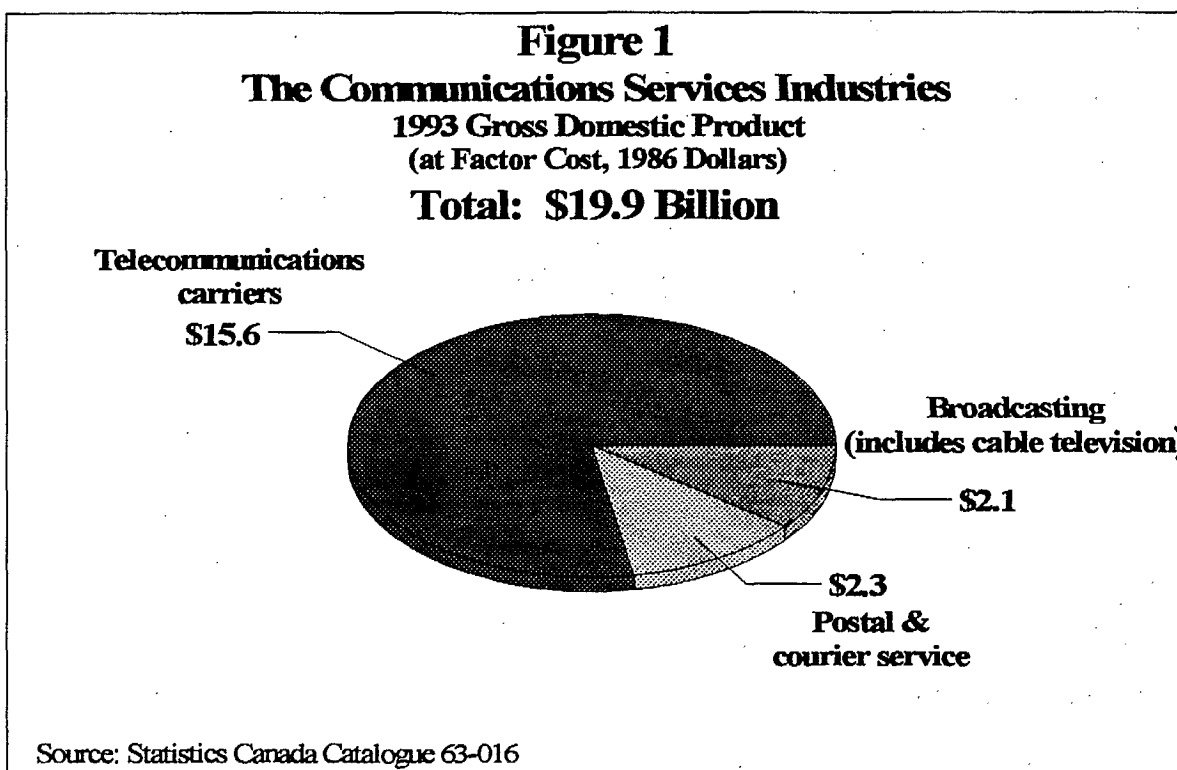
Section I

An Economic Analysis of the Service Producing Industries

- In Canada's economy, the service producing industries account for two-thirds of the gross domestic product (GDP) and for almost three-quarters of total employment.
- The service producing industries can be grouped as those involved in:
 - transportation & storage;
 - communications;
 - wholesale trade;
 - retail trade;
 - finance, insurance & real estate;
 - forestry services;
 - government services; and
 - community, business & personal services;
- The goods producing industries can be grouped as those involved in:
 - agriculture & related services;
 - fishing & trapping;
 - logging & forestry;
 - mining, quarrying & oil well;
 - manufacturing;
 - construction; and
 - other utilities.
- In 1993, the service producing industries employed more than 9 million workers, accounting for 73% of all jobs in Canada. Of these 9 million jobs, about 77% were full-time jobs and 23% were part-time jobs.
- Between the third quarter of 1993 and the second quarter of 1994, employment in the service producing industries grew by close to 2.0%.
- Approximately 34% of the GDP was derived from the goods producing industries and 66% from the service producing industries.
- The quarterly growth of the service producing industries' GDP has ranged between 0.4% and 0.9% over the last two years.
- More than 50% of all consumer spending was related to services. The quarterly growth of consumer spending on the services industries averaged about 1% in the last two years. The increase in prices averaged about 0.5%.
- For international trade, the performance of services is not as good as that of merchandise trade. In the last two years, services accounted for only 18% of total imports and 13% of total exports. There has been growth in both the export and import of services, however, the services trade balance continues to experience severe deficits.
- The remainder of this publication focuses on the economic performance of the telecommunications service industries, which are traditionally classified under the communications industries. An economic analysis of other industries closely related to the economic activities of the telecommunications carriers is also provided.

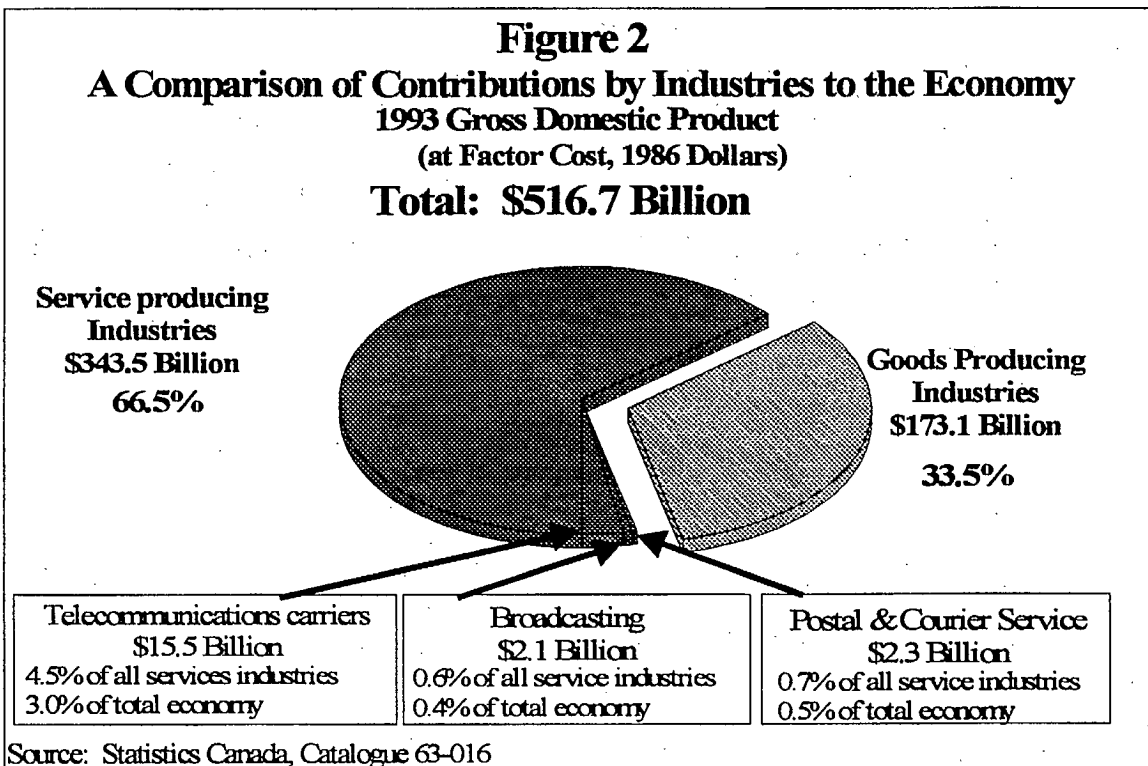
Table 1 The Canadian Economy Selected Economic Indicators *								
Selected Economic Indicators	1992		1993				1994	
	III	IV	I	II	III	IV	I	II
Employment:	thousands							
Total economy	12,546	12,234	11,982	12,435	12,717	12,398	12,131	12,661
Services	9,018	8,944	8,897	9,098	9,219	9,111	9,070	9,273
Full-time	7,364	7,039	6,957	7,160	7,454	7,101	7,033	7,334
Part-time	1,654	1,905	1,940	1,939	1,765	2,011	2,037	1,939
Selfemployment	1,196	1,218	1,239	1,291	1,321	1,289	1,290	1,337
Gross Domestic Product (GDP):	billions of 1986 dollars							
All industries	\$498	\$500	\$505	\$510	\$512	\$517	\$521	\$528
Goods Producing Industries	165	165	169	170	171	173	174	179
Service Producing Industries	334	335	337	340	341	344	347	349
Consumer spending:	billions							
Total	\$106	\$107	\$108	\$109	\$110	\$111	\$112	\$113
Services	55	55	55	56	57	57	58	58
Prices:	CPI, 1986 = 100							
All items	128.4	128.9	129.8	130.1	130.6	131.2	130.6	130.1
Services	133.6	134.4	134.9	135.3	136.3	137.0	137.1	137.5
International Trade:	billions							
Merchandise	billions							
Exports	\$39.2	\$41.6	\$43.4	\$44.5	\$45.6	\$47.9	\$48.3	\$52.1
Imports	37.9	38.9	40.8	42.2	43.3	45.5	46.3	49.9
Balance	1.3	2.7	2.6	2.3	2.3	2.4	2.0	2.2
Services	billions							
Exports	\$6.2	\$6.2	\$6.4	\$6.6	\$6.8	\$7.0	\$7.2	\$7.4
Imports	9.5	9.6	10.1	10.0	10.3	10.4	10.2	10.3
Balance	-3.3	-3.4	-3.6	-3.3	-3.5	-3.4	-3.0	-2.9
Analysis								
All Industries:	percentage of total							
Gross Domestic Product (GDP):	percentage of total							
All industries (Total Economy)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Goods Producing Industries	33.1	33.0	33.4	33.4	33.4	33.5	33.4	33.8
Service Producing Industries	66.9	67.0	66.6	66.6	66.6	66.5	66.6	66.2
International Trade:	percentage of total							
Exports:	percentage of total							
All industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Merchandise	86.4	87.0	87.1	87.0	86.9	87.3	87.1	87.6
Services	13.6	13.0	12.9	13.0	13.1	12.7	12.9	12.4
Imports:	percentage of total							
All industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Merchandise	79.9	80.2	80.2	80.9	80.8	81.5	81.9	82.9
Services	20.1	19.8	19.8	13.1	19.2	18.5	18.1	17.1
Service Producing Industries:	percentage from same quarter "last year"							
Rates of change (%)	percentage from same quarter "last year"							
Employment:	percentage from same quarter "last year"							
Total all Service Industries	0.0	0.4	0.9	1.6	2.2	1.9	1.9	1.9
Full-time	-0.2	0.2	0.9	0.4	1.2	0.9	1.1	2.4
Part-time	1.1	1.2	1.0	6.6	6.7	5.6	5.0	0.0
Selfemployment	1.7	4.9	6.6	9.9	10.5	5.8	4.1	3.6
Gross Domestic Product (GDP)	percentage from last quarter							
Gross Domestic Product (GDP)	0.4	0.4	0.5	0.8	0.4	0.8	0.9	0.8
Consumer spending	1.5	0.1	0.6	1.4	1.1	1.1	0.6	0.9
Prices	0.8	0.6	0.4	0.3	0.7	0.5	0.1	0.3
International Trade:	percentage from last quarter							
Exports	0.6	1.0	2.8	3.0	3.4	2.0	2.7	3.2
Imports	3.5	1.0	4.6	-1.1	3.7	0.4	-1.5	1.1
* The definitions and concepts used to derive the data are provided in the Glossary and Appendix B.								
Source: Statistics Canada Catalogue 63 - 016								

- The traditional classifications for the **communications service industries**, as defined by Statistics Canada, consist of the following industries:
 - telecommunications broadcasting,
 - telecommunications carriers, and
 - the postal & courier services.



- In 1993, the telecommunications carriers accounted for almost 80% of the \$19.9 billion value added (GDP) by the communications industries to the total economy.

- The telecommunications carriers' contribution to the GDP was 4.5% of the \$343.5 billion value added by all the service producing industries and 3.0% of the \$516.7 billion total GDP in 1993.
- Similarly, the broadcasting industries' contribution to the GDP was 0.6% of all the service producing industries and 0.4% of the total economy.
- The postal and courier services industries' contribution to the GDP was 0.7% of all the service producing industries and 0.5% of the total economy.



**C. The Information Technologies
& Telecommunications Service Industries' Contribution**

- The information technologies and telecommunications (IT&T) service industries, as defined by Industry Canada, refer to the aggregation of the following industries:
 - telecommunications broadcasting,
 - telecommunications carriers, and
 - computer services.

- The difference between this particular grouping and the "communications industries", as defined by Statistics Canada, is the replacement of the postal and courier services industries by the computer services industries.

- The computer services industries' contribution to the GDP was \$4.6 billion in 1993, or 1.3% of the \$343.5 billion value added by all the service producing industries and 0.9% of the \$516.7 billion total GDP. This is higher than the \$2.3 billion contribution by the postal and courier services industries noted previously.

Table 2 The Information Technologies and Telecommunications Service Industries Gross Domestic Product * (at factor cost, 1986 dollars)								
Information Technologies and Telecommunications Service Industries	1992		1993				1994	
	III	IV	I	II	III	IV	I	II
billions of 1986 dollars								
Value added (GDP)								
Broadcasting	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1
Telecommunications carriers	14.5	14.7	14.9	15.0	15.3	15.5	16.0	16.3
Computer services	4.4	4.5	4.5	4.5	4.5	4.6	4.6	4.7
Total	21.1	21.4	21.5	21.7	21.9	22.2	22.8	23.1
Analysis								
Value added (GDP)				percentage of total				
Broadcasting	10.2	10.0	10.0	10.0	9.8	9.5	9.2	9.1
Telecommunications Carriers	68.8	68.9	69.1	69.3	69.6	69.8	70.4	70.7
Computer services	21.0	21.1	20.9	20.7	20.6	20.7	20.4	20.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
percentage from last quarter								
Rates of change (%)								
Broadcasting	1.6	-0.7	0.5	0.4	-0.6	-1.1	-0.7	-0.5
Telecommunications Carriers	-0.3	1.5	0.9	1.2	1.5	1.6	3.4	1.9
Computer services	2.2	2.1	-0.2	-0.2	0.6	1.8	0.7	0.9

*The definitions and concepts used to derive the data are provided in the Glossary and Appendix B.

Source: Statistics Canada Catalogue 63 - 016

*C. The Information Technologies
& Telecommunications Service Industries' Contribution*

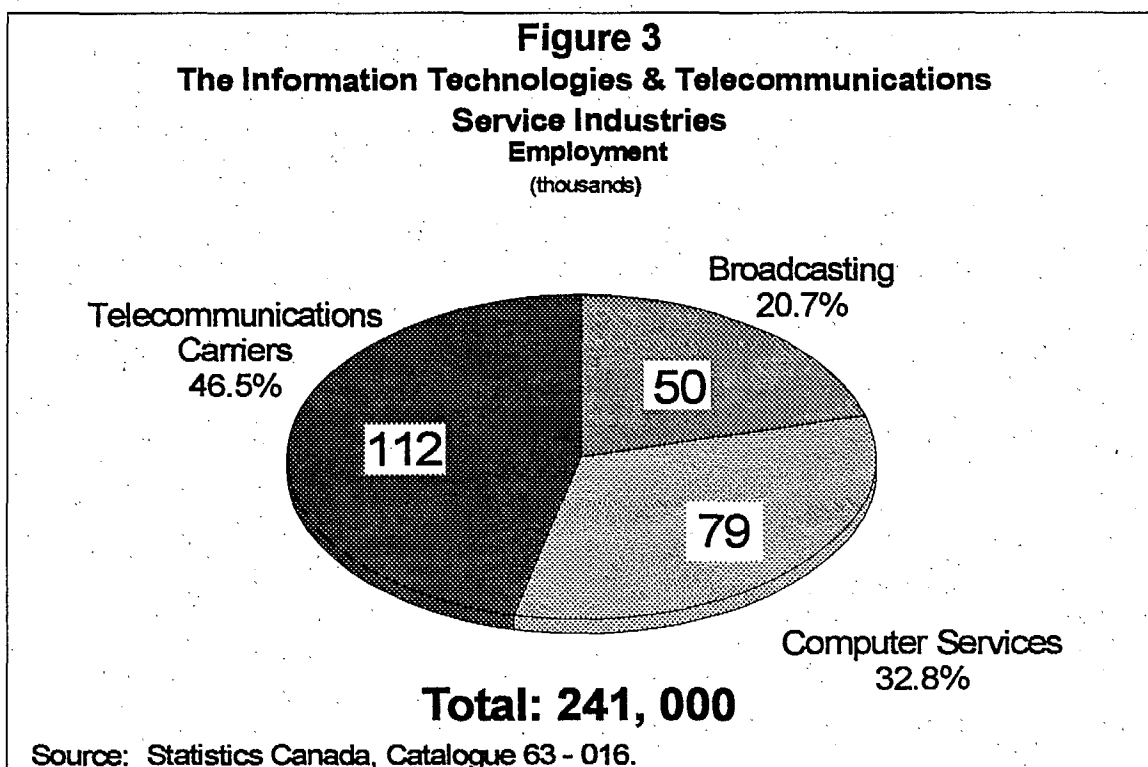
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- In 1993, the telecommunications carriers accounted for 69.8% of the \$22.2 billion value added by the IT&T service industries to the total economy. The computer services industries accounted for 20.7% and the broadcasting industries for the remaining 9.5%. The telecommunications carriers' and the broadcasting industries' contributions to the GDP are the same as that noted on page 4.
- The contribution of the telecommunications carriers has grown continually, on a quarterly basis, since the fourth quarter of 1992. For each quarter of 1993, quarterly growth of the telecommunications carriers' gross domestic product has ranged from between 0.9% and 1.6%. Its growth rate peaked at 3.4% in the first quarter of 1994 and was followed by a growth of 1.9% in the second quarter.
- With the exception of the third quarter of 1992 and the first and second quarter of 1993, the broadcasting industries have reported negative growth rates in the last two years. Its largest quarterly growth was reported as 1.6% in the third quarter of 1992. The cable-television industry, included as part of the broadcasting industries, is "**unlikely**" to have experienced the same growth pattern. Unfortunately, due to confidentiality, a further breakdown of the broadcasting industries is not publicly available.
- In the past two years, the computer services industries have experienced significant levels of quarterly growth, exceeding 2.0% in the last two quarters of 1992 and 1.8% in the fourth quarter of 1993.
- **Based on the comparative indicators, the telecommunications carriers outperformed both the broadcasting and computer services industries in terms of growth in the last two years.**

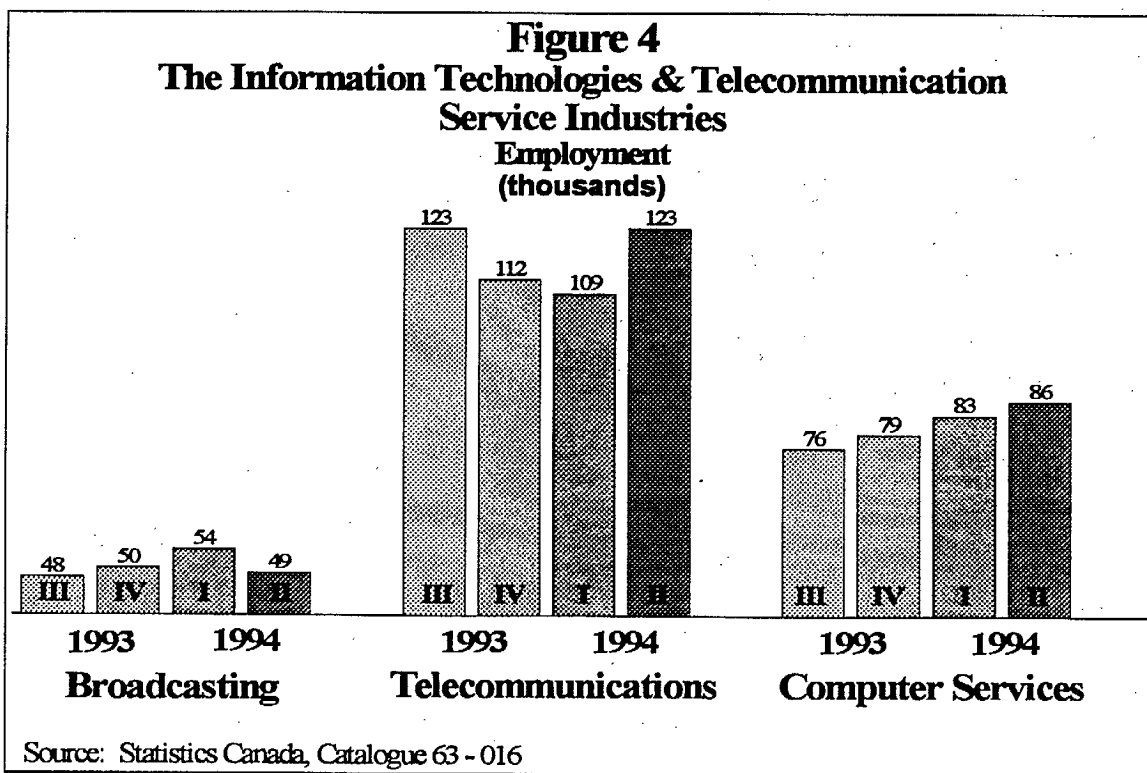
**C. The Information Technologies
& Telecommunications Service Industries' Contribution**

Table 3 A Comparison of Contributions by Selected Industries to the Economy based on Gross Domestic Product Comparative Indicator *								
Selected Industries	1992		1993				1994	
	III	IV	I	II	III	IV	I	II
Comparative indicators *	rate of change *							
Broadcasting	1.3	-1.0	-0.6	-0.5	-1.0	-2.0	-1.5	-2.0
Telecommunications Carriers	-0.6	1.2	-0.2	0.3	1.1	0.7	2.6	0.5
Computer services	1.9	1.8	-1.3	-1.1	0.2	0.9	-0.0	-0.5
Banks and other	0.3	0.1	-0.2	0.0	1.0	0.3	0.2	0.2
Trust / mortgage	-1.9	-4.1	-8.1	-2.7	-4.8	-4.6	-4.4	-7.8
Credit unions	0.5	0.6	-0.2	0.8	0.1	-0.9	0.1	-0.5
Insurance	1.2	0.8	1.6	-1.4	-0.4	0.4	2.5	4.0
Other financial	-0.9	-1.3	-2.0	2.7	-0.3	1.5	2.0	-5.3
All finance, insurance and real estate industries	-0.5	-0.8	-1.4	1.6	-0.1	1.0	1.4	-3.3
<p>* This comparative indicator is defined as the rate of change of the Gross Domestic Product for the selected industry minus the rate of change of the Gross Domestic Product for the whole economy in the same time period.</p> <p>- A POSITIVE VALUE indicates that the selected industry outperformed the economy average (a more positive value, more so).</p> <p>- A NEGATIVE VALUE indicates that the selected industry lagged behind the economy average.</p> <p>- A ZERO VALUE means that the performance of the selected industry exactly matched the economy-wide average.</p>								
Source: Statistics Canada, Catalogue 63 - 016								

- From the second quarter of 1993 onwards, the telecommunications carriers consistently outperformed the economy average on a quarterly basis.
- The performance of the telecommunications carriers also compare favourably with those of other key service industries, for example, the finance, insurance and real estate industries. These are all regulated industries which have recently had to adjust to increased entry by other service suppliers.
- The lowest the broadcasting industries lagged behind the economy average during this period was by -2.0% in the fourth quarter of 1993 and the second quarter of 1994.



- In 1993, the telecommunications carriers provided 112,000 jobs. The computer services industries provided 79,000 jobs and the broadcasting industries provided 50,000 jobs. Total employment within the telecommunications carriers, thus, accounted for 46.5% of the total 241,000 jobs provided by the IT&T service industries.
- The first two quarters of 1994 saw an increase in employment within the telecommunications carriers, computer services and the broadcasting industries. Total employment by these industries increased to 246,000 in the first quarter of 1994 and to 258,000 in the second quarter of 1994.



- The 258,000 jobs within the IT&T industry account for 2.8% of all jobs in the service industries, or 2.0% of the total jobs in the economy, as of the second quarter of 1994.
- The estimated annual salaries that an individual is expected to earn are nearly equivalent in the IT&T service industries. For example, in the fourth quarter of 1993, an individual working in the telecommunications carriers industries would be expected to earn an annual salary of \$42,641. Salaries are similarly reported as \$42,671 for the computer services industries and \$44,321 for the broadcasting industries.
- These annual salaries are substantially higher than the national average and have risen further in the first half of 1994. In the second quarter of 1994, the highest average annual salary within the IT&T industries was for computer services, at \$45,114.

**C. The Information Technologies
& Telecommunications Service Industries' Contribution**

Table 4								
Analysis of								
The Information Technologies and Telecommunications								
Service Industries								
Employment and Financial Performance *								
Information Technologies & Telecommunications Service Industries	1992		1993				1994	
	III	IV	I	II	III	IV	I	II
Employment data:	thousands							
Broadcasting	51	47	47	49	48	50	54	49
Telecommunications Carriers	109	114	125	119	123	112	109	123
Computer services	71	68	68	71	76	79	83	86
Total Information Technologies and Telecommunications Service Industries	231	229	240	239	247	241	246	258
Salaries:	dollars per year							
Broadcasting	\$40,122	\$40,523	\$41,957	\$43,634	\$43,772	\$44,321	\$44,126	\$44,534
Telecommunications Carriers	43,316	43,609	41,927	42,993	43,567	42,641	42,017	43,165
Computer services	41,957	42,103	41,959	41,929	42,824	42,671	44,223	45,114
Financial data:	millions of dollars							
Information Technologies and Telecommunications Service Industries								
Income statement								
Operating revenues	\$7,764	\$7,708	\$7,604	\$7,670	\$7,947	\$8,273	\$8,412	\$8,829
Operating expenses	6,554	6,564	6,704	6,514	6,684	7,171	7,219	7,471
Operating profit	1,210	1,144	900	1,156	1,263	1,102	1,193	1,358
Net profit	485	-8	328	404	255	-132	393	541
Balance sheet								
Information Technologies and Telecommunications Service Industries								
Assets								
Assets	\$52,666	\$53,416	\$53,612	\$54,086	\$53,865	\$54,997	\$58,601	\$60,486
Liabilities	32,053	32,438	32,456	32,820	32,438	33,789	35,449	36,820
Equity	20,612	20,979	21,156	21,266	21,427	21,206	23,150	23,666

* The definitions and concepts used to derive the data are provided in the Glossary and Appendix B.
Figures may not add up due to rounding.

Source: Statistics Canada, Catalogue 63 - 016

- In 1993, the IT&T service industries generated annual revenues of **\$31.5 billion**. Annual revenues for the telecommunications carriers amounted to \$14.8 billion (or 47.0%). The broadcasting industries earned \$5.3 billion (or 16.8%) in annual revenues and the computer service industries earned \$11.4 billion (or 36.2%).
- Annual **expenses** amounted to **\$27.1 billion** within the IT&T industries. The annual expenses of the telecommunications carriers totalled \$11.6 billion (or 42.8%). The annual expenses totalled \$4.5 billion (or 16.6%) for the broadcasting industries and \$11.0 billion (or 40.6%) for the computer services industries.

**C. The Information Technologies
& Telecommunications Service Industries' Contribution**

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- The 1993 annual **operating profit** of the IT&T service industries totalled **\$4.4 billion**. The telecommunications carriers accounted for \$3.3 billion (or 75.0%) of this total. The annual operating profit totalled \$0.8 billion for the broadcasting industries (or 18.2%) and \$0.3 billion (or 6.8%) for the computer services industries.
- The 1993 annual **net profit** of the IT&T service industries totalled **\$0.9 billion**. The telecommunications carriers industry was the only one to achieve a positive profit. The broadcasting industries and the computer service industries each had a negative annual net profit of \$(0.04) billion.
- In 1993, the **total assets** of the IT&T service industries amounted to **\$55.0 billion**. The telecommunications carriers industry accounted for \$37.9 billion (or 68.9%) of this total. The assets were valued at \$10.9 billion (or 19.8%) for the broadcasting industries and \$6.2 billion (or 11.3%) for the computer services industries.
- The **total liabilities** of the IT&T service industries amounted to **\$33.8 billion** in 1993. The telecommunications carriers industry accounted for \$21.9 billion (or 64.8%) of this total. The liabilities of the broadcasting industries totalled \$8.0 billion (or 23.7%) and \$3.9 billion (or 11.5%) for the computer services industries.
- In 1993, the **total equity** of the IT&T service industries was **\$21.2 billion**. The total equity of the telecommunications carriers industry amounted \$15.9 billion (or 75.0%). The total equity of the broadcasting industries was \$3.0 billion (or 14.2%) and \$2.3 billion (or 10.8%) for the computer services industries.
- Additional financial data and analysis on the IT&T service industries can be acquired by referring to the following tables. Similar data for the postal and courier services industries are also provided for those who wish to acquire information based on the traditional communications industries classification.

**C. The Information Technologies
& Telecommunications Service Industries' Contribution**

Table 5								
Analysis of								
The Telecommunications Carriers								
Employment and Financial Performance *								
Telecommunications Carriers	1992		1993				1994	
	III	IV	I	II	III	IV	I	II
Employment Data:								
Number of Employees	109	114	125	thousands 119 123		112	109	123
Salaries	\$43,316	\$43,609	\$41,927	dollars per year \$42,993 \$43,567		\$42,641	\$42,017	\$43,165
Financial Data:								
Income statement								
millions of dollars								
Operating revenues	\$3,603	\$3,610	\$3,630	\$3,693	\$3,743	\$3,777	\$3,789	\$3,898
Operating expenses	2,715	2,677	2,900	2,861	2,858	2,941	2,965	3,030
Operating profit	888	933	730	832	885	836	824	868
Net profit	379	450	281	296	328	42	307	322
Balance sheet								
millions of dollars								
Assets	\$35,013	\$35,998	\$36,522	\$36,716	\$36,843	\$37,881	\$39,556	\$40,519
Liabilities	19,890	20,263	20,510	20,757	20,659	21,943	22,312	23,089
Equity	15,122	15,735	16,012	15,959	16,184	15,938	17,243	17,430
Share capital	9,691	10,216	10,587	10,632	10,834	10,887	12,175	12,422
Retained earnings	4,078	4,165	4,087	3,996	4,013	3,716	3,713	3,667
Analysis								
Employment data:								
percentages (%)								
Rates of change %								
from same quarter last year								
Employment	-14.8	-8.1	5.9	1.7	12.8	-1.8	-12.8	3.4
Salaries (no CPI - adjustment)	0.0	0.7	-3.9	2.5	1.3	-2.1	-1.5	2.7
Salaries (with CPI - adjustment)	-0.4	0.3	-4.5	2.4	0.9	-2.6	-1.0	3.1
Financial data:								
percentages (%)								
Rates of change (%)								
Operating revenues	1.7	0.2	0.6	1.7	1.4	0.9	0.3	2.9
Operating expenses	1.9	-1.4	8.3	-1.3	-0.1	2.9	0.8	2.2
Assets	1.3	2.8	1.5	0.5	0.3	2.8	4.4	2.4
Liabilities	1.6	1.9	1.2	1.2	-0.5	6.2	1.7	3.5
Selected indicators								
percentages (%)								
Return on capital (%)	7.51	8.40	5.95	6.17	6.45	3.11	5.77	5.99
Return on equity (%)	10.04	11.44	7.03	7.43	8.12	1.08	7.12	7.40
Profit margin (%)	24.66	25.85	20.11	22.53	23.65	22.14	21.76	22.28
Debt to equity	0.902	0.879	0.888	0.919	0.887	0.953	0.906	0.917
Working capital ratio	0.523	0.483	0.465	0.485	0.496	0.417	0.411	0.412
Quick ratio	0.460	0.428	0.414	0.431	0.449	0.361	0.369	0.370
Comparative indicators								
Operating revenues	1.3	0.3	0.7	0.5	-0.4	-2.3	-2.4	-0.4
Profit margin	21.0	23.0	16.0	17.8	19.2	17.6	16.7	16.8
* The definitions and concepts used to derive the data are provided in the Glossary and Appendix B.								
Source: Statistics Canada, Catalogue 63 - 016								

**C. The Information Technologies
& Telecommunications Service Industries' Contribution**

**Table 6
Analysis of
The Broadcasting Industries
Employment and Financial Performance ***

Broadcasting Industries	1992		1993				1994	
	III	IV	I	II	III	IV	I	II
Employment Data:				thousands				
Number of Employees	51	47	47	49	48	50	54	49
Salaries				dollars per year				
	\$40,122	\$40,523	\$41,957	\$43,634	\$43,772	\$44,321	\$44,126	\$44,534
Financial data:				millions of dollars				
Income statement				millions of dollars				
Operating revenues	\$1,250	\$1,291	\$1,286	\$1,314	\$1,349	\$1,327	\$1,565	\$1,525
Operating expenses	1,112	1,123	1,126	1,124	1,132	1,111	1,356	1,288
Operating profit	138	168	160	190	217	216	209	237
Net profit	-12	-356	51	10	-49	-54	-24	47
Balance sheet				millions of dollars				
Assets	\$10,793	\$10,715	\$10,475	\$10,749	\$10,550	\$10,917	\$12,516	\$13,582
Liabilities	7,864	7,853	7,707	7,914	7,706	7,967	9,226	10,063
Equity	2,929	2,862	2,768	2,835	2,844	2,950	3,289	3,519
Share capital	2,088	2,092	2,038	2,105	2,171	2,437	2,823	2,634
Retained earnings	581	520	468	468	366	201	61	76
Analysis								
Employment data:				percentages (%)				
Rate of change (%)				percentages from same quarter last year				
Employment	8.5	-4.1	4.4	-5.8	-5.9	6.4	14.9	0.0
Salaries (no CPI adjustment)	-1.4	1.0	3.5	4.0	0.3	1.3	-0.4	0.9
Salaries (with CPI adjustment)	-1.8	0.6	2.8	3.8	-0.1	0.8	0.1	1.3
Financial data:				percentages (%)				
rates of change (%)				percentages (%)				
Operating revenues	0.6	3.3	-0.4	2.2	2.7	-1.6	17.9	-2.6
Operating expenses	2.0	1.0	0.3	-0.2	0.7	-1.9	22.1	-5.0
Assets	5.9	-0.7	-2.2	2.6	-1.9	3.5	14.6	8.5
Liabilities	8.3	-0.1	-1.9	2.7	-2.6	3.4	15.8	9.1
Selected indicators				percentages (%)				
Return on capital (%)	4.02	4.68	6.42	5.08	3.04	2.11	3.95	5.48
Return on equity (%)	-1.70	-0.05	7.58	1.39	-6.88	-7.34	-2.94	5.35
Profit margin (%)	11.04	13.05	12.44	14.48	16.10	16.31	13.39	15.55
Debt to equity	2.110	2.177	2.240	2.269	2.153	2.164	2.294	2.362
Working capital ratio	0.926	0.842	0.752	0.822	0.747	0.825	0.842	0.587
Quick ratio	0.880	0.800	0.711	0.783	0.708	0.782	0.805	0.549
Comparative indicators								
Operating revenues	0.2	3.4	-0.3	1.0	0.9	-4.8	15.2	-5.9
Profit margin	7.4	10.2	8.3	9.8	11.6	11.8	8.3	10.1

* The definitions and concepts used to derive the data are provided in the Glossary and Appendix B.

Source: Statistics Canada, Catalogue 63 - 016

**C. The Information Technologies
& Telecommunications Service Industries' Contribution**

**Table 7
Analysis of
The Computer Services Industries
Employment and Financial Performance ***

Computer Services Industries	1992		1993				1994	
	III	IV	I	II	III	IV	I	II
Employment Data:				thousands				
Number of Employees	71	68	68	71	76	79	83	86
				dollars per year				
Salaries	\$41,957	\$42,103	\$41,959	\$41,929	\$42,824	\$42,671	\$44,223	\$45,114
Financial data:				millions of dollars				
Income statement								
Operating revenues	\$2,911	\$2,807	\$2,688	\$2,663	\$2,855	\$3,169	\$3,058	\$3,406
Operating expenses	2,727	2,764	2,678	2,529	2,694	3,119	2,898	3,153
Operating profit	184	43	10	134	161	50	160	253
Net profit	118	-102	-4	98	-24	-120	110	172
Balance sheet				millions of dollars				
Assets	\$6,860	\$6,703	\$6,615	\$6,621	\$6,472	\$6,199	\$6,529	\$6,385
Liabilities	4,299	4,322	4,239	4,149	4,073	3,879	3,911	3,668
Equity	2,561	2,382	2,376	2,472	2,399	2,318	2,618	2,717
Share capital	1,302	1,325	1,333	1,338	1,352	1,402	1,565	1,533
Retained earnings	1,127	956	944	1,034	948	795	928	1,063
Analysis								
Employment data:				percentages (%)				
Rates of change (%)				from same quarter last year				
Employment	-22.0	-11.7	4.6	10.9	7.0	16.2	22.1	21.1
Salaries (no CPI adjustment)	-3.1	0.3	-0.3	-0.1	2.1	-0.4	3.6	2.0
Salaries (with CPI adjustment)	-3.5	-0.1	-1.1	-0.3	1.7	-0.8	4.2	2.4
Financial data:				percentages (%)				
Rates of change (%)								
Operating revenues	3.3	-3.6	-4.2	-0.9	7.2	11.0	-3.5	11.4
Operating expenses	2.9	1.4	-3.1	-5.6	6.5	15.8	-7.1	8.8
Assets	0.7	-2.3	-1.3	0.1	-2.3	-4.2	5.3	-2.2
Liabilities	-2.3	0.5	-1.9	-2.1	-1.8	-4.8	0.8	-6.2
Selected indicators				percentages				
Return on capital (%)	10.14	0.54	1.17	7.86	-2.55	-0.72	10.97	13.92
Return on equity (%)	18.50	-17.06	-0.74	15.94	-4.07	-20.71	16.84	25.35
Profit margin (%)	6.34	1.54	0.39	5.05	5.65	0.01	5.23	7.42
Debt to equity	0.788	0.862	0.789	0.751	0.758	0.853	0.745	0.661
Working capital ratio	1.643	1.573	1.625	1.542	1.609	1.521	1.574	1.473
Quick ratio	1.300	1.303	1.355	1.285	1.311	1.226	1.233	1.154
Comparative indicators								
Operating revenues	2.9	-3.4	-4.1	-2.1	5.4	7.8	-6.2	8.1
Profit margin	2.7	-1.3	-3.8	0.3	1.2	-4.5	0.1	1.9

* The definitions and concepts used to derive the data are provided in the Glossary and Appendix B.

Source: Statistics Canada, Catalogue 63 - 016

**C. The Information Technologies
& Telecommunications Service Industries' Contribution**

**Table 8
Analysis of
The Postal and Courier Services Industries
Employment and Financial Performance ***

Postal & Courier Service Industries	1992		1993				1994	
	III	IV	I	II	III	IV	I	II
Employment Data:				thousands				
Number of Employees	109	114	105	103	113	126	131	124
Salaries	30,142	29,605	29,761	dollars per year		29,670	29,741	29,920
				29,676	29,633			
Financial data:				millions of dollars				
Income statement								
Operating revenues	500	496	514	525	536	545	557	595
Operating expenses	499	490	503	520	533	551	551	589
Operating profit	1	6	11	5	3	-6	6	6
Net profit	-7	-2	2	-2	-5	-17	-5	-3
Balance sheet				millions of dollars				
Assets	748	763	757	735	743	748	770	767
Liabilities	471	493	491	476	493	516	649	653
Equity	277	270	266	259	250	232	120	114
Share capital	312	312	312	312	312	316	209	207
Retained earnings	-37	-44	-48	-53	-62	-84	-89	-92
Analysis								
Employment data:				percentages (%)				
Rates of change (%)				from same quarter last year				
Employment	5.8	6.5	6.1	-2.8	3.7	10.5	24.8	20.4
Salaries (no CPI adjustment)	3.8	-1.8	0.5	-0.3	-0.1	0.1	0.2	0.6
Salaries (with CPI adjustment)	3.4	-3.1	-0.2	-0.5	-0.6	-0.4	0.8	1.0
Financial data:				percentages (%)				
Rates of change (%)								
Operating revenues	3.5	-0.8	3.6	2.1	2.1	1.7	2.2	6.8
Operating expenses	2.7	-1.8	2.7	3.4	2.5	3.4	0.0	6.9
Assets	0.8	2.0	-0.8	-2.9	1.1	0.7	2.9	-0.4
Liabilities	3.1	4.7	-0.4	-3.1	3.6	4.7	25.8	0.6
Selected indicators				percentages (%)				
Return on capital (%)	-0.32	2.94	5.44	2.43	0.79	-7.49	0.46	1.35
Return on equity (%)	-10.49	-3.13	3.24	-3.78	-7.95	-29.12	-15.10	-11.33
Profit margin (%)	0.17	1.20	2.22	1.00	0.53	-1.14	1.05	1.07
Debt to equity	0.886	0.900	0.920	0.888	1.100	1.216	3.380	3.618
Working capital ratio	1.133	1.083	1.114	1.087	1.084	1.100	1.079	1.087
Quick ratio	1.102	1.054	1.084	1.060	1.057	1.072	1.052	1.060
Comparative indicators								
Operating revenues	3.13	-0.66	3.69	0.91	0.30	-1.51	-0.50	3.50
Profit margin	-3.52	-1.64	-1.92	-3.72	-3.97	-5.65	-4.06	-4.42

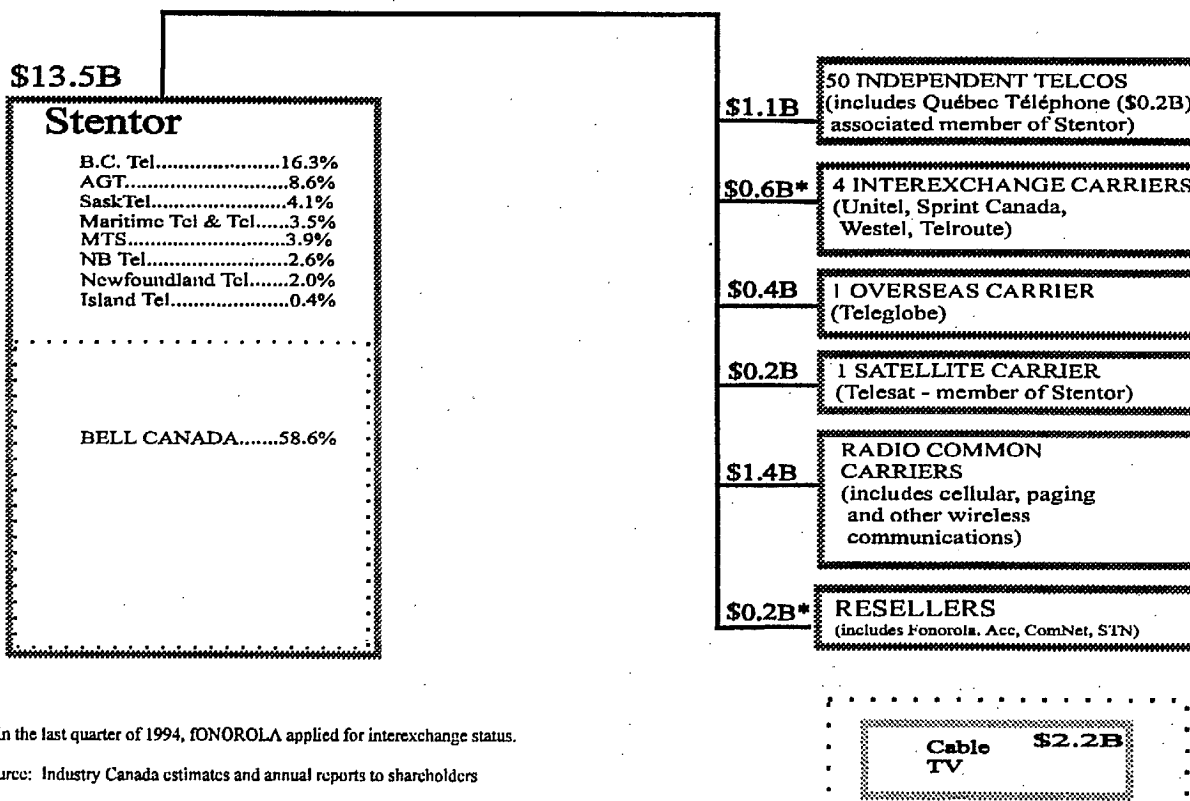
* The definitions and concepts used to derive the data are provided in the Glossary and Appendix B.

Section II

Analysis of the Telecommunications Service Providers

- There is an association of major telephone companies across Canada, within the Canadian telecommunications service industries, which is referred to as Stentor. With estimated revenues topping \$13.5 billion, Stentor accounts for 78% of all telecommunications service revenues, estimated at \$17.4 billion for 1993.¹

Figure 5
The Canadian Telecommunications Services Industries
1993 total revenues = \$17.4 Billion



* In the last quarter of 1994, FONOROLA applied for interexchange status.

Source: Industry Canada estimates and annual reports to shareholders

- In addition, there are 50 other independent telephone companies of which 15 are municipally-owned, and 35 are privately-owned. Both the Stentor member telephone companies and the independent telephone companies offer interexchange, basic local telephone as well as other telecommunications services. All the independent companies have recently come under federal regulation.

¹ Industry Canada estimates that the 1993 revenues of the telecommunications service industries reported by Statistics Canada increased from \$14.8 billion to \$17.4 billion once all the competitive segments are included.

- Including Québec Téléphone, an associate member of Stentor, the independent telephone companies had total revenues of \$1.1 billion in 1993. However, the size of these individual companies vary.

Figure 6 The Canadian Independent Telephone Companies	
<i>Ontario</i>	<i>Québec</i>
<p>INCORPORATED:</p> <ul style="list-style-type: none"> A b i b i - P r i c e I n c . A n t e k o m I n c . C o l d w a t e r C o m m u n i c a t i o n s I n c . D u r h a m T e l e p h o n e s L t d H u r o n t a r i o T e l e p h o n e s L t d L a n s d o w n e R u r a l T e l e p h o n e C o L t d . M a n i o u l i n I s l a n d T e l e p h o n e C o L t d . N o r t h F r o n t e n a c T e l e p h o n e C o L t d . N o r t h N o r w i c h T e l e p h o n e L t d . N o r t h R e n f r e w T e l e p h o n e C o . L t d . N o r t h e r n T e l e p h o n e O t o n a b e e T e l e p h o n e s L t d . P e o p l e ' s T e l . C o . o f F o r e s t L t d . R o x b o r o u g h T e l e p h o n e C o m p a n y L t d . S o u t h B r u c e R u r a l T e l e p h o n e C o L t d . W e s t p o r t T e l e p h o n e C o m p a n y L i m i t e d W i g h t m a n T e l e p h o n e L t d <p>MUNICIPAL:</p> <ul style="list-style-type: none"> B l a n s h a r d M u n i c i p a l T e l e p h o n e S y s t e m B r o o k e M u n i c i p a l T e l e p h o n e S y s t e m B r u c e M u n i c i p a l T e l e p h o n e S y s t e m C o c h r a n e P u b l i c U t i l i t i e s C o m m i s s i o n D r y d e n M u n i c i p a l T e l e p h o n e S y s t e m G o s f i e l d N o r t h M u n i c i p a l T e l e p h o n e S y s t e m H a y M u n i c i p a l T e l e p h o n e S y s t e m H u r o n a n d K i n l o s s M u n i c i p a l T e l e p h o n e S y s t e m K e e w a t i n M u n i c i p a l T e l e p h o n e S y s t e m K e n o r a M u n i c i p a l T e l e p h o n e S y s t e m M o r n i n g t o n M u n i c i p a l T e l e p h o n e S y s t e m O n t a r i o N o r t h l a n d C o m m u n i c a t i o n s T h u n d e r B a y T e l e p h o n e T u c k e r s m i t h M u n i c i p a l T e l e p h o n e S y s t e m 	<p>INCORPORATED:</p> <ul style="list-style-type: none"> L a C i e d e t é l é p h o n e d e C o u r c e l l e s I n c . T é l é p h o n e D a a q u a m I n c . T é l é p h o n e G u é v r e m o n t S o c i é t é d e t é l é p h o n e d e l a B a i e L a c o m p a g n i e d e t é l é p h o n e d e L a m b t o n I n c . T é l é p h o n e M i l o t I n c . Q u é b e c T e l T é l é p h o n e d e S t E p h r e m I n c . L e T é l é p h o n e d e S t L é o i r e d e B a g o t I n c . L a c o m p a g n i e d e T é l é p h o n e d e S t - V i c t o r S o g e t e l I n c . T é l é b e c L a c o m p a g n i e d e T é l é p h o n e d e U p t o n C o - o p d e T é l é p h o n e d e V a l c o u r t L a c o m p a g n i e d e T é l é p h o n e d e W a r w i c k N a n t e s <p>Other</p> <p>INCORPORATED:</p> <ul style="list-style-type: none"> N o r t h w e s t e l <p>MUNICIPAL:</p> <ul style="list-style-type: none"> E d m o n t o n T e l C i t y o f P r i n c e R u p e r t
Source: Annual Reports	

- Most of the 50 independent telephone companies operate in Quebec and Ontario. Exceptions are: Northwestel in the North West Territories, with revenues of \$104 million; ED TEL in Alberta, with revenues of \$312 million; and Prince Rupert in British Columbia, with revenues of \$6 million in 1993.

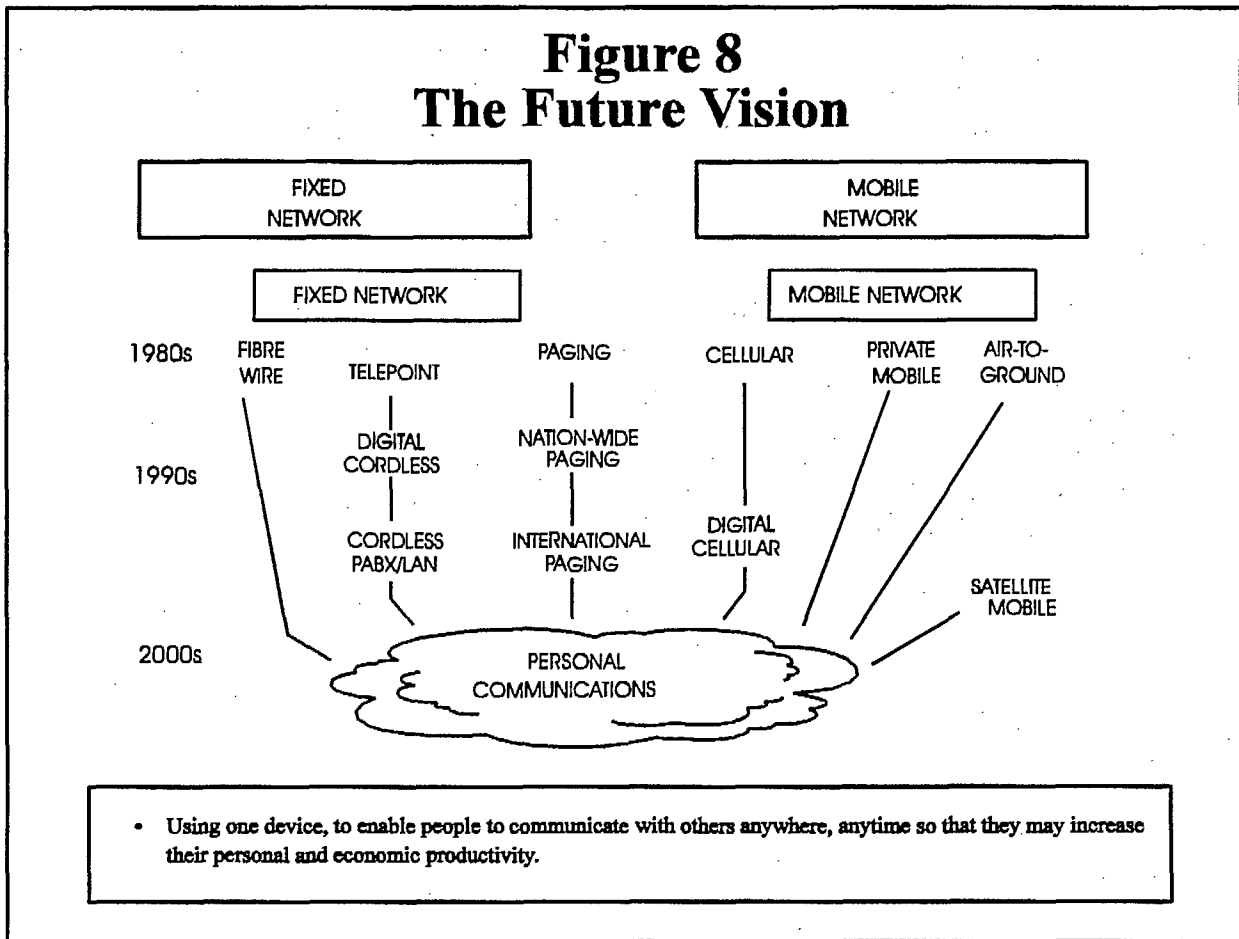
- All Canadian telephone companies compete with a range of telecommunications service providers including interexchange carriers, wireless communications carriers and resellers.

Figure 7 The Canadian Wireless Communication Service Providers	
<p><u>Largest Cellular & Radio - Telephone Carriers</u></p> <p>Rogers CantelMobile Communications Inc. Bell (Mobility) Cellular Inc. *</p> <p><u>Paging Operators</u></p> <p>National Pagette * Telelink Canada Limited Rogers CantelMobile Communications Inc. Unitel The Beeper People Inc. Motorola Canada Ltd. La Corporation Scotpage limitée Glen Net Inc. Telesat Canada Communications Inc. National Personal Communications Ray Primack Mobility Canada (Personacom) Ltd.</p> <p><u>National (Can-USA) Paging Operators</u></p> <p>Rogers CantelMobile Inc. MBM International Network Mobility Canada (Personacom)</p> <p><u>Air-to-Ground Public Telephone Service</u></p> <p>Skytel Communications Corp. * In-Flight Phone (Canada) Corp. Air One Canada Communications Inc.</p> <p><u>Mobile Data</u></p> <p>Mobitex (Rogers CantelMobile Communications Inc.) Bell-Ardis Inc. *</p> <p><u>Mobile Satellite</u></p> <p>Teleglobe Inmarsat Telesat Mobile Inc. (TMI) **</p>	<p><u>Public Cordless Telephone Service Operators</u></p> <p><u>Canada Popfone Corporation:</u></p> <p>Sprint Canada CUC Broadcasting Ltd. Cablecasting Limited Le Groupe Vidéotron Ltée. MacLean Hunter Cable T.V. Ltd. FirstTel Communications Corporation (consortium of 27 companies) Com2i Fundy Cablevision Ltd. Northern Cable Holdings Limited Telesystem Financial Corporation</p> <p><u>Mobility Personacom Canada Ltd.</u></p> <p>AGT Cellular Limited BCE Mobile Communications Inc. Edmonton Telephone Corporations Island Telephone Company Ltd. Manitoba Telephone System Maritime Telegraph & Telephone Company Ltd. New Brunswick Telephone Company Ltd. Newfoundland Telephone Company Ltd. Northwest Telephone Company Ltd. Québec - Téléphone Saskatchewan Telecommunications Thunder Bay Telephone</p> <p><u>Rogers CantelMobile Inc.</u></p> <p><u>Telezone:</u></p> <p>Telezone Inc. (subsidiary of Tricaster Management Inc.) Classic Communications Ltd. Integrated Messaging Inc. Douserv Management Inc. Omega Paging Services Ltd. Tridon Communications Inc.</p>
<p>* Subsidiary of BCE Mobile Communications ** Subsidiary of Telesat Canada</p> <p>Source: Industry Canada</p>	

- In 1993, there were four alternate inter-exchange carriers, companies who owned and operated their own telecommunications facilities to provide public switched long-distance telephone services. Their facilities are interconnected to the public switched telephone network (PSTN) so as to gain access to end users. The interconnection, approved by the

CRTC, allows them the use of the telephone companies local exchange facilities at a fee. These carriers are expected to acquire an increasing share of the \$8 billion long-distance telecommunications market. In 1993, With the advent of competition, in 1993, the alternate interexchange carriers gained an estimated \$0.6 billion of the telecommunications long distance market. This accounts for 3% of the telecommunications service industries' revenues.

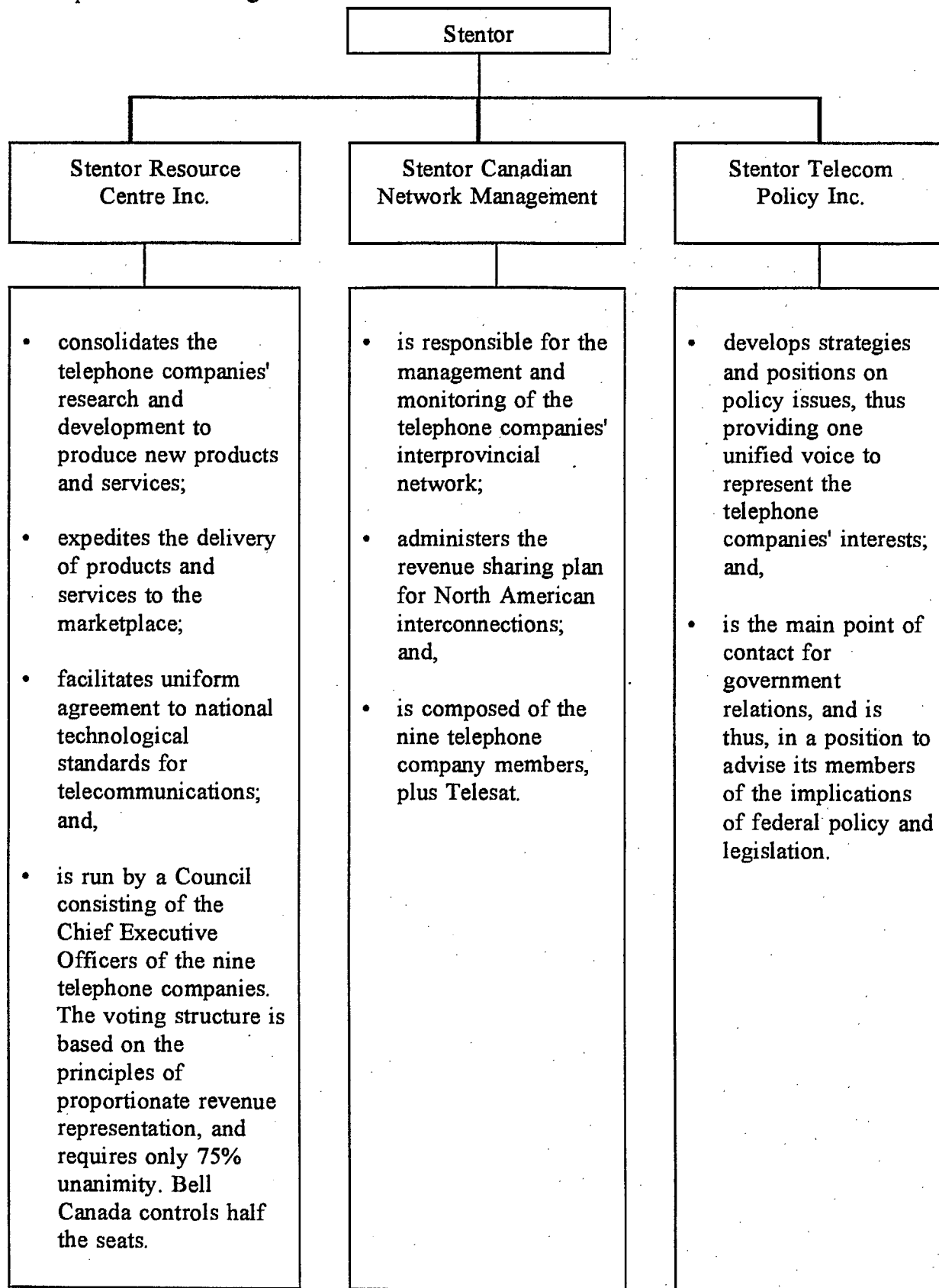
- As of September 1994, all services are open to competition, including basic local telephone services. Exemptions are over-seas and satellite services. These services are presently offered on a monopoly basis. However, resale of overseas and satellite services are permitted.
- Teleglobe, the sole Canadian overseas carrier, with revenues of \$0.4 billion, and Telesat, the sole Canadian satellite carrier, with revenues of \$0.2 billion, together had 1% of the telecommunications service industries' revenues in 1993. The federal government will be reviewing the monopoly status of Teleglobe in 1995 with an expected decision by 1997.
- Two major players, Rogers Cantel and Mobility Canada, are the main wireless service providers, yet, there are also hundreds of small, individual radio common carriers associated with the distribution of wireless telecommunications services. In 1993, it is estimated that these service providers in total contributed \$1.4 billion or 8% of the total telecommunications service industries' revenues. Services offered by these carriers include cellular, paging and other personal communications services.
- Finally, companies engaged in the resale of most telecommunications services are categorized as the telecommunications resellers. These companies which presently number more than two hundred, are not considered carriers as they do not own or operate transmission facilities. Many of the initial resellers, such as Call-Net Enterprises (Sprint Canada) and FONOROLA, have since acquired their own facilities. As such, they are now legally classified as telecommunications carriers. In 1993, resellers earned revenues totalling over \$0.2 billion, 1% of the telecommunications service industries' revenues.



- In the future consumers will not differentiate between the various wired and wireless communication services, both of which are expected to expand at an ever increasing rate.
- With the recent changes in the regulatory environment, to be discussed in Section III, it is foreseen that interactive multimedia services will be offered by the telephone companies, the cable television companies and other companies, like the hydro-electric companies. These new services may provide additional growth for multimedia companies well into the next century.
- For example, a recent CRTC decision allows telephone companies to produce electronic information and launch market trials of interactive video services.

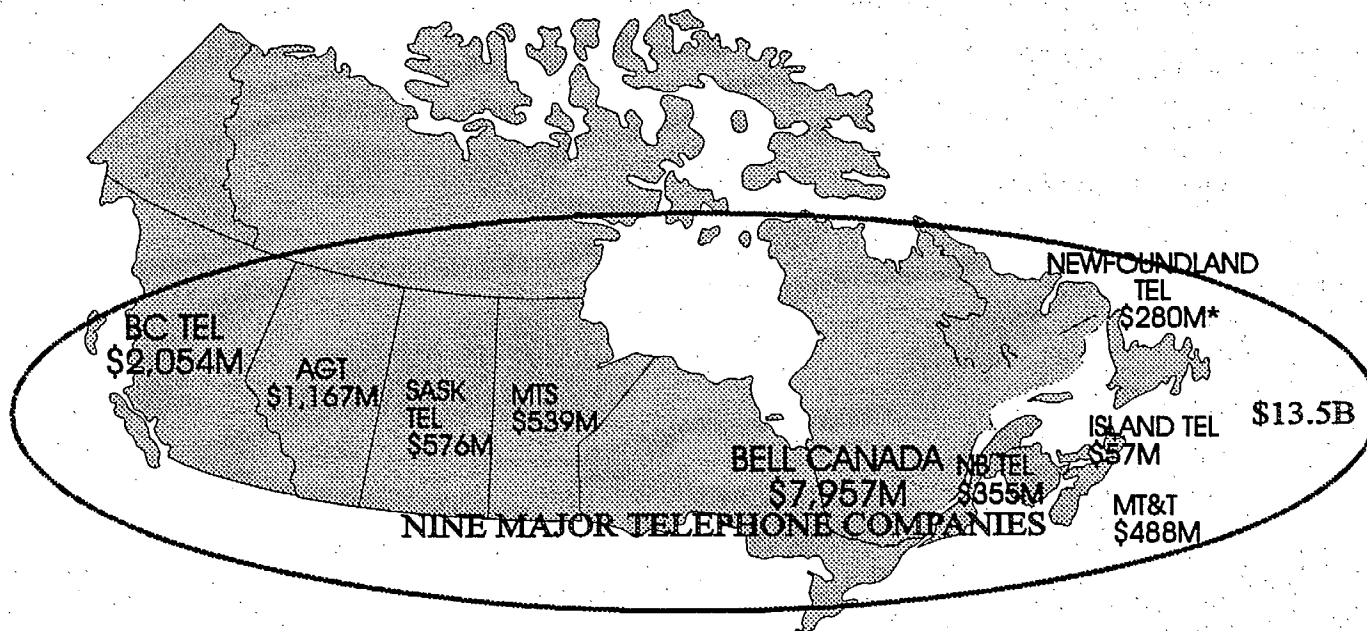
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- In response, plans are under way by various companies to begin offering two-way enhanced electronic services, such as home shopping and electronic delivery of movies on demand, to Canadians by as early as the fourth quarter of 1995.
 - In addition, several industries have been identified as being targets for potential initial application of the new electronic information services: entertainment; education; financial services; health care; publishing; and government services.
 - The following sections provide additional information on the key players in Canada's telecommunications service industries.

Stentor is composed of three organizations:



Source: Stentor

Figure 9
The Stentor Telephone Companies
 by Serving Territory



Dollar values are estimated 1993 Operating Revenues (excludes Telesat Canada and Quebec Tel)

* Refers to NewTel Enterprises Ltd. revenues

- The nine telephone companies that are full members of Stentor operate in their respective province(s) as indicated above. They are subject to federal regulations, except for SaskTel which is exempted from the Telecommunications Act until 1998.
- Stentor can simply be described as a working association of telephone companies that allows its members to provide national services without duplicating facilities. Telesat Canada, Canada's sole satellite carrier covering all of Canada is also a member. In addition, Québec Téléphone which operates in regions of Quebec not served by Bell Canada, is an associate member of Stentor. As previously noted, Québec Téléphone is usually referred to as an independent telephone company.

- In general, there are nine existing or potential markets of principal interest for the Stentor member companies:
 1. **Large (Signature) Business:** for the provision of access and gateway services to multi-provincial, multi-location customers;
 2. **Medium Business:** for the provision of access and gateway services to national or multi-provincial customers;
 3. **Small Business (Long Distance):** one-province business with interprovincial dealings;
 4. **Consumer Long Distance:** traditional long distance service;
 5. **Global Communications:** small-to-large businesses participating in international markets;
 6. **Wholesalers and Resellers:** group sharing to participate in discounts;
 7. **Systems Integration:** providing access to infrastructure to network users (eg. IBM, Gemini, SHL Systemhouse);
 8. **Personal Communication:** wireless services (cellular, paging, etc.); and
 9. **Interactive Multimedia:** information and entertainment delivery to the home.

Source: Stentor

- Each individual member company is responsible for the initiation of new strategies and policies regarding the targetting of one of these potential markets.
- The first five principal interests can be identified as having been the core business of the telephone company operations for the past few decades.
- The last decade, however, has witnessed the emergence of three additional principal interests; resale, systems integration and wireless services. These are now high-growth market segments which have been fuelling growth in the telecommunication service industries in recent years.
- MediaLinx Interactive Inc., part of the \$8 billion Beacon initiative announced by the Stentor consortium, will upgrade the local and national networks with high-speed fibre-optic and cable connections to most Canadian homes in the next 10 years.
- The following tables provide additional data on the individual members of Stentor, including Québec Téléphone and Telesat Canada. The data are those of Stentor, and the definitions and concepts used to derive the data are provided in the Glossary.

Table 9*
Analysis of
The Stentor Member Companies

	AGT Limited	Bell Canada	BC TELECOM	Island Tel	MTS	MT&T	NBTel	Newfoundland Telephone	Sask Tel	Telesat	Québec Téléphone	Total or Average %
1992												
millions of dollars												
Operating Revenues												
Total Revenues	\$1,112	\$7,863	\$2,037	\$55	\$527	\$477	\$349	\$273	\$572	\$196	\$242	\$13,704
Toll Ratio	60.9%	47.1%	44.9%	46.5%	52.1%	54.6%	56.0%	59.7%	62.0%	N/A	58.0%	49.7%
Net Operating Revenues	\$280	\$2,243	\$517	\$18	\$78	\$155	\$96	\$86	\$141	\$37	\$62	\$3,712
millions of dollars												
Operating Expenses												
Total Expenses Excluding Taxes	\$832	\$5,034	\$1,481	\$36	\$433	\$308	\$239	\$175	\$429	\$155	\$160	\$9,283
Total Expenses Less Taxes and Depreciation	594	3,453	1,156	24	298	213	162	111	307	89	114	6,521
Operating Ratio	74.8%	64.0%	72.7%	64.9%	82.1%	64.6%	68.8%	64.3%	74.9%	79.0%	66.1%	67.7%
millions of dollars												
Taxes												
Income Taxes	\$5	\$638	\$201	\$6	N/A	\$53	\$32	\$29	N/A	\$-5	\$18	\$977
Other Taxes	42	586	39	1	16	15	15	12	3	4	20	752
Total Taxes	48	1,223	239	7	16	67	47	41	3	-1	38	1,729
millions of dollars												
Investment												
Total Investments in Telecommunications Plant	\$2,674	\$25,205	\$5,147	\$186	\$1,927	\$1,531	\$1,083	\$951	\$1,594	\$1,267	\$709	\$42,274
millions of dollars												
Expenditures												
Capital Expenditures	\$348	\$2,686	\$470	\$16	\$172	\$147	\$106	\$92	\$99	\$13	\$53	\$4,202
1993												
millions of dollars												
Operating Revenues												
Total Revenues	\$1,167	\$7,957	\$2,210	\$57	\$539	\$473	\$355	\$275	\$556	\$200	\$243	\$14,032
Toll Ratio	58.7%	43.7%	44.7%	45.7%	51.1%	53.5%	52.9%	58.3%	58.9%	N/A	56.6%	47.1%
Net Operating Revenues	\$279	\$2,164	\$541	\$18	\$93	\$150	\$93	\$87	\$137	\$26	\$61	\$3,648
millions of dollars												
Operating Expenses												
Total Expenses Excluding Taxes	\$848	\$5,196	\$1,629	\$38	\$433	\$309	\$249	\$175	\$416	\$170	\$163	\$9,625
Total Expenses Less Taxes and Depreciation	584	3,520	1,254	25	291	202	165	109	298	89	113	6,650
Operating Ratio	72.6%	65.3%	73.7%	66.2%	80.6%	65.2%	70.0%	63.6%	74.9%	84.7%	67.2%	68.6%
millions of dollars												
Taxes												
Income Taxes	\$6	\$629	\$201	\$6	N/A	\$50	\$30	\$30	N/A	\$-7	\$19	\$963
Other Taxes	41	597	40	1	16	15	14	13	3	4	19	762
Total Taxes	46	1,227	240	7	16	65	43	42	3	-3	37	1,725
millions of dollars												
Investment												
Total Investments in Telecommunications Plant	\$2,697	\$26,034	\$5,824	\$195	\$1,981	\$1,605	\$1,092	\$973	\$1,624	\$1,123	\$735	\$43,883
millions of dollars												
Expenditures												
Capital Expenditures	\$315	\$2,106	\$515	\$18	\$170	\$146	\$93	\$90	\$74	\$13	\$60	\$3,599
* Totals may not add exactly due to rounding												
Source: Stentor												

Table 10
Analysis of
The Stentor Member Companies

	AGT Limited	Bell Canada	BC TELECOM	Island Tel	MTS	MT&T	NBTel	Newfoundland Telephone	Sask Tel	Telesat	Québec Téléphone	Total
1992												
Plant												
Number of Route Kilometers of Microwave System	31,033	42,602	11,813	-	6,996	-	1,932	9,026	10,659	N/A	3,683	117,744
Number of Channel Kilometers of Microwave System	31,033	47,852	108,162	-	12,315	-	12,015	12,510	47,631	N/A	22,308	293,826
Number of Route Kilometers of Fibre Optics	5,650	25,360	3,520	383	683	3,200	2,407	1,415	8,560	N/A	2,815	53,993
Number of Fibre Kilometers	80,980	562,059	10,748	-	-	-	7,064	18,395	78,193	N/A	28,190	785,629
Total Wire/Cable Kilometer	-	153,919,662	26,635,647	9,813	10,129,411	52,147	5,988,006	16,580	8,891,094	N/A	3,934,380	209,576,740
Percentage of Plant Underground (%)	-	75.8%	33.5%	64.0%	84.7%	26.0%	24.3%	11.0%	85.0%	N/A	22.8%	64.5%
Network Data												
Total Network Access Lines (NAS)	1,156,711	9,229,400	2,079,882	71,049	713,497	513,570	461,100	255,787	573,464	N/A	264,338	15,318,798
Number of Network Access Lines per 100 population	59.4%	58.9%	-	54.4%	65.3%	56.7%	63.6%	45.0%	57.7%	N/A	48.1%	53.8%
Number of Network Access Lines Equipped for Direct Dial Overseas	1,156,711	8,843,975	2,079,882	71,049	695,690	513,570	457,934	250,000	573,464	N/A	259,952	14,902,227
Percent NAS served by Digital Switches (%)	99.1%	100.0%	79.0%	62.0%	-	71.0%	86.0%	-	92.7%	N/A	90.5%	85.0%
Number of Directories Printed	2,509,059	17,800,000	4,414,350	112,859	1,659,428	1,114,534	570,000	392,200	803,500	N/A	368,424	29,744,354
Number of Exchanges	474	943	307	26	234	149	100	213	342	N/A	135	2,923
Number of Exchanges with Extended Area Service (EAS)	460	860	241	26	162	149	81	100	69	N/A	122	2,270
Number of NAS served by EAS	1,085,460	9,189,616	-	71,049	-	513,570	434,206	189,391	394,767	N/A	259,149	12,137,208
Number of People in 911 Serving Areas	539,104	10,500,000	1,418,000	0	653,760	30,000	268,000	200,000 **	418,542	N/A	0	14,027,406
Number of Communities Served by 911	6	119	-	0	2	168	15	45	5	N/A	0	360
Plant												
Number of Route Kilometers of Microwave System	32,363	-	12,247	191	-	2,789	1,543	8,962	10,338	N/A	3,683	72,166
Number of Channel Kilometers of Microwave System	32,363	-	101,913	-	-	-	9,141	12,762	43,174	N/A	22,308	221,661
Number of Route Kilometers of Fibre Optics	5,962	27,992	5,166	525	-	4,250	2,902	1,987	8,830	N/A	2,890	60,504
Number of Fibre Kilometers	85,335	639,442	21,882	-	-	-	29,020	27,818	79,978	N/A	29,741	121,008
Total Wire/Cable Kilometer	-	154,658,720	27,476,103	9,978	-	52,323	6,034,280	16,687	9,175,015	N/A	3,921,466	201,344,572
Percentage of Plant Under ground	-	75.8%	34.0%	63.0%	-	24.0%	24.1%	12.0%	96.0%	N/A	22.7%	68.4%
Network Data												
Total Network Access Lines (NAS)	1,194,438	9,461,863	2,171,689	75,203	735,497	527,521	480,314	262,856	574,962	N/A	269,393	15,753,736
Number of Network Access Lines per 100 population	58.4%	56.9%	-	56.9%	65.9%	57.2%	65.8%	46.3%	58.7%	N/A	49.0%	57.6%
Number of Network Access Lines Equipped for Direct Dial Overseas	1,193,244	see note*	2,171,689	75,203	717,109	527,521	480,314	258,000	574,962	N/A	268,547	6,266,589
Percent NAS served by Digital Switches (%)	99.9%	95.0%	84.0%	80.0%	82.0%	81.0%	100.0%	81.9%	95.3%	N/A	98.3%	89.7%
Number of Directories Printed	2,490,378	17,019,548	4,560,750	116,416	1,703,836	1,110,625	585,000	401,000	796,000	N/A	371,585	29,155,138
Number of Exchanges	465	940	307	26	236	149	100	213	341	N/A	135	2,912
Number of Exchanges with Extended Area Service (EAS)	443	859	241	26	60	149	85	100	70	N/A	122	2,165
Number of NAS served by EAS	1,111,835	9,421,679	-	75,203	-	527,521	452,000	195,040	399,058	N/A	264,033	12,446,369
Number of people in 911 Serving Areas	620,394	10,600,000	1,556,889	-	667,473	30,000	277,400	200,000 **	422,955	N/A	0	14,375,111
Number of Communities Served by 911	6	122	29	-	2	168	14	54	5	N/A	0	400

* Note: Bell reports percentage of network access lines (NAS) equipped for Direct Dial Overseas

** Note: The number of people in 911 Serving Areas is estimated for Newfoundland Telephone

Source: Stentor

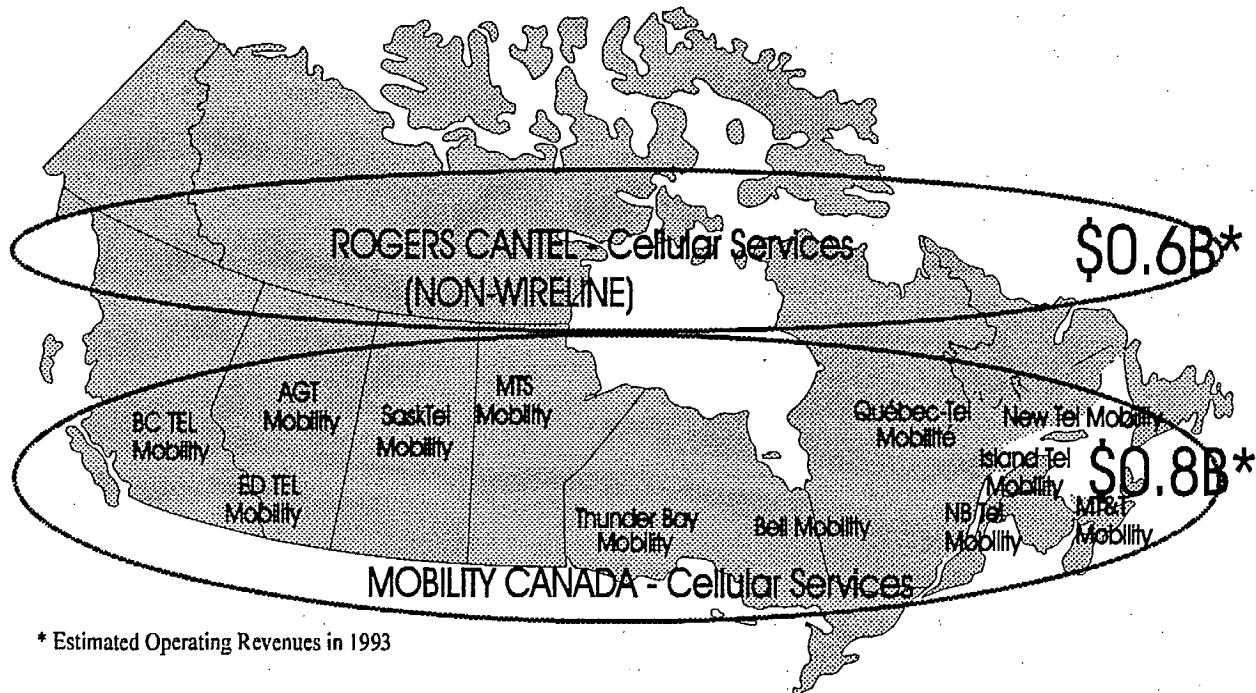
Table 11
Analysis of
The Stentor Member Companies

	AGT Limited	Bell Canada	BC TELECOM	Island Tel	MTS	MT&T	NBTel	Newfoundland Telephone	Sask Tel	Telesat	Québec Téléphone	Total
1992												
Message Data												
Percentage Touch-Tone Business	87.4%	50.7%	89.7%	88.4%	-	84.4%	90.0%	72.4%	74.8%	N/A	63.0%	77.9%
Percentage Touch-Tone Residential	80.5%	72.7%	76.4%	69.7%	-	73.5%	84.0%	76.1%	66.2%	N/A	67.2%	74.0%
No. of Long Distance Calls	421,213	1,758,300	484,200	14,667	146,506	108,824	131,036	71,059	164,687	N/A	55,825	3,356,317
							thousands					
Payroll												
No. of Employees	9,037	52,897	14,524	336	5,338	3,877	2,348	1,817	3,727	830	1,737	96,468
Total Payroll	421,886	2,561,800	705,684	14,107	201,635	162,659	100,599	80,931	164,466	53,847	75,142	4,542,756
							thousands					
Shares - Shareholders												
Common Shares Outstanding	1,700,000	286,991,614	111,595,703	3,468,997	N/A	28,040,000	20,243,957	17,258,027	N/A	6,087,160	16,700,432	492,085,890
Preferred Shares Outstanding	0	15,001,170	4,249,970	352,500	N/A	4,788,414	0	638,275	N/A	5,000,000	519,003	30,549,332
Total Shares Outstanding	1,700,000	301,992,784	115,845,673	3,821,497	N/A	32,828,414	20,243,957	17,896,302	N/A	11,087,160	17,219,435	522,635,222
Shares held by Canadian Residents	1,700,000	901,992,115	115,249,967	3,748,865	N/A	32,684,294	20,243,957	17,896,039	N/A	11,087,160	17,205,285	521,807,673
Shares held by Non-Residents	0	669	595,706	72,632	N/A	144,120	0	263	N/A	0	14,150	827,540
No. of Shareholders	2	3,748	14,060	2,208	N/A	15,126	1	762	N/A	1	4,843	40,751
1993												
Message Data												
Percentage Touch-Tone Business	89.6%	48.9%	92.1%	89.1%	88.4%	87.7%	94.0%	77.7%	72.7%	N/A	70.2%	81.0%
Percentage Touch-Tone Residential	83.8%	78.7%	80.3%	76.7%	82.1%	78.9%	88.0%	82.1%	86.8%	N/A	73.4%	81.1%
No. of Long Distance Calls	468,659	see note*	520,000	15,555	156,598	119,150	150,121	76,761	178,951	N/A	61,179	1,746,974
							thousands					
Payroll												
No. of Employees	6,946	50,982	13,478	329	4,408	3,736	2,283	1,672	3,517	512	1,709	89,572
Total Payroll	353,334	2,539,500	866,021	14,662	194,293	165,794	99,984	76,004	154,211	40,560	74,159	4,578,482
							thousands					
Shares - Shareholders												
Common Shares Outstanding	1,700,000	293,624,031	114,986,294	3,486,997	N/A	28,040,000	20,890,515	17,258,027	N/A	6,842,447	16,916,795	503,727,106
Preferred Shares Outstanding	0	15,001,170	3,932,915	352,500	N/A	3,350,000	0	0	N/A	5,000,000	518,103	28,154,688
Total Shares Outstanding	1,700,000	308,625,201	118,919,209	3,821,497	N/A	31,390,000	20,890,515	17,258,027	N/A	11,842,448	17,434,898	531,881,795
Shares held by Canadian Residents	1,700,000	308,621,882	117,451,261	3,712,927	N/A	31,049,613	20,890,515	17,258,027	N/A	11,842,448	14,417,993	529,944,666
Shares held by Non-Residents	0	3,319	1,467,948	108,570	N/A	340,387	0	0	N/A	0	16,905	1,937,129
No. of Shareholders	2	3,372	13,735	2,341	N/A	13,969	1	1	N/A	1	4,508	37,930
Statistics include Directory Operations	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	N/A		Yes
Statistics include Mobile/Cellular Operations	No	No	Yes	Yes	Yes	No	Yes	No	No	No		Yes

* Note: Bell reports Long Distance Calls, as conversation minutes % increase = 0.5%

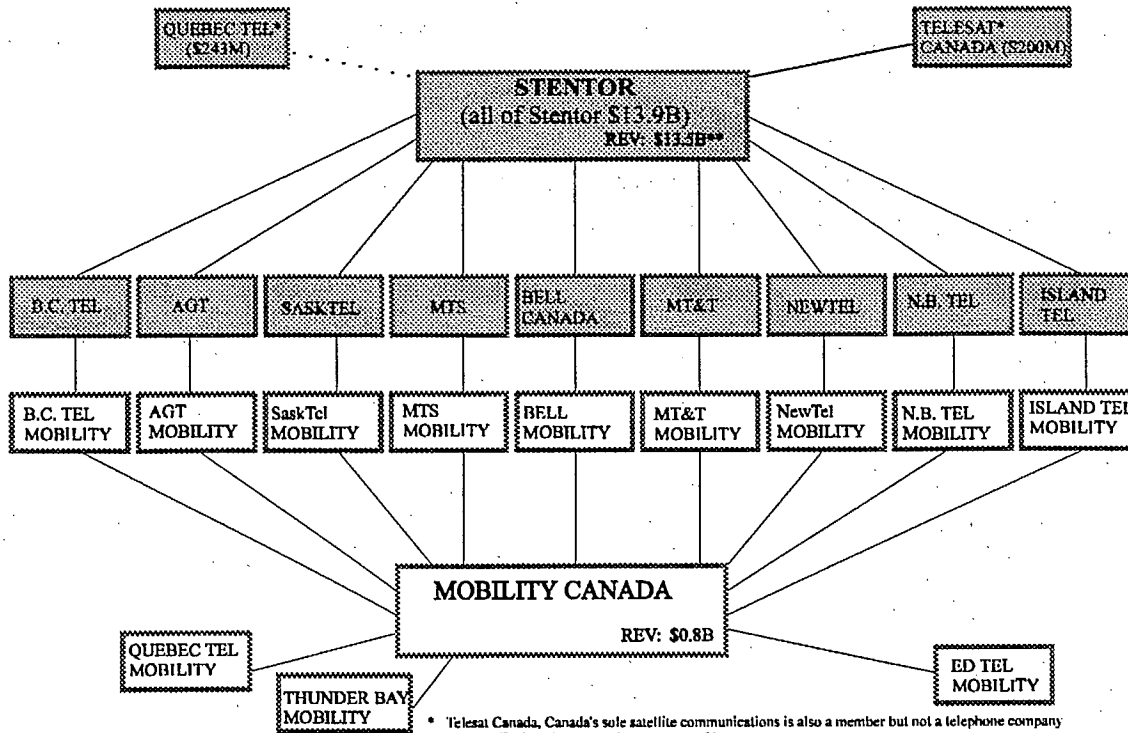
Source: Stentor

Figure 10
Canada's Cellular Radio-Telephone Carriers
 Total Subscribers = 1.3 millions



- There are two cellular radio-telephone service carriers in Canada, Rogers Cantel and Mobility Canada.
- Rogers Cantel, which is licensed to operate in all provinces, is a subsidiary of Rogers Communications Inc., a publicly traded company.
- Mobility Canada is similar to Stentor in that it too is an association of companies, but for the wireless market. Each member is limited to providing cellular radio-telephone service only where the associated telephone company is licensed to operate.

Figure 11
The Major Wireless Carriers
(Association Between Stentor Members and Mobility Canada Members)



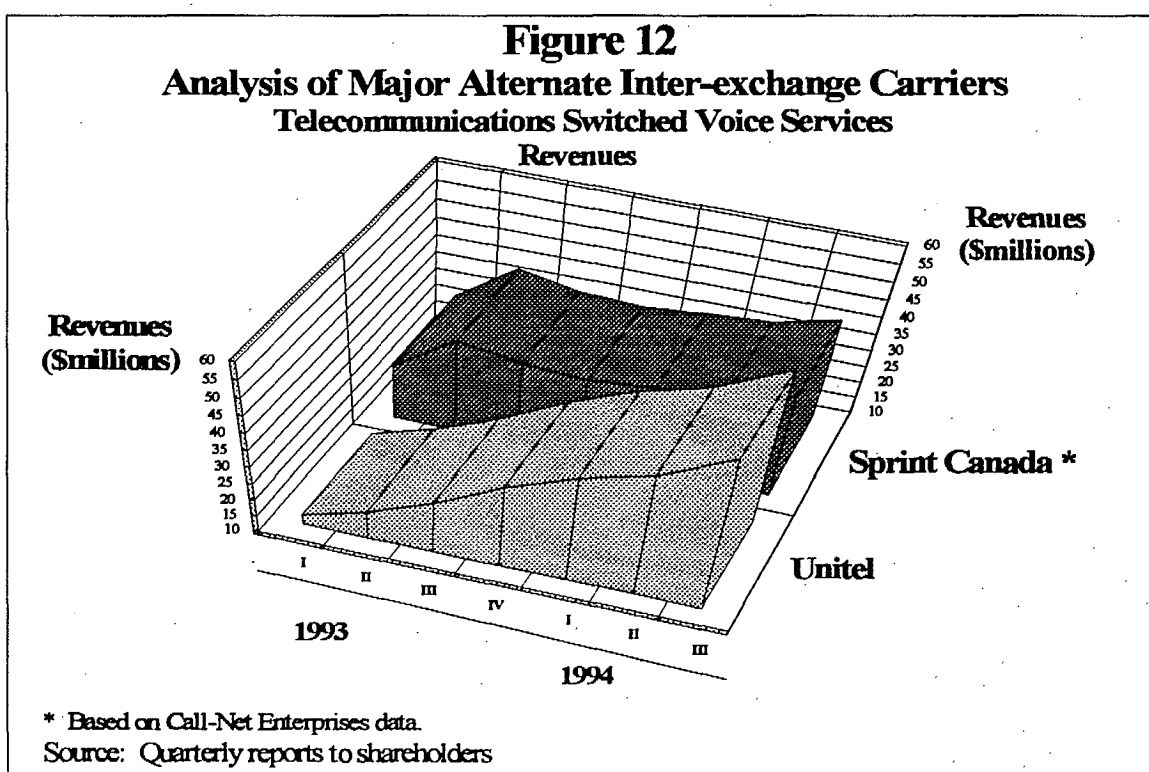
* Telesat Canada, Canada's sole satellite communications is also a member but not a telephone company
 Quebec Tel is only an associate member of Stentor

** Refers to Stentor member telephone companies only

Source: 1993, Annual Company Reports

- Because of the difficulties of segregating consolidated financial data, there is some duplication between the estimated composition of Stentor's \$13.5 billion operating revenues and Mobility Canada's \$0.8 billion operating revenues as reported in financial statements to shareholders. In some cases the financial results of the wireless services are included within the operations of the main telephone company, in other cases they are reported separately.
- As noted previously, there are hundreds of smaller radio communications service providers. Recently several consortiums or alliances have started to offer communications services based on new technologies such as the public cordless telephone service (see Figure 7).

- In addition to the Stentor member companies and the independent telephone companies, Canada had four alternate inter-exchange carriers in 1993. These were Unitel, Sprint Canada, TelRoute and Westel.
- In 1993, Unitel Communications, a subsidiary of its parent Rogers Communications Inc., had total revenues of \$427 million.
- In 1993, Call-Net Enterprises Inc., Sprint Canada's parent, had estimated revenues of \$134 million. Separate results are unavailable for Sprint Canada since they are consolidated with those of the parent company.
- TelRoute is a privately held company and does not make financial information publicly available.
- Westel is a wholly owned subsidiary of the British Columbia Railway Group. Revenues for Westel are consolidated with those of the Group and are not available separately.

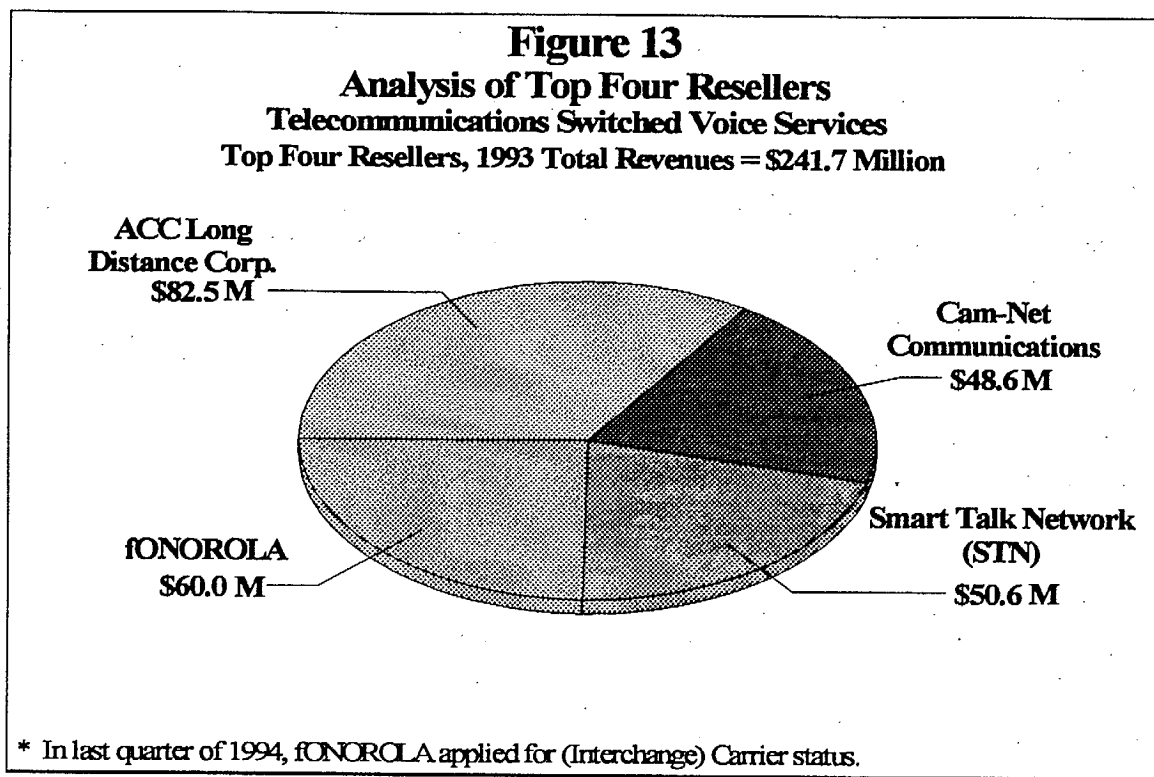


- Switched voice services revenues, for the top two alternate inter-exchange carriers, Unitel and Sprint Canada, amounted to \$224.6 million in 1993.

Table 12							
Analysis of Major Alternate Providers							
Telecommunications Switched Voice Service Revenues							
Top Two Alternate Interexchange Carriers	1993				1994		
	I	II	III	IV	I	II	III
Revenues	millions of dollars						
Unitel	\$13.0	\$18.5	\$25.8	\$35.2	\$42.4	\$47.5	\$56.5
Sprint Canada *	26.6	38.2	35	34.1	35.5	36.7	40.9
Analysis							
Revenues							
Rates of Change (%)	percentage (%)						
Unitel	N/A	42.8	39.0	36.5	20.5	12.1	18.9
Sprint Canada *	N/A	43.6	-8.4	-2.7	4.2	3.2	11.5
* Data on Sprint Canada based on Call-Net Enterprises Inc. quarterly reports							
Source: Quarterly reports to shareholders							

- Growth in revenues from providing telecommunications switched voice services have increased dramatically for Unitel, from \$25.8 million in the third quarter of 1993 to \$56.5 million in the third quarter of 1994. Sprint Canada's growth was lower than Unitel's during this same period.
- Most industry analysts predict that the alternate inter-exchange carriers will eventually capture at least 20% of the estimated \$8 billion long distance (switched voice services) market.

- In 1993, there were more than two hundred resellers in Canada.

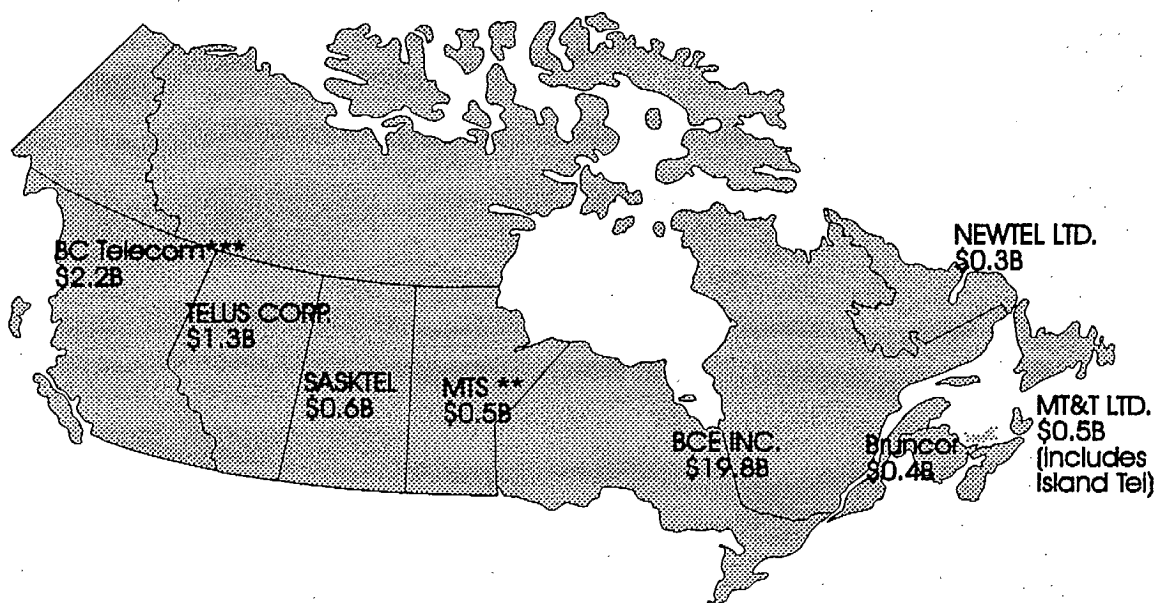


- The revenues of the top four resellers amounted to \$242 million in 1993.

Top Four Resellers	1993				1994	
	I	II	III	IV	I	II
Revenues	millions of dollars					
ACC	\$18.3	\$18.8	\$20.4	\$25.0	\$25.3	\$22.8
CAM-NET	10.4	13.5	12.9	11.8	9.8	11.4
IONOROLA	13.2	13.5	15.5	18.1	19.0	23.3
STN	6.9	10.2	14.1	19.5	21.4	25.4
Analysis						
Revenues	percentage from last quarter					
Rate of Change (%)						
ACC	N/A	2.5%	9.0%	22.4%	1.2%	-10.0%
CAM-NET	N/A	295.0	-4.5	-8.8	-16.5	16.0
IONOROLA	N/A	0.5	16.3	16.9	5.3	22.5
STN	N/A	48.0	38.4	38.7	10.0	18.7
*In the last quarter of 1994, IONOROLA applied for (interexchange) carrier status						
Source: Quarterly reports to shareholders						

• Growth in revenues for these four resellers have increased dramatically within the last year and a half.

Figure 14
 Holding Companies
 (Associated with Stentor)*

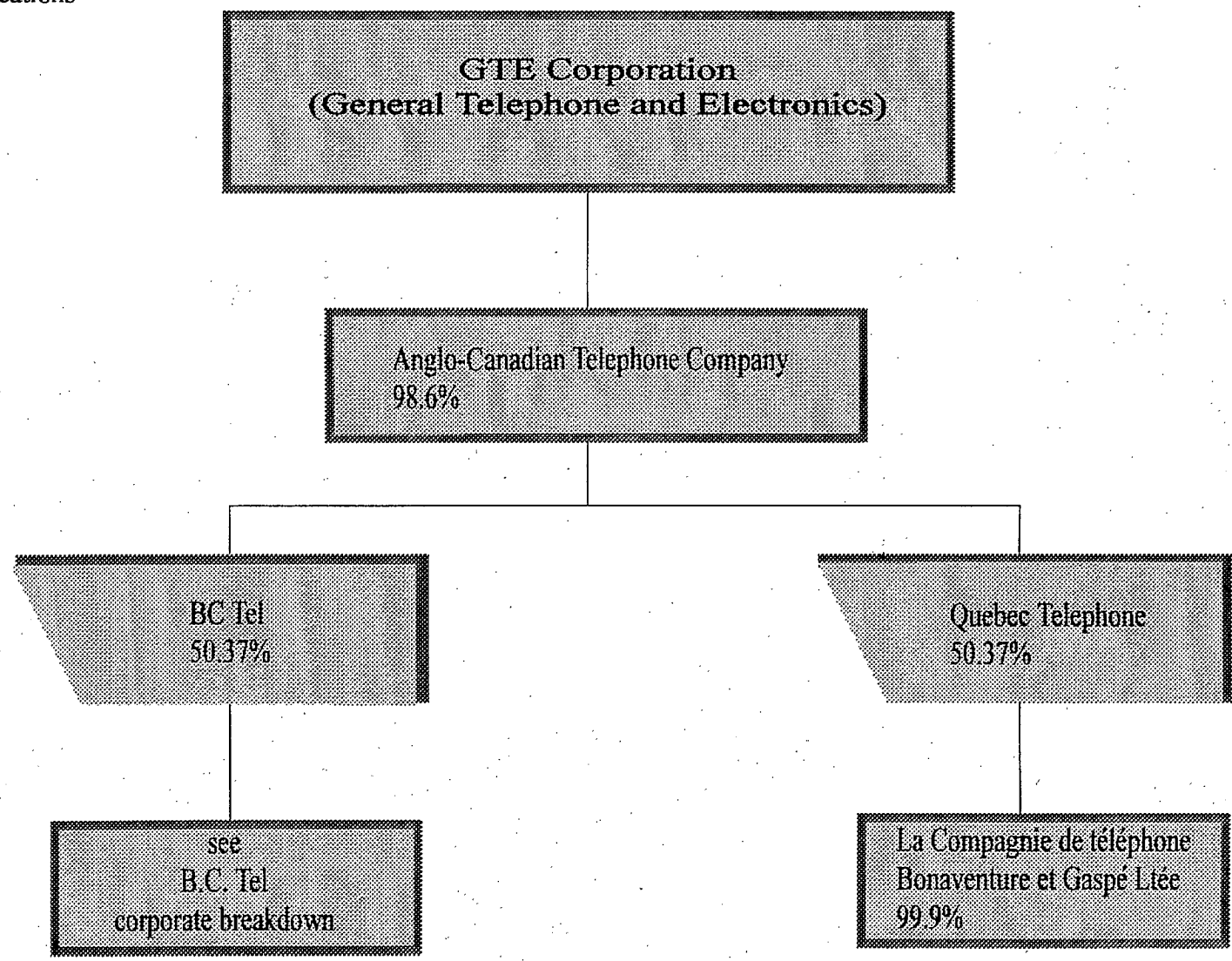


Dollar values are estimated 1993 operating revenues, excludes Telesat Canada and Quebec Tel)

* Holding Company for Telesat Canada (\$0.2B) is Alouette Telecommunications Inc. with its head office in the Ottawa-Hull region.
 ** MTS is the only member of Stentor without a holding company
 *** BC Telecom and Quebec Tel are both 50.4% held by Anglo-Canadian Telephone Company.

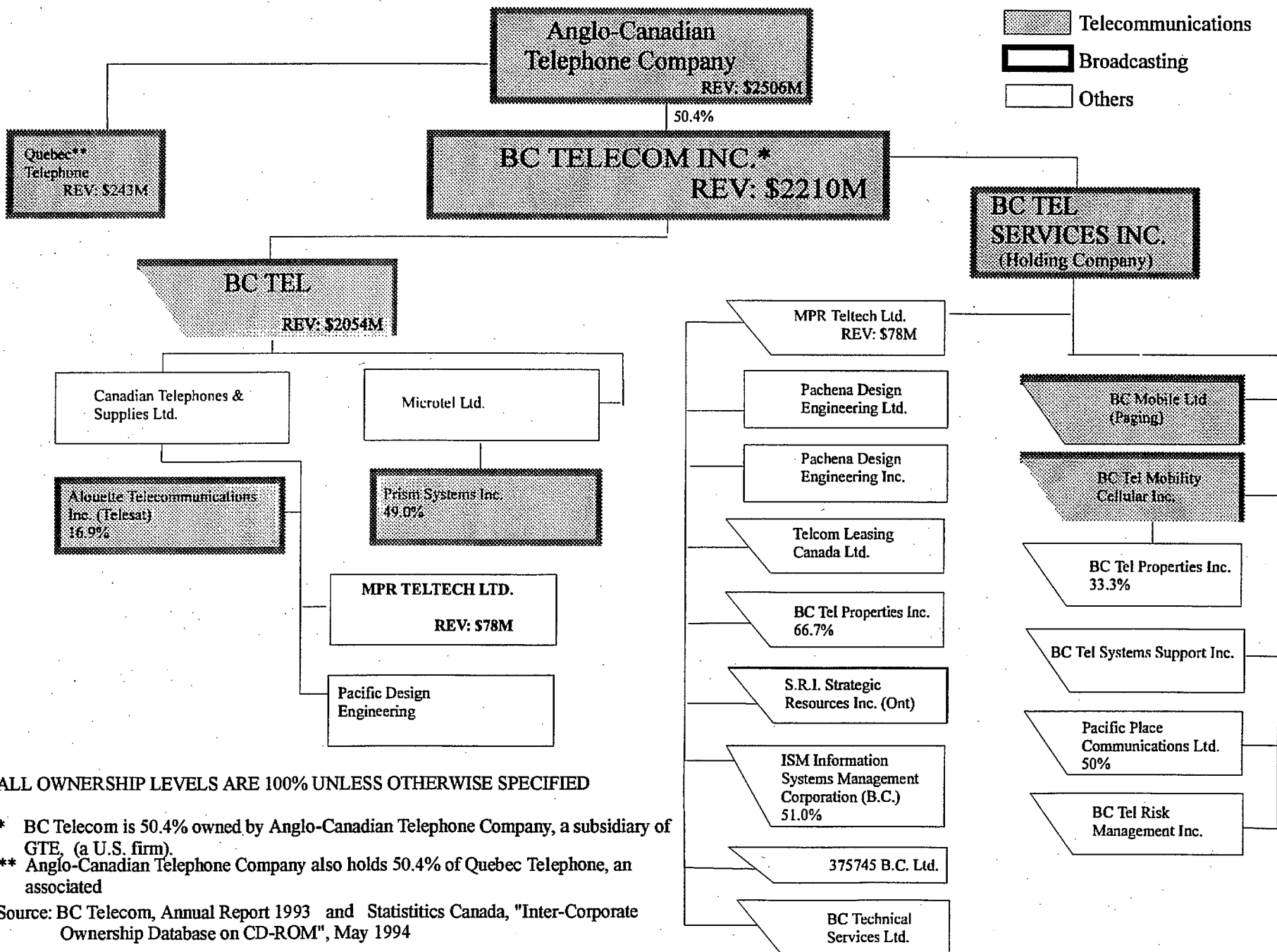
- With the exception of Manitoba Telephone System (MTS), all the members of Stentor have established holding companies.
- The largest Canadian holding company principally devoted to the telecommunications industry is BCE Inc., with worldwide revenues of \$19.8 billion.
- BC Tel, which is part of BC Telecom, and Quebec Tel, an associate member of Stentor, are both 50.4% owned by the Anglo-Canadian Telephone Company. The Anglo-Canadian Telephone Company is the second largest holding company in the Canadian telecommunications industry, with revenues of \$2.5 billion.
- The following figures provide the organizational structure of each of the holding companies that are noted above, proceeding from West to East.

- Telecommunications
- Broadcasting
- Others



ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

Source: Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

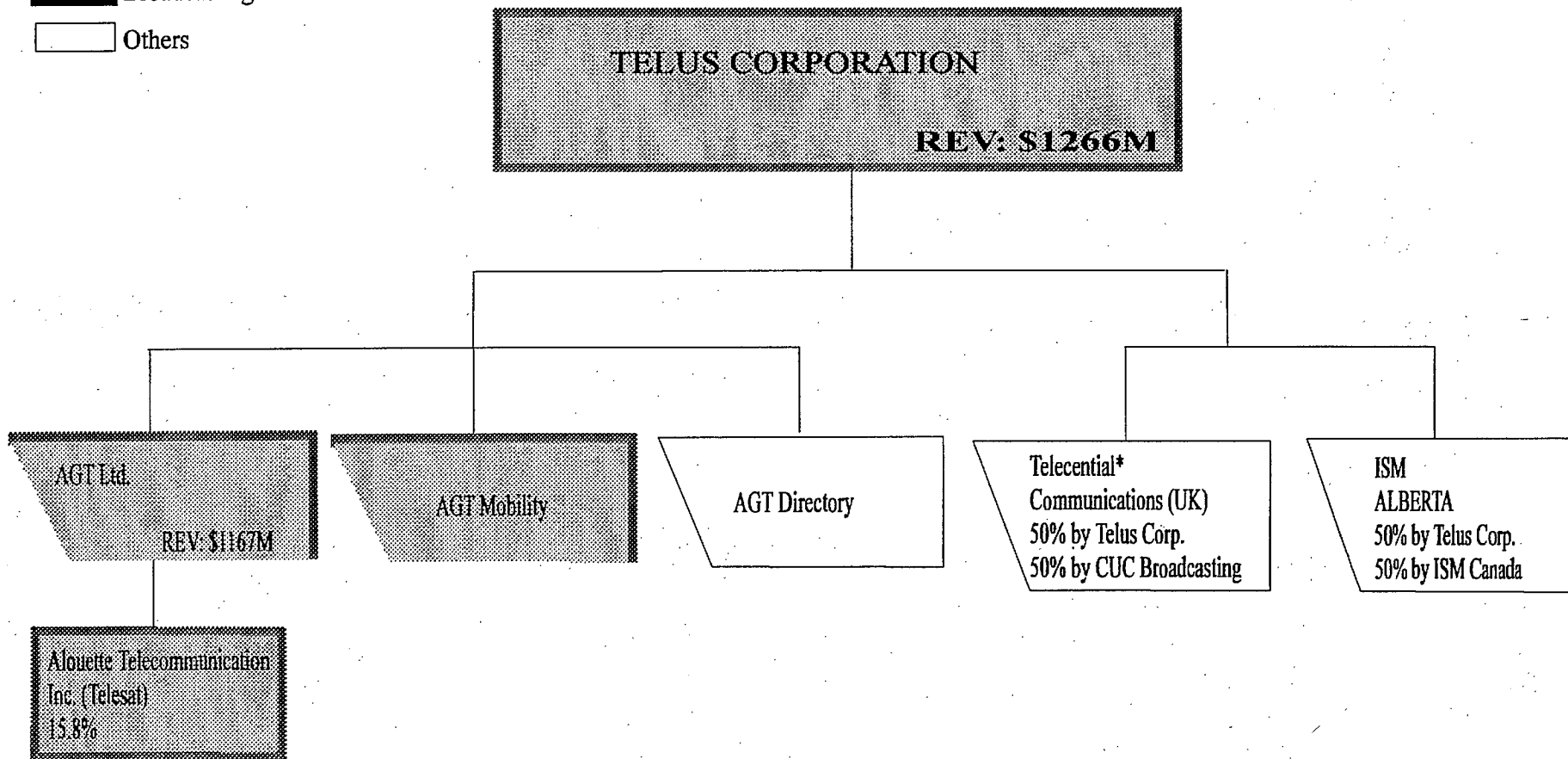


ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

* BC Telecom is 50.4% owned by Anglo-Canadian Telephone Company, a subsidiary of GTE, (a U.S. firm).
 ** Anglo-Canadian Telephone Company also holds 50.4% of Quebec Telephone, an associated

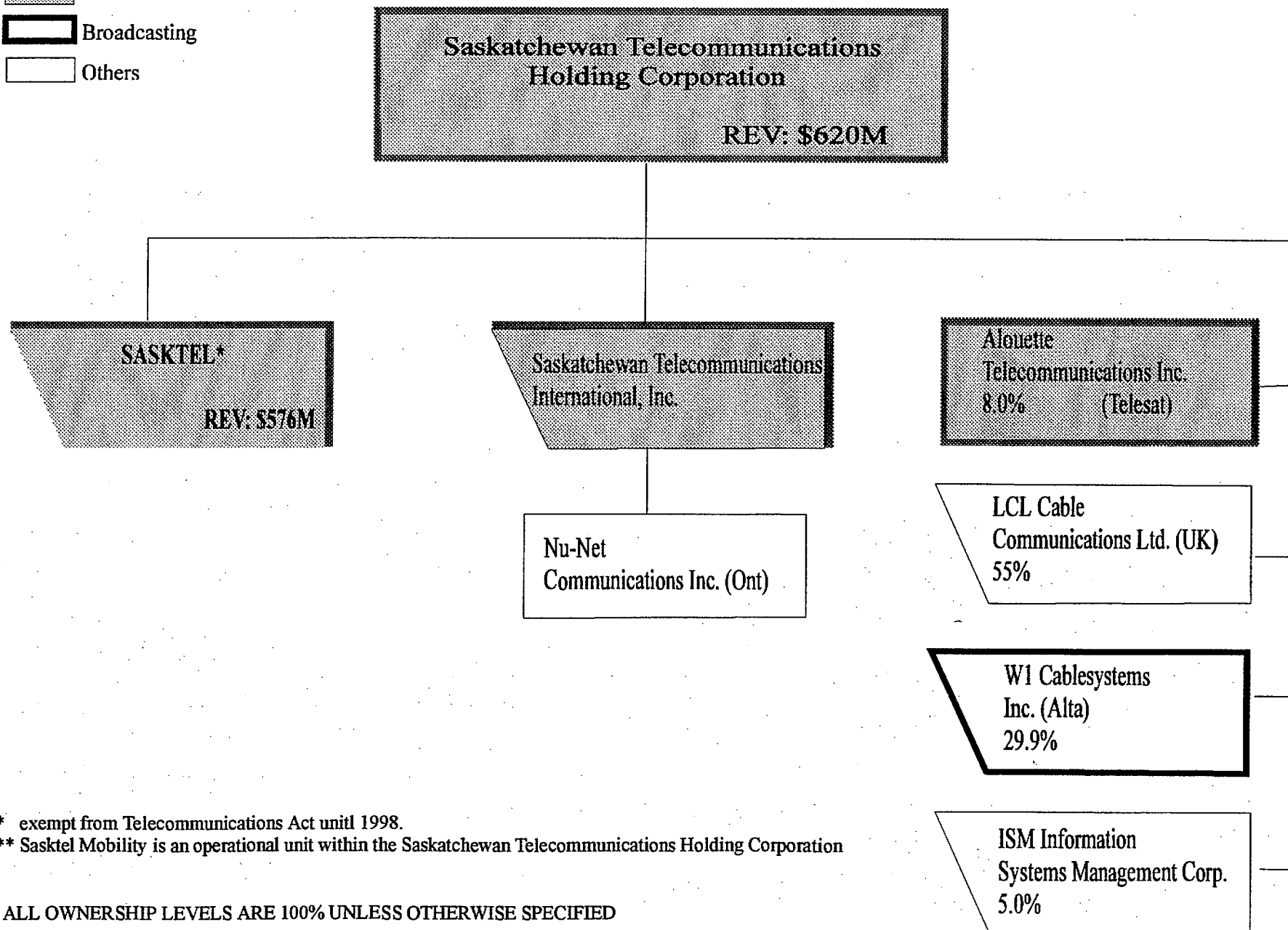
Source: BC Telecom, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

- Telecommunications
- Broadcasting
- Others



* devoted to providing merged cable television telephone services.

Telecommunications
 Broadcasting
 Others






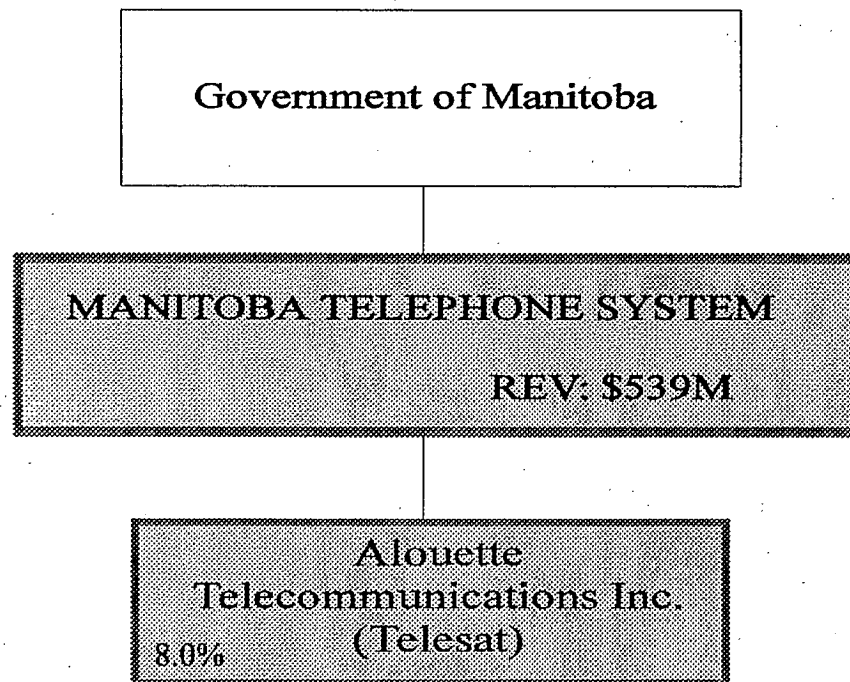
* exempt from Telecommunications Act until 1998.

** Sasktel Mobility is an operational unit within the Saskatchewan Telecommunications Holding Corporation

ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

Source: SaskTel, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

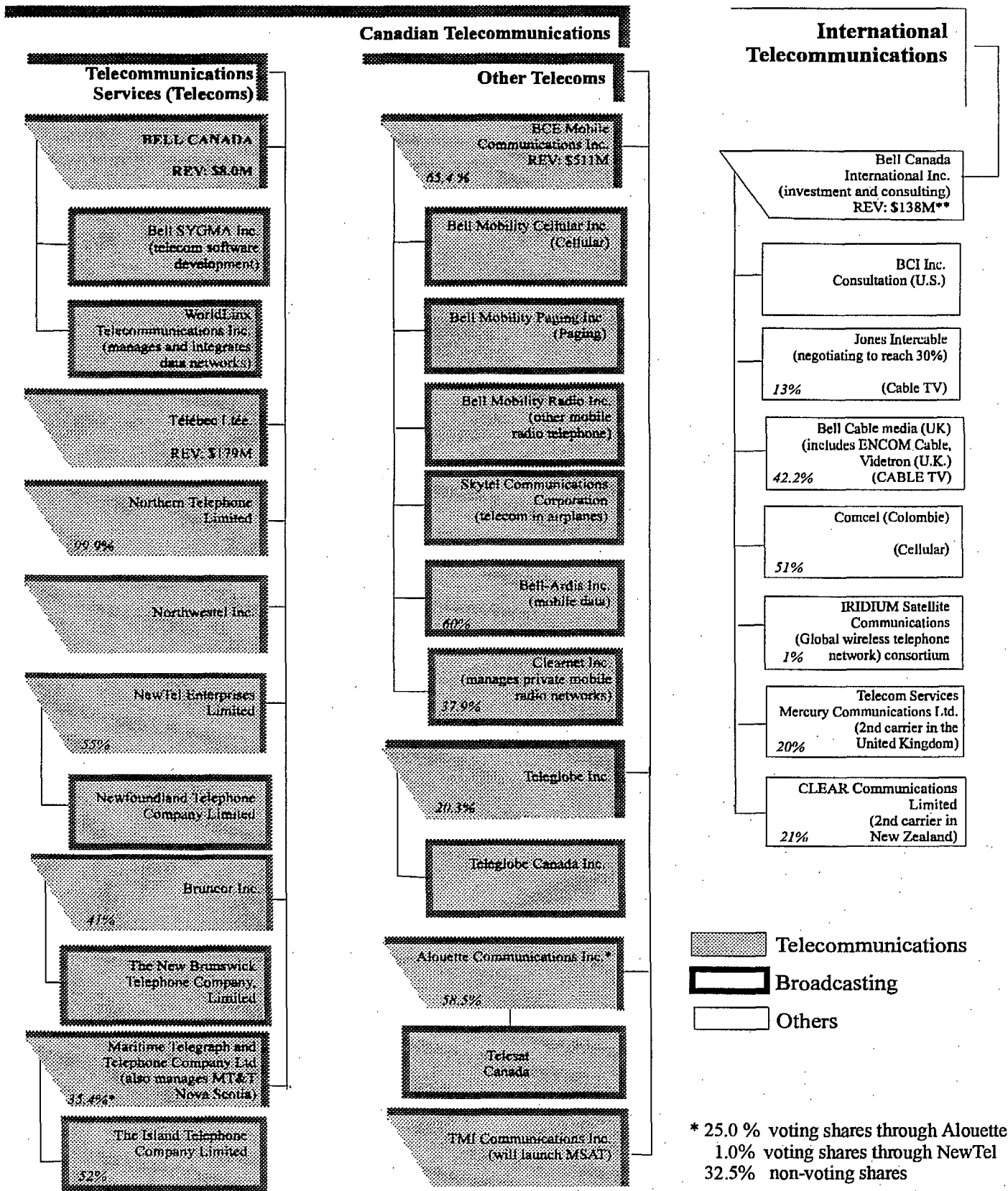
-  Telecommunications
-  Broadcasting
-  Others



ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

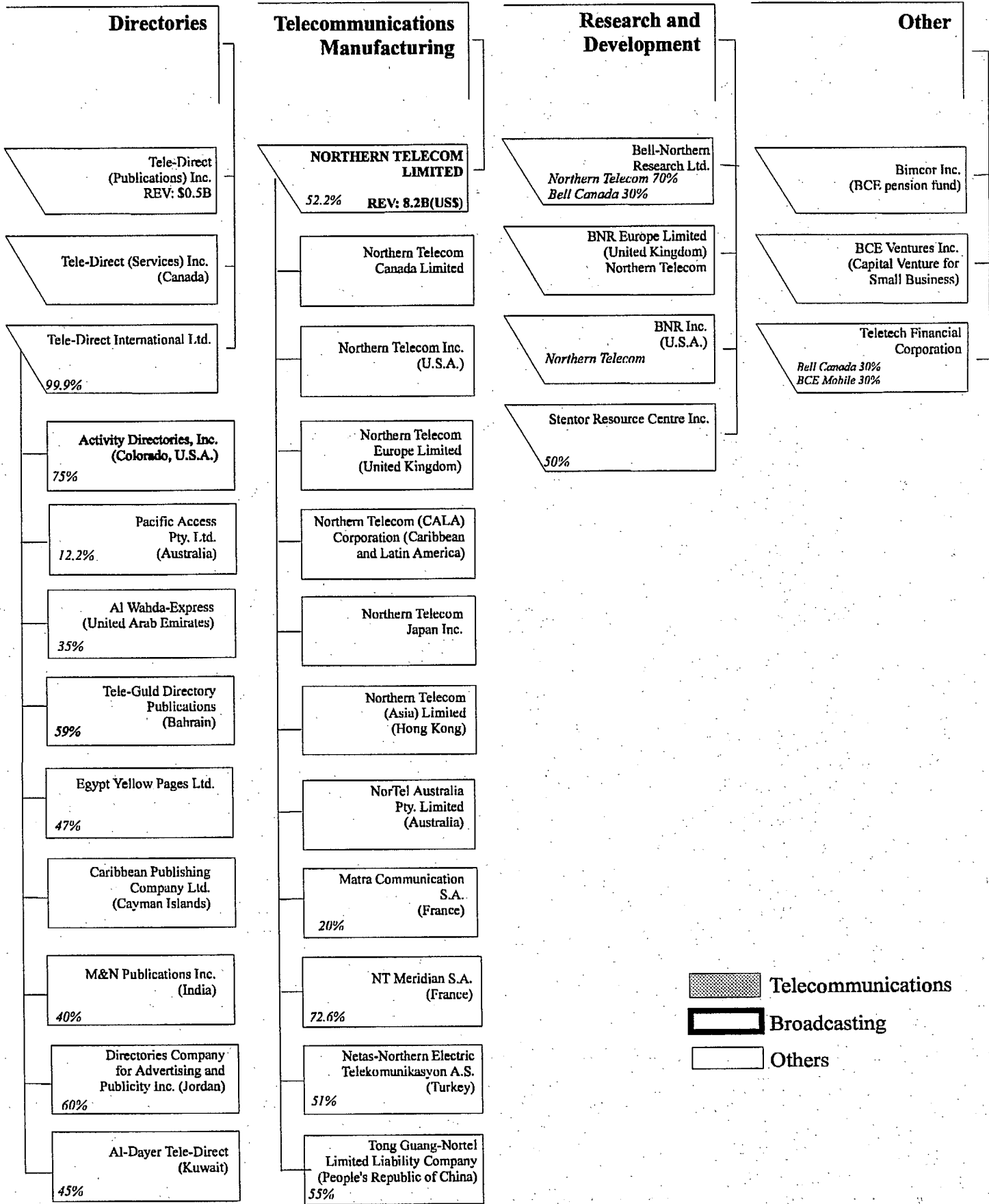
* MTS Mobility is an operational unit of MTS, and not an independent entity.

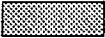

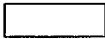
Source: Manitoba Telephone System, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

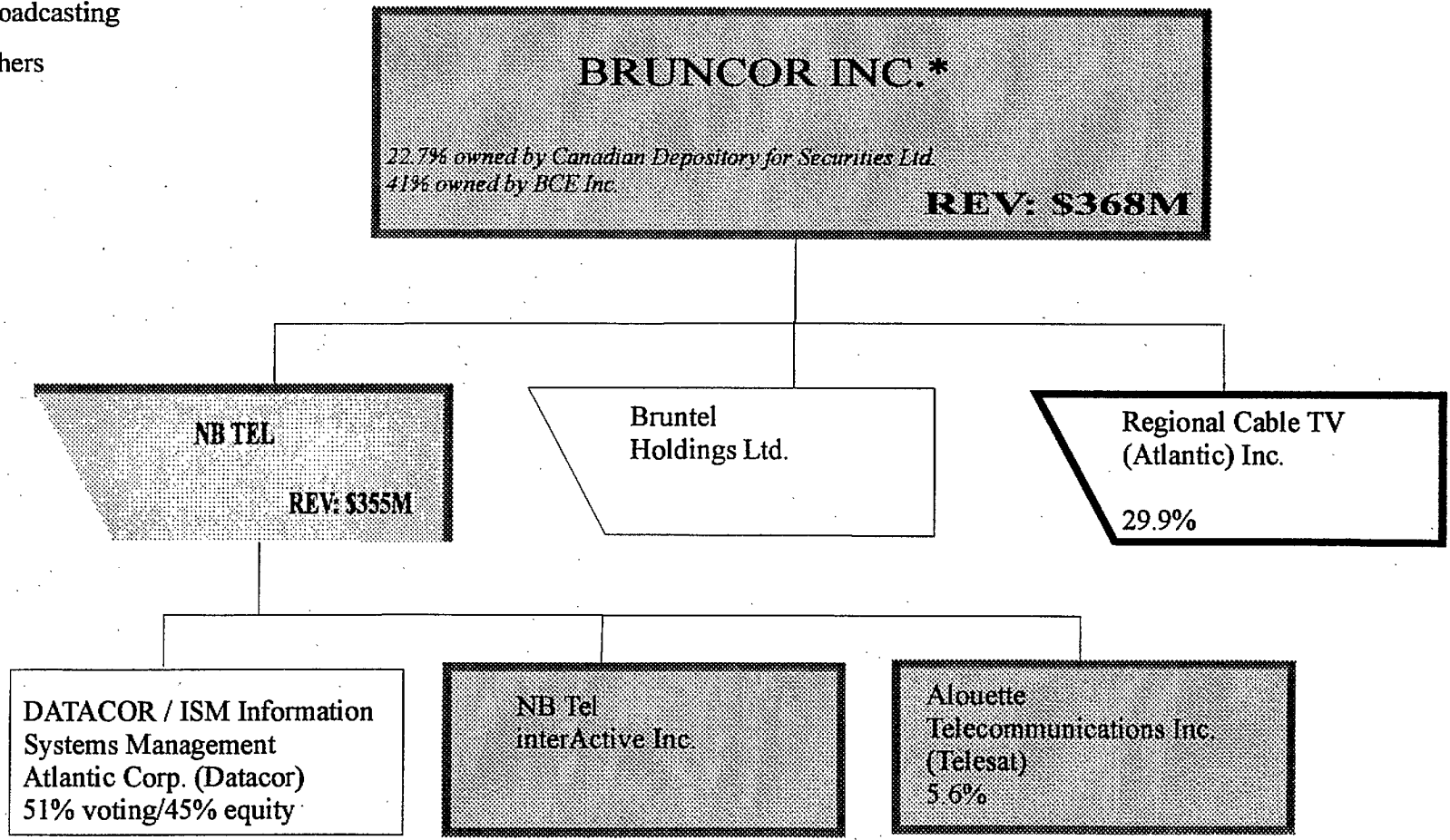


ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

Source: BCE, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994



 Telecommunications
 Broadcasting
 Others

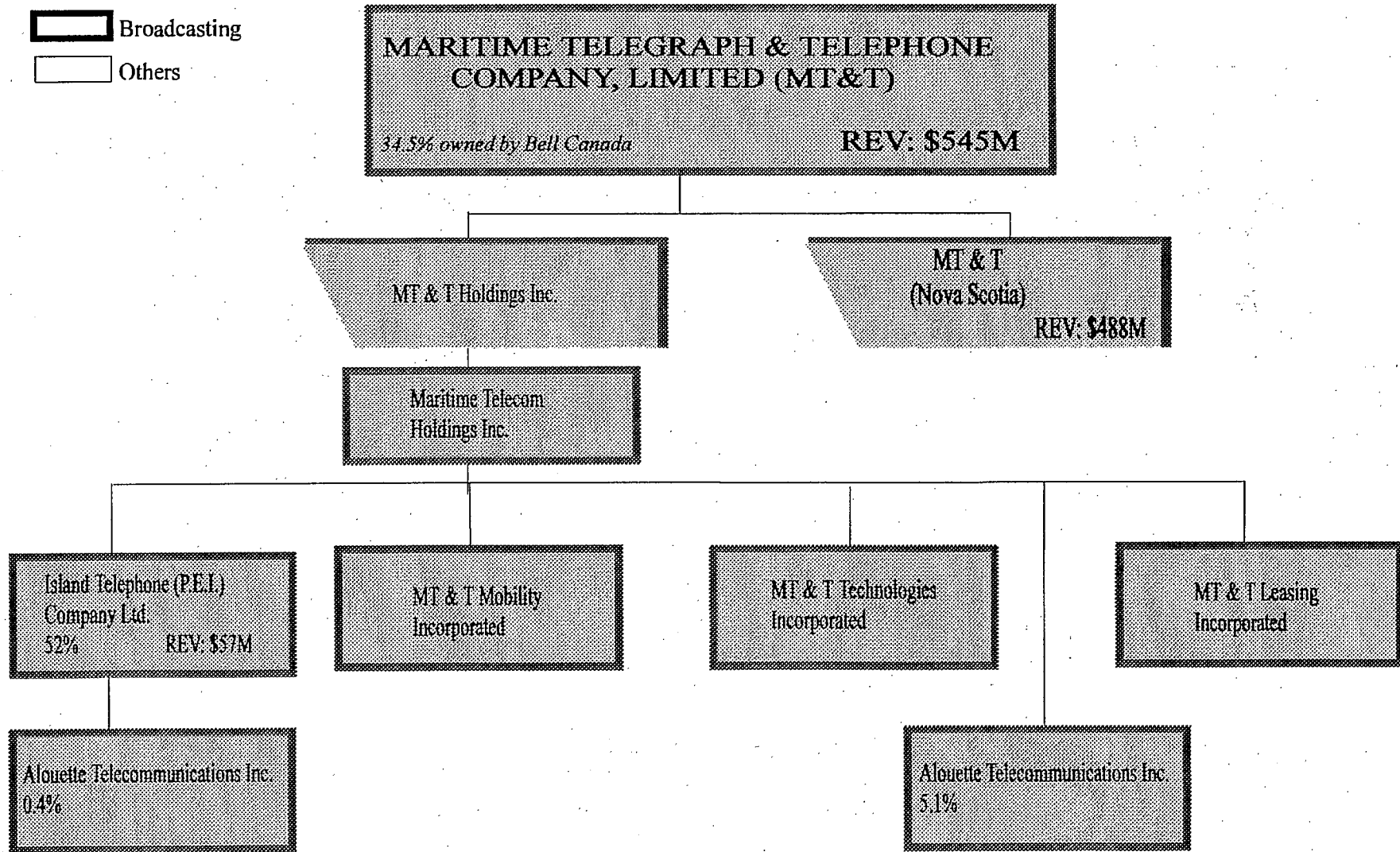


ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

* All of Bruncor's interests in financial services and real estate; Bruncor Leasing Inc., Chancellor Corp., V&A Properties Inc., Reynolds Vichery Messina and Griefen Company, have been sold, or will be sold in the near future except for the properties occupied by NB Tel and Datacor.

Source: Bruncor Inc., Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

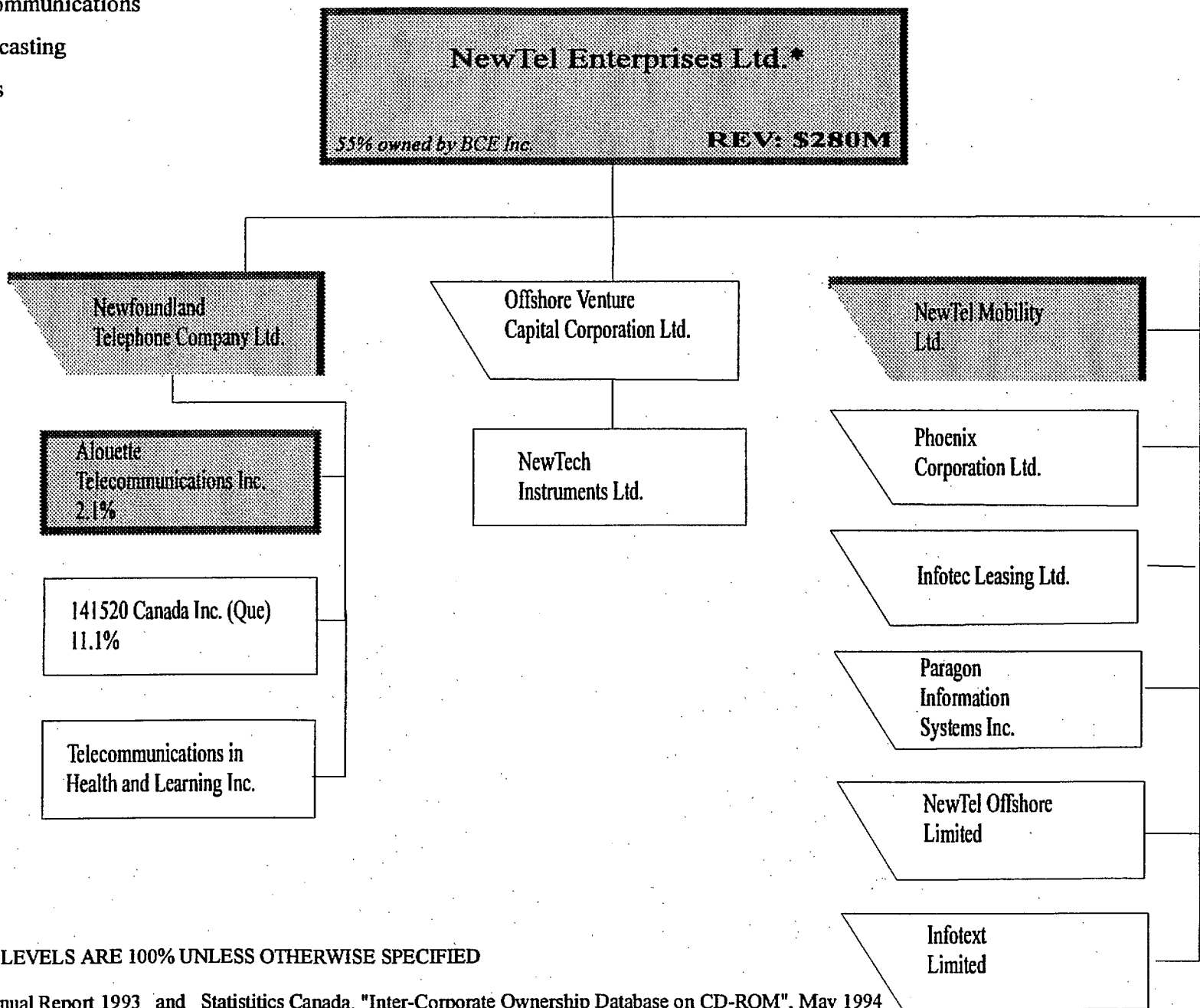
Telecommunications
 Broadcasting
 Others



ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

Source: MT&T, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994



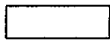
- Telecommunications
- Broadcasting
- Others

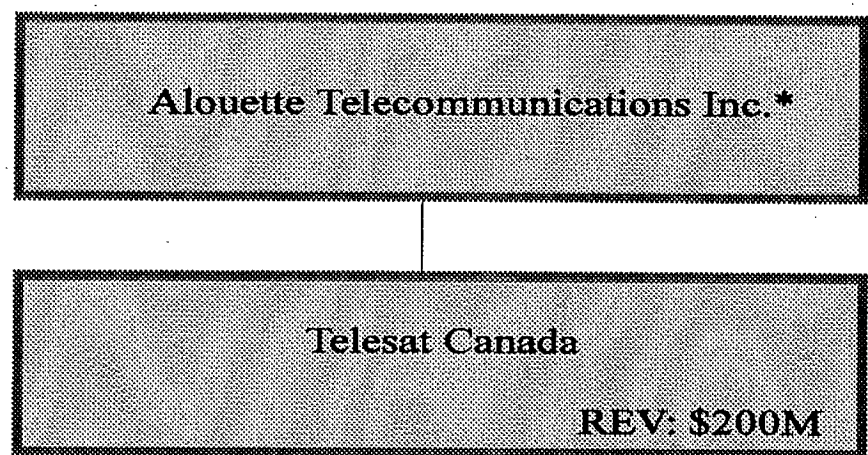


ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

Source: NewTel, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

- As noted in the previous figures, all of the Stentor members' holding companies hold shares in Alouette Telecommunications Inc., which is the holding company of **Telesat Canada**. Telesat was privatized in 1992 and provides monopoly domestic satellite services. Its operating revenues amounted to \$200 million in 1993.
- **Teleglobe Inc.** is the holding company of **Teleglobe Canada**, privatized in 1987. Teleglobe Canada provides monopoly overseas services. Its operating revenues totalled \$374 million in 1993. It is 20.3% owned by BCE Inc. All the carriers have service agreements with Teleglobe to provide overseas international services.
- **Call-Net Enterprises Inc.** is the holding company of Sprint Canada, the third-largest interexchange carrier in Canada, after Stentor and Unitel. Its operating revenues totalled \$134 million in 1993.

-  Telecommunications
-  Broadcasting
-  Others



*** Alouette Telecommunications is:**

Owners Associated with BCE (by voting shares)

- 25.0% owned by BCE Inc.
- 16.9% owned by Canadian Telephones and Suppliers Ltd.
- 15.8% owned by AGT Ltd.
- 8.0% owned by Manitoba Telephone System
- 8.0% owned by Saskatchewan Telecommunications
- 5.6% owned by NB Telephone Company Ltd.
- 5.1% owned by MT&T Co. Ltd.
- 2.1% owned by Newfoundland Telephone Co. Ltd.
- 0.4% owned by Island Telephone Co. Ltd.

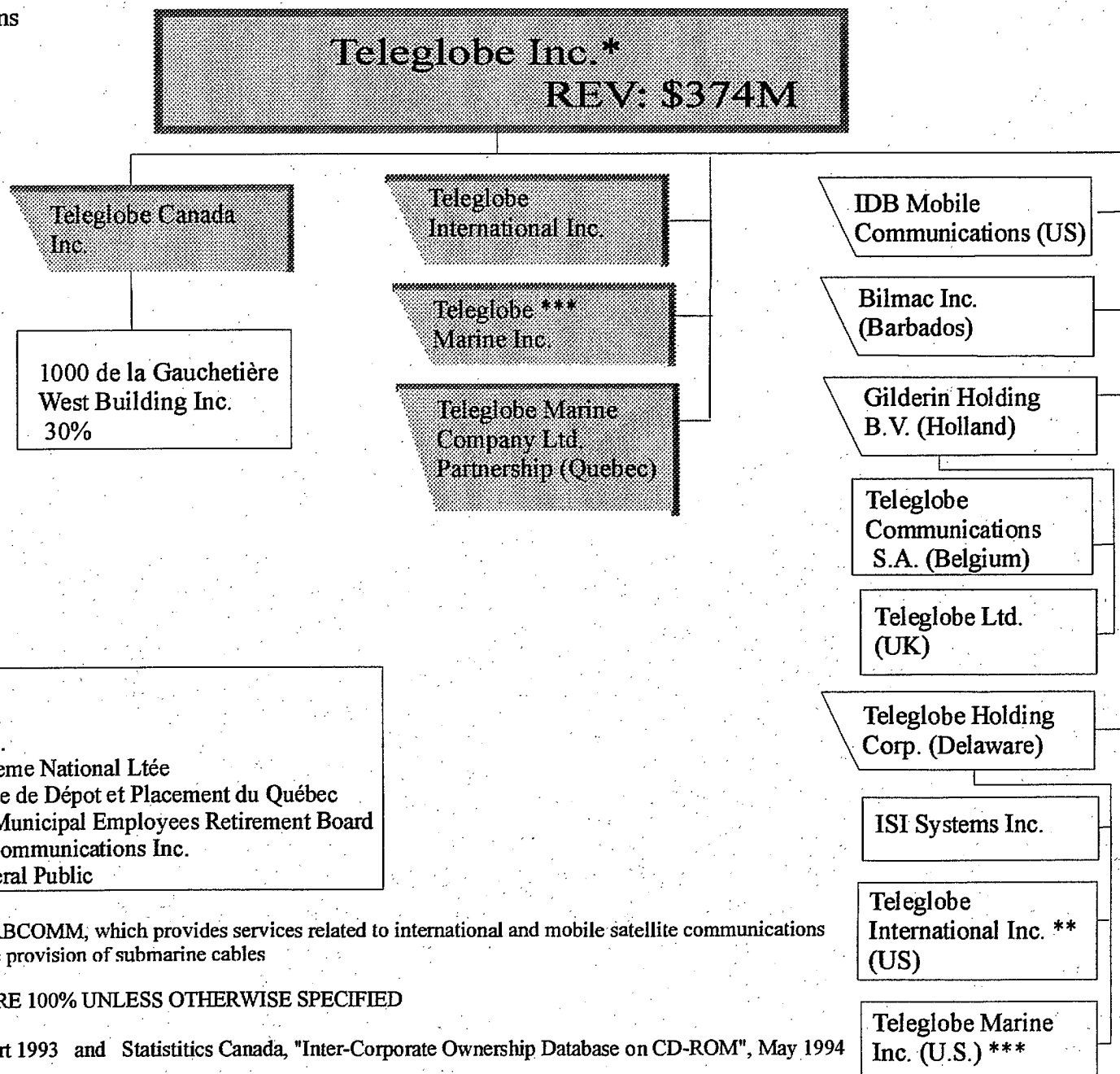
Owners Associated with Other Companies (by voting shares)

- 10.0% owned by SPAR Aerospace Ltd.
- 3.1% owned by Others

ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

Source: Telesat, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

Telecommunications
 Broadcasting
 Others



*** Teleglobe Inc. is;**

20.3% owned by BCE Inc.
 19.9% owned by Telesysteme National Ltée
 16.4% owned by La Caisse de Dépôt et Placement du Québec
 8.9% owned by Ontario Municipal Employees Retirement Board
 4.3% owned by Rogers Communications Inc.
 30.2% owned by the General Public

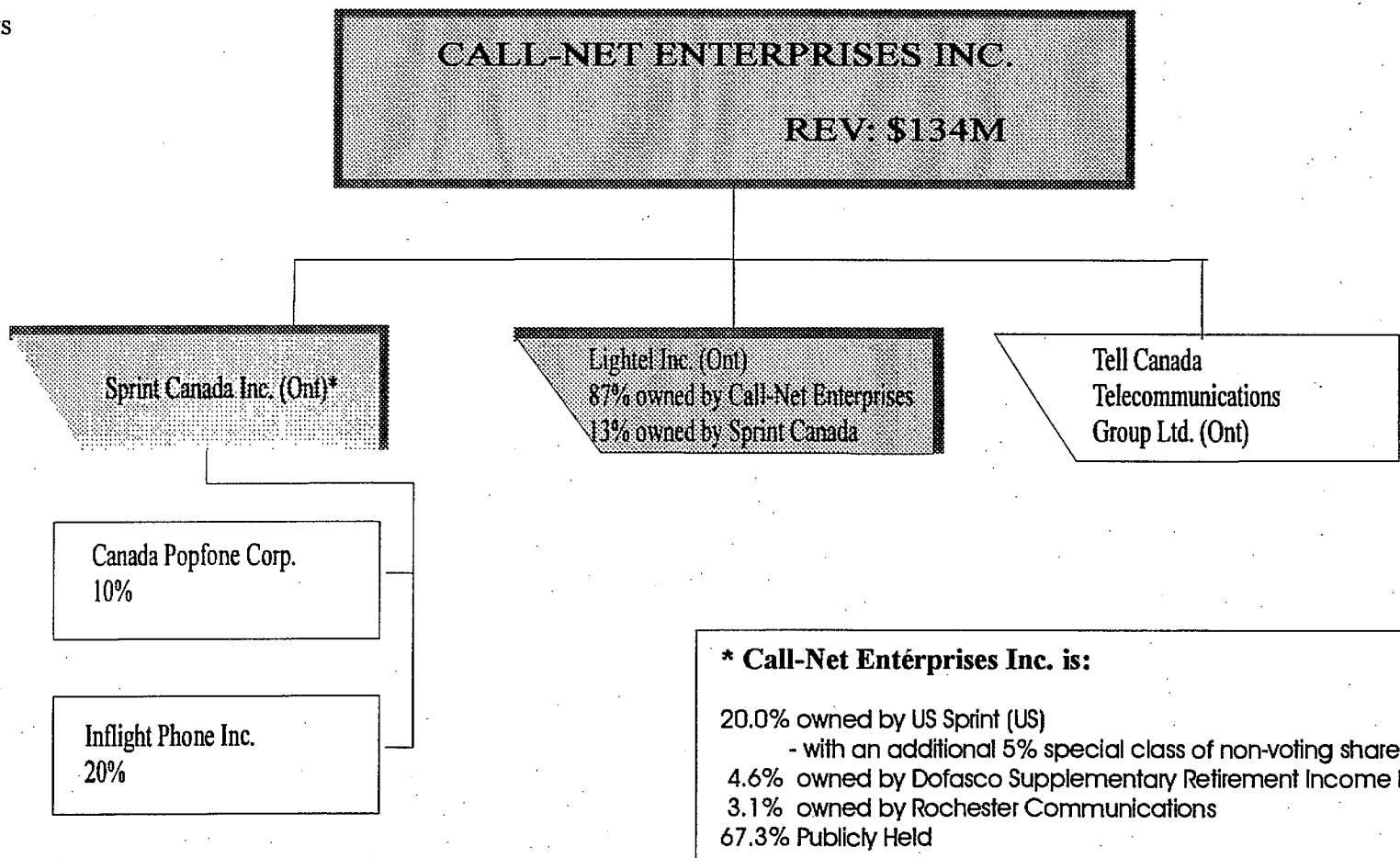
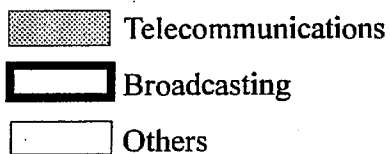
** indirectly involved in ORBCOMM, which provides services related to international and mobile satellite communications

*** subsidiaries related to the provision of submarine cables

ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

Source: Teleglobe, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

As of June 30, 1994

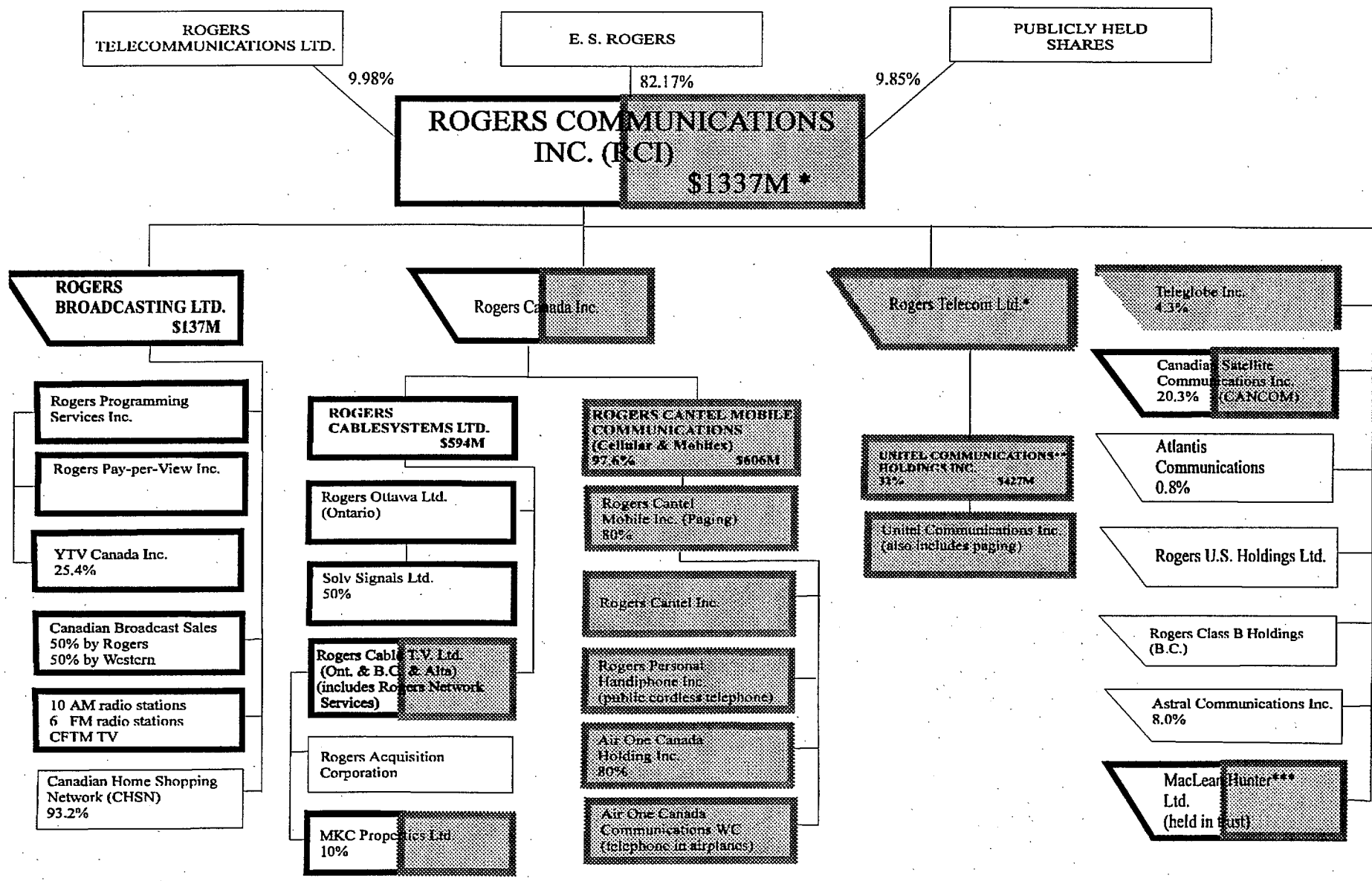


ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

* Sprint Canada involved in Canada Popfone Corp. to provide public cordless telephone services

Source: Call-Net, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

- **Rogers Communications Inc. (RCI)** is a diverse communications holding company with \$1.4 billion operating revenues in 1993. Its holdings include: Rogers Cable, Canada's largest cable TV company with \$594 million operating revenues in 1993.; and Rogers Cantel, one of Canada's two cellular carriers. It has a separate holding company called Rogers Cantel Mobile Communications with \$606 million operating revenues in 1993.
- **Unitel**, Canada's second largest interexchange carrier, after Stentor, is owned by RCI (32%), Canadian Pacific (48%) and AT&T (20%). It appears in the RCI organization chart under the separate holding company, **Unitel Communications Holding Inc.**, with \$427 million operating revenues in 1993.
- **Le Groupe Videotron Ltee.**, the second-largest cable television holding company (\$584 million operating revenue), is a significant force in Quebec broadcasting. Universal Bidirectional Interactive (UBI) network is a consortium of 6 members including Videotron which will provide multimedia services in 1995. Canada Popfone Corporation is a consortium of 10 members including Videotron which will soon offer public cordless telephone service.
- **Maclean Hunter Ltd.** (\$1.6 billion operating revenue) has significant holdings in the cable television and broadcasting industries as well as in publishing and paging. Rogers Communications Inc. recently wholly acquired Maclean Hunter's operations in the financial markets. This acquisition is still awaiting regulatory approval since a public CRTC hearing on this acquisition commenced in September 20, 1994.
- **Shaw Communications Inc.** (\$234 million operating revenue) also has significant holdings in the cable TV and broadcasting industry. The company publicly announced its intentions to acquire CUC Broadcasting which has cable television operations in Ontario, but has not yet made an application to the CRTC.
- **Western Broadcasting Ltd.** (\$344 million operating revenue) is a holding company within broadcasting and is predominantly concentrated in Western Canada, with a significant number of operations in the satellite service industry.

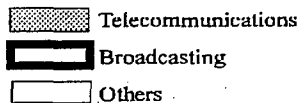


ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

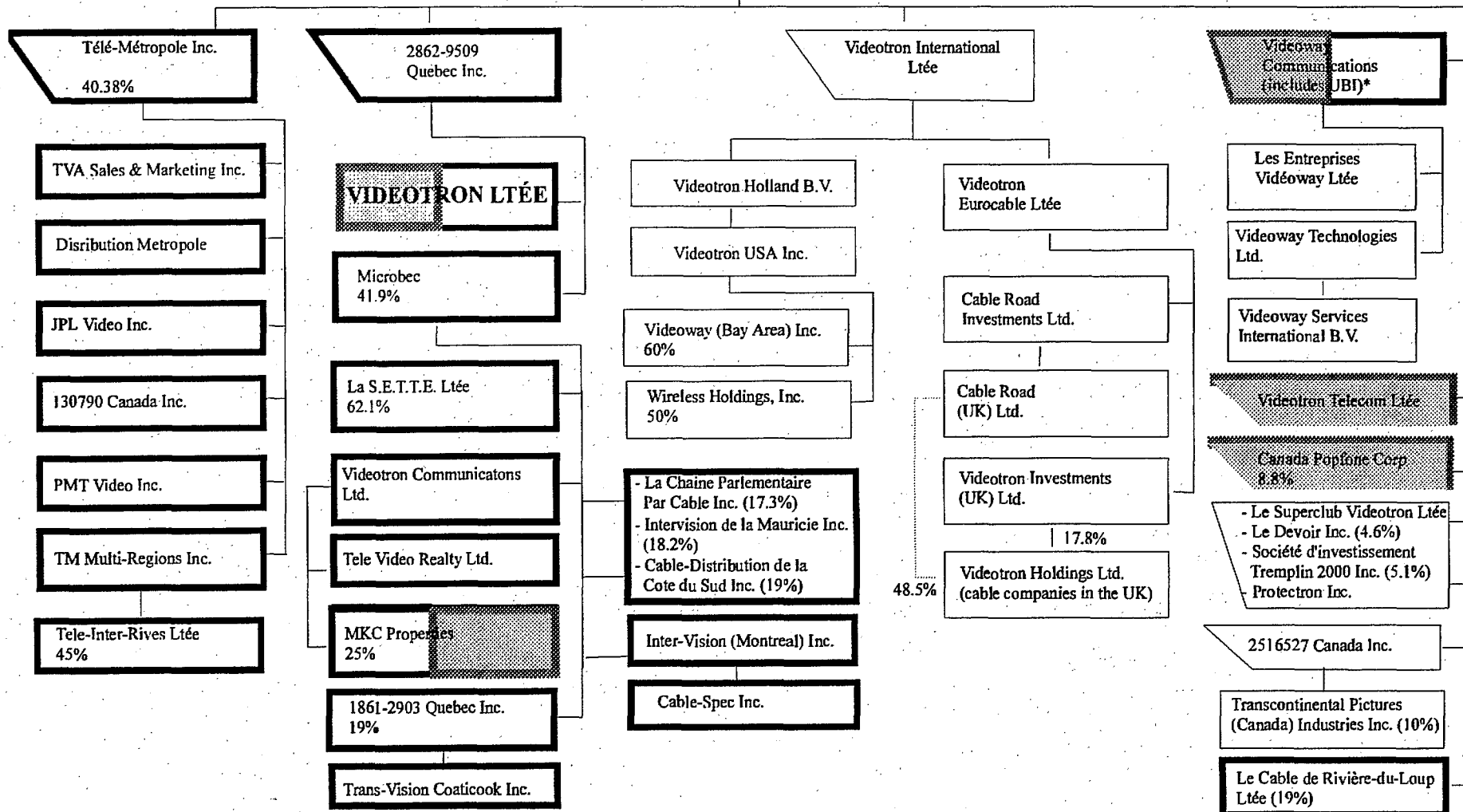
- * RCI revenues exclude Unitel Communications
- ** UNITEL COMMUNICATIONS is also held by Canadian Pacific Ltd. (48%) and AT&T (20%)
- *** Pending CRTC review

Telecommunications
 Broadcasting
 Others

Source: RCI, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994



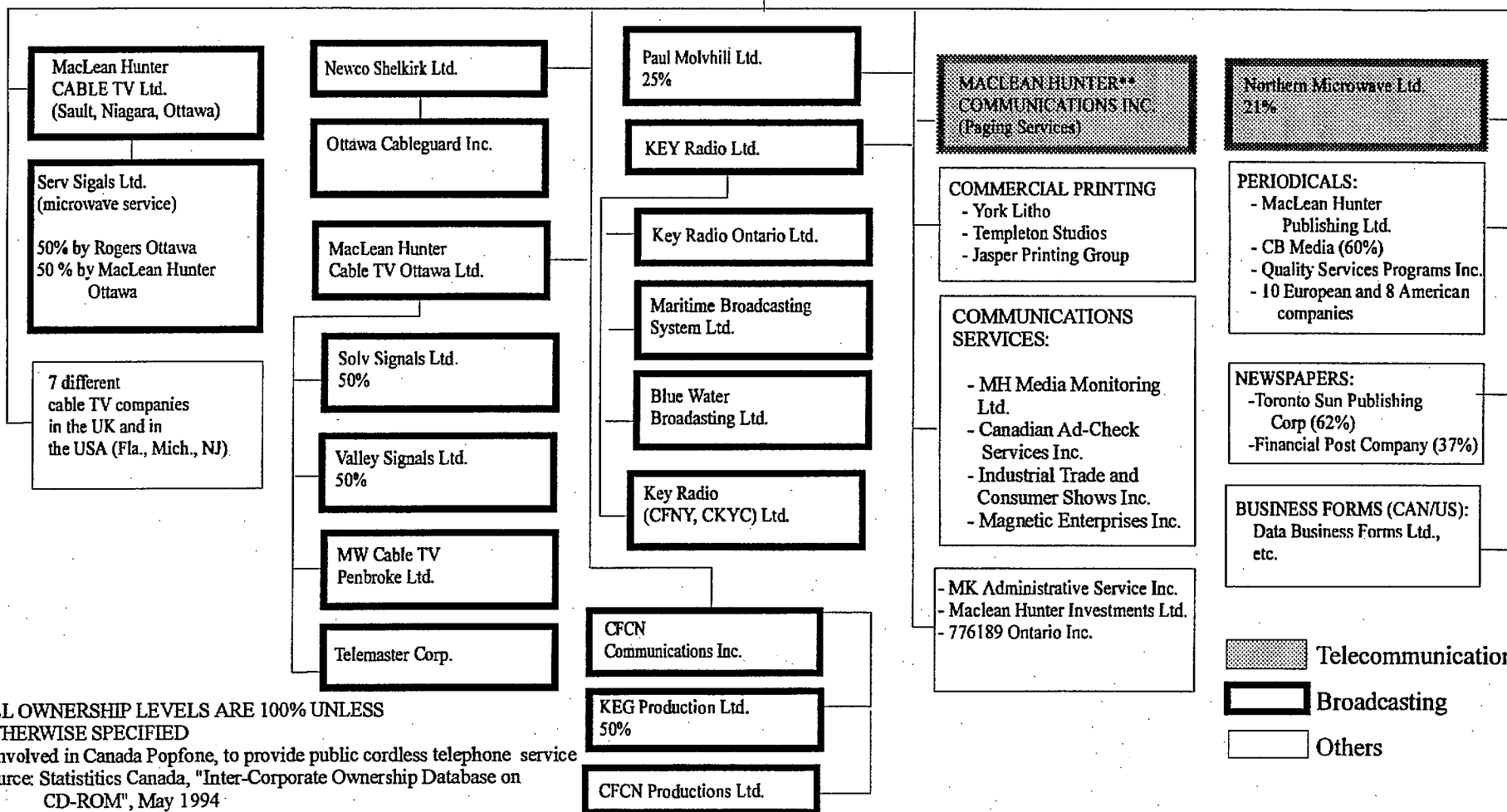
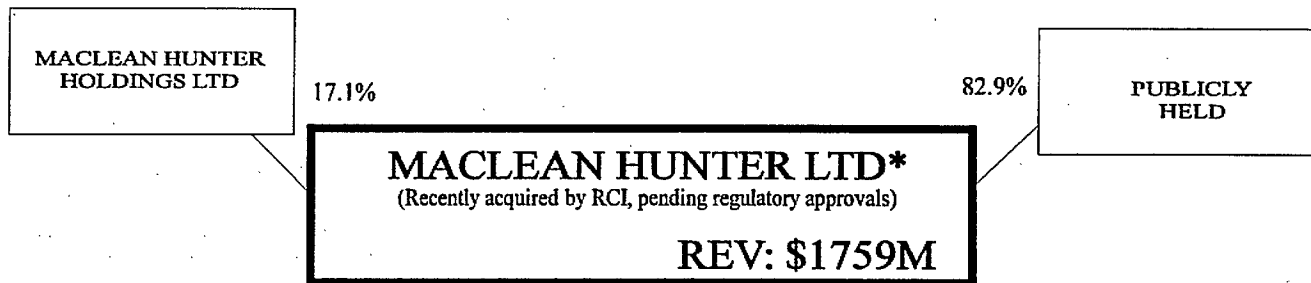
LE GROUPE VIDÉOTRON LTÉE
REV: \$584M



ALL LEVELS OF OWNERSHIP ARE 100% UNLESS OTHERWISE INDICATED

* Universal Bidirectional Interactive is a consortium devoted to offering multimedia services

Source: Le Groupe Vidéotron Ltée, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994



ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

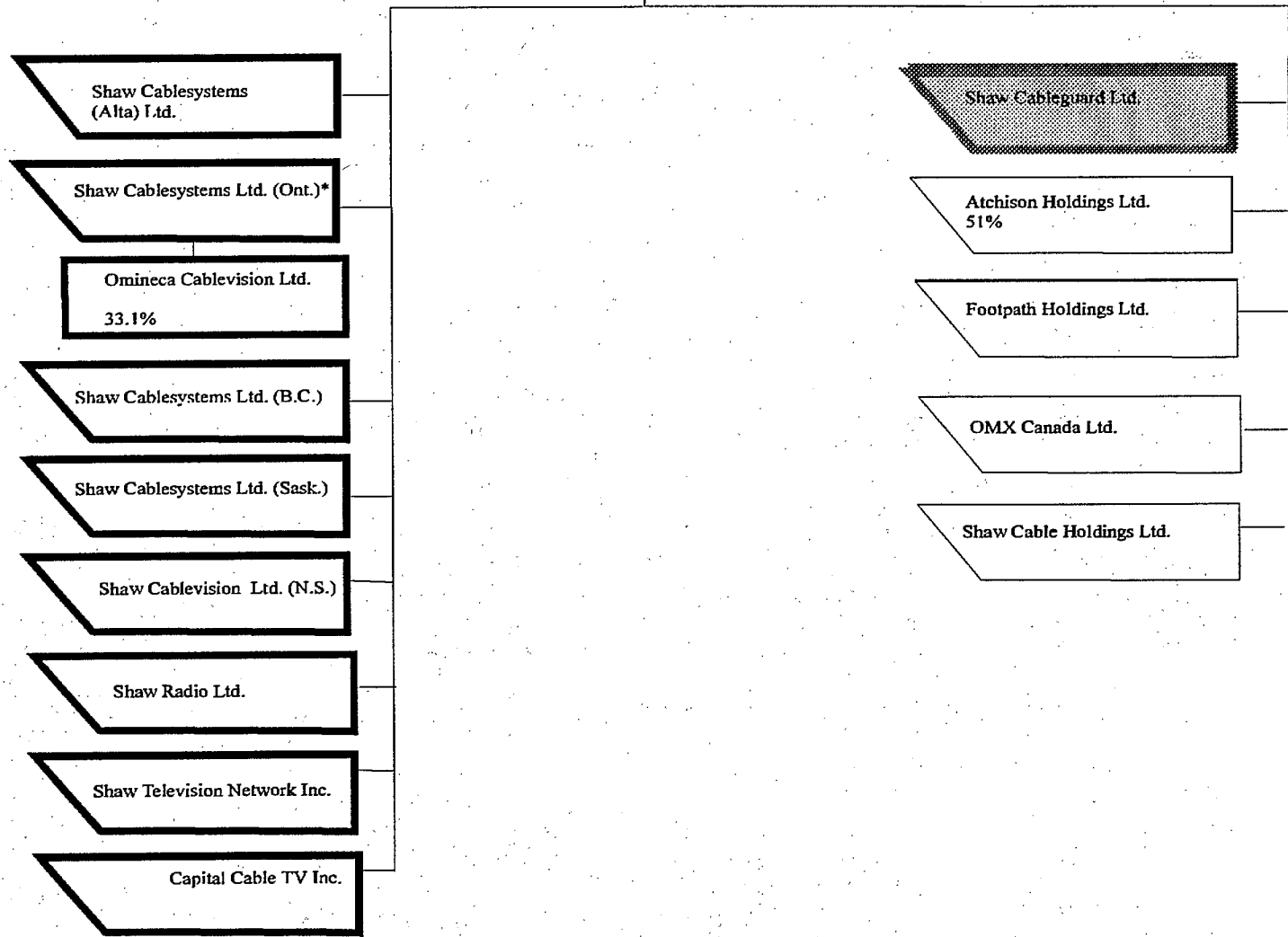
* involved in Canada Popfone, to provide public cordless telephone service
Source: Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

Telecommunications
 Broadcasting
 Others

SHAW COMMUNICATIONS INC.*

33.1% owned by L.E. Shaw Investments
 44.4% owned by James R. Shaw Ltd.
 22.5% owned by others

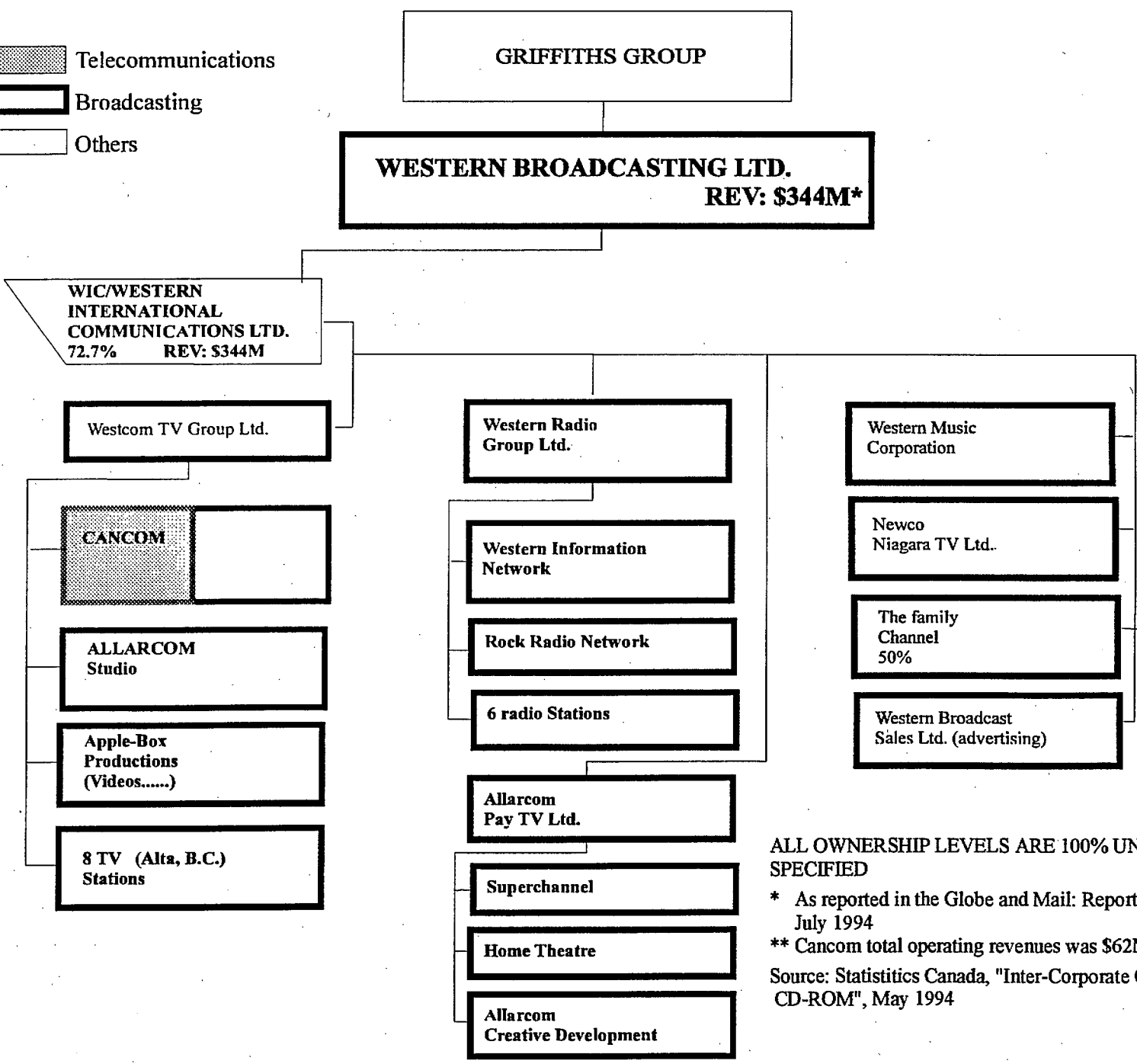
REV: \$234M



ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

* publicly announced its intentions to acquire CUC Broadcasting which has cable TV Operations in Ontario, but has not yet made an application to the CRTC.
 Source: Shaw Communications, Annual Report 1993 and Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

Telecommunications
 Broadcasting
 Others



ALL OWNERSHIP LEVELS ARE 100% UNLESS OTHERWISE SPECIFIED

* As reported in the Globe and Mail: Report on Business Magazine, July 1994

** Cancom total operating revenues was \$62M in 1993.

Source: Statistics Canada, "Inter-Corporate Ownership Database on CD-ROM", May 1994

Section III

Key 1993\1994 Telecommunications Services Legislative, Policy and Regulatory Developments

- All telephone companies in Canada are under federal jurisdiction. However, Sasktel is exempt from federal regulation until 1998.

Supreme Court Decision in *Téléphone Guèvremont*

- In a unanimous decision issued on April 26, 1994, the Supreme Court of Canada upheld lower court decisions in favour of federal jurisdiction over *Téléphone Guèvremont*, a small independent telephone company near Montreal.
- There are currently 50 independent telephone companies operating in the provinces of Quebec, Ontario, Alberta and British Columbia. The Supreme Court's decision in *Téléphone Guèvremont* applies, by extension, to all 50 independents.
- In 1989, the Supreme Court had already clarified that Alberta Government Telephones, and by extension all the members of Telecom Canada (now Stentor), were subject to federal jurisdiction.

Transitional Arrangements for the Federal Regulation of ED TEL

- As a result of the Supreme Court of Canada's decision in the *Téléphone Guèvremont* case, ED TEL also became subject to federal regulation. In response to a request by ED TEL, the Governor in Council issued a directive under section 75 of the Telecommunications Act to the Canadian Radio-television and Telecommunications Commission (CRTC) in October 1994, to help ease the company's transition to federal regulation. ED TEL had previously been regulated by the City of Edmonton.

Background

- Canada's new *Telecommunications Act* came into force on October 25, 1993. The new Act, passed by Parliament on June 23, 1993, updates and consolidates laws governing Canadian telecommunications, some of which dated back to 1908. It represents a hard-won consensus, built on extensive consultations with industry, business users, consumers, unions and provinces. Key factors underlying the need to modernize Canadian legislation in this field included:
 - rapid developments in telecommunications technologies and accelerated introduction of new services;
 - a global trend toward greater reliance on market forces and more competition in telecommunications services; and
 - the 1989 Supreme Court decision which recognized federal authority over all Canada's major telephone companies.

- The *Telecommunications Act* establishes a new legislative and regulatory framework for all federally-regulated common carriers. In so doing, it provides for an integrated Canadian market for telecommunications services. In addition, it allows the federal regulator, the CRTC, to put in place a more flexible regulatory system which will facilitate innovation and the development of Canada's principal high-technology industry. This will be increasingly important as domestic and global markets become more competitive.

Application

- The Act provides for the supervision and, *where required*, regulation of telecommunications common carriers under federal jurisdiction who own and/or operate their own transmission facilities. These are referred to as "**Canadian carriers**". Currently, these include national carriers such as Telesat, Teleglobe, Unitel, Sprint, independent telephone companies, and all but one of the Stentor telephone companies (AGT, Bell Canada, BC Tel, Island Tel, Manitoba Telephone System, Maritime Tel & Tel, NBTel, Newfoundland Tel). Consistent with an agreement between the federal government and the province of Saskatchewan, SaskTel is exempt from the application of the Act for five years after its coming into force. "**Resellers**" who do not own or operate transmission facilities but who lease facilities from Canadian carriers to provide services to the public **are not subject to the Act**. All carriers who make use of the radio spectrum continue to be subject to licensing and regulation under the *Radiocommunication Act*.

Policy Objectives

- The new Act includes a statement of Canadian telecommunications policy (s. 7). This policy recognizes the strategic importance of telecommunications in the maintenance of Canada's identity and sovereignty and for the social and economic development of the country. Its nine objectives strike a balance between traditional concerns such as universal, affordable access to services, and newer considerations such as the need for increased reliance on market forces and a competitive, efficient, telecommunications industry. In addition, it provides for Canadian ownership of "Canadian carriers" who own and operate the national telecommunications infrastructure.

Major Powers of the Government and the Regulator

- Various provisions of the Act outline the respective powers of the Governor in Council (i.e., the Federal Cabinet), the Minister responsible for telecommunications and the CRTC.
- The Governor in Council (GIC) has the authority to issue directions on broad policy matters to the CRTC (s.8) and to review, vary, rescind or refer back any CRTC decision (s. 12). The Minister has the authority to establish technical standards and to require the CRTC to enforce these standards (s. 15). However, the provinces must be informed and have an opportunity to consult with the Minister before any of these powers are used. In addition, the Governor in Council can make regulations to implement the Canadian ownership requirements outlined in the Act.
- The CRTC has the full range of regulatory powers of an independent, quasi-judicial regulatory agency (s. 22-71). Under s. 47, the CRTC must exercise its powers with a view to implementing the policy objectives in s. 7 of the Act and any directions issued by the GIC on broad policy matters. The CRTC must ensure that rates are just and reasonable, and that Canadian carriers do not engage in unjust discrimination, or accord any undue preference. **The CRTC is also given important new powers:** it can exempt classes of carriers from the application of the Act where this is in the public interest (s. 9); it may forbear from regulating where this is in the public interest and must forbear where it finds that there is effective competition (s. 34); and it can use any method of regulation it considers appropriate (e.g.: alternatives to traditional rate-base, rate-of return regulation) (s. 27(5)).

Legislation amended or repealed

- The *Telecommunications Act* brought amendments to the *Radiocommunication Act*, and to the *Special Acts* relating to Bell Canada, British Columbia Telephone Company, Teleglobe Canada and Telesat Canada. The new Act repeals the *National Telecommunications Powers and Procedures Act* and the *Telegraphs Act*, and those sections of the *Railway Act* which formerly dealt with telecommunications.

- The *Canadian Telecommunications Common Carrier Ownership and Control Regulations* (the Regulations) were released in final form in October 1994 after extensive public consultation.
- The *Telecommunications Act* empowers the Governor in Council to make regulations providing for greater specificity of the Canadian ownership and control requirements outlined in section 16 of the Act.
- The Act provides that carriers must be at least 80% owned and controlled by Canadians in order to be eligible to operate as telecommunications common carriers.
- The regulations define the term "*Canadian*" to include corporations which are at least 66 2/3 Canadian owned. This would apply to investor companies such as holding companies that own the carriers. This provides carriers with greater flexibility to access foreign capital and technology that are keys to future growth.
- The Regulations also grant the carriers specific powers to monitor and maintain Canadian ownership, specify reporting requirements, and permit the CRTC to enforce compliance of the Regulations where a carrier fails to do so.

- On March 16, 1994, Industry Minister John Manley announced the creation of a national Advisory Council which would assist the federal government in developing and implementing a strategy for Canada's information highway. The Council includes members from industry, the education, research and consumer communities, labour and other interested constituencies.

- The work of the Council is guided by three policy objectives, which are:
 - to create jobs through innovation and investment in Canada;
 - to reinforce Canadian sovereignty and cultural identity; and
 - to ensure universal access at reasonable cost;

- and four operating principles, which include:
 - an interconnected and interoperable network of networks;
 - collaborative public and private sector development;
 - competition in facilities, products and services; and
 - privacy protection and network security.

- The Council was established to provide advice on an ongoing basis and it has indicated that it will submit a report in Spring 1995.

- On October 15, 1994, a discussion paper on privacy issues was published in the Canada Gazette, Part I. Interested parties have 60 days in which to submit their comments.
- The discussion paper reviews the current legislative framework and explores various options for privacy protection: legislation and regulation; voluntary codes; technological solutions (e.g., public key encryption); and consumer education.
- It seeks public comment on issues such as:
 - Should government introduce stronger measures?
 - Is a national level of privacy protection needed?
 - When are voluntary private sector privacy guidelines appropriate?
- Comments will be provided to the Information Highway Advisory Council as an aid to its decision-making.

- In October 1994, the Minister approved a new policy on regional and global mobile satellite systems, after broad public consultation.
- The policy states that a regional or global mobile satellite service provider can offer service in Canada if:
 - it provides demonstrable benefits to Canadians (such as the provision of services otherwise unavailable);
 - Canadians hold a share of equity in the system that is proportional to the level of Canadian use; and
 - the Canadian service provider is "Canadian" as defined in the *Telecommunications Act*.

Background

- Two of the four principles underlying the Canadian strategy for an information highway are the interconnection and interoperability of existing networks, and a competitive environment for services.
- Telephone and cable television companies provide the most extensive wireline networks in Canada, reaching virtually all Canadians. Their networks are complementary. Telcos' networks are nationally interconnected with two-way narrow band to the home. Cablecos' networks are local one-way broadbands. However, as potential competitors, they are unequal: telephone industry revenues are seven times those of the cable television industry's.
- In this context, establishing a policy environment which addresses the ground rules for telephone and cable television industries is a challenge.

Initiatives

- The federal government announced, on October 11, 1994, new policies relating to telecommunications and broadcasting for the Information Highway, and requested the CRTC to hold public hearings and report on questions related to the implementation of these policies. The Commission is to report by April 1995.
- Policies and implementation issues focus on three areas:
 - a timeframe for interconnection and interoperability of cable-TV and telephone company networks;
 - measures to support Canadian cultural content services;
 - a timeframe for the transition to fair competition in the provision of all telecommunications and broadcasting services.
- This initiative will complement Telecom Decision CRTC 94-19, and the ongoing work of the Information Highway Advisory Council, which will have an opportunity to comment on the CRTC's Report. The CRTC public hearings will ensure broad consultation.

- On September 16, 1994, the CRTC issued a major decision with respect to the regulatory framework for the telecommunications industry. This decision reflects the policy objectives included in the 1993 Telecommunications Act, and more generally, the high priority that governments in Canada and around the world have placed on the development of information highways.

Background

- The CRTC's review was initiated in light of the major changes (technological changes, increased competition, development of information societies) which have overtaken the telecommunications industry in recent years. The objectives were:
 - to streamline or eliminate regulation in order to place greater reliance on market forces;
 - to establish safeguards to protect against the abuse of market power;
 - to identify ways to reduce local service subsidy; and
 - to encourage the provision of innovative new services; and
 - to assess alternatives to rate of return regulation.

Outline of the Decision

- **Regulation:** should focus on monopolies and areas of market dominance - leading to forbearance and deregulation.
 - Price caps for local utility services only, as of 1998.
 - Transitional incentive-based rate of return regulation starting in January 1995 (split-rate base).
 - Considerable freedom to price competitive services, as long as all causal costs are covered and that shareholders absorb any losses.
- **Rate Rebalancing:** As of January, 1995, monthly rate for basic local service increases \$2 for each of the next 3 years; corresponding rate reductions will be targeted to residential and small business long-distance services.
- **Competition:** All telecommunications services, including basic local service, are now open to competition by cable-TV service providers or others.

- **Safeguards:** The CRTC established a number of safeguards, such as:
 - split rate base for utility and competitive services
 - carrier access tariff
 - unbundling of bottleneck services;
 - interconnection and interoperability of networks; and
 - investments on advanced networks at telcos' risk, unless demonstrably linked to utility services.

- **Convergence:** The telephone companies can invest in content services. They can also deliver broadcasting, as carriers, on behalf of licensees (video dial tone).

Consequences

- The Decision will generate follow up proceedings: rate rebalancing, split-rate base, co-location, unbundling.

- Unitel Communications Inc. and Sprint Canada Inc. have filed separate appeals to the CRTC concerning the change in the method of calculating the contribution charge they must pay from an approach based on "trunk lines" to one based on "minutes of use".

- People for Affordable Telephone Service (PATS), a coalition of citizen's groups across Canada, has filed a petition to the Government in Council (GIC) requesting that the GIC overturn the part of Decision 94-19 which authorized three consecutive annual increases in the local telephone rates of \$2 per month starting January, 1995.

a. Long distance competition

By far the most important decision of the Commission regarding competition was when it first allowed entry in the public long distance voice telephone services market. This market alone accounted for \$8 billion of the estimated \$17.4 telecommunications service industries' revenues in 1993. The decision has led to a number of other proceedings, some of which have already been described.

Background

- The CRTC issued its decision to allow open competition in the provision of public long distance voice telephone services in 1992 (Telecom Decision CRTC 92-12).
- The decision applied to regions served by the telephone companies: Bell Canada, B.C. Tel, MT&T, Island Tel, NB Tel and Newfoundland Tel.
- Shortly after issuing its decision, the CRTC received applications to extend such competition to other regions of Canada.

Alberta (AGT)

- On October 29, 1993, the CRTC approved long distance competition in the territory serviced by AGT Limited on essentially the same terms and conditions as was applied in the territories serviced by the Atlantic telephone companies, by Bell and by BCTel in Decision 92-12 (Telecom Decision CRTC 93-17). The decision was issued in response to applications filed by Unitel and Cam-Net.
- Resale and sharing were also permitted in Telecom Decision CRTC 93-17 on similar terms as those previously established in earlier CRTC decisions.
- Similar to the directions issued in Telecom Decision CRTC 92-12, the technical details of the interconnection arrangements were to be negotiated within the framework of a Joint Technical Committee established by AGT with Unitel; alternatively, upon request by Unitel, AGT was to participate in the Joint Technical Committees already established by Stentor. AGT was also directed to establish an Interexchange Carrier Group within the company to handle interconnection arrangements with Unitel and resellers.
- The CRTC has recently initiated a proceeding to review matters related to alternative methods for collecting contributions from facilities-based carriers and from resellers in Alberta.

a. Long distance competition (cont'd)

Manitoba (MTS)

- There has been competition in the provision of public long distance voice telephone services since January 1993 in the province of Manitoba. This was initiated by the Government of Manitoba in light of the CRTC's decision of 1992. On December 31, 1993, MTS became subject to federal regulation.

Saskatchewan (SaskTel)

- In 1994, the Government of Saskatchewan announced its intentions to seek public comment on whether to permit competition in the provision of public long distance voice telephone services and resale in that province. As of October 1994, no final decision has been made.

b. Forbearance from regulation

- Since the passage of the *Telecommunications Act*, the CRTC has initiated a number of proceedings to consider forbearing from the regulation of various telecommunications services. The CRTC has already issued decisions with respect to forbearing from regulation, including:

Terminal Equipment

- The outright sale of **terminal equipment** by Canadian carriers (Telecom Decision CRTC 94-14, August 4, 1994).
- In *Review of Regulatory Framework* (Telecom Decision CRTC 94-19, September 16, 1994), the CRTC found it appropriate to forbear, **with limited exceptions**, the sale, lease and maintenance of **terminal equipment** by the telephone companies subject to that Decision. In Telecom Decision CRTC 94-19, the Commission also detailed **the factors that it will take into account when assessing whether a particular market is sufficiently competitive for the Commission to refrain from regulating.**

Wireless Services

- The provision of **cellular and public cordless telephone services**, unless offered directly by a telephone company (Telecom Decision CRTC 94-15, August 12, 1994).
- With respect to **mobile wireless services** provided directly by telephone companies, the CRTC is prepared to forbear from exercising some of its regulatory powers contingent on the establishment of sufficient costing and marketing safeguards.

Digital Video Compression Services

- The offering of **digital video compression services** by Telesat Canada (Telecom Decision CRTC 94-20, October 3, 1994).

c. Exemption from regulation

Since the coming into force of the Act, the CRTC has used its power of exemption on the following:

Wireless services providers

- On August 12, 1994, the CRTC announced that with the exception of telephone companies, providers of wireless services other than cellular and public cordless telephone service, including paging and mobile radio, will be exempt from CRTC regulation (Telecom Decision CRTC 94-15).

Direct-to-Home (DTH) Satellite Distribution Undertakings

- On August 30, 1994, the CRTC issued an Exemption Order for DTH satellite broadcasting distribution undertakings. Under this order, DTH satellite undertakings are exempt from licensing provided that they meet certain criteria.
- On September 12, 1994, Canadian Heritage Minister Michel Dupuy and Industry Minister John Manley announced their intention to review existing policy with respect to DTH satellite distribution undertakings in the context of the Government's stated objectives and principles for the Information Highway. A public consultation process will be announced soon.
- One of the most important issues to be examined in the context of the Information Highway, is the potential for DTH services to become competitive alternatives to existing distribution services.

Video Games Programming Service Undertakings

- On March 23, 1994, the CRTC called for comments on a proposed exemption order respecting video games programming service undertakings (Public Notice CRTC 1994-34). On June 29, 1994, the CRTC solicited comments as to the most appropriate type of contribution that should be required of exempted video games programming service undertakings (Public Notice CRTC 1994-75). Under the Broadcasting Act it is required that "each element of the Canadian broadcasting system shall contribute in an appropriate manner to the creation and presentation of Canadian programming." No decision has been issued to date.

Video-on-Demand Trials

- On September 16, 1994, the CRTC ruled that Canadian programming undertakings wishing to carry on limited trials using video-on-demand technology would be exempted from detailed regulation, including the need to obtain a licence from the CRTC, provided they conform to specific criteria (Public Notice CRTC 1994-118).

Appendix A

Glossary of Terms

Source of Definitions

SCSI: Statistics Canada Services Indicators

Statistics Canada Definitions and Concepts used in Section 1

Operating Data (Statistics Canada catalogue 63-016)

Operating items relate to the principal operations of an enterprise, and by extension, an industry. Other revenues and expenses, such as interest receipts and payments are excluded. In the case of financial institutions, interest on deposits and commercial loans are considered as principal operations and are therefore included. Net profit refers to profits after deducting income taxes and includes extraordinary gains.(SCSI)

The selected indicators used are defined as follows:

- Return on capital employed:

$$\frac{\text{Profit before extraordinary interest and gains on borrowing net of tax} \times 4 \times 100}{\text{Borrowing + Loans and Accounts with Affiliates} + \text{Total Equity} + \text{Deferred Income Tax}}$$

It is a ratio indicating profitability. (SCSI)

- Return on Equity:

$$\frac{\text{Profit before extraordinary gains} \times 4 \times 100}{\text{Total equity}}$$

This is also a measure of profitability.

- Profit Margin:

$$\frac{\text{Operating profit} \times 100}{\text{Operating Revenue}}$$

This is an indicator of efficiency.(SCSI)

- Debt to Equity:

$$\frac{\text{Borrowing + Loans and Accounts with Affiliates}}{\text{Total Equity}}$$

This indicator conveys information about solvency and capital structure.(SCSI)

- Working Capital Ratio:

$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

This is an indicator of solvency for non-financial business.(SCSI)

- Quick Ratio:

$$\frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$$

This is also an indicator of solvency.(SCSI)

- Capital ratio:

$$\frac{\text{Total Assets}}{\text{Total equity}}$$

This is an indicator of solvency and capital structure for banking and banking-type businesses.(SCSI)

- Claims to Premiums:

$$\frac{\text{Insurance Claims incurred}}{\text{Premiums}}$$

This ratio is an indicator of efficiency in the insurance industry.(SCSI)

Source of Definitions

SCSI: Statistics Canada Services Indicators

Statistics Canada Definitions and Concepts used in Section 1

Comparative indicators are designed to help the user compare the relative performance of the industry with that of the economy as a whole. A comparative indicator is defined simply as the rate of change of a variable for a certain industry minus the rate of change of the same variable for the whole economy and for the same time period. A positive value indicates the industry outperformed the economy average; a more positive value, more so. A negative value indicates that it lagged behind the economy average. A comparative indicator with a value of zero means that the performance of industry exactly matched the economy-wide average.(SCSI)

Employment Data:

Given that the employment data are not seasonally adjusted, it makes little sense to depict them as time series. The relevant comparisons are between one quarter with the same quarter last year. This is how both the rates of change and the comparative indicators are constructed and interpreted. Employment figures of less than 30,000 should be treated with caution as they may be subject to high sampling variability.(SCSI)

Salary Data:

They refer to actual payroll and not rates of pay. The monthly average weekly salary series (including overtime) are averaged over three months to produce average weekly earning series for the quarter (smoothing moving average technique). Then they are multiplied by 52. The resulting series show the estimated annual salaries. They reveal what an individual is

expected to make in a year as seen from what the person makes this quarter. This kind of salary information is expected to change every quarter.(SCSI)

The CPI-adjusted rates of change are calculated as follows: first the annualized series are deflated with the CPI of the quarter (obtained from monthly series); and then, the rate of change from the previous quarter value of the series is estimated. This is the methodologically correct procedure to follow rather than to merely subtract the CPI from the series rate of change. The latter would be, at best, an approximation of the intended measurement.(SCSI)

Value-added Data:

The value-added by industry data are produced at the source (IMAD) as annualized series. That is, the monthly total is multiplied by 12. Unlike the practices of the source, the total value added for the finance, insurance and real estate industries (GDP at factor cost, 1986 dollars) does not include "Government Royalties on Natural Resources" and the imputed values for "Owner-occupied dwellings".(SCSI)

Source of Definitions

ST: Stentor, Statistics 1992 and 1993

Definitions of Stentor, Statistics 1992 and 1993
(in reference to Tables 9 to 11, Section II)

1. **Total Operating Revenues**
Operating revenues, less provision for uncollectible operating revenues.(ST)
2. **Toll Ratio**
Percentage toll revenues of total operating revenues.(ST)
3. **Net Operating Expenses**
Total operating revenues - (total operating expenses, excluding taxes + other taxes).(ST)
4. **Total Operating Expenses Excluding Taxes**
Excludes property and business tax grants in lieu of taxes and company-paid payroll taxes less construction credits.(ST)
5. **Total Operating Expenses Less Depreciation and Taxes**
Total operating expenses excluding taxes - depreciation expense.(ST)
6. **Operating Ratio**
Total operating expenses, excluding taxes as a percentage of total operating revenues (total operating expenses, excluding taxes/total operating revenues).(ST)
7. **Income Taxes**
Self explanatory.(ST)
8. **Other taxes**
Business and property taxes or grants in lieu of taxes in the case of Government companies, and company-paid payroll taxes less construction credits.(ST)
9. **Total taxes**
Sum of income taxes and other taxes.(ST)
10. **Total Investment in Telecommunications Plant**
Original cost of land, buildings and equipment (in service and under construction). Accumulated depreciation and material and supplies inventories should be excluded.(ST)

Source of Definitions

ST: Stentor, Statistics 1992 and 1993

Definitions of Stentor, Statistics 1992 and 1993
(in reference to Tables 9 to 11, Section II)

- 11. **Capital Expenditures**
Total cost of gross additions to land, telephone plant, buildings and equipment (in service and under construction).(ST)
- 12. **Route Kilometres of Microwave System**
Number of kilometres of microwave.(ST)
- 13. **Channel Kilometres of Microwave System**
Measure of available capacity of the system.(ST)
- 14. **Route Kilometres of Fibre Optics**
Number of kilometres of fibre optic cable.(ST)
- 15. **Conductor Kilometres of Fibre Optics**
Number of kilometres of fibre, i.e. route kilometre of fibre optics x number of fibres in each kilometre of cable.(ST)
- 16. **Total Conductor Kilometres of Wire/Cable**
Includes buried, aerial, submarine and underground cable/wire and conduit-measure of penetration.(ST)

- 17. **Percentage of Plant Under Ground**
Percentage of underground/buried cable/wire in relation to total cable/wire mileage.(ST)
- 18. **Total Network Access Service (NAS) Lines**
Network Access Service (NAS) replaces the former term "Main and Equivalent Main Telephones". The definition of NAS, as adopted at the May 1984 Accounting Committee, for statistical reporting purposes, is as follows:(ST)

"A network access service provides 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; Centrex, official services, coin licensed radiotelephones; primary connections within networks (i.e. drops); and primary special services circuits."

Note 1: NAS subscriber lines may terminate on company-owned/leased or CPE (Customer Provided Equipment) sets.

Note 2: Includes licensed radiotelephones capable of direct network access added to counts normally used for telephone station apparatus.

Source of Definitions

ST: Stentor, Statistics 1992 and 1993

Definitions of Stentor, Statistics 1992 and 1993
(in reference to Tables 9 to 11, Section II)

Note 3: For Centrex or PBX services, where the Centrex or PBX provides a Class-5 service and homes directly on a toll switch, one count is included for each working line circuit. Where the Centrex or PBX homes directly on a Class-5 switch, one count is included for each trunk between the Centrex or PBX and the Class-5 switch.

- | | |
|--|---|
| <p>19. Number of NAS Lines per 100 Population</p> <p>Self explanatory.(ST)</p> <p>20. Number of NAS Lines Equipped for Direct Dialling Overseas</p> <p>Self explanatory.(ST)</p> <p>21. NAS Served by Digital Switches</p> <p>Percentage digitization of the network.(ST)</p> <p>22. Number of Directories Printed</p> <p>Self explanatory.(ST)</p> <p>23. Number of Exchanges</p> <p>Self-explanatory.(ST)</p> | <p>24. Number of Exchanges with Extended Area Service (EAS)</p> <p>EAS is a service within a designated area where all telephone customers can reach all others in the area without long distance charges.(ST)</p> <p>25. Number of NAS Lines Served by EAS</p> <p>Self explanatory.(ST)</p> <p>26. Number of People in 911 Serving Areas</p> <p>Population in those communities served by Universal Emergency Service. Does not include population of EAS-satellite communities.(ST)</p> <p>27. Number of Communities Served by 911</p> <p>Includes number of cities or towns receiving Universal Emergency Service either alone or in conjunction with other cities or towns in the same area. Does not include EAS-related communities.(ST)</p> <p>28. Business Touch-Tone</p> <p>Percentage of Business lines using Touch-Tone dialling.(ST)</p> <p>29. Residential Touch-Tone</p> <p>Percentage of Residential lines using Touch-Tone dialing.(ST)</p> |
|--|---|

Source of Definitions

ST: Stentor, Statistics 1992 and 1993

Definitions of Stentor, Statistics 1992 and 1993
(in reference to Tables 9 to 11, Section II)

30. Number of Long Distance Calls

Number of sent (paid), received (collect) message toll calls for all voice services, including 800 Service, plus official long distance calls (call made by phone company employees concerning business).(ST)

31. Total Number of Employees

Regular full and part time, temporary full and part time, probationary and student employees.(ST)

32. Total Payroll

Regular full and part time, temporary full and part time, probationary and student employee payroll.(ST)

33. Common Shares Outstanding

Common shares outstanding on December 31.(ST)

34. Preferred Shares Outstanding

Preferred shares outstanding on December 31.(ST)

35. Total Shares Outstanding

Sum of common shares outstanding and preferred shares outstanding.(ST)

36. Shares Held by Canadian Residents

Total number of shares owned or controlled by Canadian residents.(ST)

37. Shares Held by Non-Residents

Total number of shares owned or controlled by non-residents.(ST)

38. Number of Shareholders

Total number of common and preferred shareholders.(ST)

Source of Definitions

BCC: Statistics Canada Broad Commodity Classification
TA: Telecommunications Act
EDI : EDI Group Inc.
TSS: Statistics Canada Demand for Telecom Service Survey

Other Definitions

800 service

A service where callers reach the subscriber by dialling, free of charge, a 1-800+7 digits number. The called party (subscriber) pays for the call. (TSS)

Application Software

The development and marketing (sale, rental, leasing and/or licensing) of application packaged software. Documentation, maintenance and other support services such as assistance in installation and training can be an integral component of this service. The resale (buying and selling) of packaged software is a trade service and is classified accordingly. Custom software development services include the custom design of software or the modification of packaged software to meet specific user needs. (BCC)

ATM (Asynchronous transfer mode)

A cell-switched technique that uses 53-byte cells to carry data, still images, full-motion video and voice over high-speed circuits. (TSS)

Call Management Services

The provision of network management intelligence, services such as call displaying, call tracing, call waiting and call screening to the subscribers of the basic telephone service. (BCC)

Cellular radio networks

These networks allow subscribers to communicate with the Public Switched Telephone Network via base stations that are located in a given service area. (TSS)

Cellular Telephone Services

A radiotelephone service which, by means of transportable equipment, gives both way access to the public telephone network or other mobile telephones. Some versions of this service, with proper terminal equipment, may be used to transmit facsimiles as well as voice communications. (BCC)

This service, formally referred to as cellular mobile telephone service, allows subscribers to use hand-held or in-place units to make calls to the Public Switched Network while moving at vehicular speeds, or less. (TSS)

Centrex Services

The provision of PBX functionality (inward dialling from extensions, transfer of incoming from one extension to another, identification of extension telephones for billing of long distances calls, etc.) from a carrier's central office. (BCC)

Source of Definitions

BCC:	Statistics Canada Broad Commodity Classification
TA:	Telecommunications Act
EDI:	EDI Group Inc.
TSS:	Statistics Canada Demand for Telecom Service Survey

Other Definitions**Computer Facilities Management**

The provision of personnel to manage and operate client owned (leased) computer facilities on an ongoing basis whether these facilities are located on the client's or supplier's site. The incidental development of software can be an integral component of this service. Shared processing services include the provision of computing resources. (BCC)

Computer Maintenance and Repair

The repair and maintenance of computer hardware. Other professional services include systems (software or application) maintenance services. (BCC)

Computer Programming Services

(not provided by Statistics Canada)

Computer Programming Services

(not provided by Statistics Canada)

Computer Rental and Leasing

The rental and leasing of computer equipment and peripherals for a specified period of time (usually less than the expected life of the equipment) where the client selects the equipment from the supplier's inventory (operating lease services). The financial leasing of computer equipment (i.e. where the client selects and negotiates the price for equipment from one business and obtains financing from another) is a financial-service and is classified accordingly. Shared processing services include the rental and leasing of computer time. (BCC)

Connection Services

The provision of access to telecommunication network services by connecting the customer's premises to the carrier's facilities. (BCC)

Corporate EDP Consulting Services

The provision of advice and assistance on matters related to the management of businesses' and institutions' computer resources. This service may consist of assessing the computer needs of the organisation, of planning the organisation's acquisitions, of counselling the client on the procurement of hardware and software, of performing an audit on the computer related operations of the organisation, etc. Systems and technical consulting services include the provision of advice on technical matters related to computer systems. (BCC)

Custom Software Development Services

The development (analysis, design and programming) of software for, and to meet the requirements of a specific client. The modification of packaged software is also included here. The provision of assistance during the installation phase and of training services can be an integral component of this service. (BCC)

Source of Definitions

BCC: Statistics Canada Broad Commodity Classification
TA: Telecommunications Act
EDI: EDI Group Inc.
TSS: Statistics Canada Demand for Telecom Service Survey

Other Definitions

Data Entry Services

The capture of data supplied by the customer on tape, diskette or other medium or directly into a data processing system. (BCC)

Data transmission

This includes a wide variety of digital and analog based data services that transmit information at various speeds. (TSS)

Debit & calling cards

A card issued by the telecommunications service provider to give customers a more convenient payment option. (TSS)

Directory Advertising Services

The provision of space in telephone advertising directories. (BCC)

Discount long distance

This includes long distance services commonly acquired on a contractual basis and which may represent price reductions over regular long distance (direct dialling). (TSS)

Electronic Commerce

The use of electronic information and network systems for the transmission and recording of communications in a commercial transaction. (EDI)

Electronic Data Interchange (EDI)

EDI is the company-to-company electronic exchange of business computer-readable structured format. This includes proprietary formats, industry formats, and cross-industry standard formats. (X12, UCS, EDIFACT, etc.) EDI could be accomplished through direct communications between computers through value-added networks (VANs), or by the use of tape or disk exchanges. (EDI)

Electronic Information Services

The provision of information via terminal based inquiry. The users typically inquire into and extract information from, but do not update the data bases. (BCC)

Electronic text messages

A service that exchanges text messages - popularly known as electronic mail. (TSS)

Facsimile

A service where copies of documents are transmitted over communications systems and reproduced at the receiver. (TSS)

Fibre optic facilities

These cables are composed of glass fibres and use light pulses to transmit an information signal. (TSS)

Source of Definitions

BCC: Statistics Canada Broad Commodity Classification
TA: Telecommunications Act
EDI: EDI Group Inc.
TSS: Statistics Canada Demand for Telecom Service Survey

Other Definitions**Frame relay**

A packet-based transmission technology that is modelled on the X.25 protocol. With frame-relay, data is packaged into variable-length frames or packets, each with address headings to route the data to the appropriate location. Frame-relay is designed for digital networks that have high clarity circuits. (TSS)

Information Retrieval Services

(not provided by Statistics Canada)

Interconnection Services to Other Carriers

The provision of network services by one carrier to another when a communication originating in a carrier's network reaches its destination through another carrier's network. (BCC)

Interconnection Services to Resellers

The provision of network services by a carrier to a reseller. (BCC)

Internet

The Internet connects computers to the global network or networks for electronic mail services, file transfer, and information search and retrieval. (TSS)

Leased private line networks

This is a system of leased channels on the Public Switched Network dedicated for the use of a specific customer. (TSS)

Leased Private Line Services (except for program transmission)

The leasing of dedicated network facilities to establish voice, data and/or image communications between selected (point to point or multipoint) locations or terminals. Program Transmission Services include the leasing of network facilities for the transmission of television and/or radio programs. (BCC)

Microwave radio networks

Telecommunications networks capable of transferring large amounts of information using electromagnetic signals on frequencies above 2 Gigahertz. (TSS)

Other Mobile Telecommunication Services

The provision of mobile telecommunication services not elsewhere classified such as air to ground and maritime communications. (BCC) The TSS, also includes voice and data dispatch communication, public phones in aircraft and satellite based services.

Other Processing Services

This category includes, among other services, the provision of tape and diskette conversion and rectification services, input preparation services and optical character recognition services.

Source of Definitions

BCC: Statistics Canada Broad Commodity Classification
TA: Telecommunications Act
EDI: EDI Group Inc.
TSS: Statistics Canada Demand for Telecom Service Survey

Other Definitions

Paging Services

The summoning of a person to the telephone through the use of an electronic pager. This class includes tone, voice and digital display paging services. (BCC)

A mobile radio service that allows subscribers to receive short text messages with small pocket-sized radio receivers. (TSS)

Private communications networks

Networks constructed and used by a specific organization. (TSS)

Public cordless telephone

A digital, personal communications service employing hand-held units which communicate with the Public Switched Network while moving at pedestrian speeds, or less. This limited range service is suited for use in high traffic areas such as airports. (BCC)

Public Data Network Services

The provision of switched data transmission services. This service is provided on a pay as you use basis where charges can be based on any or a combination of the following factors: time, distance, speed (bps) and/or volume (kilopackets) of information transmitted. Public data network services typically serve applications involving low to medium volumes of data. Leased private line networks also include the leasing of dedicated data networks. (BCC)

Public Local Telephone Services

The provision of the switching and transmission services necessary to establish and maintain communications within a local calling area. This service is primarily designed (used) to establish voice communications but also serves other applications such as text communication (facsimile or teletex) and is generally provided for a flat monthly fee independently of the number of calls made by the subscriber. This category includes local payphone services but does not include the provision of local private line services or the rental of terminal equipment (see also definition for virtual private network services and telecommunications equipment rental services). (BCC)

Public Long Distance Telephone Services

The provision of the switching and transmission services necessary to establish and maintain communications between local calling areas. This service is primarily designed (used) to establish voice communications but also serves other applications such as text communications (facsimile or teletex) and may be provided on a toll or flat rate basis. This service provides the customer with access to the supplier's and connecting carrier's entire telephone network or, in some instances, to a limited number of exchange areas (e.g., WATS service). This category includes long distance payphone services and the telecommunication component of specialty customer sponsored services such as party lines and electronic polling. (BCC)

Source of Definitions

BCC: Statistics Canada Broad Commodity Classification
TA: Telecommunications Act
BDI: BDI Group Inc.
TSS: Statistics Canada Demand for Telecom Service Survey

Other Definitions

Radio Broadcast Transmission Services

The provision of the network service necessary for the transmission of audio signals such as radio broadcasting, wired music and loudspeaker service. (BCC)

Regular long distance (direct dialling)

Refers to the basic long distance service. Its features include: operator assistance, person-to-person calling and automated billing. (TSS)

Resellers

Telecommunications service providers which lease bulk facilities from telecom carriers and resell them for a profit margin. They do not own their own facilities and are not regulated. They often offer enhanced communications services, such as custom design & management of customers' private networks and customized billing.

Satellite

A device placed in orbit around the earth, that carries radio equipment used to provide communications services between distant points on earth. (TSS)

Shared Telecommunications Services

The pooling of a telecom carrier's facilities for dedicated network services into a single contract for multiple users to enable the advantage of volume discounts.

Shared Processing Services

The provision of computing resources for the purpose of processing data owned and supplied by the client. The execution of the application may be performed by the client (remote access) or the supplier. The provision of accounting (e.g., payroll accounting), statistical (e.g., tabulating and analysing results of a market research survey), administrative (e.g., billing service from a computerized list supplied by the client), etc. Services where the supplier uses computers to deliver the service are not classified here but rather according to the nature of the service rendered. (BCC)

System Analysis and Programming Services

The provision of systems analysts and/or programmers on a per diem basis to participate in one of the phases of the development of a system. The client supervises and retains the right to their work. Custom software development services include the delivery of software commissioned by the client where the developer supervises and is involved in all phases (analysis, design and programming) of the development. (BCC)

Source of Definitions

BCC: Statistics Canada Broad Commodity Classification
TA: Telecommunications Act
EDI: EDI Group Inc.
TSS: Statistics Canada Demand for Telecom Service Survey

Other Definitions**Systems and Technical Consulting Services**

The provision of advice and assistance on technical matters related to computer systems. This service may consist of conducting feasibility studies on the implementation of a system, of providing specifications for a data base design, of providing technical expertise for the integration of hardware and software, of providing guidance and assistance during the start-up phase of a new system, of providing specifications to secure a data base, etc. Custom software development services include the custom design of software. The training of personnel on the use of a computer system is an educational service and is classified accordingly. (BCC)

Systems and User Tools Software

The development and marketing (sale, rental, leasing and/or licensing) of systems and user tools packaged software. Documentation, maintenance and other support services such as assistance in installation and training can be an integral component of this service. The resale (buying and selling) of packaged software is a trade service and is classified accordingly. Custom software development services include the custom design of software or the modification of packaged software to meet specific user needs. (BCC)

Telecommunications Common Carrier

A person who owns or operates a transmission facility used by that person or another person to provide telecommunications services to the public for compensation. (TA)

Telecommunication Consulting Services

The provision of advice and assistance to businesses and/or institutions on matters related to telecommunications and telematics. (BCC)

Telecommunication Equipment Rental & Leasing Services

The provision of telecommunication terminal equipment through a rental or lease agreement (generally for a flat monthly fee). (BCC)

Telecommunication Equipment Sales Services

The retail or wholesale sales of telecommunication terminal equipment. (BCC)

Telecommunications Facility

Any facility, apparatus or other thing that is used or is capable of being used for telecommunications or for any operation directly connected with telecommunications, and includes a transmission facility. (TA)

Telecommunications Facilities Management
(not provided by Statistics Canada)**Telecommunication Maintenance Services**

The provision of maintenance services for communications and communications related products on a fee or contract basis. Equipment maintained includes modems, multiplexers, earth stations, telex terminals, telephones etc. (BCC)

Source of Definitions

BCC: Statistics Canada Broad Commodity Classification
TA: Telecommunications Act
EDI: EDI Group Inc.
TSS: Statistics Canada Demand for Telecom Service Survey

Other Definitions

Telecommunications Service

A service provided by means of telecommunications facilities and includes the provision in whole or in part of telecommunications facilities and any related equipment, whether by sale, lease or otherwise. (TA)

Telecommunications Software Development Services

(not provided by Statistics Canada)

Teleconferencing

A service that permits three or more parties to participate simultaneously in a call. (TSS)

Teleconferencing Services

The provision of the network and related services necessary to hold voice conferences or a one way or two way fully interactive video conference. (TSS)

Telegraph Services

The transmission of written messages by telegraphy. (BCC)

Television Broadcast Transmission Services

The provision of the network services necessary for the transmission of television signals, independently of the type of technology (network) employed. This class does not include satellite or cable services where the provider sells T.V. signals via satellite to cable companies (as opposed to selling use of satellite facilities) nor does it include DTH (direct to home) satellite services where the provider sells television program packages directly to households located in remote areas. (BCC)

Telex/TWX Services

The provision of the network and related services necessary to send and receive written messages between telex/TWX terminals. (BCC)

Transmission Facility

Any wire, cable, radio, optical or other electromagnetic system, or any similar technical system for the transmission of intelligence between network termination points, but does not include any exempt transmission apparatus. (TA)

Value Added Services

The provision of the network and support services (hardware or software) necessary to establish "intelligent" computer based communication. This type of service typically offers one or a combination of the following communication applications: E-mail, EDI, gateway to data bases, electronic bulletin boards, electronic calendar, dataconferencing, voice mail box and videotext. (BCC)

Source of Definitions

BCC: Statistics Canada Broad Commodity Classification
TA: Telecommunications Act
EDI : EDI Group Inc.
TSS: Statistics Canada Demand for Telecom Service Survey

Other Definitions

Video conferencing

A service that permits simultaneous voice and image communications between two or more locations. (TSS)

Virtual private networks

To the user these networks appear as a private communications network. However, they are, in fact, part of the Public Switched Network and are dynamically configured for the use of a specific organization. (TSS)

Virtual Private Network Services

The provision of the switching and transmission services necessary to establish voice, data and/or image communications between selected (point to point or multipoint) locations or terminals. This type of service has characteristics similar to those of a private network (custom dialling plans, high bandwidth, network management) but is provided via the public network on a pay as you use basis. (BCC)

Voice mail

A service which intercepts calls, plays an announcement and records the caller's spoken message for later retrieval. (TSS)

Wide area networks

These are networks that connect computers, terminals and printers located in a number of sites and over distances normally requiring telecommunications facilities other than in-building cabling. (TSS)

Source of Definitions

CRTC: Canadian Radio-TV and Telecommunications Commission

CRTC Definitions

Carrier Access Tariff (CAT)

The "carrier access tariff" consists of charges which will be applicable to all inter-exchange carriers, including the telephone companies, for access to the Utility (local) network. The CAT will define the terms and conditions for interconnection with the public switched telephone network. The CAT consists of two main components: a network access component which includes charges for switching and aggregation, the recovery of start-up costs and other unbundled elements; and a contribution component to subsidize the rates for basic local telephone services. (CRTC)

Co-location

"Co-location" refers to an arrangement whereby competitors of a telephone company can locate facilities at or near the telephone company's central offices. This arrangement allows competitors to use their own transmission facilities to deliver their customers' traffic to the public switched telephone network. (CRTC)

Contribution

"Contribution" is the term used in Canada to refer to the surplus revenues generated by toll and other services that are used to cover the revenue shortfall in local/access services. (CRTC)

Imputation Test

A test adopted by the Commission to detect anti-competitive targeted pricing strategies. This test is to ensure that all telephone company services are priced to recover all causal costs including contribution and network access charges. (CRTC)

Interoperability

Refers to the seamless interconnectivity of networks so that traffic can move efficiently between those networks in response to customer demands and service requirements. (CRTC)

Local/Access Shortfall

The term "local/access shortfall" refers to the deficit that occurs because the revenue from combined local and access services do not cover costs. (CRTC)

Phase II Costing Methodology (Phase II)

A long-run incremental costing methodology relied on by the Commission to estimate the costs regulated telecommunications carriers incur in providing a particular services. (CRTC)

Source of Definitions

CRTC: Canadian Radio-TV and Telecommunications Commission

CRTC Definitions

Phase III Costing Methodology (Phase III)

The methodology used by the Commission to determine the costs and revenue of various categories of telephone company services. This is done by assigning the investment, expense and revenue accounts of the telephone company's regulated operations to the appropriate service category. (CRTC)

Price Cap Method of Regulation

Overall, price caps are a regulatory device which limit or "cap" the price that a telephone company may charge for a particular basket of services. This form of regulation encourages telephone companies to operate more efficiently by allowing the company to increase its profits by becoming more productive. Price cap regulation will replace earnings or rate of return regulation for services in the Utility segment in 1998. (CRTC)

Rate Rebalancing

The term "rate rebalancing" refers to the reduction in the price of toll services and the corresponding increase in the price of local/access services in order to bring the rates for these services more closely in line with their costs, thereby reducing the subsidy that flows between these two classes of services. (CRTC)

Rate of Return Regulation

Under rate of return (or "earnings") regulation, the regulated telephone company is allowed to earn a reasonable return on its rate base (which includes its investment in capital and operating expenses). The Commission approves the rates which the telephone company must charge in order to achieve this rate of return. The company is not allowed to make profits in excess of this reasonable rate of return. (CRTC)

Split Rate Base

Over the transitional period to price cap regulation, the rate base of the Stentor companies will be split into two segments: Utility and Competitive. The Utility segment will continue to be earnings regulated during the transition period. Competitive segment services will no longer be subject to rate of return regulation. (CRTC)

Unbundling

The term "unbundling" describes the policy of requiring the telephone companies to make available individual bottleneck or essential facilities on a tariffed basis, tailored to users' needs. (CRTC)

Utility Segment

The Utility segment will consist predominantly of services in the current Monopoly Local and Access service categories, plus a share of certain common costs and local network transport services. (CRTC)

Source of Definitions

CRTC: Canadian Radio-TV and Telecommunications Commission

CRTC Definitions

Video Dial Tone

Refers to the switched (as distinct from dedicated) broadband carriage of information. Video dial tone permits the distribution of services which require a greater amount of bandwidth (including video). (CRTC)

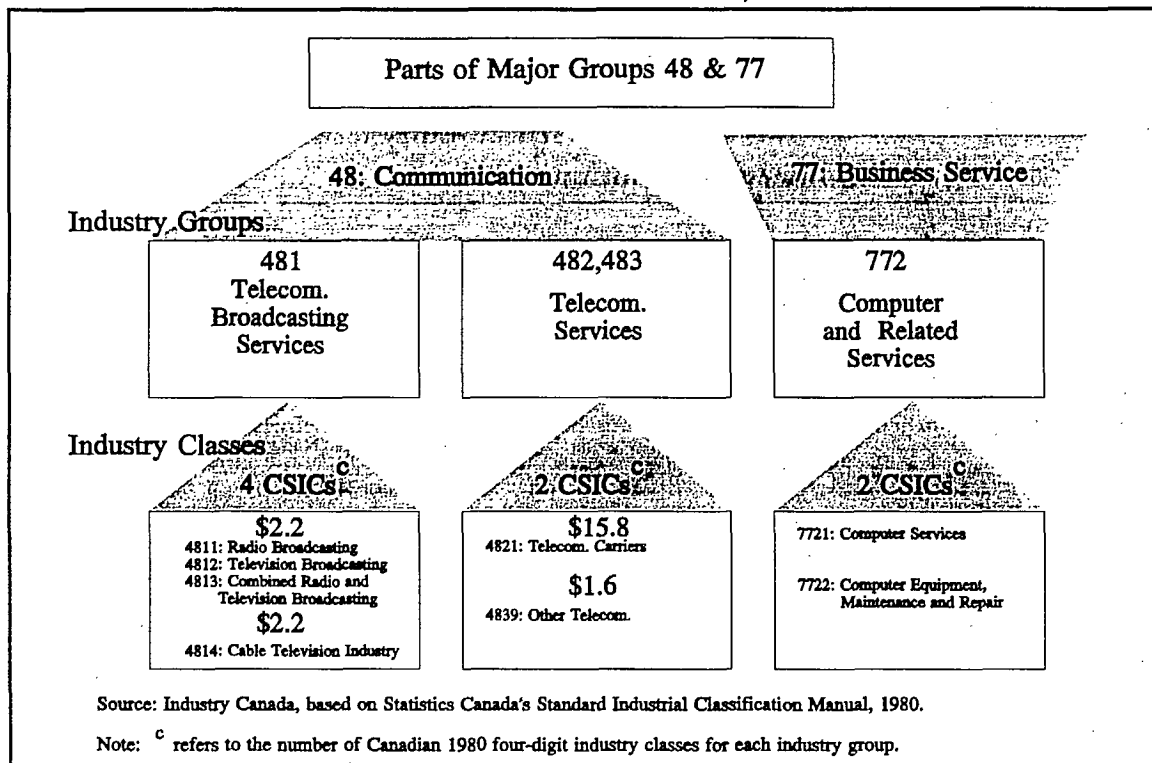
Appendix B

**Standard Industrial Classifications used to Define the
Information Technologies and Telecommunications Industries**

THE INFORMATION TECHNOLOGIES AND TELECOMMUNICATIONS SERVICE INDUSTRIES

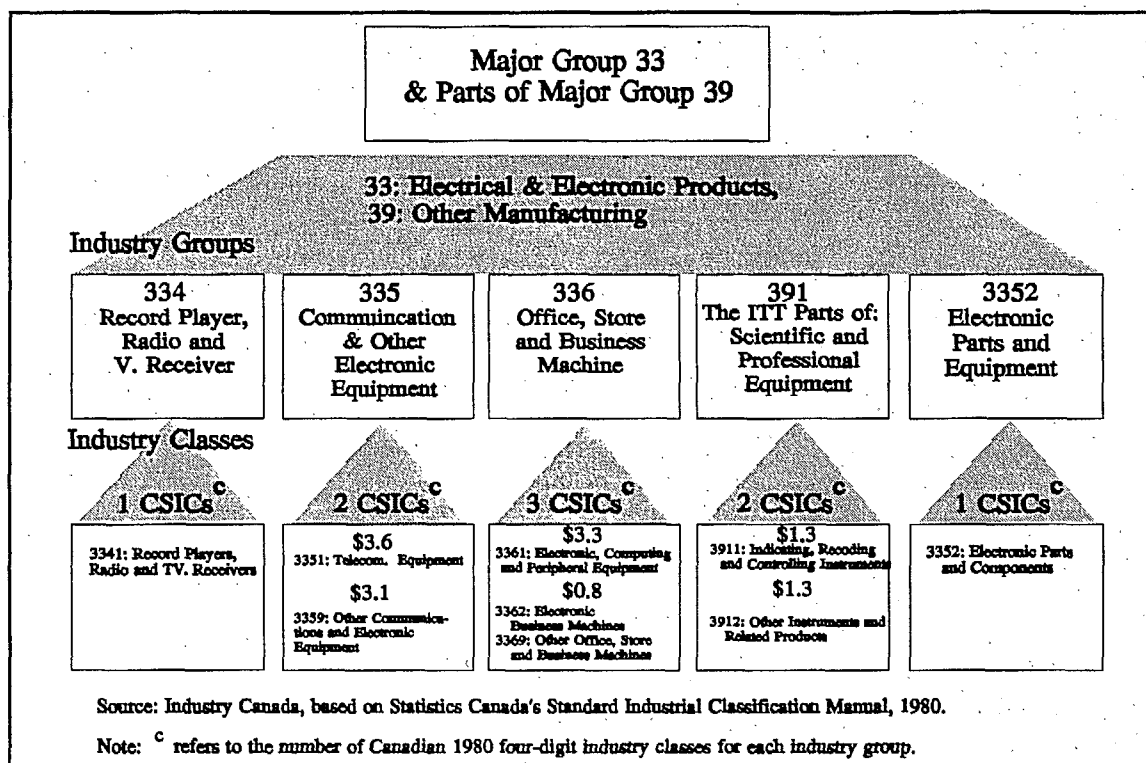
- The following figure outlines the existing classifications structure used by Industry Canada to define the information technologies and telecommunications (IT&T) service industries. It is based on the current definitions and classifications used by Statistics Canada, in outlining its Standard Industrial Classification (SIC).

**Figure 15
CLASSIFICATIONS OF
THE INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS
SERVICE INDUSTRIES**



- The following figure outlines the existing classifications structure used by Industry Canada to define the IT&T manufacturing industries. It is based on the current definitions and classifications used by Statistics Canada, in outlining its Standard Industrial Classification (SIC). However, analysis of these industries was not undertaken in this publication. Those interested in acquiring further information on the telecommunications manufacturing industries, may contact Ed Thériault (613-954-3317) or Vivian Bierman (613-954-3285).

**Figure 16
CLASSIFICATIONS OF
THE INFORMATION TECHNOLOGIES AND TELECOMMUNICATIONS
MANUFACTURING INDUSTRIES**



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