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# Information and Communications Technologies (ICT)

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# Statistical Review 1990 - 1997

May 1999

Spectrum, Information Technologies and Telecommunications Sector

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Industry Canada

# INFORMATION AND COMMUNICATIONS TECHNOLOGIES STATISTICAL REVIEW (ICTSR): 1990 - 1997

principal authors:

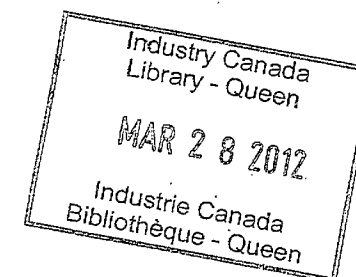
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based on work carried out under the auspices of  
*Industry Canada and Statistics Canada*

An electronic version of this and other related documents can be found  
on the Industry Canada web site at:  
<http://strategis.ic.gc.ca/infotech>

The electronic version of the ICTSR is regularly updated and provides the  
latest data on the Canadian Information and Communications Technologies sector.



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## Note to Readers

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### Progress in measuring the ICT Sector

Industry Canada is pleased to provide the 1999 edition of the Information and Communications Technologies Statistical Review (ICTSR), which reports the 1997 statistics for the Canadian information and communications technologies sector.

Industry Canada is working closely with Statistics Canada, other federal departments, the industry itself, and international organizations such as the Organization for Economic Cooperation and Development (OECD), to develop and improve statistics for the ICT sector. Progress has been achieved over the last five years through agreements between Industry Canada and Statistics Canada to revise current surveys and data sources associated with ICT and to introduce new surveys.

Countries within the OECD reached an important consensus in 1998 on an industry-based definition of the ICT sector. The definition is based on the international standard industrial classification (ISIC), revision 3 (rev. 3). This allows both the OECD and its members to gather related data and to begin the task of international comparisons in this rapidly changing sector.

According to the OECD, the ICT sector has been defined as the combination of manufacturing and service industries which electronically capture, transmit and display data and information. The ICT manufacturing industries include establishments that manufacture products intended:

- to fulfil information processing and communications functions including transmission and display; or
- to use electronic processing to detect, measure and/or record physical phenomena, or to control a physical process.

The ICT service industries include establishments which provide services intended to enable electronic information processing and communications functions.

Statistics Canada has developed a concordance between the ISIC rev.3 and the Canadian 1980 Standard Industrial Classification (SIC). For further details on the OECD definition of the sector and the concordance, consult the appendix *Defining the Information and Communication Technology Sector*, as well as the appendix *Statistics Canada SIC Definitions* for the full description of the industries.

The use of the new OECD definition of the ICT sector for this year's ICT Statistical Review implies significant changes in comparison with last year's edition. The sector now includes communications wire and cable manufacturing; ICT wholesaling; and office machinery rental and leasing. However, it excludes radio and television broadcasting industries. Historical data ranging back to 1990 have been updated with the new definition.

Reporting on the ICT sector will continue to evolve as the 1997 North American Industrial Classification System (NAICS) is implemented. The appendix *Defining the Information and Communication Technology Sector* provides a concordance between the ISIC rev.3 and the NAICS.

### **Changes of data sources**

Some data sources were changed in order to harmonize the reporting unit for all the ICT industries. The standard reporting unit for this year's ICTSR is the establishment (as opposed to the enterprise<sup>1</sup>). As much as possible, data sources were changed to meet this standard. Specifically, the changes affect the telecommunications services, and the software and computer services industries.

In terms of financial data for the telecommunications services industry, figures for the 1990 to 1996 period, as for last year's edition, come from a sample of financial and taxation data submitted by corporations under the Canadian Income Tax Act. The reporting unit for these years is the enterprise, but the financial data for 1997 are derived from a new Annual Census of business units classified in the telecommunications industry which use the establishment as the reporting unit. Due to the change in the reporting unit, the 1997 data are not fully comparable to the data for previous years.

The source of employment data for the telecommunications services industry is now the Survey of Employment, Payrolls, and Hours (SEPH), which replaces the Labour Force Survey (LFS) used in last year's edition. This survey provides estimates of employment based on data collected at the establishment-level and therefore comply with the standard reporting unit (establishment). Data have been revised for the period 1990 to 1996 resulting from the change in reporting unit.

Regard to financial data for the software and computer services industry, this year's ICTSR relies on the annual survey of computer services. This source collects data at the establishment-level and complies with the standard reporting unit. Data for the period of 1990 to 1996 have been revised to reflect the change.

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<sup>1</sup>Statistics Canada collects data for two different statistical units, namely the establishment and the enterprise. The establishment is the smallest operating unit in a business capable of reporting specified input and output data. The enterprise is a family of businesses under common ownership and control for which a set of consolidated financial statements is produced. Enterprises with complex organizational structures (those which are larger and more diverse) usually have more than one establishment.

The LFS is the most appropriate source of employment data for the software and computer services industry although it is not an establishment level survey but a household-based survey. The LFS is used because it is the only survey which provides data on contract workers (self-employed), a common form of employment in this industry.

### **Important Note**

Due to the above-mentioned changes to this year's ICTSR, it is not advisable to compare data with last year's edition. However, reference data from 1990 to 1996 have all been recalculated using the sector definition and data sources described above. This edition also includes revisions made by Statistics Canada to data previously published. In addition, this publication provides, as in previous editions, estimates by Industry Canada, which are underlined in the document. Please see sources and technical notes for further details.

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# Highlights

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## HIGHLIGHTS

### CANADA'S INFORMATION AND COMMUNICATIONS TECHNOLOGIES SECTOR - 1997 SIGNIFICANT ACHIEVEMENTS

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#### New Sector Definition

As mentioned in the "Note to Readers", Industry Canada is using for the first time the new OECD definition for the Information and Communications Technologies (ICT) sector. This new definition is not directly comparable with that of last year's edition. Due to this change, aggregated data presented in this year's ICTSR are not comparable with data presented in the previous edition. However, historical data are presented under the new definition in this edition.

The new definition comprises the following:

#### **ICT Manufacturing**

consumer electronics  
communications and telecommunications equipment  
electronic components  
computer equipment  
communications wires and cables  
instrumentation

#### **ICT Services**

cable television  
telecommunications services  
ICT wholesaling  
software and computer services  
office machinery rental and leasing

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The use of the new OECD definition for this year's ICTSR implies significant changes in comparison with last year's edition.

- The ICT sector now includes communications wire and cable manufacturing; ICT wholesaling; and office machinery rental and leasing, but excludes radio and television broadcasting industries.
- In terms of size, the added industries outweigh the excluded industries. Therefore, there is a substantial increase in the ICT sector aggregated data.
- The most important impact on the sector comes from the inclusion of ICT wholesaling, which adds: \$33 billion in revenues, \$9.4 billion in GDP, \$317 million in R&D spending, and more than 90,000 jobs.

It should also be noted that the GDP has been rebased with 1992 as its base year. Given price deflation for some ICT goods and services, there are considerable differences, for a number of ICT industries, in the GDP between the 1986 and 1992 base years.



## HIGHLIGHTS

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Using the OECD's definition, Canada's Information and Communications Technologies sector continued to show a surge in 1997 and most industries showed substantial increases. The highlights between 1996 and 1997 are:

The creation of more than **42,300 new jobs** for Canadians

A **5.4% increase** brought ICT revenues to \$100.2 billion

A **14% increase** in ICT's contribution to GDP - ICT accounted for **6.1% of total Canadian GDP** in 1997

A **7.8% increase** in ICT research and development - ICT R&D accounts for **42% of total Canadian private sector R&D**

A **8.2% increase** in ICT exports, bringing the total to \$26.8 billion and **8.4% of total Canadian exports**

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### Revenues

- ICT revenues reached \$100.2 billion in 1997, an increase of 5.4% from 1996.
- Services accounted for 72% of all ICT revenues, with wholesaling activities making up one-third of total revenues and telecommunications services another 23% in 1997.
- Revenues for the entire ICT sector have grown at a compound annual growth rate (CAGR) of 8.5% for the 1990-1997 period.
- During 1997, the telecommunication equipment industry and the software and computer services industry showed the strongest growth at 27.0% and 14.5% respectively. The electronic parts and components industry showed the strongest growth over the 1990-1997 period with a CAGR of 25.0%.
- Between 1996 and 1997, while most industries showed increases in their revenues, the computer equipment industry's revenues decreased by \$906 million to \$5.3 billion. This decrease in Canadian operations is likely due to a loss of market share, both nationally and internationally, to computer equipment manufactured abroad.

### Employment

- Total employment in the ICT sector was 473,928 in 1997, a net increase of 9.8%, or 42,391 more jobs from the previous year (compared to a 1.9% increase in total Canadian employment).
- ICT services industries employed 376,542 people, 79.5% of the total ICT sector in 1997.
- Employment in the ICT sector grew at a CAGR of 2.8% over the 1990-1997 period compared to 0.8% in the Canadian economy.
- Between 1996 and 1997, the largest increase in employment was in the software and computer services industry, with more than 36,000 new jobs<sup>1</sup>, representing an expansion of 26.5%.

### Contribution to GDP

- The contribution to Canadian GDP by the ICT sector in 1997 was \$42.3 billion (in 1992 constant dollars). This represents a 14.0% increase from 1996 compared to a 4.0% increase of total Canadian GDP over the same period.
- The ICT sector accounted for 6.1% of Canada's entire GDP for 1997, up from 4.6% in 1993.
- The ICT sector also accounted for 19.3% of the growth of the Canadian GDP between 1996 and 1997.
- The telecommunications services industry accounted for 36% of the ICT sector's GDP, a contribution of \$15.2 billion (in 1992 constant dollars).
- Between 1990 and 1997, GDP in the ICT sector grew at a CAGR of 6.2%<sup>2</sup> compared to 2.0% for the Canadian economy.

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<sup>1</sup> Includes full-time, part-time employees and self employed, as per the Labour Force Survey of Statistics Canada.

<sup>2</sup> Excluding wholesaling because 1990 GDP is not available for this industry.

## Research and Development

- The ICT sector is one of the largest R&D performers in the Canadian economy. In 1997, total R&D expenditures in the ICT sector were \$3.6 billion (an increase of 7.8% from 1996). This represents almost 42% of total Canadian private sector R&D.
- With total R&D expenditures close to \$1.6 billion in 1997, the telecommunication equipment industry accounted for 43.8% of all R&D expenditures in the ICT sector and 18% of total Canadian private sector R&D.
- From 1990 to 1997, R&D expenditures in the ICT sector grew at a CAGR of 9.1% compared to 7.5% in the Canadian private sector.

## Trade

- ICT exports of goods and services increased by 8.2% in 1997, reaching \$26.8 billion. This represents 8.4% of total Canadian exports<sup>3</sup>.
- ICT imports reached \$44.7 billion in 1997, up 13.4% from 1996, representing 15.1% of total Canadian imports<sup>4</sup>.
- Goods accounted for 87% of ICT exports and 94% of ICT imports.
- Between 1996 and 1997, the trade deficit for ICT manufacturing goods grew from \$15.7 billion to \$18.8 billion.
- The positive trade balance for ICT services shrunk by 17% to \$921 million in 1997. However, over the 1990-1997 period, the balance increased at a CAGR of 23.5%.

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<sup>3</sup> Canadian exports are defined as the sum of manufacturing exports and receipts for commercial services sold to clients located abroad.

<sup>4</sup> Canadian imports are defined as the sum of manufacturing imports and payments for commercial services bought from abroad.

### **ICT Manufacturing Trade in 1998**

- Total ICT manufacturing exports were up 6.9% in 1998 reaching \$25 billion. This represents 7.9% of total Canadian manufacturing exports.
- The electronic computing and peripheral equipment industry represented the largest proportion (28.3%) of ICT manufacturing exports with \$7.0 billion in 1998.
- ICT manufacturing imports reached \$45.9 billion in 1998, an increase of 8.9% from 1997. ICT manufacturing imports represented 15.4% of total Canadian manufacturing imports in 1998.
- Imports of electronic parts and components reached \$15.5 billion in 1998, representing 33.7% of total ICT manufacturing imports.
- The ICT manufacturing trade deficit reached \$20.9 billion in 1998, an increase of 11.3% from 1997. The electronic parts and components industry accounted for nearly 46% of this trade deficit and 48% of the growth occurring between 1997 and 1998.
- With a trade surplus of \$2.1 billion in 1998, the telecommunication equipment industry is the only manufacturing industry consistently running a trade surplus over the 1990-1998 period.

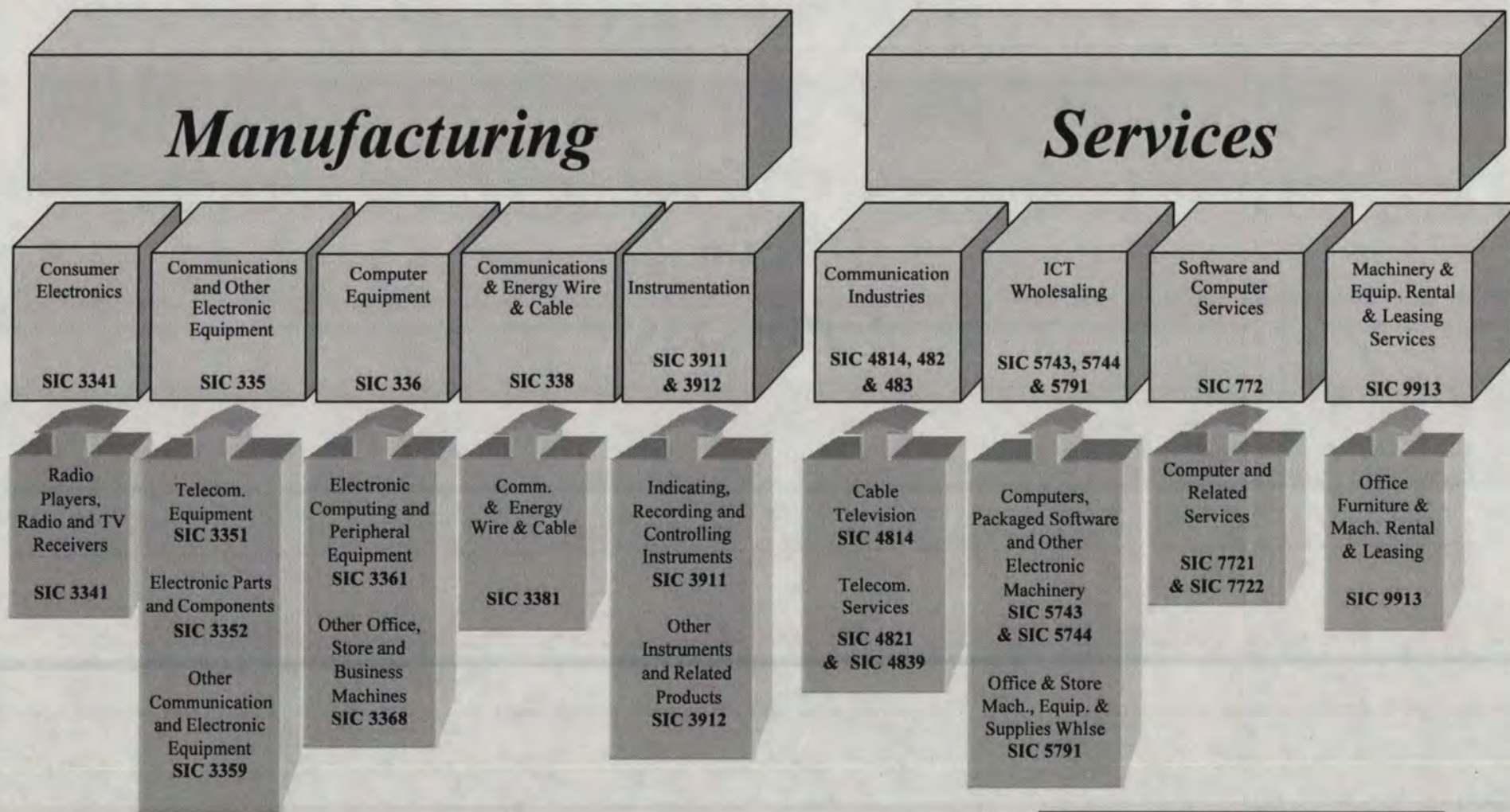
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# Section 1

## Legend

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# Information and Communications Technologies Legend (SIC - E)



For further details, see Statistical Appendices,  
Statistics Canada SIC Definitions.

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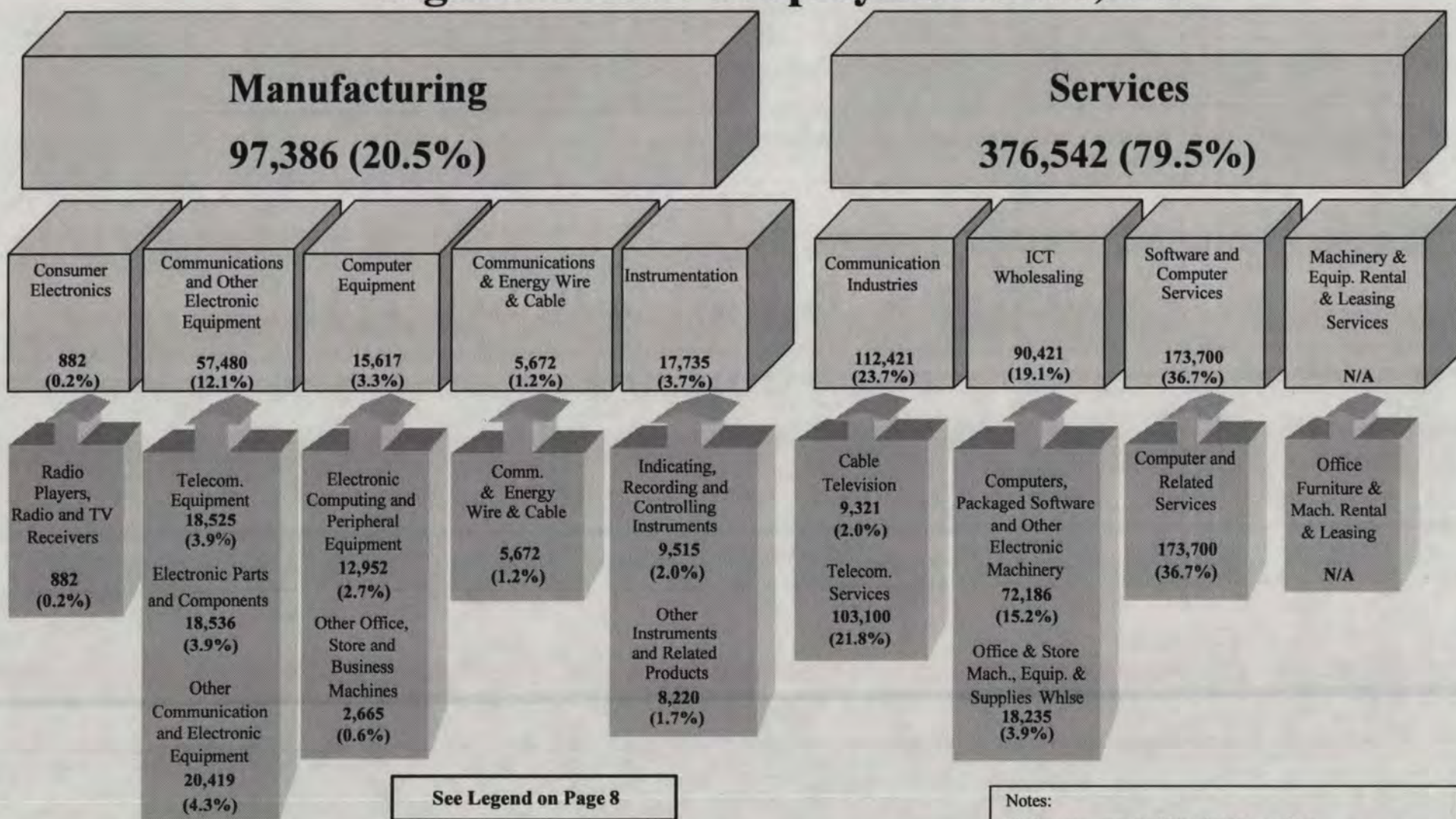
## **Section 2**

# **ICT Sector: 1997 at a Glance**

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# Information and Communications Technologies

## Figure 1 - 1997 Employment: 473,928



See Legend on Page 8

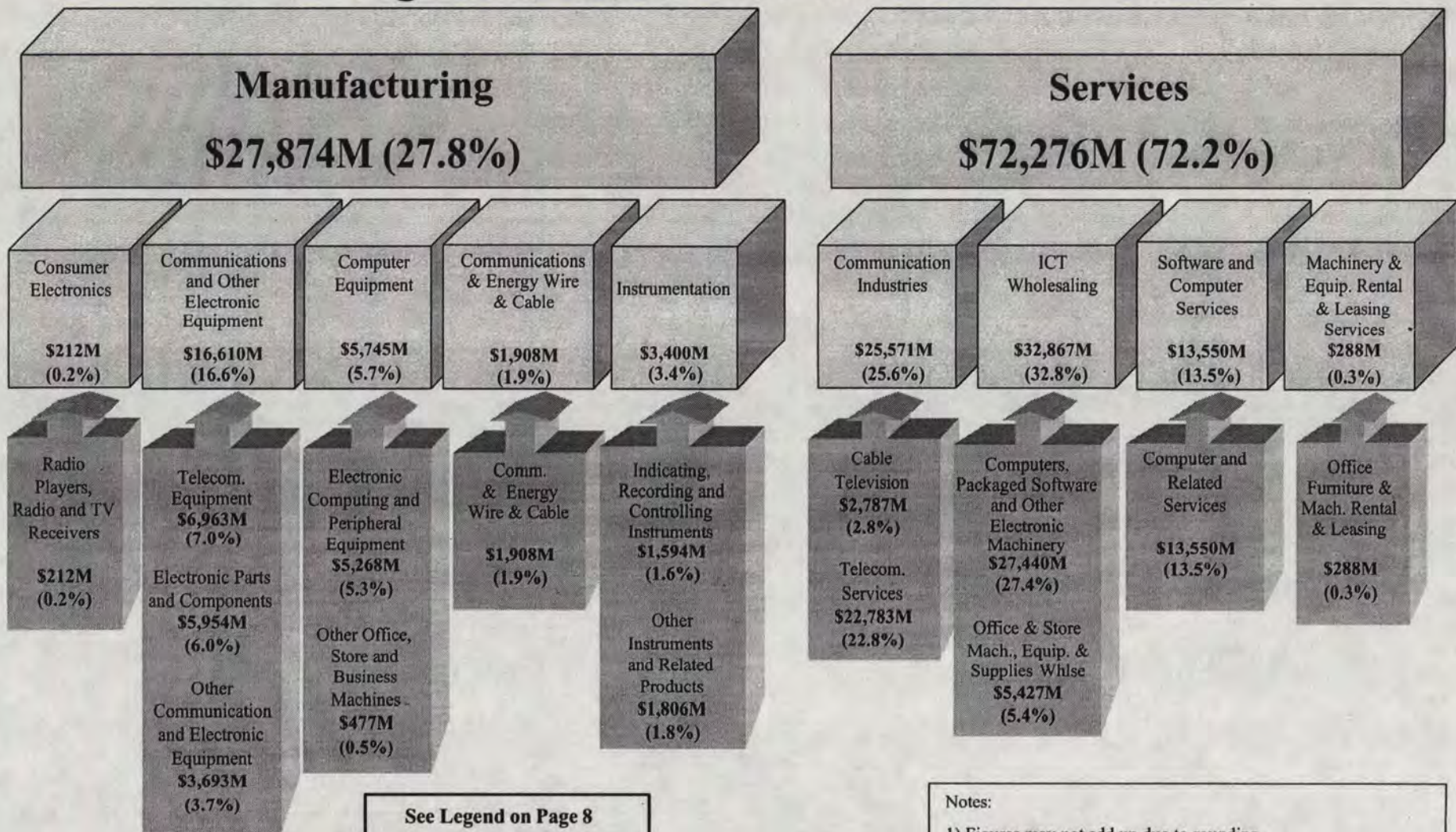
Notes:  
 1) Figures may not add up due to rounding.  
 2) All percentages are with respect to the total of 473,928  
 See Sources and Technical Notes for more details.

Sources: Survey for Employment, Payroll and Hours (SEPH) for Telecommunications services, the Labour Force Survey (LFS) for Software and Computer services, Annual Return for Cable Television, Annual Survey of Manufactures (ASM) for Manufacturing industries and Industry Canada estimates based on Statistics Canada data for Wholesaling industries.



# Information and Communications Technologies

## Figure 2 - 1997 Revenue: \$100.2 billion



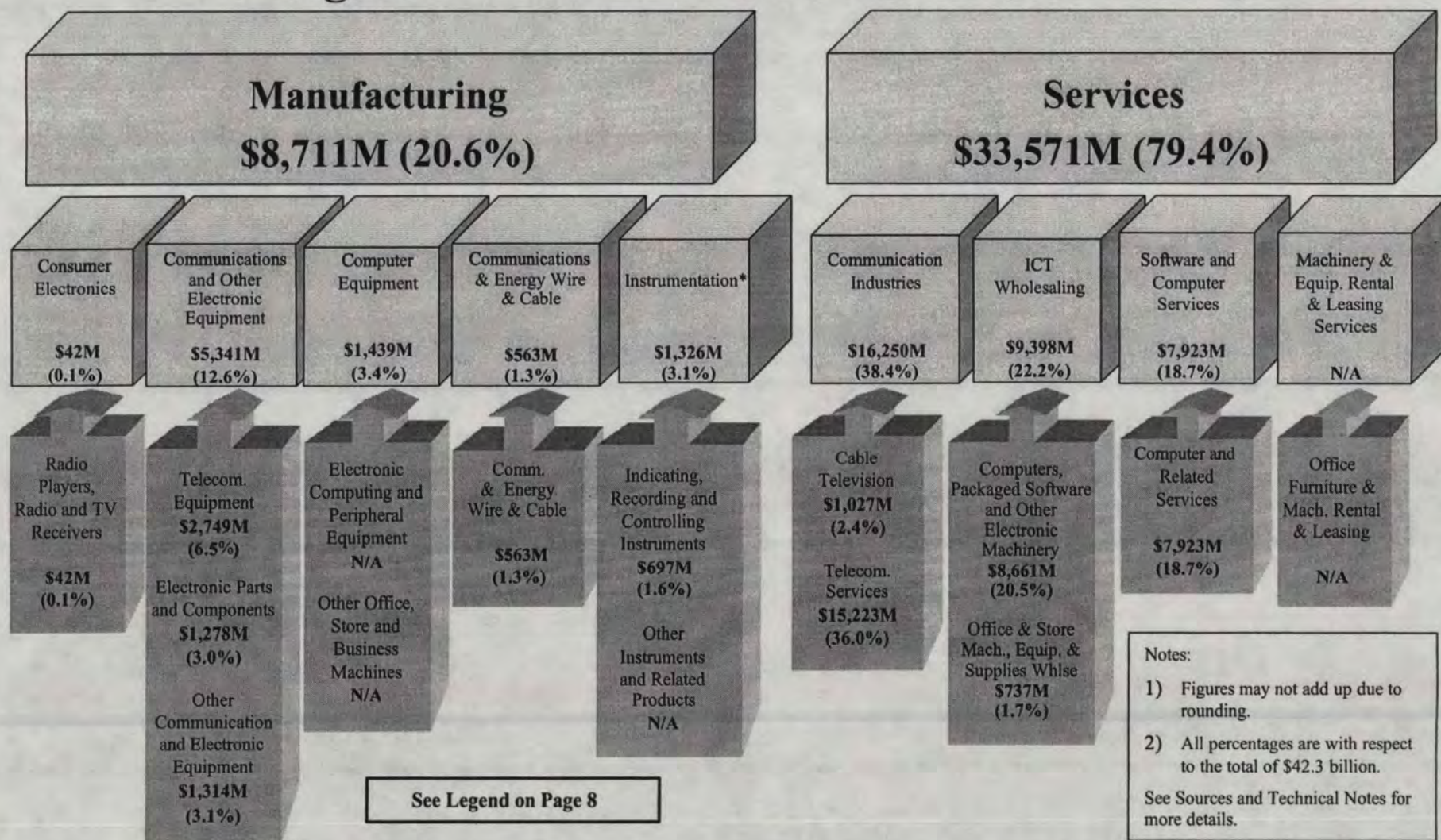
**Notes:**

- 1) Figures may not add up due to rounding.
  - 2) All percentages are with respect to the total of \$100.2 billion.
- See Sources and Technical Notes for more details.

Sources: Industry Canada estimates based on Statistics Canada data, except for Manufacturing industries (Annual Survey of Manufactures), Cable television (Annual Returns) and Telecommunications services (Annual Survey of Telecommunications Services Providers).

# Information and Communications Technologies

## Figure 3 - 1997 GDP: \$42.3 billion (in 1992 dollars)

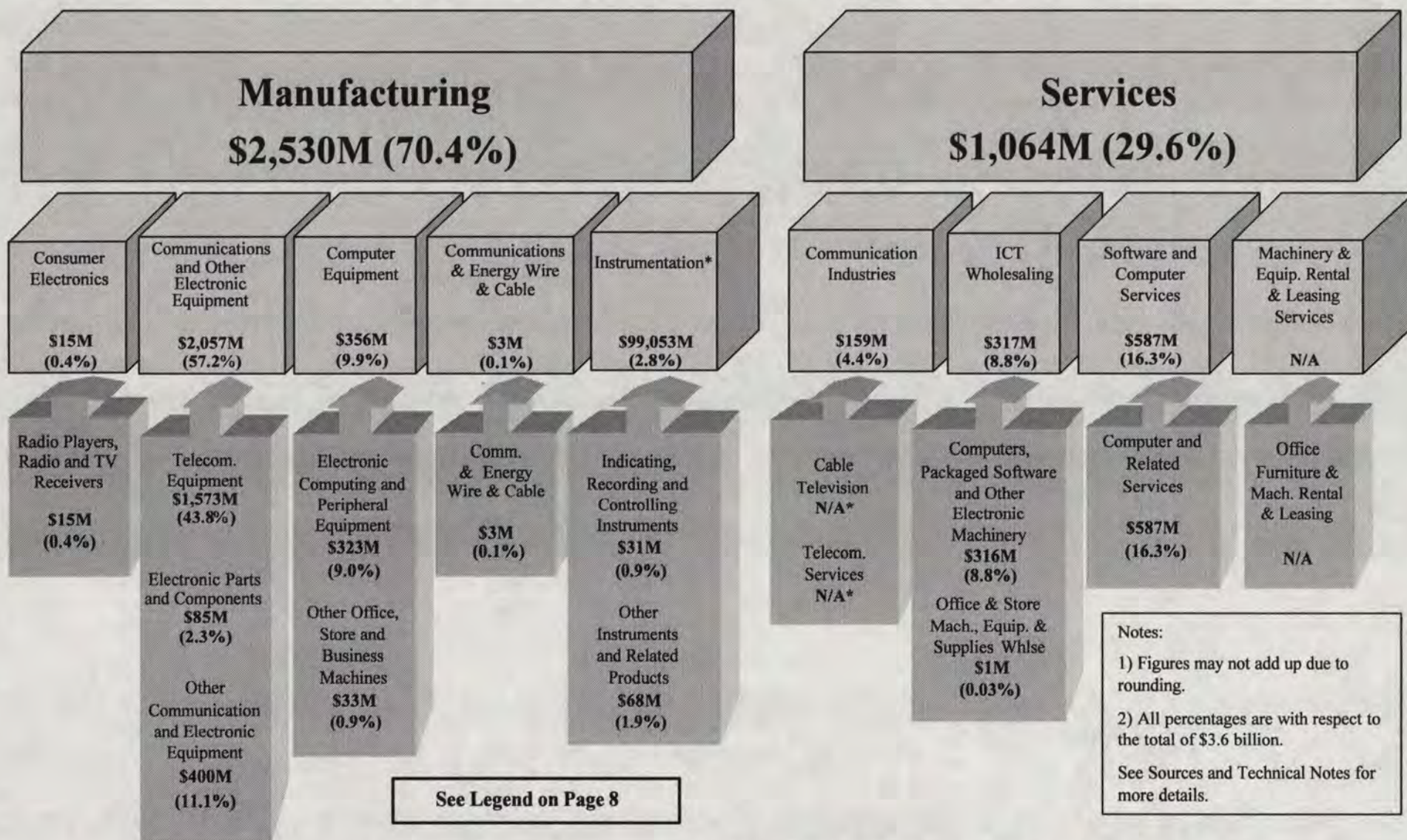


Sources: Gross Domestic Product by Industry, Statistics Canada (Cat. No. 15-001) and Industry Canada estimates based on Statistics Canada data for ICT wholesaling.

\* Somewhat overstated due to the inclusion of SIC 3913 and 3914.

# Information and Communications Technologies

## Figure 4 - 1997 R&D: \$3.6 billion



**Notes:**

- 1) Figures may not add up due to rounding.
- 2) All percentages are with respect to the total of \$3.6 billion.

See Sources and Technical Notes for more details.

Sources: Statistics Canada special tabulations for Industry Canada.

\* Telecommunications services and cable industries have been combined to maintain confidentiality among respondents.



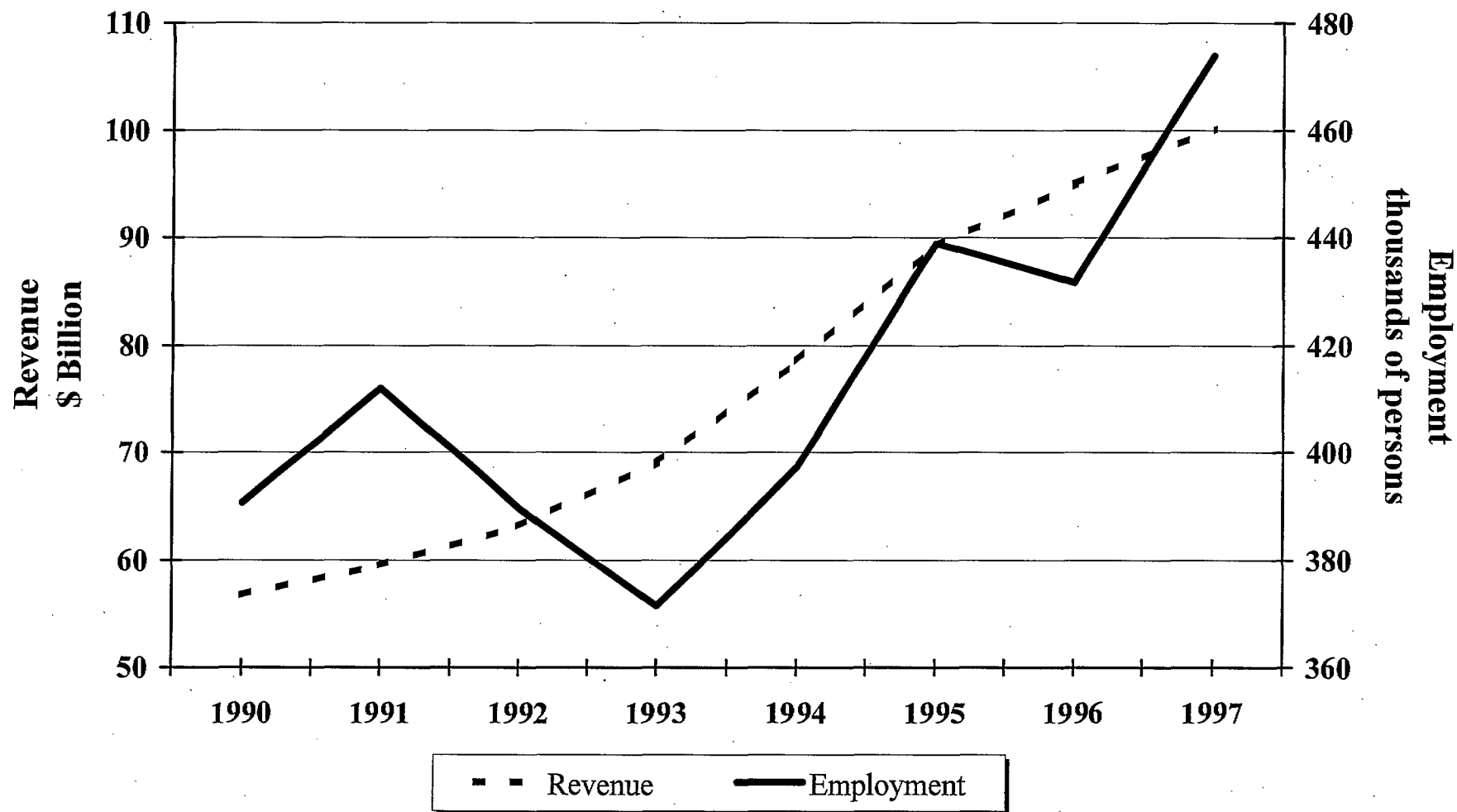
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# Section 3

## Trends in the ICT Sector: 1990 - 1997

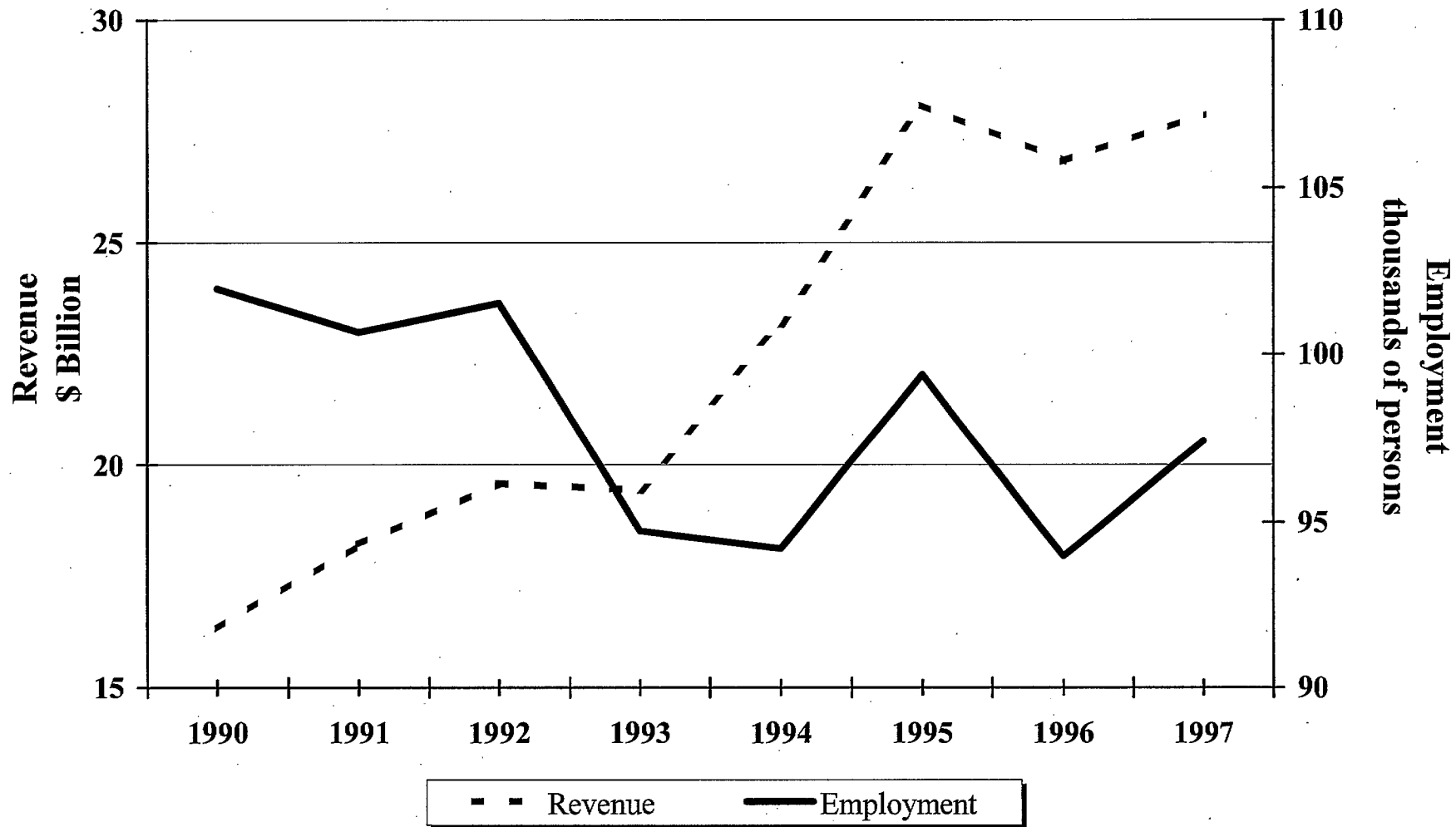
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Figure 5

**Total ICT Sector: 1990-1997  
(Manufacturing and Services)  
Revenue and Employment**

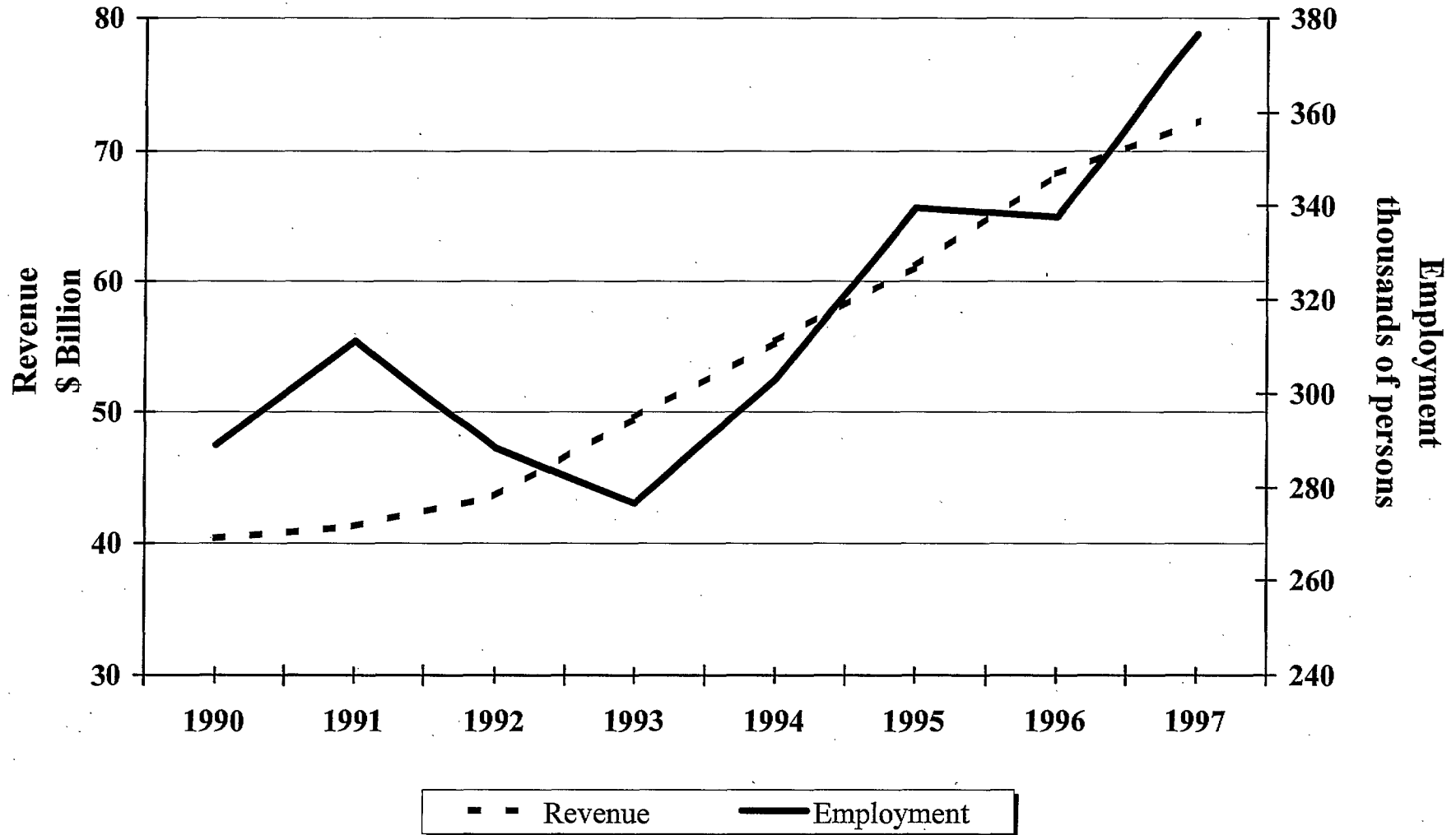
Sources: Various sources, see Sources and Technical Notes.

**Figure 6**                      **ICT Manufacturing: 1990-1997**  
**Revenue and Employment**



Sources: Annual Survey of Manufactures, Statistics Canada (Cat. No. 31-203).

Figure 7

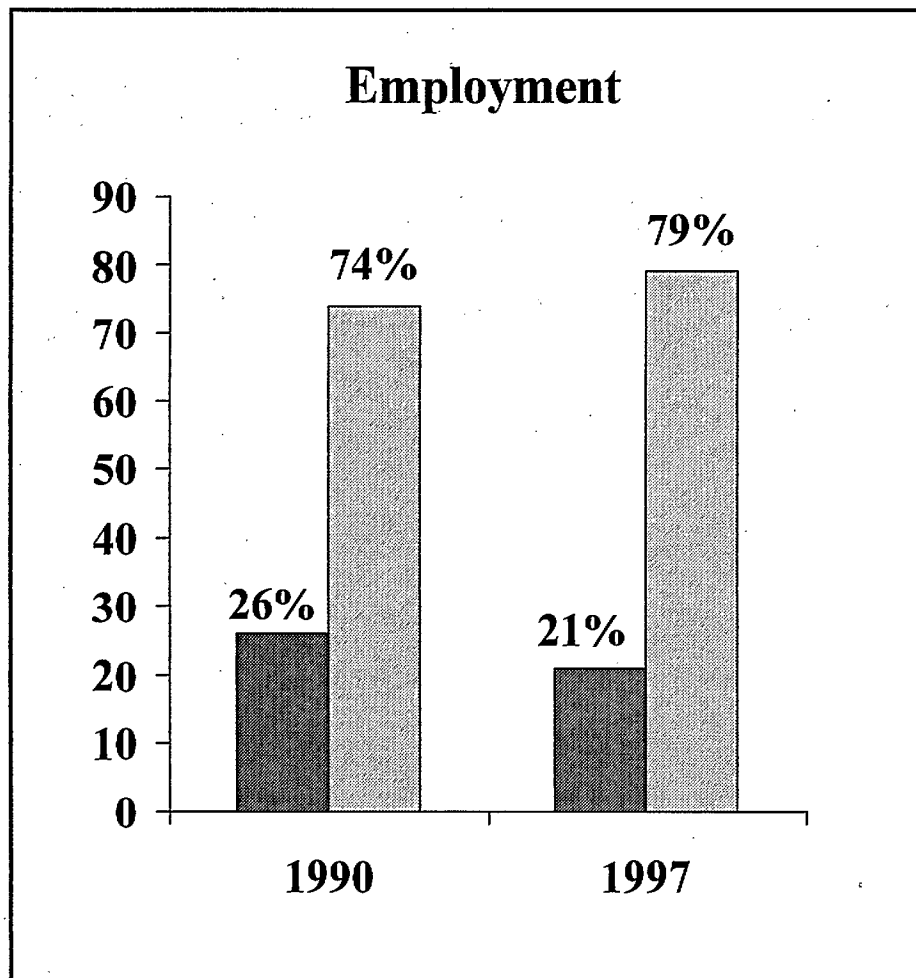
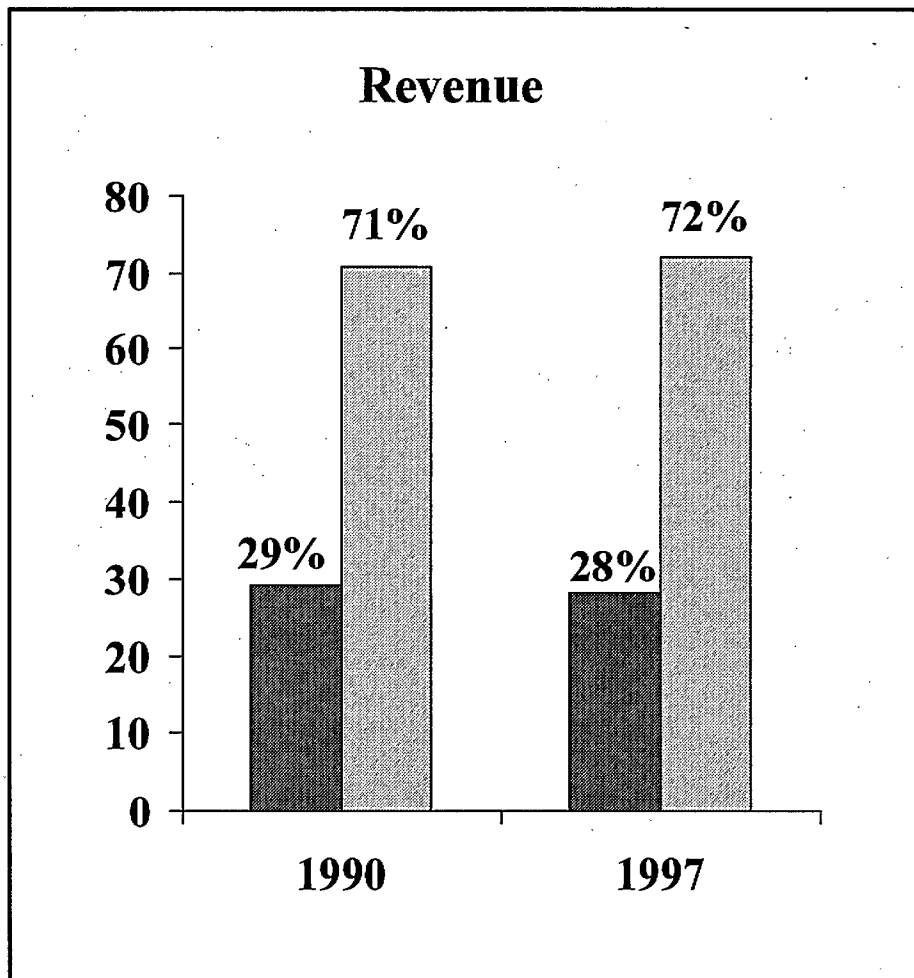
ICT Services: 1990-1997  
Revenue and Employment

Sources: Various sources, see Sources and Technical Notes.



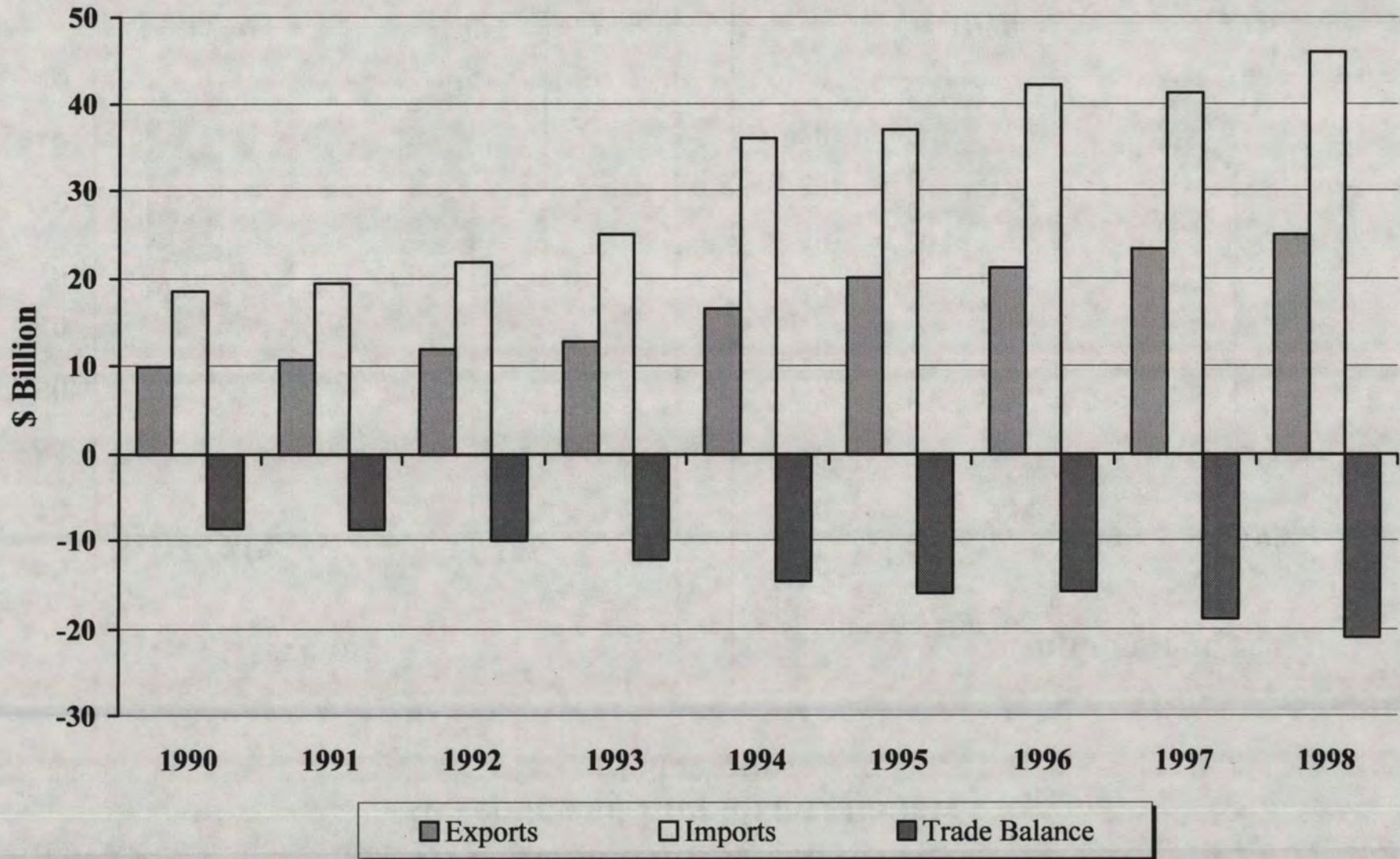
**Figure 8**

**ICT Manufacturing and Services  
Revenue and Employment Shares  
1990 & 1997**



■ ICT Manufacturing    ■ ICT Services

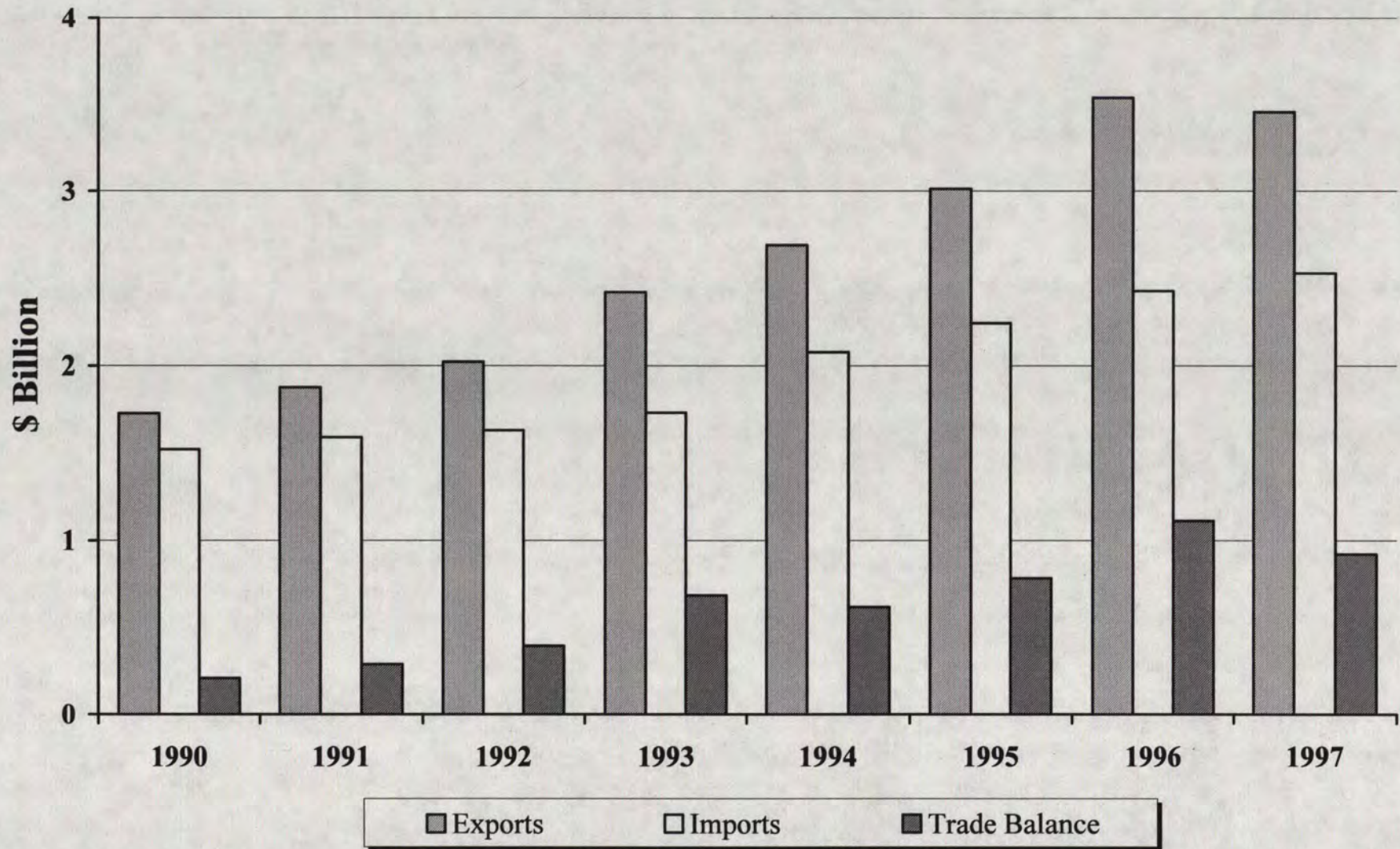
Figure 9

**ICT Manufacturing: 1990-1998**  
**Total Exports, Imports and Trade Balance**

Sources: TIERS, Statistics Canada and Canada's International Transactions in Services (Cat. no. 67-203), Statistics Canada.

**Figure 10**

**ICT Services: 1990-1997  
Exports, Imports and Trade Balance**



Source: Canada's International Transactions in Services (Cat. no. 67-203), Statistics Canada.



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# Section 4

## ICT Sector Aggregate Statistics: 1990 - 1997

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**Table 4.0**  
**Total ICT Sector**  
**Aggregate Statistics: 1990 - 1997**

<i>Employment</i>	1990	1991	1992	1993	1994	1995	1996	1997	% change 1996-1997	% change 1990-1997	CAGR 1990-1997
ICT Manufacturing	101,953	100,657	101,524	94,728	94,198	99,381	93,966	97,386	3.6%	-4.5%	-0.7%
ICT Services	<u>288,789</u>	<u>311,215</u>	<u>288,180</u>	<u>276,592</u>	<u>303,062</u>	<u>339,469</u>	<u>337,571</u>	<u>376,542</u>	11.5%	30.4%	3.9%
<b>Total ICT Sector</b>	<b><u>390,742</u></b>	<b><u>411,872</u></b>	<b><u>389,704</u></b>	<b><u>371,320</u></b>	<b><u>397,260</u></b>	<b><u>438,850</u></b>	<b><u>431,537</u></b>	<b><u>473,928</u></b>	<b>9.8%</b>	<b>21.3%</b>	<b>2.8%</b>

<i>Revenues (\$'000,000)</i>	1990	1991	1992	1993	1994	1995	1996	1997	% change 1996-1997	% change 1990-1997	CAGR 1990-1997
ICT Manufacturing	16,328	18,245	19,589	19,439	23,168	28,095	26,810	27,875	4.0%	70.7%	7.9%
ICT Services	40,377	41,279	43,630	49,563	55,396	61,152	<u>68,238</u>	<u>72,276</u>	5.9%	79.0%	8.7%
<b>Total ICT Sector</b>	<b>56,705</b>	<b>59,525</b>	<b>63,219</b>	<b>69,001</b>	<b>78,564</b>	<b>89,247</b>	<b><u>95,048</u></b>	<b><u>100,151</u></b>	<b>5.4%</b>	<b>76.6%</b>	<b>8.5%</b>

<i>Gross Domestic Product (GDP) (\$'000,000 - 1992 constant \$)</i>	1990	1991	1992	1993	1994	1995	1996	1997	% change 1996-1997	% change 1990-1997	CAGR 1990-1997
ICT Manufacturing	5,821	5,823	6,115	6,104	6,781	7,879	7,856	8,711	10.9%	49.6%	5.9%
ICT Services*	15,807	16,762	17,145	<u>22,189</u>	<u>24,714</u>	<u>27,148</u>	<u>29,237</u>	<u>33,571</u>	14.8%	52.9%**	6.3%**
<b>Total ICT Sector*</b>	<b>21,628</b>	<b>22,585</b>	<b>23,260</b>	<b><u>28,293</u></b>	<b><u>31,495</u></b>	<b><u>35,027</u></b>	<b><u>37,093</u></b>	<b><u>42,282</u></b>	<b>14.0%</b>	<b>52.0%**</b>	<b>6.2%**</b>

<i>Research and Development (R&amp;D) (\$'000,000)</i>	1990	1991	1992	1993	1994	1995	1996	1997	% change 1996-1997	% change 1990-1997	CAGR 1990-1997
ICT Manufacturing	1,525	1,588	1,617	1,768	2,030	2,244	2,361	2,530	7.2%	65.9%	7.5%
ICT Services	430	463	558	723	878	905	972	1,064	9.4%	147.3%	13.8%
<b>Total ICT Sector</b>	<b>1,955</b>	<b>2,051</b>	<b>2,174</b>	<b>2,491</b>	<b>2,908</b>	<b>3,150</b>	<b>3,333</b>	<b>3,594</b>	<b>7.8%</b>	<b>83.9%</b>	<b>9.1%</b>

\* For 1990 to 1992, GDP for ICT wholesaling is not available and therefore not included in total GDP. For this reason, total GDP for 1990 to 1992 is not directly comparable to the rest of the period.

\*\* To calculate the growth, ICT wholesaling was excluded.

All underlined figures are Industry Canada estimates.

See Sources and Technical Notes for more details.

**Table 4.1**  
**ICT Sector Employment: 1990 - 1997**  
**(Manufacturing and Services)**

<i>SIC</i>	<i>Industry</i>	1990	1991	1992	1993	1994	1995	1996	1997
3341	Record Player, Radio and Television Receiver Industry	2,628	2,279	2,664	1,433	1,516	1,173	801	882
3351	Telecommunication Equipment Industry	14,861	16,267	17,673	18,704	19,287	20,706	16,038	18,525
3352	Electronic Parts and Components Industry	14,963	16,389	14,681	13,065	14,293	17,670	17,722	18,536
3359	Other Communication and Electronic Equipment Industries	26,312	23,458	24,408	21,564	19,095	18,036	19,385	20,419
3361	Electronic Computing and Peripheral Equipment Industry	12,159	11,011	11,895	10,983	13,749	13,499	12,339	12,952
3368	Electronic & Other Office, Store & Bus. Machine Industries	4,037	4,669	4,840	4,444	2,103	2,198	2,303	2,665
3381	Communications and Energy Wire and Cable Industry	8,659	7,882	7,253	7,361	6,868	7,107	6,118	5,672
3911	Indicating, Recording and Controlling Instruments Industry	11,452	10,843	10,484	9,678	9,429	10,139	10,053	9,515
3912	Other Instruments and Related Products Industry	6,882	7,859	7,626	7,496	7,858	8,853	9,207	8,220
	<b>Total ICT Manufacturing</b>	<b>101,953</b>	<b>100,657</b>	<b>101,524</b>	<b>94,728</b>	<b>94,198</b>	<b>99,381</b>	<b>93,966</b>	<b>97,386</b>
4814	Cable Television	9,827	9,780	9,127	9,225	9,432	10,500	9,483	9,321
482/3	Telecommunications Services	127,100	125,000	121,700	107,500	110,600	115,600	104,100	103,100
	ICT Wholesaling	<u>80,202</u>	<u>86,420</u>	<u>85,329</u>	<u>80,846</u>	<u>83,974</u>	<u>90,057</u>	<u>86,688</u>	<u>90,421</u>
772	Software and Computer Services*	71,660	90,015	72,024	79,021	99,056	123,312	137,300	173,700
9913	Office Furn. & Machinery Rental & Leasing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<b>Total ICT Services</b>	<b>288,789</b>	<b>311,215</b>	<b>288,180</b>	<b>276,592</b>	<b>303,062</b>	<b>339,469</b>	<b>337,571</b>	<b>376,542</b>
	<b>Total ICT</b>	<b>390,742</b>	<b>411,872</b>	<b>389,704</b>	<b>371,320</b>	<b>397,260</b>	<b>438,850</b>	<b>431,537</b>	<b>473,928</b>

<i>SIC</i>	<i>Industry</i>	<i>% change</i> <i>1996-1997</i>	<i>% change</i> <i>1990-1997</i>	<i>CAGR</i> <i>1990-1997</i>
3341	Record Player, Radio and Television Receiver Industry	10.1%	-66.4%	-14.4%
3351	Telecommunication Equipment Industry	15.5%	24.7%	3.2%
3352	Electronic Parts and Components Industry	4.6%	23.9%	3.1%
3359	Other Communication and Electronic Equipment Industries	5.3%	-22.4%	-3.6%
3361	Electronic Computing and Peripheral Equipment Industry	5.0%	6.5%	0.9%
3368	Electronic and Other Office, Store & Business Machine Industries	15.7%	-34.0%	-5.8%
3381	Communications and Energy Wire and Cable Industry	-7.3%	-34.5%	-5.9%
3911	Indicating, Recording and Controlling Instruments Industry	-5.4%	-16.9%	-2.6%
3912	Other Instruments and Related Products Industry	-10.7%	19.4%	2.6%
	<b>Total ICT Manufacturing</b>	<b>3.6%</b>	<b>-4.5%</b>	<b>-0.7%</b>
4814	Cable Television	-1.7%	-5.1%	-0.8%
482/3	Telecommunications Services	-1.0%	-18.9%	-2.9%
	ICT Wholesaling	4.3%	12.7%	1.7%
772	Software and Computer Services*	26.5%	142.4%	13.5%
9913	Office Furn. & Machinery Rental & Leasing	N/A	N/A	N/A
	<b>Total ICT Services*</b>	<b>11.5%</b>	<b>30.4%</b>	<b>3.9%</b>
	<b>Total ICT</b>	<b>9.8%</b>	<b>21.3%</b>	<b>2.8%</b>

\* Includes self-employed.

All underlined figures are  
Industry Canada estimates.

See Sources and Technical Notes for more details.

**Table 4.2**  
**ICT Sector Revenue: 1990 - 1997**  
**(Manufacturing and Services)**

<i>SIC</i>	<i>Industry (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
3341	Record Player, Radio and Television Receiver Industry	831,455	726,534	915,371	668,585	821,370	811,951	592,961	211,715
3351	Telecommunication Equipment Industry	3,003,561	3,511,093	4,018,624	4,192,552	4,871,576	6,267,300	5,483,404	6,963,237
3352	Electronic Parts and Components Industry	1,250,912	3,084,722	3,568,802	3,636,628	3,917,958	4,975,857	5,769,649	5,954,091
3359	Other Communication and Electronic Equipment Industries	3,153,017	3,028,259	3,019,827	2,776,864	2,825,966	2,876,691	3,229,807	3,692,508
3361	Electronic Computing and Peripheral Equipment Industry	2,954,501	2,964,656	3,321,023	3,316,961	5,645,716	7,626,920	6,174,460	5,268,390
3368	Electronic & Other Office, Store & Bus. Machine Industries	784,958	821,601	775,650	745,497	431,305	387,707	374,028	476,599
3381	Communications and Energy Wire and Cable Industry	2,012,377	1,634,221	1,535,591	1,557,419	1,855,292	2,045,616	1,832,186	1,908,277
3911	Indicating, Recording and Controlling Instruments Industry	1,317,861	1,286,427	1,282,708	1,313,436	1,405,389	1,505,970	1,626,251	1,594,277
3912	Other Instruments and Related Products Industry	1,019,109	1,187,977	1,151,648	1,230,694	1,393,310	1,596,530	1,727,651	1,805,645
	<b>Total ICT Manufacturing</b>	<b>16,327,751</b>	<b>18,245,490</b>	<b>19,589,244</b>	<b>19,438,636</b>	<b>23,167,882</b>	<b>28,094,542</b>	<b>26,810,397</b>	<b>27,874,739</b>
4814	Cable Television	1,643,534	1,792,022	1,948,435	2,155,085	2,337,623	2,534,880	2,681,549	2,787,380
482/3	Telecommunications Services	13,037,000	14,483,000	15,438,000	17,084,000	18,163,000	20,110,000	22,509,000	22,783,400
	ICT Wholesaling	19,746,406	18,714,676	19,610,676	21,986,922	24,732,055	27,325,474	30,936,341	<u>32,867,131</u>
772	Software and Computer Services	5,700,821	6,032,411	6,377,000	8,081,500	9,895,700	10,916,000	11,829,000	<u>13,550,000</u>
9913	Office Furn. & Machinery Rental & Leasing	249,000	257,000	256,000	255,000	268,000	266,000	282,000	288,000
	<b>Total ICT Services</b>	<b>40,376,761</b>	<b>41,279,109</b>	<b>43,630,111</b>	<b>49,562,507</b>	<b>55,396,378</b>	<b>61,152,354</b>	<b>68,237,890</b>	<b>72,275,911</b>
	<b>Total ICT</b>	<b>56,704,512</b>	<b>59,524,599</b>	<b>63,219,355</b>	<b>69,001,143</b>	<b>78,564,260</b>	<b>89,246,896</b>	<b>95,048,287</b>	<b>100,150,650</b>

<i>SIC</i>	<i>Industry</i>	<i>% change 1996-1997</i>	<i>% change 1990-1997</i>	<i>CAGR 1990-1997</i>
3341	Record Player, Radio and Television Receiver Industry	-64.3%	-74.5%	-17.8%
3351	Telecommunication Equipment Industry	27.0%	131.8%	12.8%
3352	Electronic Parts and Components Industry	3.2%	376.0%	25.0%
3359	Other Communication and Electronic Equipment Industries	14.3%	17.1%	2.3%
3361	Electronic Computing and Peripheral Equipment Industry	-14.7%	78.3%	8.6%
3368	Electronic and Other Office, Store & Business Machine Industries	27.4%	-39.3%	-6.9%
3381	Communications and Energy Wire and Cable Industry	4.2%	-5.2%	-0.8%
3911	Indicating, Recording and Controlling Instruments Industry	-2.0%	21.0%	2.8%
3912	Other Instruments and Related Products Industry	4.5%	77.2%	8.5%
	<b>Total ICT Manufacturing</b>	<b>4.0%</b>	<b>70.7%</b>	<b>7.9%</b>
4814	Cable Television	3.9%	69.6%	7.8%
482/3	Telecommunications Services	1.2%	74.8%	8.3%
	ICT Wholesaling	6.2%	66.4%	7.6%
772	Software and Computer Services	14.5%	137.7%	13.2%
9913	Office Furn. & Machinery Rental & Leasing	2.1%	15.7%	2.1%
	<b>Total ICT Services</b>	<b>5.9%</b>	<b>79.0%</b>	<b>8.7%</b>
	<b>Total ICT</b>	<b>5.4%</b>	<b>76.6%</b>	<b>8.5%</b>

All underlined figures are  
Industry Canada estimates.

See Sources and Technical Notes for more details.



**Table 4.3**  
**ICT Sector GDP (in 1992 dollars): 1990 - 1997**  
**(Manufacturing and Services)**

<i>SIC</i>	<i>Industry (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
3341	Record Player, Radio and Television Receiver Industry	185,000	152,000	165,000	87,000	116,000	94,000	68,000	42,000
3351	Telecommunication Equipment Industry	1,693,000	1,689,000	1,797,000	1,810,000	2,007,000	2,463,000	2,301,000	2,749,000
3352	Electronic Parts and Components Industry	428,000	481,000	573,000	596,000	730,000	964,000	1,103,000	1,278,000
3359	Other Communication and Electronic Equipment Industries	1,427,000	1,325,000	1,379,000	1,198,000	1,202,000	1,179,000	1,270,000	1,314,000
336	Office store and Business Machine Industry	473,000	552,000	619,000	806,000	1,046,000	1,443,000	1,328,000	1,439,000
3381	Communications and Energy Wire and Cable	497,000	430,000	411,000	453,000	488,000	473,000	493,000	563,000
391	Scientific and Professional Equipment	1,118,000	1,194,000	1,171,000	1,154,000	1,192,000	1,263,000	1,293,000	1,326,000
	<b>Total ICT Manufacturing*</b>	<b>5,821,000</b>	<b>5,823,000</b>	<b>6,115,000</b>	<b>6,104,000</b>	<b>6,781,000</b>	<b>7,879,000</b>	<b>7,856,000</b>	<b>8,711,000</b>
4814	Cable Television	1,043,000	1,141,000	1,128,000	1,085,000	1,084,000	1,006,000	1,016,000	1,027,000
482/3	Telecommunications Services	11,604,000	12,225,000	12,592,000	12,453,000	12,945,000	13,317,000	14,030,000	15,223,000
	ICT Wholesaling	N/A	N/A	N/A	<u>4,000,000</u>	<u>5,116,000</u>	<u>6,447,000</u>	<u>7,221,000</u>	<u>9,398,000</u>
772	Software and Computer Services	3,160,000	3,396,000	3,425,000	4,651,000	5,569,000	6,378,000	6,970,000	7,923,000
9913	Office Furn. & Machinery Rental & Leasing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	<b>Total ICT Services**</b>	<b>15,807,000</b>	<b>16,762,000</b>	<b>17,145,000</b>	<b>22,189,000</b>	<b>24,714,000</b>	<b>27,148,000</b>	<b>29,237,000</b>	<b>33,571,000</b>
	<b>Total ICT**</b>	<b>21,628,000</b>	<b>22,585,000</b>	<b>23,260,000</b>	<b>28,293,000</b>	<b>31,495,000</b>	<b>35,027,000</b>	<b>37,093,000</b>	<b>42,282,000</b>
	<b>TOTAL CANADIAN GDP</b>	<b>609,231,000</b>	<b>600,004,000</b>	<b>604,275,000</b>	<b>618,422,000</b>	<b>645,956,000</b>	<b>662,122,000</b>	<b>671,391,000</b>	<b>698,259,000</b>

<i>SIC</i>	<i>Industry</i>	<i>% Change 1996-1997</i>	<i>% Change 1990-1997</i>	<i>CAGR 1990-1997</i>
3341	Record Player, Radio and Television Receiver Industry	-38.2%	-77.3%	-19.1%
3351	Telecommunication Equipment Industry	19.5%	62.4%	7.2%
3352	Electronic Parts and Components Industry	15.9%	198.6%	16.9%
3359	Other Communication and Electronic Equipment Industries	3.5%	-7.9%	-1.2%
336	Office store and Business Machine Industry	8.4%	204.2%	17.2%
3381	Communications and Energy Wire and Cable Industry	14.2%	13.3%	1.8%
391	Scientific and Professional Equipment	2.6%	18.6%	2.5%
	<b>Total ICT Manufacturing</b>	<b>10.9%</b>	<b>49.6%</b>	<b>5.9%</b>
4814	Cable Television	1.1%	-1.5%	-0.2%
482/3	Telecommunications Services	8.5%	31.2%	4.0%
	ICT Wholesaling	30.1%	N/A	N/A
772	Software and Computer Services	13.7%	150.7%	14.0%
9913	Office Furn. & Machinery Rental & Leasing	N/A	N/A	N/A
	<b>Total ICT Services</b>	<b>14.8%</b>	<b>52.9%***</b>	<b>6.3%***</b>
	<b>Total ICT</b>	<b>14.0%</b>	<b>52.0%***</b>	<b>6.2%***</b>
	<b>TOTAL CANADIAN GDP</b>	<b>4.0%</b>	<b>14.6%</b>	<b>2.0%</b>

\* Somewhat overstated due to the inclusion of SIC 3913 and 3914 which are not included in the definition of ICT.

\*\* For 1993 and following years, GDP includes wholesaling, data are not comparable with previous years.

\*\*\*To calculate the growth, ICT wholesaling was excluded.

All underlined figures are Industry Canada estimates.

See Sources and Technical Notes for more details.

**Table 4.4**  
**ICT Sector Intramural R&D Expenditures: 1990 - 1997**  
**(Manufacturing and Services)**

SIC	Industry (\$'000)	1990	1991	1992	1993	1994	1995	1996	1997
3341	Record Player, Radio and Television Receiver Industry	3,182	7,164	9,519	10,662	11,787	13,399	14,481	15,184
3351	Telecommunication Equipment Industry	738,517	773,383	735,085	906,052	1,109,731	1,378,664	1,473,208	1,572,667
3352	Electronic Parts and Components Industry	42,588	41,436	49,036	48,542	50,260	59,012	71,469	84,887
3359	Other Communication and Electronic Equipment Industries	374,027	373,585	408,517	421,977	449,809	387,114	383,104	399,678
3361	Electronic Computing and Peripheral Equipment Industry	274,982	301,985	319,526	281,160	294,869	290,703	288,880	322,852
3368	Electronic & Other Office, Store & Business Machine Industries	23,834	27,117	25,027	28,049	30,226	30,802	31,282	32,772
3381	Communications and Energy Wire and Cable Industry	2,553	N/A	2,640	2,298	2,457	2,542	2,801	2,834
3911	Indicating, Recording and Controlling Instruments Industry	25,347	23,595	24,495	26,580	28,342	25,856	29,838	31,054
3912	Other Instruments and Related Products Industry	39,515	39,778	42,740	43,107	52,140	56,307	65,702	67,999
	<b>Total ICT Manufacturing</b>	<b>1,524,545</b>	<b>1,588,043</b>	<b>1,616,585</b>	<b>1,768,427</b>	<b>2,029,621</b>	<b>2,244,399</b>	<b>2,360,765</b>	<b>2,529,927</b>
	Cable Television and Telecommunications Services*	138,875	147,113	172,975	252,604	244,077	184,719	157,853	159,227
	ICT Wholesaling	62,041	84,273	104,337	152,278	203,812	256,314	294,710	317,116
772	Software and Computer Services	229,145	231,379	280,239	318,089	430,047	464,121	519,316	587,333
	<b>Total ICT Services</b>	<b>430,061</b>	<b>462,765</b>	<b>557,551</b>	<b>722,971</b>	<b>877,936</b>	<b>905,154</b>	<b>971,879</b>	<b>1,063,676</b>
	<b>Total ICT</b>	<b>1,954,606</b>	<b>2,050,808</b>	<b>2,174,136</b>	<b>2,491,398</b>	<b>2,907,557</b>	<b>3,149,553</b>	<b>3,332,644</b>	<b>3,593,603</b>
	<b>TOTAL PRIVATE SECTOR R&amp;D</b>	<b>5,216,000</b>	<b>5,439,000</b>	<b>5,845,000</b>	<b>6,539,000</b>	<b>7,121,000</b>	<b>7,659,000</b>	<b>8,143,000</b>	<b>8,627,000</b>
	<b>ICT R&amp;D as a PERCENTAGE of TOTAL PRIVATE SECTOR R&amp;D</b>	<b>37.5%</b>	<b>37.7%</b>	<b>37.2%</b>	<b>38.1%</b>	<b>40.8%</b>	<b>41.1%</b>	<b>40.9%</b>	<b>41.7%</b>

SIC	Industry	% Change 1996-1997	% Change 1990-1997	CAGR 1990-1997
3341	Record Player, Radio and Television Receiver Industry	4.9%	377.2%	25.0%
3351	Telecommunication Equipment Industry	6.8%	112.9%	11.4%
3352	Electronic Parts and Components Industry	18.8%	99.3%	10.4%
3359	Other Communication and Electronic Equipment Industries	4.3%	6.9%	1.0%
3361	Electronic Computing and Peripheral Equipment Industry	11.8%	17.4%	2.3%
3368	Electronic & Other Office, Store & Business Machine Industries	4.8%	37.5%	4.7%
3381	Communications and Energy Wire and Cable Industry	1.2%	11.0%	1.5%
3911	Indicating, Recording and Controlling Instruments Industry	4.1%	22.5%	2.9%
3912	Other Instruments and Related Products Industry	3.5%	72.1%	8.1%
	<b>Total ICT Manufacturing</b>	<b>7.2%</b>	<b>65.9%</b>	<b>7.5%</b>
	Cable Television and Telecommunications Services*	0.9%	14.7%	2.0%
	ICT Wholesaling	7.6%	411.1%	26.2%
772	Software and Computer Services	13.1%	156.3%	14.4%
	<b>Total ICT Services</b>	<b>9.4%</b>	<b>147.3%</b>	<b>13.8%</b>
	<b>Total ICT</b>	<b>7.8%</b>	<b>83.9%</b>	<b>9.1%</b>
	<b>TOTAL PRIVATE SECTOR R&amp;D</b>	<b>5.9%</b>	<b>65.4%</b>	<b>7.5%</b>

\* Cable television and telecom. services are combined to maintain confidentiality among respondents.

See Sources and Technical Notes for more details.

**Table 4.5**  
**Total ICT Trade**  
**Aggregate Statistics: 1990 - 1997**

<i>ICT Manufacturing</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>% change</i> <i>1996-1997</i>	<i>% change</i> <i>1990-1997</i>	<i>CAGR</i> <i>1990-1997</i>
Total Exports	9,875	10,690	11,900	12,791	16,481	20,105	21,273	23,400	10.0%	137.0%	13.1%
Imports	18,500	19,455	21,924	25,057	31,105	36,038	37,003	42,174	14.0%	128.0%	12.5%
Balance of trade	(8,625)	(8,765)	(10,024)	(12,267)	(14,623)	(15,933)	(15,730)	(18,774)	-19.3%	-117.7%	-11.8%

	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>% change</i> <i>1996-1997</i>	<i>% change</i> <i>1990-1997</i>	<i>CAGR</i> <i>1990-1997</i>
Exports (Receipts)	1,726	1,877	2,022	2,412	2,690	3,014	3,531	3,449	-2.3%	99.8%	10.4%
Imports (Payments)	1,516	1,587	1,628	1,731	2,076	2,234	2,420	2,528	4.5%	66.8%	7.6%
Balance of trade	210	290	394	681	614	780	1,111	921	-17.1%	338.6%	23.5%

	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>% change</i> <i>1996-1997</i>	<i>% change</i> <i>1990-1997</i>	<i>CAGR</i> <i>1990-1997</i>
Total Exports	11,601	12,567	13,922	15,203	19,171	23,119	24,804	26,849	8.2%	131.4%	12.7%
Imports	20,016	21,042	23,552	26,788	33,181	38,272	39,423	44,702	13.4%	123.3%	12.2%
Balance of trade	(8,415)	(8,475)	(9,630)	(11,586)	(14,009)	(15,153)	(14,619)	(17,853)	-22.1%	-112.1%	-11.3%

See Sources and Technical Notes for more details.

**Table 4.6**  
**ICT Sector Total Exports: 1990 - 1998**

<i>SIC</i>	<i>Industry (\$'000,000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
3341	Record Player, Radio and Television Receiver Industry	190	114	137	145	217	257	240	211	256
3351	Telecommunication Equipment Industry	1,102	1,073	1,436	1,924	2,330	2,839	3,471	3,896	4,186
3352	Electronic Parts and Components Industry	3,065	3,580	3,276	2,992	3,468	4,279	5,199	6,092	5,878
3359	Other Communication and Electronic Equipment Industries	945	879	1,000	974	1,474	1,649	1,958	2,445	3,094
3361	Electronic Computing and Peripheral Equipment Industry	2,821	3,257	3,842	4,293	5,975	7,757	6,706	6,611	7,068
3368	Electronic & Other Office, Store & Business Machine Indus.	363	324	311	356	392	372	418	530	560
3381	Communications and Energy Wire and Cable Industry	232	202	296	357	424	574	647	726	951
3911	Indicating, Recording and Controlling Instruments Industry	574	601	710	833	1,176	1,214	1,262	1,300	1,250
3912	Other Instruments and Related Products Industry	582	660	891	916	1,026	1,164	1,372	1,589	1,777
	<b>Total ICT Manufacturing Exports</b>	<b>9,875</b>	<b>10,689</b>	<b>11,900</b>	<b>12,791</b>	<b>16,481</b>	<b>20,105</b>	<b>21,273</b>	<b>23,400</b>	<b>25,020</b>
	<b>Total Canadian Merchandise Exports</b>	<b>148,979</b>	<b>146,006</b>	<b>162,828</b>	<b>187,515</b>	<b>225,679</b>	<b>262,227</b>	<b>275,789</b>	<b>299,090</b>	<b>317,903</b>
	Communications Services*	1,220	1,291	1,247	1,417	1,618	1,707	1,956	1,917	N/A
	Computer Services	506	586	775	995	1,072	1,307	1,575	1,532	N/A
	<b>Total ICT Services Exports</b>	<b>1,726</b>	<b>1,877</b>	<b>2,022</b>	<b>2,412</b>	<b>2,690</b>	<b>3,014</b>	<b>3,531</b>	<b>3,449</b>	<b>N/A</b>
	<b>Total Canadian Commercial Services Exports</b>	<b>9,061</b>	<b>9,814</b>	<b>11,080</b>	<b>13,113</b>	<b>15,492</b>	<b>17,215</b>	<b>19,519</b>	<b>20,100</b>	<b>N/A</b>
	<b>Total ICT Exports</b>	<b>11,601</b>	<b>12,566</b>	<b>13,922</b>	<b>15,203</b>	<b>19,171</b>	<b>23,119</b>	<b>24,804</b>	<b>26,849</b>	<b>N/A</b>
	<b>Total Canadian Exports</b>	<b>158,040</b>	<b>155,820</b>	<b>173,908</b>	<b>200,628</b>	<b>241,171</b>	<b>279,442</b>	<b>295,308</b>	<b>319,190</b>	<b>N/A</b>

<i>SIC</i>	<i>Industry</i>	<i>% Change 1996-1997</i>	<i>% Change 1990-1997</i>	<i>CAGR 1990-1997</i>	<i>% Change 1997-1998</i>	<i>% Change 1990-1998</i>	<i>CAGR 1990-1998</i>
3341	Record Player, Radio and Television Receiver Industry	-12.1%	10.8%	1.5%	21.3%	34.5%	3.8%
3351	Telecommunication Equipment Industry	12.2%	253.4%	19.8%	7.5%	279.8%	18.2%
3352	Electronic Parts and Components Industry	17.2%	98.8%	10.3%	-3.5%	91.8%	8.5%
3359	Other Communication and Electronic Equipment Industries	24.9%	158.6%	14.5%	26.5%	227.2%	16.0%
3361	Electronic Computing and Peripheral Equipment Industry	-1.4%	134.3%	12.9%	6.9%	150.6%	12.2%
3368	Electronic & Other Office, Store & Business Machine Indus.	26.8%	46.0%	5.6%	5.7%	54.3%	5.6%
3381	Communications and Energy Wire and Cable Industry	12.2%	212.8%	17.7%	31.1%	309.9%	19.3%
3911	Indicating, Recording and Controlling Instruments Industry	3.0%	126.5%	12.4%	-3.9%	117.8%	10.2%
3912	Other Instruments and Related Products Industry	15.9%	173.2%	15.4%	11.8%	205.5%	15.0%
	<b>Total ICT Manufacturing Exports</b>	<b>10.0%</b>	<b>137.0%</b>	<b>13.1%</b>	<b>6.9%</b>	<b>153.4%</b>	<b>12.3%</b>
	<b>Total Canadian Merchandise Exports</b>	<b>8.4%</b>	<b>100.8%</b>	<b>10.5%</b>	<b>6.3%</b>	<b>113.4%</b>	<b>9.9%</b>
	Communications Services*	-2.0%	57.1%	6.7%			
	Computer Services	-2.7%	202.8%	17.1%			
	<b>Total ICT Services Exports</b>	<b>-2.3%</b>	<b>99.8%</b>	<b>10.4%</b>			
	<b>Total Canadian Commercial Services Exports</b>	<b>3.0%</b>	<b>121.8%</b>	<b>12.1%</b>			
	<b>Total ICT Exports</b>	<b>8.2%</b>	<b>131.4%</b>	<b>12.7%</b>			
	<b>Total Canadian Exports</b>	<b>8.1%</b>	<b>102.0%</b>	<b>10.6%</b>			

\* Includes Telecommunications services and Postal Courier Services.

See Sources and Technical Notes for more details.

**Table 4.7**  
**ICT Sector Imports: 1990 - 1998**

<i>SIC</i>	<i>Industry (\$'000,000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
3341	Record Player, Radio and Television Receiver Industry	1,459	1,665	1,786	2,056	2,323	2,583	2,273	2,696	3,109
3351	Telecommunication Equipment Industry	551	695	1,019	1,229	1,414	1,333	1,656	1,847	2,059
3352	Electronic Parts and Components Industry	4,786	4,954	5,461	5,995	11,124	14,135	13,824	14,653	15,460
3359	Other Communication and Electronic Equipment Industries	1,461	1,367	1,357	1,524	1,862	2,048	2,314	3,023	3,321
3361	Electronic Computing and Peripheral Equipment Industry	5,224	5,879	6,785	7,839	6,705	7,748	8,496	9,996	10,556
3368	Electronic & Other Office, Store & Business Machine Indus.	908	878	1,022	1,106	1,154	1,215	1,250	1,396	1,588
3381	Communications and Energy Wire and Cable Industry	300	300	375	469	631	501	607	734	898
3911	Indicating, Recording and Controlling Instruments Industry	1,276	1,235	1,358	1,758	2,469	2,968	2,858	3,620	4,056
3912	Other Instruments and Related Products Industry	2,535	2,481	2,759	3,080	3,424	3,507	3,725	4,209	4,875
	<b>Total ICT Manufacturing Imports</b>	<b>18,500</b>	<b>19,455</b>	<b>21,924</b>	<b>25,057</b>	<b>31,105</b>	<b>36,038</b>	<b>37,003</b>	<b>42,174</b>	<b>45,924</b>
	<b>Total Canadian Merchandise Imports</b>	<b>136,245</b>	<b>135,461</b>	<b>148,018</b>	<b>169,953</b>	<b>202,736</b>	<b>225,553</b>	<b>232,557</b>	<b>272,856</b>	<b>298,317</b>
	Communications Services*	1,210	1,183	1,207	1,349	1,550	1,726	1,843	1,815	N/A
	Computer Services	306	404	421	382	526	508	577	713	N/A
	<b>Total ICT Services Imports</b>	<b>1,516</b>	<b>1,587</b>	<b>1,628</b>	<b>1,731</b>	<b>2,076</b>	<b>2,234</b>	<b>2,420</b>	<b>2,528</b>	<b>N/A</b>
	<b>Total Canadian Commercial Services Imports</b>	<b>12,554</b>	<b>13,208</b>	<b>14,050</b>	<b>16,859</b>	<b>19,602</b>	<b>20,823</b>	<b>22,497</b>	<b>22,576</b>	<b>N/A</b>
	<b>Total ICT Imports</b>	<b>20,016</b>	<b>21,042</b>	<b>23,552</b>	<b>26,788</b>	<b>33,181</b>	<b>38,272</b>	<b>39,423</b>	<b>44,702</b>	<b>N/A</b>
	<b>Total Canadian Imports</b>	<b>148,799</b>	<b>148,669</b>	<b>162,068</b>	<b>186,812</b>	<b>222,338</b>	<b>246,376</b>	<b>255,054</b>	<b>295,432</b>	<b>N/A</b>

<i>SIC</i>	<i>Industry</i>	<i>% Change 1996-1997</i>	<i>% Change 1990-1997</i>	<i>CAGR 1990-1997</i>	<i>% Change 1997-1998</i>	<i>% Change 1990-1998</i>	<i>CAGR 1990-1998</i>
3341	Record Player, Radio and Television Receiver Industry	18.6%	84.8%	9.2%	15.3%	113.1%	9.9%
3351	Telecommunication Equipment Industry	11.5%	235.3%	18.9%	11.5%	273.8%	17.9%
3352	Electronic Parts and Components Industry	6.0%	206.2%	17.3%	5.5%	223.0%	15.8%
3359	Other Communication and Electronic Equipment Industries	30.6%	107.0%	11.0%	9.9%	127.4%	10.8%
3361	Electronic Computing and Peripheral Equipment Industry	17.6%	91.3%	9.7%	5.6%	102.1%	9.2%
3368	Electronic & Other Office, Store & Business Machine Indus.	11.7%	53.7%	6.3%	13.8%	74.9%	7.2%
3381	Communications and Energy Wire and Cable Industry	21.0%	144.7%	13.6%	22.4%	199.5%	14.7%
3911	Indicating, Recording and Controlling Instruments Industry	26.7%	183.6%	16.1%	12.1%	217.8%	15.6%
3912	Other Instruments and Related Products Industry	13.0%	66.0%	7.5%	15.8%	92.3%	8.5%
	<b>Total ICT Manufacturing Imports</b>	<b>14.0%</b>	<b>128.0%</b>	<b>12.5%</b>	<b>8.9%</b>	<b>148.2%</b>	<b>12.0%</b>
	<b>Total Canadian Merchandise Imports</b>	<b>17.3%</b>	<b>100.3%</b>	<b>10.4%</b>	<b>9.3%</b>	<b>119.0%</b>	<b>10.3%</b>
	Communications Services*	-1.5%	50.0%	6.0%			
	Computer Services	23.6%	133.0%	12.8%			
	<b>Total ICT Services Imports</b>	<b>4.5%</b>	<b>66.8%</b>	<b>7.6%</b>			
	<b>Total Canadian Commercial Services Imports</b>	<b>0.4%</b>	<b>79.8%</b>	<b>8.7%</b>			
	<b>Total ICT Imports</b>	<b>13.4%</b>	<b>123.3%</b>	<b>12.2%</b>			
	<b>Total Canadian Imports</b>	<b>15.8%</b>	<b>98.5%</b>	<b>10.3%</b>			

\* Includes Telecommunications services and Postal Courier Services.

See Sources and Technical Notes for more details.

**Table 4.8**  
**ICT Sector Trade Balance: 1990 - 1998**

<i>SIC</i>	<i>Industry (\$'000,000)</i>	1990	1991	1992	1993	1994	1995	1996	1997	1998
3341	Record Player, Radio and Television Receiver Industry	(1,268)	(1,551)	(1,649)	(1,911)	(2,105)	(2,326)	(2,033)	(2,485)	(2,853)
3351	Telecommunication Equipment Industry	551	378	417	695	916	1,506	1,814	2,048	2,127
3352	Electronic Parts and Components Industry	(1,721)	(1,374)	(2,185)	(3,002)	(7,655)	(9,856)	(8,624)	(8,561)	(9,582)
3359	Other Communication and Electronic Equipment Industries	(515)	(488)	(357)	(550)	(388)	(399)	(356)	(578)	(228)
3361	Electronic Computing and Peripheral Equipment Industry	(2,403)	(2,623)	(2,943)	(3,546)	(730)	9	(1,790)	(3,385)	(3,488)
3368	Electronic & Other Office, Store & Business Machine Indus.	(545)	(554)	(710)	(750)	(762)	(842)	(832)	(866)	(1,029)
3381	Communications and Energy Wire and Cable Industry	(68)	(98)	(79)	(112)	(207)	73	40	(8)	53
3911	Indicating, Recording and Controlling Instruments Industry	(703)	(634)	(648)	(925)	(1,293)	(1,754)	(1,596)	(2,320)	(2,807)
3912	Other Instruments and Related Products Industry	(1,953)	(1,822)	(1,868)	(2,165)	(2,398)	(2,343)	(2,353)	(2,620)	(3,098)
	<b>Total ICT Manufacturing Trade Balance</b>	<b>(8,625)</b>	<b>(8,766)</b>	<b>(10,024)</b>	<b>(12,267)</b>	<b>(14,623)</b>	<b>(15,933)</b>	<b>(15,730)</b>	<b>(18,774)</b>	<b>(20,904)</b>
	<b>Total Canadian Merchandise Trade Balance</b>	<b>12,734</b>	<b>10,545</b>	<b>14,810</b>	<b>17,562</b>	<b>22,943</b>	<b>36,674</b>	<b>43,232</b>	<b>26,234</b>	<b>19,586</b>
	Communications Services*	10	108	40	68	68	(19)	113	102	N/A
	Computer Services	200	182	354	613	546	799	998	819	N/A
	<b>Total ICT Services Trade Balance</b>	<b>210</b>	<b>290</b>	<b>394</b>	<b>681</b>	<b>614</b>	<b>780</b>	<b>1,111</b>	<b>921</b>	<b>N/A</b>
	<b>Total Cdn Commercial Services Trade Balance</b>	<b>(3,493)</b>	<b>(3,394)</b>	<b>(2,970)</b>	<b>(3,746)</b>	<b>(4,110)</b>	<b>(3,608)</b>	<b>(2,978)</b>	<b>(2,476)</b>	<b>N/A</b>
	<b>Total ICT Trade Balance</b>	<b>(8,415)</b>	<b>(8,476)</b>	<b>(9,630)</b>	<b>(11,586)</b>	<b>(14,009)</b>	<b>(15,153)</b>	<b>(14,619)</b>	<b>(17,853)</b>	<b>N/A</b>
	<b>Total Canadian Trade Balance</b>	<b>9,241</b>	<b>7,151</b>	<b>11,840</b>	<b>13,816</b>	<b>18,833</b>	<b>33,066</b>	<b>40,254</b>	<b>23,758</b>	<b>N/A</b>

<i>SIC</i>	<i>Industry</i>	<i>% Change</i> 1996-1997	<i>% Change</i> 1990-1997	<i>CAGR</i> 1990-1997	<i>% Change</i> 1997-1998	<i>% Change</i> 1990-1998	<i>CAGR</i> 1990-1998
3341	Record Player, Radio and Television Receiver Industry	-22.3%	-95.9%	-10.1%	-14.8%	-124.9%	-10.7%
3351	Telecommunication Equipment Industry	12.9%	271.5%	20.6%	3.8%	285.7%	18.4%
3352	Electronic Parts and Components Industry	0.7%	-397.5%	-25.8%	-11.9%	-456.9%	-23.9%
3359	Other Communication and Electronic Equipment Industries	-62.3%	-12.2%	-1.7%	60.6%	55.8%	9.7%
3361	Electronic Computing and Peripheral Equipment Industry	-89.0%	-40.8%	-5.0%	-3.1%	-45.1%	-4.8%
3368	Electronic & Other Office, Store & Business Machine Indus.	-4.1%	-58.9%	-6.8%	18.7%	-88.7%	-8.3%
3381	Communications and Energy Wire and Cable Industry	N/A	88.0%	26.1%	N/A	N/A	N/A
3911	Indicating, Recording and Controlling Instruments Industry	-45.3%	-230.2%	-18.6%	-21.0%	-299.5%	-18.9%
3912	Other Instruments and Related Products Industry	-11.4%	-34.1%	-4.3%	-18.3%	-58.6%	-5.9%
	<b>Total ICT Manufacturing Trade Balance</b>	<b>-19.3%</b>	<b>-117.7%</b>	<b>-11.8%</b>	<b>-11.3%</b>	<b>-142.4%</b>	<b>-11.7%</b>
	<b>Total Canadian Merchandise Trade Balance</b>	<b>-39.3%</b>	<b>106.0%</b>	<b>10.9%</b>	<b>-25.3%</b>	<b>53.8%</b>	<b>5.5%</b>
	Communications Services*	-9.7%	920.0%	39.3%			
	Computer Services	-17.9%	309.5%	22.3%			
	<b>Total ICT Services Trade Balance</b>	<b>-17.1%</b>	<b>338.6%</b>	<b>23.5%</b>			
	<b>Total Cdn Commercial Services Trade Balance</b>	<b>16.9%</b>	<b>29.1%</b>	<b>4.8%</b>			
	<b>Total ICT Trade Balance</b>	<b>-22.1%</b>	<b>-112.1%</b>	<b>-11.3%</b>			
	<b>Total Canadian Trade Balance</b>	<b>-41.0%</b>	<b>157.1%</b>	<b>14.4%</b>			

\* Includes Telecommunications services and Postal Courier Services.

See Sources and Technical Notes for more details.

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# **Section 5**

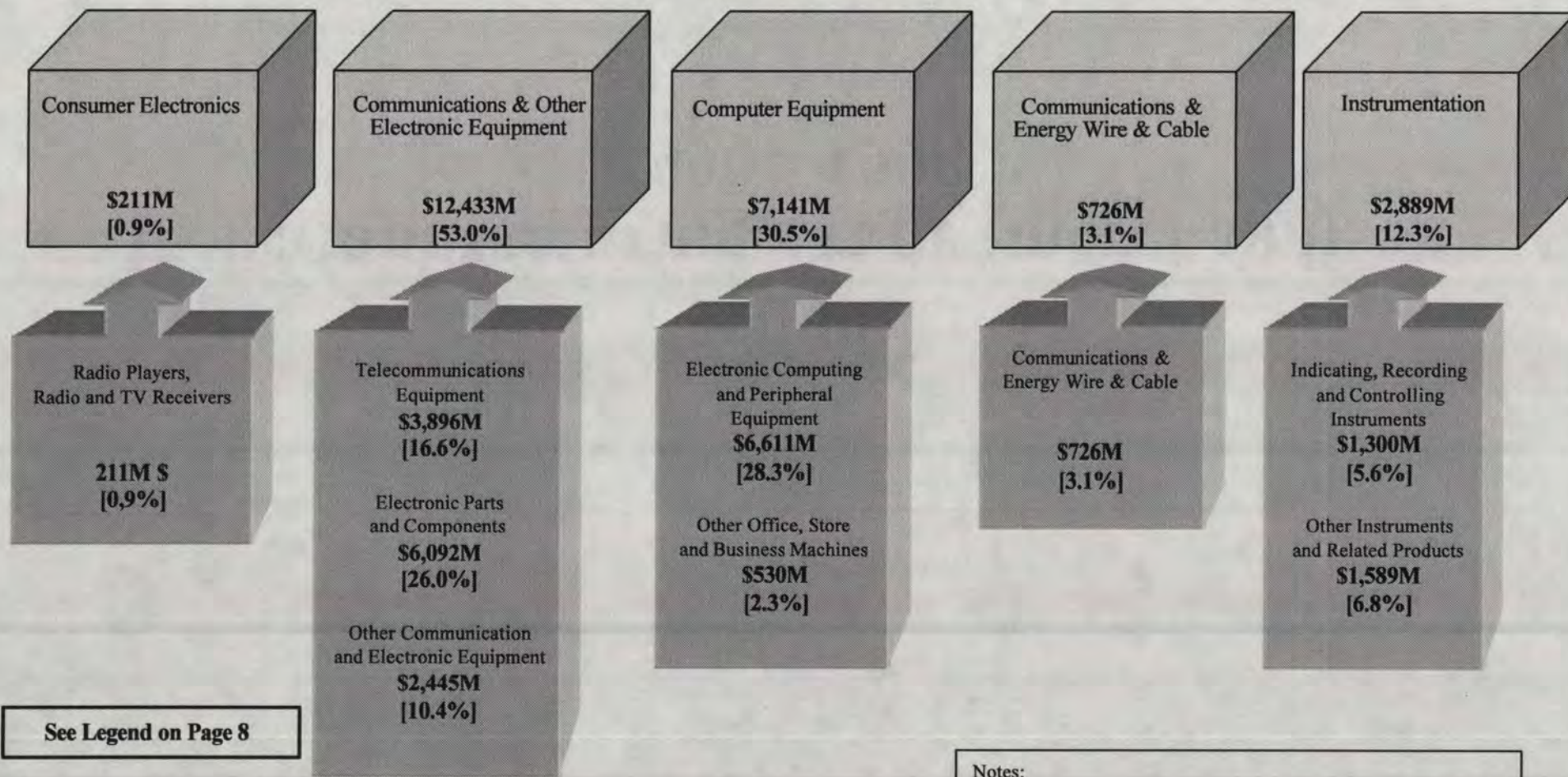
## **ICT Manufacturing Trade (merchandise): 1990 - 1998**

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# Information and Communications Technologies

## Figure 11a - Manufacturing Total Exports: 1997

**\$23.4 billion**



See Legend on Page 8

Source: Trade Information Enquiry and Retrieval System (TIERS), Statistics Canada.

Notes:

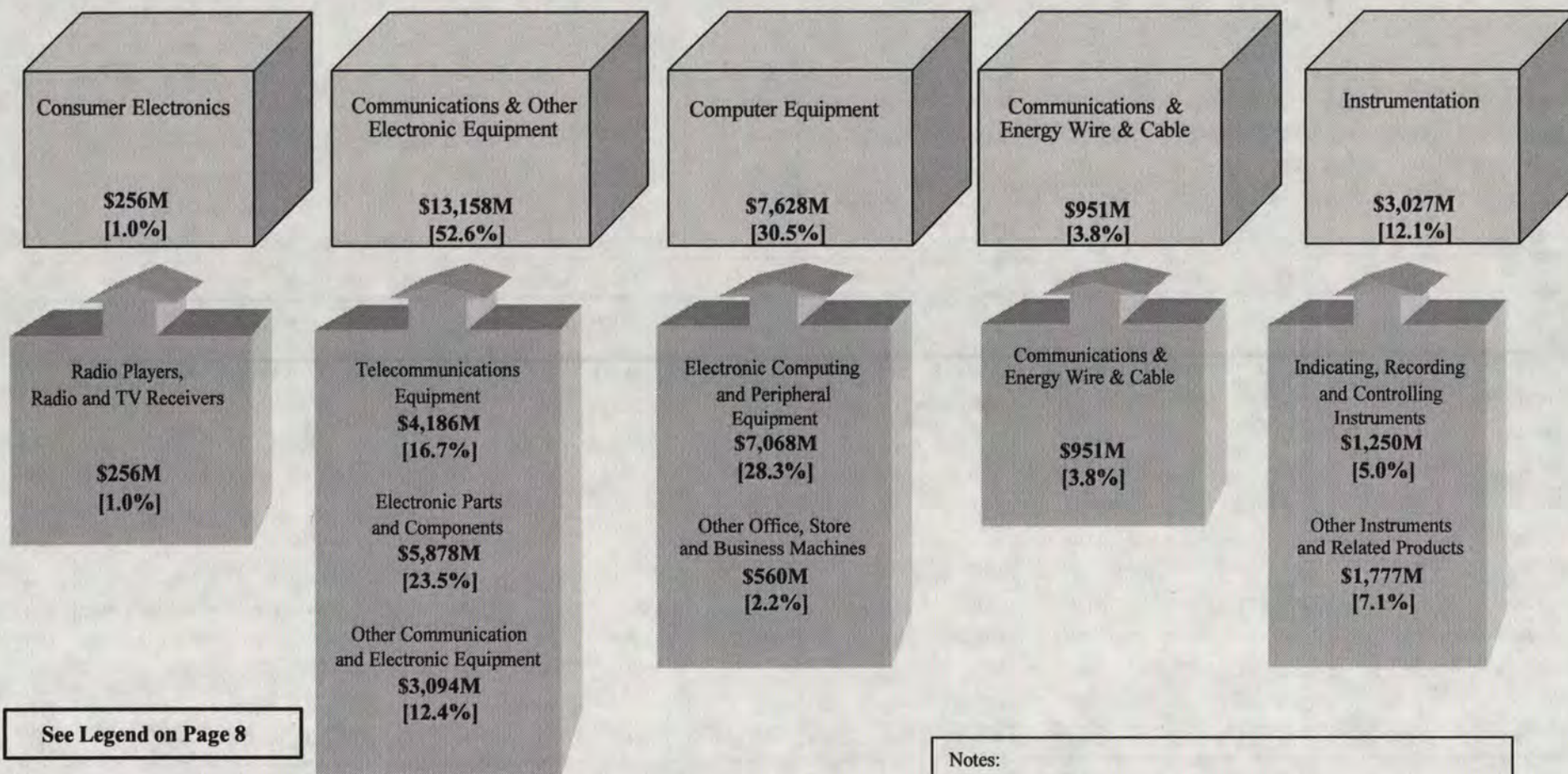
- 1) Figures may not add up due to rounding.
- 2) All percentages are with respect to the total of \$23.4 billion.



# Information and Communications Technologies

## Figure 11b - Manufacturing Total Exports: 1998

### \$25.0 billion



See Legend on Page 8

Source: Trade Information Enquiry and Retrieval System (TIERS), Statistics Canada.

Notes:

- 1) Figures may not add up due to rounding.
- 2) All percentages are with respect to the total of \$25.0 billion.

Table 5.1  
ICT Manufacturing Sector  
Total Exports: 1990 - 1998

SIC	Industry (\$'000)	1990	1991	1992	1993	1994	1995	1996	1997	1998
3341	Record Player, Radio and Television Receiver Industry	190,474	114,095	137,032	144,635	217,306	256,600	240,120	211,102	256,104
3351	Telecommunication Equipment Industry	1,102,303	1,072,837	1,435,881	1,924,310	2,329,878	2,839,265	3,470,687	3,895,582	4,186,350
3352	Electronic Parts and Components Industry	3,065,120	3,580,019	3,275,901	2,992,473	3,468,454	4,278,514	5,199,488	6,092,416	5,878,128
3359	Other Communication & Electronic Equipment Industries	945,377	878,691	999,938	974,174	1,473,751	1,649,224	1,958,218	2,445,209	3,093,610
3361	Electronic Computing and Peripheral Equipment Industry	2,821,063	3,256,564	3,842,354	4,293,010	5,975,271	7,756,843	6,706,005	6,610,994	7,068,282
3368	Electronic & Other Office, Store & Business Machine Indust.	362,885	323,877	311,499	356,132	391,522	372,226	417,783	529,697	559,944
3381	Communications and Energy Wire and Cable	232,000	201,925	296,028	356,721	423,627	574,316	646,813	725,640	951,026
3911	Indicating, Recording & Controlling Instruments Industry	573,830	601,047	710,445	833,335	1,175,752	1,213,702	1,261,628	1,299,900	1,249,840
3912	Other Instruments and Related Products Industry	581,687	659,845	890,685	915,770	1,025,875	1,164,395	1,371,897	1,589,378	1,776,993
	<b>Total ICT Manufacturing Exports</b>	<b>9,874,739</b>	<b>10,688,899</b>	<b>11,899,763</b>	<b>12,790,559</b>	<b>16,481,436</b>	<b>20,105,085</b>	<b>21,272,640</b>	<b>23,399,916</b>	<b>25,020,276</b>
	<b>Total Canadian Merchandise Exports</b>	<b>148,979,427</b>	<b>146,006,227</b>	<b>162,827,709</b>	<b>187,515,393</b>	<b>225,678,964</b>	<b>262,227,358</b>	<b>275,789,031</b>	<b>299,090,111</b>	<b>317,902,675</b>

Percentage of total ICT manufacturing exports

SIC	Industry	1990	1991	1992	1993	1994	1995	1996	1997	1998
3341	Record Player, Radio and Television Receiver Industry	1.9%	1.1%	1.2%	1.1%	1.3%	1.3%	1.1%	0.9%	1.0%
3351	Telecommunication Equipment Industry	11.2%	10.0%	12.1%	15.0%	14.1%	14.1%	16.3%	16.6%	16.7%
3352	Electronic Parts and Components Industry	31.0%	33.5%	27.5%	23.4%	21.0%	21.3%	24.4%	26.0%	23.5%
3359	Other Communication & Electronic Equipment Industries	9.6%	8.2%	8.4%	7.6%	8.9%	8.2%	9.2%	10.4%	12.4%
3361	Electronic Computing and Peripheral Equipment Industry	28.6%	30.5%	32.3%	33.6%	36.3%	38.6%	31.5%	28.3%	28.3%
3368	Electronic & Other Office, Store & Business Machine Indust.	3.7%	3.0%	2.6%	2.8%	2.4%	1.9%	2.0%	2.3%	2.2%
3381	Communications and Energy Wire and Cable	2.3%	1.9%	2.5%	2.8%	2.6%	2.9%	3.0%	3.1%	3.8%
3911	Indicating, Recording & Controlling Instruments Industry	5.8%	5.6%	6.0%	6.5%	7.1%	6.0%	5.9%	5.6%	5.0%
3912	Other Instruments and Related Products Industry	5.9%	6.2%	7.5%	7.2%	6.2%	5.8%	6.4%	6.8%	7.1%
	<b>Total ICT Manufacturing Exports</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
	<b>ICT Exports as a percentage of total Canadian Merchandise Exports</b>	<b>6.6%</b>	<b>7.3%</b>	<b>7.3%</b>	<b>6.8%</b>	<b>7.3%</b>	<b>7.7%</b>	<b>7.7%</b>	<b>7.8%</b>	<b>7.9%</b>

See Sources and Technical Notes for more details.

**Table 5.1.1**  
**ICT Manufacturing Sector**  
**Domestic Exports: 1990 - 1998**

<i>SIC</i>	<i>Industry (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
3341	Record Player, Radio and Television Receiver Industry	146,666	84,263	104,381	111,366	174,581	202,173	162,328	124,192	139,122
3351	Telecommunication Equipment Industry	1,059,804	1,032,198	1,392,141	1,873,855	2,278,887	2,785,685	3,405,448	3,834,130	4,085,975
3352	Electronic Parts and Components Industry	2,893,159	3,212,499	3,054,105	2,707,751	2,940,266	3,581,340	4,257,491	4,641,625	4,887,095
3359	Other Communication & Electronic Equipment Industries	890,931	831,359	932,478	899,419	1,385,164	1,568,868	1,865,314	2,292,280	2,941,146
3361	Electronic Computing and Peripheral Equipment Industry	2,487,701	2,907,968	3,215,292	3,470,880	4,899,255	6,559,867	5,491,722	5,496,376	5,772,077
3368	Electronic & Other Office, Store & Business Machine Indust.	338,536	296,241	287,829	319,568	353,121	317,987	357,296	464,687	500,109
3381	Communications and Energy Wire and Cable	229,087	198,651	292,199	352,561	418,533	567,932	638,511	714,128	931,711
3911	Indicating, Recording & Controlling Instruments Industry	537,878	558,277	659,022	772,116	1,109,119	1,139,391	1,183,931	1,209,451	1,147,624
3912	Other Instruments and Related Products Industry	517,473	590,441	773,010	807,827	912,001	1,042,960	1,217,168	1,421,795	1,571,715
	<b>Total ICT Manufacturing Domestic Exports</b>	<b>9,101,234</b>	<b>9,711,896</b>	<b>10,710,458</b>	<b>11,315,344</b>	<b>14,470,927</b>	<b>17,766,204</b>	<b>18,579,210</b>	<b>20,198,665</b>	<b>21,976,575</b>
	<b>Total Canadian Merchandise Domestic Exports</b>	<b>141,721,307</b>	<b>138,519,205</b>	<b>154,526,280</b>	<b>177,621,782</b>	<b>212,492,630</b>	<b>246,389,914</b>	<b>259,295,081</b>	<b>281,225,580</b>	<b>296,699,625</b>

**Percentage of total ICT manufacturing domestic exports**

<i>SIC</i>	<i>Industry</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
3341	Record Player, Radio and Television Receiver Industry	1.6%	0.9%	1.0%	1.0%	1.2%	1.1%	0.9%	0.6%	0.6%
3351	Telecommunication Equipment Industry	11.6%	10.6%	13.0%	16.6%	15.7%	15.7%	18.3%	19.0%	18.6%
3352	Electronic Parts and Components Industry	9.8%	8.6%	8.7%	7.9%	9.6%	8.8%	10.0%	11.3%	13.4%
3359	Other Communication & Electronic Equipment Industries	31.8%	33.1%	28.5%	23.9%	20.3%	20.2%	22.9%	23.0%	22.2%
3361	Electronic Computing and Peripheral Equipment Industry	27.3%	29.9%	30.0%	30.7%	33.9%	36.9%	29.6%	27.2%	26.3%
3368	Electronic & Other Office, Store & Business Machine Indust.	3.7%	3.1%	2.7%	2.8%	2.4%	1.8%	1.9%	2.3%	2.3%
3381	Communications and Energy Wire and Cable	2.5%	2.0%	2.7%	3.1%	2.9%	3.2%	3.4%	3.5%	4.2%
3911	Indicating, Recording & Controlling Instruments Industry	5.9%	5.7%	6.2%	6.8%	7.7%	6.4%	6.4%	6.0%	5.2%
3912	Other Instruments and Related Products Industry	5.7%	6.1%	7.2%	7.1%	6.3%	5.9%	6.6%	7.0%	7.2%
	<b>Total ICT Manufacturing Domestic Exports</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
	<b>ICT Domestic Exports as a percentage of total Canadian Merchandise Domestic Exports</b>	<b>6.4%</b>	<b>7.0%</b>	<b>6.9%</b>	<b>6.4%</b>	<b>6.8%</b>	<b>7.2%</b>	<b>7.2%</b>	<b>7.2%</b>	<b>7.4%</b>

See Sources and Technical Notes for more details.

Table 5.1.2  
ICT Manufacturing Sector  
Re-exports: 1990 - 1998

SIC	Industry (\$'000)	1990	1991	1992	1993	1994	1995	1996	1997	1998
3341	Record Player, Radio and Television Receiver Industry	43,808	29,832	32,651	33,268	42,726	54,427	77,792	86,910	116,982
3351	Telecommunication Equipment Industry	42,499	40,639	43,740	50,455	50,990	53,579	65,239	61,451	100,374
3352	Electronic Parts and Components Industry	171,962	367,520	221,795	284,722	528,188	697,174	941,996	1,450,790	991,033
3359	Other Communication & Electronic Equipment Industries	54,446	47,332	67,460	74,755	88,587	80,357	92,904	152,929	152,464
3361	Electronic Computing and Peripheral Equipment Industry	333,363	348,596	627,062	822,129	1,076,016	1,196,976	1,214,283	1,114,617	1,296,205
3368	Electronic & Other Office, Store & Business Machine Indust.	24,349	27,637	23,669	36,563	38,401	54,238	60,488	65,010	59,834
3381	Communications and Energy Wire and Cable	2,913	3,274	3,829	4,161	5,094	6,384	8,302	11,512	19,315
3911	Indicating, Recording & Controlling Instruments Industry	35,953	42,770	51,423	61,219	66,632	74,311	77,697	90,448	102,216
3912	Other Instruments and Related Products Industry	64,214	69,403	117,676	107,943	113,874	121,435	154,729	167,583	205,278
	<b>Total ICT Manufacturing Re-exports</b>	<b>773,506</b>	<b>977,003</b>	<b>1,189,305</b>	<b>1,475,215</b>	<b>2,010,509</b>	<b>2,338,881</b>	<b>2,693,430</b>	<b>3,201,252</b>	<b>3,043,701</b>
	<b>Total Canadian Merchandise Re-exports</b>	<b>7,258,120</b>	<b>7,487,022</b>	<b>8,301,429</b>	<b>9,893,611</b>	<b>13,186,334</b>	<b>15,837,444</b>	<b>16,493,950</b>	<b>17,864,531</b>	<b>21,203,050</b>

Percentage of total ICT manufacturing re-exports

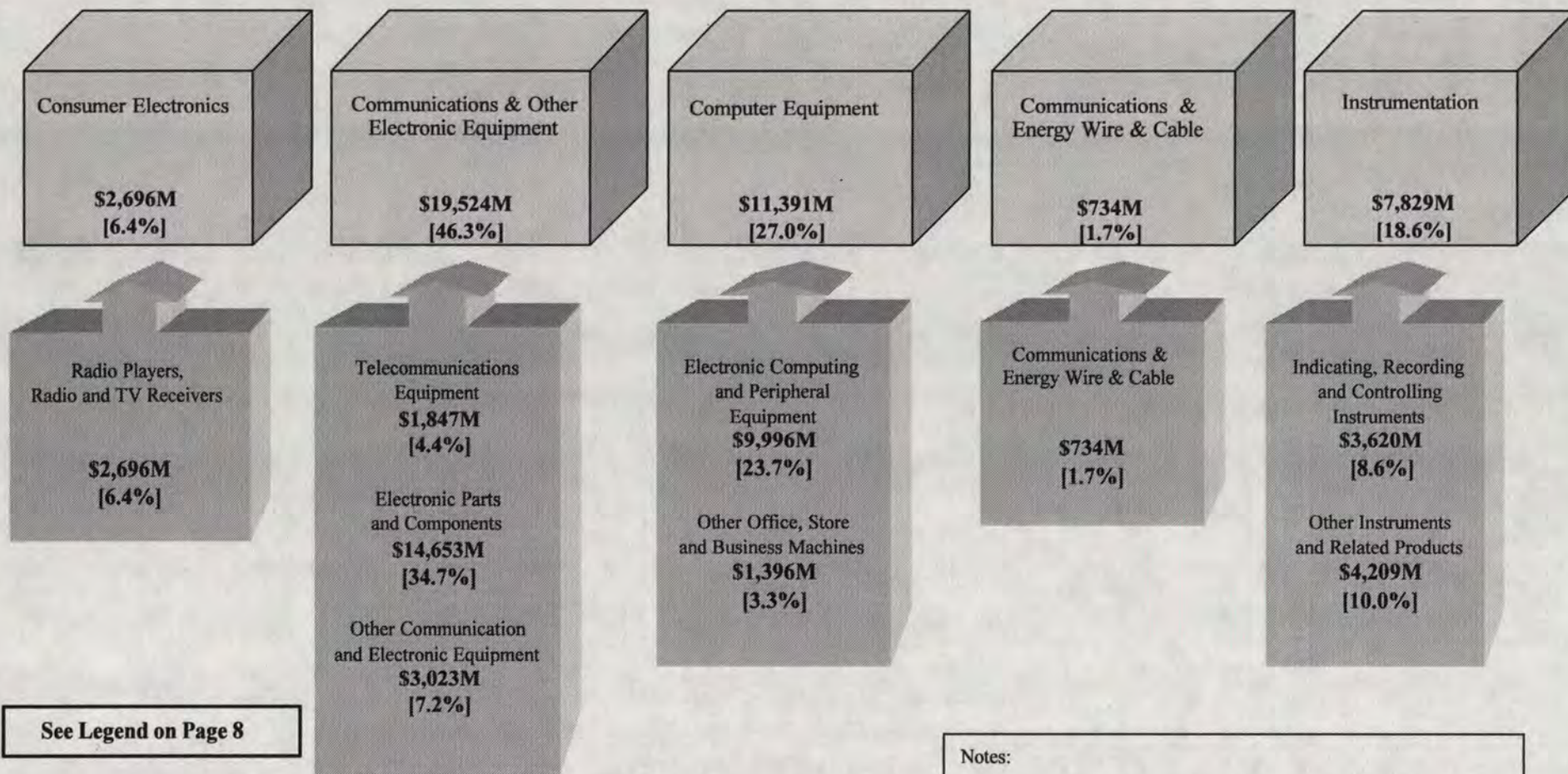
SIC	Industry	1990	1991	1992	1993	1994	1995	1996	1997	1998
3341	Record Player, Radio and Television Receiver Industry	5.7%	3.1%	2.7%	2.3%	2.1%	2.3%	2.9%	2.7%	3.8%
3351	Telecommunication Equipment Industry	5.5%	4.2%	3.7%	3.4%	2.5%	2.3%	2.4%	1.9%	3.3%
3352	Electronic Parts and Components Industry	22.2%	37.6%	18.6%	19.3%	26.3%	29.8%	35.0%	45.3%	32.6%
3359	Other Communication & Electronic Equipment Industries	7.0%	4.8%	5.7%	5.1%	4.4%	3.4%	3.4%	4.8%	5.0%
3361	Electronic Computing and Peripheral Equipment Industry	43.1%	35.7%	52.7%	55.7%	53.5%	51.2%	45.1%	34.8%	42.6%
3368	Electronic & Other Office, Store & Business Machine Indust.	3.1%	2.8%	2.0%	2.5%	1.9%	2.3%	2.2%	2.0%	2.0%
3381	Communications and Energy Wire and Cable	0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.6%
3911	Indicating, Recording & Controlling Instruments Industry	4.6%	4.4%	4.3%	4.1%	3.3%	3.2%	2.9%	2.8%	3.4%
3912	Other Instruments and Related Products Industry	8.3%	7.1%	9.9%	7.3%	5.7%	5.2%	5.7%	5.2%	6.7%
	<b>Total ICT Manufacturing Re-exports</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
	<b>ICT Re-exports as a percentage of total Canadian Merchandise Re-exports</b>	<b>10.7%</b>	<b>13.0%</b>	<b>14.3%</b>	<b>14.9%</b>	<b>15.2%</b>	<b>14.8%</b>	<b>16.3%</b>	<b>17.9%</b>	<b>14.4%</b>

See Sources and Technical Notes for more details.

# Information and Communications Technologies

## Figure 12a - Manufacturing Imports: 1997

**\$42.2 billion**



See Legend on Page 8

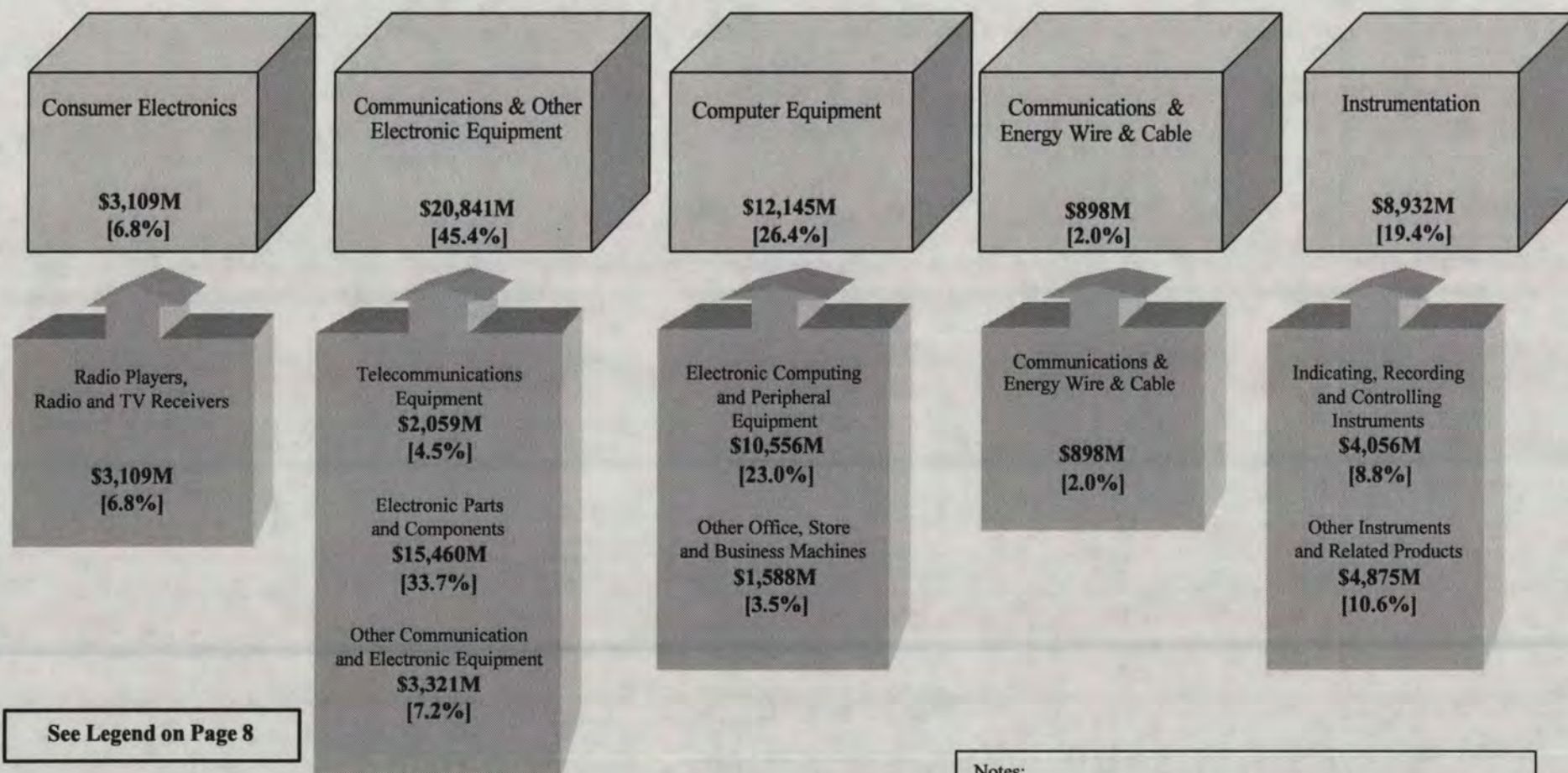
Notes:  
 1) Figures may not add up due to rounding.  
 2) All percentages are with respect to the total of \$42.2 billion.

Source: Trade Information Enquiry and Retrieval System (TIERS), Statistics Canada.

# Information and Communications Technologies

## Figure 12b - Manufacturing Imports: 1998

### \$45.9 billion



See Legend on Page 8

Notes:

- 1) Figures may not add up due to rounding.
- 2) All percentages are with respect to the total of \$45.9 billion.

Source: Trade Information Enquiry and Retrieval System (TIERS), Statistics Canada.

**Table 5.2**  
**ICT Manufacturing Sector**  
**Imports: 1990 - 1998**

<i>SIC</i>	<i>Industry (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
3341	Record Player, Radio and Television Receiver Industry	1,458,792	1,665,260	1,786,347	2,055,814	2,322,757	2,582,827	2,272,645	2,695,903	3,108,710
3351	Telecommunication Equipment Industry	550,875	695,294	1,019,251	1,229,492	1,414,366	1,333,081	1,656,492	1,847,169	2,059,364
3352	Electronic Parts and Components Industry	4,785,828	4,953,746	5,461,302	5,994,935	11,123,509	14,135,012	13,823,962	14,653,226	15,459,950
3359	Other Communication & Electronic Equipment Industries	1,460,790	1,366,979	1,357,373	1,524,406	1,861,556	2,048,400	2,314,427	3,023,447	3,321,455
3361	Electronic Computing and Peripheral Equipment Industry	5,224,331	5,879,324	6,785,206	7,839,459	6,705,253	7,747,837	8,496,445	9,995,583	10,556,389
3368	Electronic & Other Office, Store & Business Machine Indust.	908,086	877,769	1,021,591	1,105,915	1,153,878	1,214,668	1,249,993	1,395,898	1,588,469
3381	Communications and Energy Wire and Cable	299,908	300,389	375,429	469,066	630,751	500,975	606,563	733,817	898,327
3911	Indicating, Recording & Controlling Instruments Industry	1,276,367	1,234,881	1,358,438	1,757,877	2,469,026	2,967,817	2,857,726	3,619,677	4,056,474
3912	Other Instruments and Related Products Industry	2,535,122	2,481,469	2,759,013	3,080,277	3,423,711	3,507,308	3,724,703	4,209,262	4,875,069
	<b>Total ICT Manufacturing Imports</b>	<b>18,500,099</b>	<b>19,455,111</b>	<b>21,923,949</b>	<b>25,057,242</b>	<b>31,104,808</b>	<b>36,037,925</b>	<b>37,002,957</b>	<b>42,173,983</b>	<b>45,924,206</b>
	<b>Total Canadian Merchandise Imports</b>	<b>136,245,000</b>	<b>135,461,000</b>	<b>148,018,000</b>	<b>169,953,000</b>	<b>202,736,000</b>	<b>225,553,000</b>	<b>232,557,000</b>	<b>272,856,000</b>	<b>298,317,000</b>

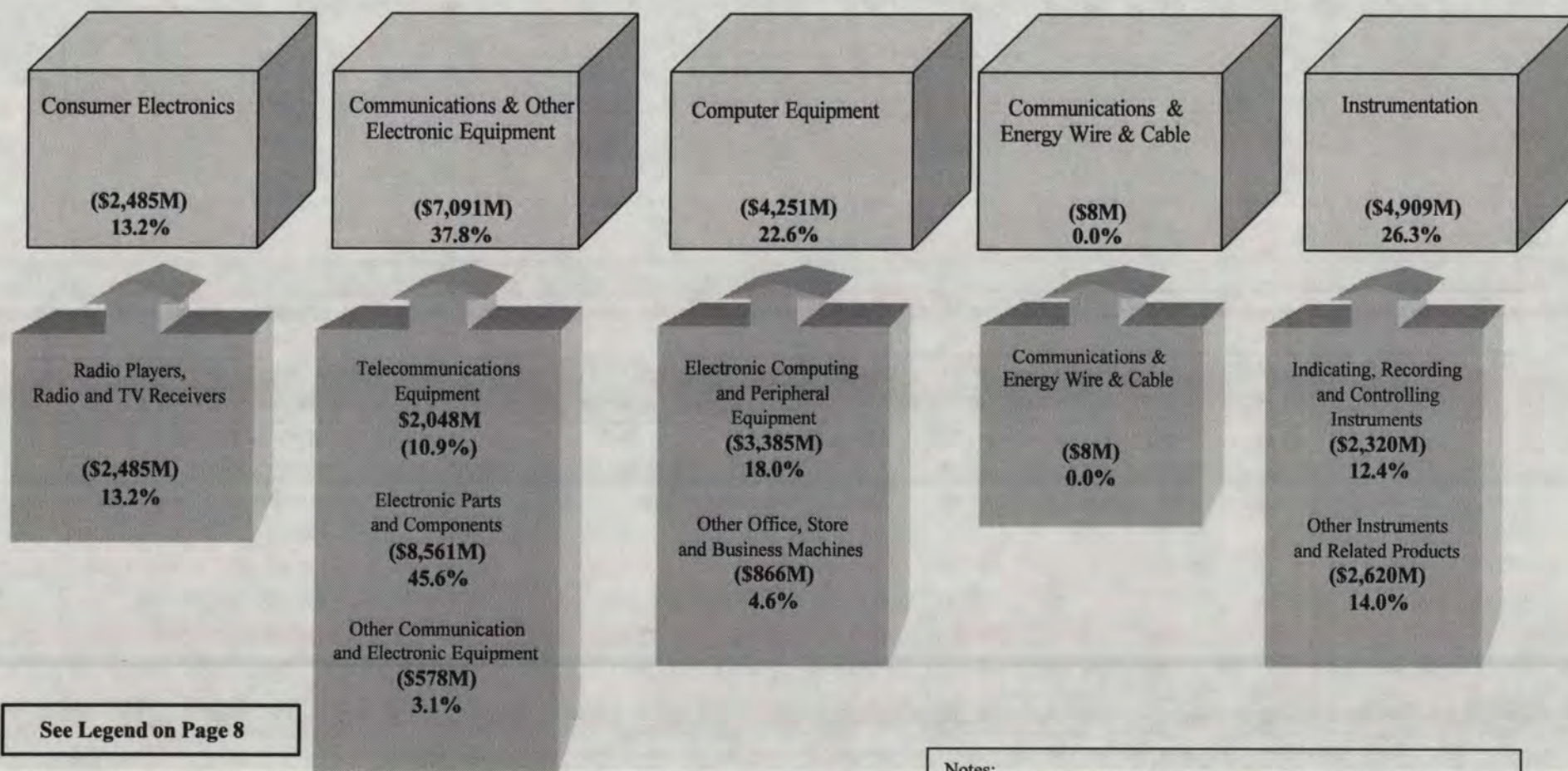
**Percentage of total ICT manufacturing imports**

<i>SIC</i>	<i>Industry</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
3341	Record Player, Radio and Television Receiver Industry	7.9%	8.6%	8.1%	8.2%	7.5%	7.2%	6.1%	6.4%	6.8%
3351	Telecommunication Equipment Industry	3.0%	3.6%	4.6%	4.9%	4.5%	3.7%	4.5%	4.4%	4.5%
3352	Electronic Parts and Components Industry	25.9%	25.5%	24.9%	23.9%	35.8%	39.2%	37.4%	34.7%	33.7%
3359	Other Communication & Electronic Equipment Industries	7.9%	7.0%	6.2%	6.1%	6.0%	5.7%	6.3%	7.2%	7.2%
3361	Electronic Computing and Peripheral Equipment Industry	28.2%	30.2%	30.9%	31.3%	21.6%	21.5%	23.0%	23.7%	23.0%
3368	Communications and Energy Wire and Cable	4.9%	4.5%	4.7%	4.4%	3.7%	3.4%	3.4%	3.3%	3.5%
3381	Electronic & Other Office, Store & Business Machine Indust.	1.6%	1.5%	1.7%	1.9%	2.0%	1.4%	1.6%	1.7%	2.0%
3911	Indicating, Recording & Controlling Instruments Industry	6.9%	6.3%	6.2%	7.0%	7.9%	8.2%	7.7%	8.6%	8.8%
3912	Other Instruments and Related Products Industry	13.7%	12.8%	12.6%	12.3%	11.0%	9.7%	10.1%	10.0%	10.6%
	<b>Total ICT Manufacturing Imports</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
	<b>ICT Imports as a percentage of total Canadian Merchandise Imports</b>	<b>13.6%</b>	<b>14.4%</b>	<b>14.8%</b>	<b>14.7%</b>	<b>15.3%</b>	<b>16.0%</b>	<b>15.9%</b>	<b>15.5%</b>	<b>15.4%</b>

See Sources and Technical Notes for more details.

## Information and Communications Technologies

### Figure 13a - Manufacturing Trade Balance: 1997 (\$18.8 billion deficit)



See Legend on Page 8

Notes:  
 1) Figures may not add up due to rounding.  
 2) All percentages are with respect to the total of \$18.8 billion.

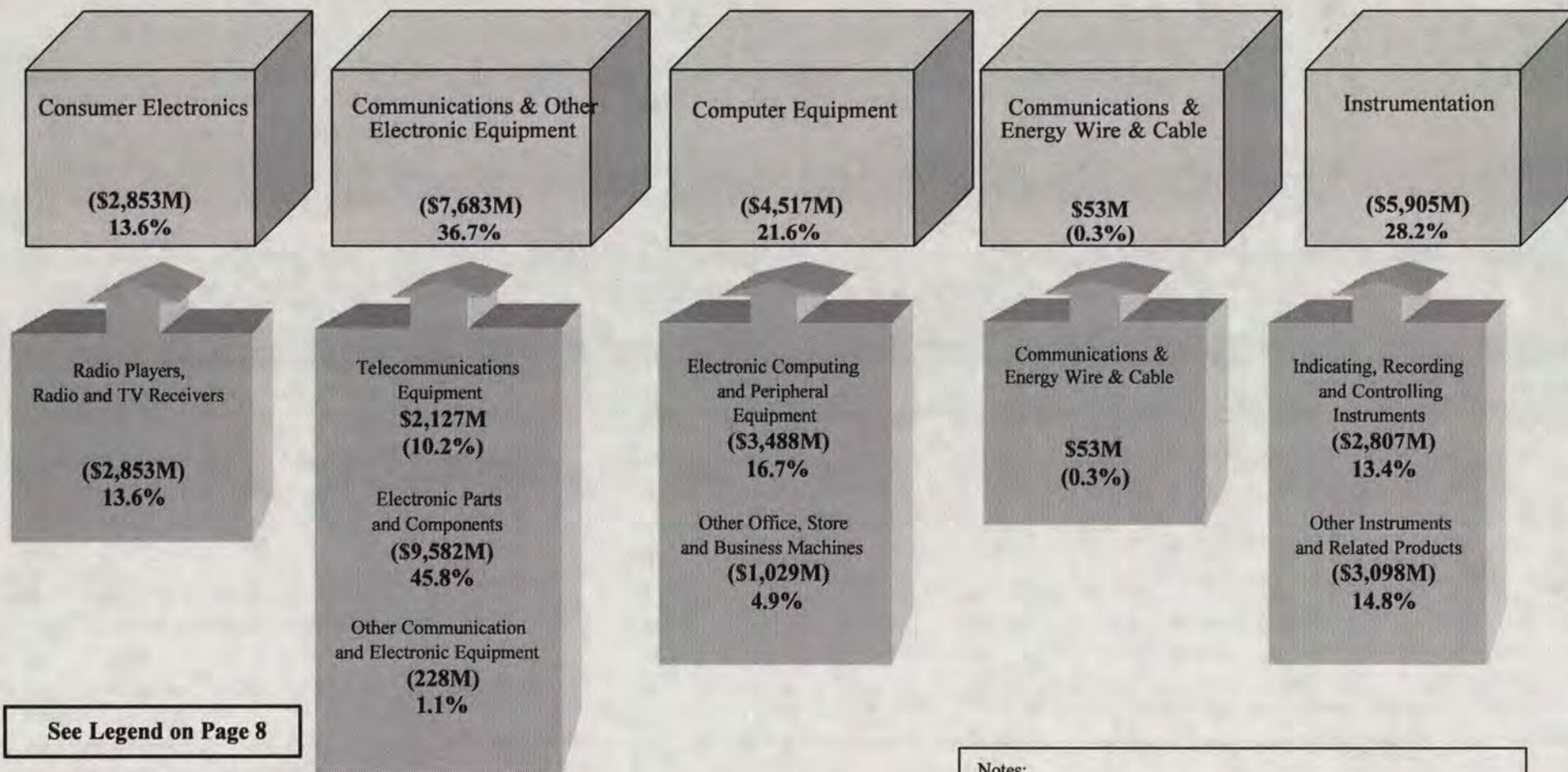
Source: Trade Information Enquiry and Retrieval System (TIERS), Statistics Canada.



# Information and Communications Technologies

## Figure 13b - Manufacturing Trade Balance: 1998

(\$20.9 billion deficit)



See Legend on Page 8

Source: Trade Information Enquiry and Retrieval System (TIERS), Statistics Canada.

Notes:

- 1) Figures may not add up due to rounding.
- 2) All percentages are with respect to the total of \$20.9 billion.

**Table 5.3**  
**ICT Manufacturing Sector**  
**Trade Balance: 1990 - 1998**

<i>SIC</i>	<i>Industry (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
3341	Record Player, Radio and Television Receiver Industry	(1,268,318)	(1,551,165)	(1,649,315)	(1,911,180)	(2,105,451)	(2,326,227)	(2,032,525)	(2,484,801)	(2,852,605)
3351	Telecommunication Equipment Industry	551,428	377,543	416,630	694,818	915,512	1,506,184	1,814,194	2,048,412	2,126,986
3352	Electronic Parts and Components Industry	(1,720,708)	(1,373,726)	(2,185,401)	(3,002,462)	(7,655,055)	(9,856,498)	(8,624,474)	(8,560,811)	(9,581,822)
3359	Other Communication & Electronic Equipment Industries	(515,413)	(488,288)	(357,435)	(550,232)	(387,805)	(399,176)	(356,209)	(578,237)	(227,845)
3361	Electronic Computing and Peripheral Equipment Industry	(2,403,267)	(2,622,761)	(2,942,852)	(3,546,449)	(729,982)	9,006	(1,790,440)	(3,384,590)	(3,488,107)
3368	Electronic & Other Office, Store & Business Machine Indust.	(545,200)	(553,892)	(710,092)	(749,783)	(762,357)	(842,442)	(832,210)	(866,201)	(1,028,526)
3381	Communications and Energy Wire and Cable	(67,909)	(98,464)	(79,401)	(112,345)	(207,124)	73,341	40,250	(8,178)	52,699
3911	Indicating, Recording & Controlling Instruments Industry	(702,537)	(633,834)	(647,992)	(924,542)	(1,293,274)	(1,754,115)	(1,596,098)	(2,319,777)	(2,806,634)
3912	Other Instruments and Related Products Industry	(1,953,435)	(1,821,624)	(1,868,328)	(2,164,507)	(2,397,836)	(2,342,912)	(2,352,806)	(2,619,884)	(3,098,076)
	<b>Total ICT Manufacturing Trade Balance</b>	<b>(8,625,359)</b>	<b>(8,766,211)</b>	<b>(10,024,187)</b>	<b>(12,266,683)</b>	<b>(14,623,373)</b>	<b>(15,932,840)</b>	<b>(15,730,317)</b>	<b>(18,774,066)</b>	<b>(20,903,930)</b>
	<b>Total Canadian Merchandise Trade Balance</b>	<b>12,734,427</b>	<b>10,545,227</b>	<b>14,809,709</b>	<b>17,562,393</b>	<b>22,942,964</b>	<b>36,674,358</b>	<b>43,232,031</b>	<b>26,234,111</b>	<b>19,585,675</b>

**Percentage of total ICT manufacturing trade balance**

<i>SIC</i>	<i>Industry</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
3341	Record Player, Radio and Television Receiver Industry	14.7%	17.7%	16.5%	15.6%	14.4%	14.6%	12.9%	13.2%	13.6%
3351	Telecommunication Equipment Industry	-6.4%	-4.3%	-4.2%	-5.7%	-6.3%	-9.5%	-11.5%	-10.9%	-10.2%
3352	Electronic Parts and Components Industry	19.9%	15.7%	21.8%	24.5%	52.3%	61.9%	54.8%	45.6%	45.8%
3359	Other Communication & Electronic Equipment Industries	6.0%	5.6%	3.6%	4.5%	2.7%	2.5%	2.3%	3.1%	1.1%
3361	Electronic Computing and Peripheral Equipment Industry	27.9%	29.9%	29.4%	28.9%	5.0%	-0.1%	11.4%	18.0%	16.7%
3368	Electronic & Other Office, Store & Business Machine Indust.	6.3%	6.3%	7.1%	6.1%	5.2%	5.3%	5.3%	4.6%	4.9%
3381	Communications and Energy Wire and Cable	0.8%	1.1%	0.8%	0.9%	1.4%	-0.5%	-0.3%	0.0%	-0.3%
3911	Indicating, Recording & Controlling Instruments Industry	8.1%	7.2%	6.5%	7.5%	8.8%	11.0%	10.1%	12.4%	13.4%
3912	Other Instruments and Related Products Industry	22.6%	20.8%	18.6%	17.6%	16.4%	14.7%	15.0%	14.0%	14.8%
	<b>Total ICT Manufacturing Trade Balance</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

These percentages are taken from the Trade Balance, which is in deficit.  
Therefore, a positive percentage indicates a share of the negative balance.

See Sources and Technical Notes for more details.

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# Section 6

## ICT Manufacturing Industry Tables: 1990 - 1997

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**Table 6.0**  
**ICT Manufacturing: 1990 - 1997**  
**Total ICT Manufacturing**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	66,117	63,515	66,657	62,311	62,459	67,623	62,405	65,094
Administrative and Other Employees	35,836	37,144	34,867	32,417	31,739	31,758	31,561	32,292
Total Employment	101,953	100,657	101,524	94,728	94,198	99,381	93,966	97,386
<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	1,312	1,172	1,133	1,091	1,078	1,158	1,319	1,304
Revenue (total shipments)	16,327,751	18,245,490	19,589,244	19,438,636	23,167,882	28,094,542	26,810,397	27,874,739
- Manufacturing Shipments	14,264,947	16,009,718	16,992,737	17,251,809	20,824,701	25,677,654	24,827,769	26,179,048
- Non Manufacturing Shipments	2,062,804	2,235,772	2,596,507	2,186,827	2,343,181	2,416,888	1,982,628	1,695,691
Operating Expenses	11,978,411	14,086,446	15,502,763	15,269,307	17,996,960	21,813,161	20,768,261	20,196,754
- Total Salaries and Wages	3,478,169	3,589,360	3,730,132	3,717,190	3,789,425	4,006,129	3,850,861	4,101,021
- Production Salaries & Wages	1,942,658	1,952,254	2,158,094	2,049,020	2,108,552	2,312,293	2,156,035	2,332,157
- Administrative and Other Salaries & Wages	1,535,511	1,637,106	1,572,038	1,668,170	1,680,873	1,693,836	1,832,739	1,768,864
- Cost of Fuel & Electricity	106,956	103,266	112,252	112,928	116,624	125,562	120,065	117,180
- Cost of Materials and Supplies Used	6,997,870	9,045,900	9,912,187	9,968,375	12,575,696	15,902,249	15,302,163	14,666,020
- Cost of Goods for Resale	1,395,416	1,347,920	1,748,192	1,470,814	1,515,215	1,779,221	1,495,172	1,312,533
EBITDA	4,349,340	4,159,044	4,086,481	4,169,329	5,170,922	6,281,381	6,042,136	7,677,985
Manufacturing Value Added	7,119,974	6,790,030	7,047,216	7,350,915	8,212,335	9,800,715	9,471,164	11,499,006
Total Value Added	7,757,226	7,623,940	7,821,639	8,067,128	9,040,301	10,438,382	9,981,282	11,872,285
<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	5,821,000	5,823,000	6,115,000	6,104,000	6,781,000	7,879,000	7,856,000	8,711,000
Intramural R&D Expenditures	1,524,545	1,588,043	1,616,585	1,768,427	2,029,621	2,244,399	2,360,765	2,529,927
Capital Expenditures	N/A	728,000	558,800	636,600	626,400	577,300	759,000	718,000
<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	18,500,099	19,455,111	21,923,949	25,057,242	31,104,808	36,037,925	37,002,957	42,173,983
Total Exports (including Re-exports)	9,874,739	10,688,899	11,899,763	12,790,559	16,481,436	20,105,085	21,272,640	23,399,916
Trade Balance	(8,625,359)	(8,766,211)	(10,024,187)	(12,266,683)	(14,623,373)	(15,932,840)	(15,730,317)	(18,774,066)
Apparent Domestic Market	22,890,306	24,775,929	27,016,924	29,518,492	35,448,074	41,610,494	40,558,086	44,953,114

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 6.1**  
**ICT Manufacturing: 1990 - 1997**  
**Record player, radio and TV Receivers Industry (SIC 3341)\***

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	2,066	1,779	2,195	1,239	1,195	921	592	639
Administrative and Other Employees	562	500	469	194	321	252	209	243
Total Employment	2,628	2,279	2,664	1,433	1,516	1,173	801	882

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	20	20	14	15	16	17	18	19
Revenue (total shipments)	831,455	726,534	915,371	668,585	821,370	811,951	592,961	211,715
- Manufacturing Shipments	555,167	477,539	538,568	272,805	391,052	375,247	263,452	210,326
- Non Manufacturing Shipments	276,288	248,995	376,803	395,780	430,318	436,704	329,509	1,389
Operating Expenses	660,055	586,999	757,570	592,772	700,402	706,522	522,621	173,401
- Total Salaries and Wages	75,051	68,711	87,593	39,543	45,524	33,128	28,846	26,091
- Production Salaries & Wages	50,607	44,324	62,525	28,845	30,033	20,610	16,113	15,341
- Administrative and Other Salaries & Wages	24,444	24,387	25,068	10,698	15,491	12,518	12,733	10,750
- Cost of Fuel & Electricity	1,688	1,979	2,168	1,406	1,218	1,137	888	865
- Cost of Materials and Supplies Used	338,983	322,323	346,017	225,027	327,885	313,852	195,619	145,465
- Goods for Resale	244,333	193,986	321,792	326,796	325,775	358,405	297,268	980
EBITDA	171,400	139,535	157,801	75,813	120,968	105,429	70,340	38,314
Manufacturing Value Added	208,825	169,810	178,010	48,190	56,987	61,061	67,275	38,697
Total Value Added	240,780	224,819	233,021	117,174	161,530	139,360	99,516	57,242

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	185,000	152,000	165,000	87,000	116,000	94,000	68,000	42,000
Intramural R&D Expenditures	3,182	7,164	9,519	10,662	11,787	13,399	14,481	15,184
Capital Expenditures	N/A	21,700	17,400	22,100	28,400	4,600	2,500	5,200

<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	1,458,792	1,665,260	1,786,347	2,055,814	2,322,757	2,582,827	2,272,645	2,695,903
Total Exports (including Re-exports)	190,474	114,095	137,032	144,635	217,306	256,600	240,120	211,102
Trade Balance	(1,268,318)	(1,551,165)	(1,649,315)	(1,911,180)	(2,105,451)	(2,326,227)	(2,032,525)	(2,484,801)
Apparent Domestic Market	1,823,485	2,028,704	2,187,883	2,183,985	2,496,503	2,701,474	2,295,977	2,695,127

All underlined figures are Industry Canada estimates.  
 See Sources and Technical Notes for more details.

\*Also referred to as Consumer Electronics

**Table 6.2**  
**ICT Manufacturing: 1990 - 1997**  
**Communication and Other Electronic Equipment Industries (SIC 335)\***

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	38,961	37,089	38,664	35,814	36,634	39,776	35,359	37,593
Administrative and Other Employees	17,175	19,027	18,098	17,519	16,041	16,636	17,786	19,887
Total Employment	56,136	56,114	56,762	53,333	52,675	56,412	53,145	57,480
<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	557	501	484	467	458	511	565	559
Revenue (total shipments)	7,407,490	9,624,074	10,607,253	10,606,044	11,615,500	14,119,848	14,482,860	16,609,836
- Manufacturing Shipments	6,700,601	8,781,806	9,699,201	9,840,064	10,970,217	13,331,953	13,773,277	15,844,327
- Non Manufacturing Shipments	706,889	842,268	908,052	765,980	645,283	787,895	709,583	765,509
Operating Expenses	5,051,178	7,083,768	8,050,002	8,124,228	8,465,493	9,782,000	10,503,371	11,679,185
- Total Salaries and Wages	1,927,529	2,003,869	2,119,793	2,153,662	2,183,467	2,307,351	2,247,311	2,544,398
- Production Salaries & Wages	1,190,772	1,189,347	1,337,439	1,255,766	1,311,787	1,393,708	1,270,118	1,449,716
- Administrative and Other Salaries & Wages	736,757	814,522	782,354	897,896	871,680	913,643	977,193	1,094,682
- Cost of Fuel & Electricity	47,624	49,934	56,645	56,326	57,911	64,831	60,943	63,957
- Cost of Materials and Supplies Used	2,607,817	4,507,419	5,287,977	5,369,644	5,712,608	6,738,949	7,623,703	8,336,938
- Cost of Goods for Resale	468,208	522,546	585,587	544,596	511,507	670,869	571,414	733,892
EBITDA	2,356,312	2,540,306	2,557,251	2,481,816	3,150,007	4,337,848	3,979,489	4,930,651
Manufacturing Value Added	4,045,294	4,160,918	4,480,071	4,515,577	5,206,312	6,560,813	6,196,136	7,628,728
Total Value Added	4,253,809	4,426,698	4,728,644	4,736,961	5,340,088	6,677,839	6,334,305	7,630,335
<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	3,548,000	3,495,000	3,749,000	3,604,000	3,939,000	4,606,000	4,674,000	5,341,000
Intramural R&D Expenditures	1,155,132	1,188,404	1,192,638	1,376,571	1,609,800	1,824,790	1,927,781	2,057,232
Capital Expenditures	N/A	267,900	303,000	296,100	351,200	369,300	468,700	428,500
<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	6,797,493	7,016,018	7,837,926	8,748,834	14,399,431	17,516,494	17,794,881	19,523,842
Total Exports (including Re-exports)	5,112,800	5,531,547	5,711,720	5,890,957	7,272,082	8,767,003	10,628,393	12,433,206
Trade Balance	(1,684,693)	(1,484,471)	(2,126,206)	(2,857,877)	(7,127,348)	(8,749,490)	(7,166,489)	(7,090,635)
Apparent Domestic Market	8,385,294	10,266,277	11,825,407	12,697,941	18,097,565	22,081,443	20,939,766	22,934,962

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

\* aggregation of SIC 3351, 3352 & 3359

**Table 6.2.1**  
**ICT Manufacturing: 1990 - 1997**  
**Electronic Parts and Components Industry (SIC 3352)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	12,242	11,192	9,799	10,251	11,532	14,271	13,072	13,931
Administrative and Other Employees	2,721	5,198	4,882	2,814	2,761	3,399	4,650	4,605
Total Employment	14,963	16,389	14,681	13,065	14,293	17,670	17,722	18,536

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	262	222	215	208	209	239	263	255
Revenue (total shipments)	1,250,912	3,084,722	3,568,802	3,636,628	3,917,958	4,975,857	5,769,649	5,954,091
- Manufacturing Shipments*	1,190,258	3,020,879	3,484,147	3,568,140	3,893,984	4,933,241	5,727,413	5,902,630
- Non Manufacturing Shipments	60,654	63,843	84,655	68,488	23,974	42,616	42,236	51,461
Operating Expenses	921,007	2,727,780	3,225,398	3,166,064	3,264,642	4,014,184	4,559,053	4,519,315
- Total Salaries and Wages	397,783	460,135	418,405	404,577	456,001	559,881	637,449	700,071
- Production Salaries & Wages	286,730	265,730	260,060	266,494	313,373	388,387	410,058	452,770
- Administrative and Other Salaries & Wages	111,053	194,405	158,345	138,083	142,628	171,494	227,391	247,301
- Cost of Fuel & Electricity	20,448	21,595	21,921	22,566	24,636	31,151	29,417	28,014
- Cost of Materials and Supplies Used	448,742	2,204,267	2,720,184	2,693,925	2,759,935	3,366,149	3,854,000	3,748,286
- Cost of Goods for Resale	54,034	41,783	64,888	44,996	24,070	57,003	38,187	42,944
EBITDA	329,905	356,942	343,404	470,564	653,316	961,673	1,210,596	1,434,776
Manufacturing Value Added	723,672	688,527	741,087	847,092	1,122,989	1,556,071	1,827,001	2,167,622
Total Value Added	730,292	709,106	764,812	870,584	1,122,893	1,541,684	1,831,050	2,176,129

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	428,000	481,000	573,000	596,000	730,000	964,000	1,103,000	1,278,000
Intramural R&D Expenditures	42,588	41,436	49,036	48,542	50,260	59,012	71,469	84,887
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	4,785,828	4,953,746	5,461,302	5,994,935	11,123,509	14,135,012	13,823,962	14,653,226
Total Exports (including Re-exports)	3,065,120	3,580,019	3,275,901	2,992,473	3,468,454	4,278,514	5,199,488	6,092,416
Trade Balance	(1,720,708)	(1,373,726)	(2,185,401)	(3,002,462)	(7,655,055)	(9,856,498)	(8,624,474)	(8,560,811)
Apparent Domestic Market	2,910,966	4,394,605	5,669,548	6,570,602	11,549,039	14,789,739	14,351,887	14,463,441

All underlined figures are Industry Canada estimates.  
 See Sources and Technical Notes for more details.

\* In 1991, the method for reporting manufacturing shipments changed for this SIC.

**Table 6.2.2**  
**ICT Manufacturing: 1990 - 1997**  
**Telecommunication Equipment Industry and Other**  
**Communication and Electronic Equipment Industries (SIC 3358 = SIC 3351 & 3359)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	26,719	25,897	28,865	25,563	25,102	25,505	22,287	23,662
Administrative and Other Employees	14,454	13,829	13,216	14,705	13,280	13,237	13,136	15,282
Total Employment	41,173	39,725	42,081	40,268	38,382	38,742	35,423	38,944

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	295	279	269	259	249	272	302	304
Revenue (total shipments)	6,156,578	6,539,352	7,038,451	6,969,416	7,697,542	9,143,991	8,713,211	10,655,745
- Manufacturing Shipments	5,510,343	5,760,927	6,215,054	6,271,924	7,076,233	8,398,712	8,045,864	9,941,697
- Non Manufacturing Shipments	646,235	778,425	823,397	697,492	621,309	745,279	667,347	714,048
Operating Expenses	4,130,171	4,355,988	4,824,604	4,958,164	5,200,851	5,767,816	5,944,318	7,159,870
- Total Salaries and Wages	1,529,746	1,543,734	1,701,388	1,749,085	1,727,466	1,747,470	1,609,862	1,844,327
- Production Salaries & Wages	904,042	923,617	1,077,379	989,272	998,414	1,005,321	860,060	996,946
- Administrative and Other Salaries & Wages	625,704	620,117	624,009	759,813	729,052	742,149	749,802	847,381
- Cost of Fuel & Electricity	27,176	28,339	34,724	33,760	33,275	33,680	31,526	35,943
- Cost of Materials and Supplies Used	2,159,075	2,303,152	2,567,793	2,675,719	2,952,673	3,372,800	3,769,703	4,588,652
- Goods for Resale	414,174	480,763	520,699	499,600	487,437	613,866	533,227	690,948
EBITDA	2,026,407	2,183,364	2,213,847	2,011,252	2,496,691	3,376,175	2,768,893	3,495,875
Manufacturing Value Added	3,321,622	3,472,391	3,738,984	3,668,485	4,083,323	5,004,742	4,369,135	5,461,106
Total Value Added	3,523,517	3,717,592	3,963,832	3,866,377	4,217,195	5,136,155	4,503,255	5,454,206

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	3,120,000	3,014,000	3,176,000	3,008,000	3,209,000	3,642,000	3,571,000	4,063,000
Intramural R&D Expenditures	1,112,544	1,146,968	1,143,602	1,328,029	1,559,540	1,765,778	1,856,312	1,972,345
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	2,011,665	2,062,273	2,376,624	2,753,898	3,275,922	3,381,482	3,970,920	4,870,616
Total Exports (including Re-exports)	2,047,680	1,951,528	2,435,819	2,898,483	3,803,629	4,488,489	5,428,905	6,340,791
Trade Balance	36,015	(110,745)	59,195	144,585	527,707	1,107,008	1,457,985	1,470,175
Apparent Domestic Market	5,474,328	5,871,672	6,155,859	6,127,339	6,548,526	7,291,704	6,587,879	8,471,522

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.



**Table 6.2.2.1**  
**ICT Manufacturing: 1990 - 1997**  
**Telecommunication Equipment Industry (SIC 3351)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	8,498	10,054	11,609	10,497	11,439	12,625	8,515	8,471
Administrative and Other Employees	6,363	6,214	6,064	8,207	7,848	8,081	7,523	10,054
Total Employment	14,861	16,267	17,673	18,704	19,287	20,706	16,038	18,525

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	57	65	63	62	61	65	67	68
Revenue (total shipments)	3,003,561	3,511,093	4,018,624	4,192,552	4,871,576	6,267,300	5,483,404	6,963,237
- Manufacturing Shipments	2,736,077	3,186,491	3,636,904	3,811,177	4,457,561	5,756,147	5,042,517	6,460,547
- Non Manufacturing Shipments	267,484	324,602	381,720	381,375	414,015	511,153	440,887	502,690
Operating Expenses	1,813,336	2,158,879	2,501,966	2,849,436	3,102,917	3,798,100	3,810,581	4,706,433
- Total Salaries and Wages	593,628	672,157	750,685	899,114	918,770	981,868	781,977	921,978
- Production Salaries & Wages	286,268	361,047	435,825	429,334	445,974	481,040	313,010	365,669
- Administrative and Other Salaries & Wages	307,360	311,110	314,860	469,780	472,796	500,828	468,967	556,309
- Cost of Fuel & Electricity	9,304	10,945	13,226	14,568	15,174	16,319	13,647	17,029
- Cost of Materials and Supplies Used	1,010,953	1,248,250	1,485,546	1,669,679	1,858,810	2,389,972	2,666,681	3,276,322
- Goods for Resale	199,451	227,527	252,509	266,075	310,163	409,941	348,276	491,104
EBITDA	1,190,225	1,352,214	1,516,658	1,343,116	1,768,659	2,469,200	1,672,823	2,256,804
Manufacturing Value Added	1,743,039	1,990,567	2,238,095	2,234,300	2,580,733	3,366,290	2,456,036	3,346,010
Total Value Added	1,780,906	2,035,181	2,289,456	2,349,600	2,684,585	3,467,502	2,548,647	3,327,596

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	1,693,000	1,689,000	1,797,000	1,810,000	2,007,000	2,463,000	2,301,000	2,749,000
Intramural R&D Expenditures	738,517	773,383	735,085	906,052	1,109,731	1,378,664	1,473,208	1,572,667
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	550,875	695,294	1,019,251	1,229,492	1,414,366	1,333,081	1,656,492	1,847,169
Total Exports (including Re-exports)	1,102,303	1,072,837	1,435,881	1,924,310	2,329,878	2,839,265	3,470,687	3,895,582
Trade Balance	551,428	377,543	416,630	694,818	915,512	1,506,184	1,814,194	2,048,412
Apparent Domestic Market	2,184,649	2,808,948	3,220,274	3,116,359	3,542,049	4,249,963	3,228,323	4,412,135

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 6.2.2.2**  
**ICT Manufacturing: 1990 - 1997**  
**Other Communication and Electronic Equipment Industries (SIC 3359)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	18,221	15,843	17,256	15,066	13,663	12,880	13,772	15,191
Administrative and Other Employees	8,091	7,615	7,152	6,498	5,432	5,156	5,613	5,228
Total Employment	26,312	23,458	24,408	21,564	19,095	18,036	19,385	20,419

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	238	214	206	197	188	207	235	236
Revenue (total shipments)	3,153,017	3,028,259	3,019,827	2,776,864	2,825,966	2,876,691	3,229,807	3,692,508
- Manufacturing Shipments	2,774,266	2,574,436	2,578,150	2,460,747	2,618,672	2,642,565	3,003,347	3,481,150
- Non Manufacturing Shipments	378,751	453,823	441,677	316,117	207,294	234,126	226,460	211,358
Operating Expenses	2,316,835	2,197,109	2,322,638	2,108,728	2,097,934	1,969,716	2,133,737	2,453,437
- Total Salaries and Wages	936,118	871,577	950,703	849,971	808,696	765,602	827,885	922,349
- Production Salaries & Wages	617,774	562,570	641,554	559,938	552,440	524,281	547,050	631,277
- Administrative and Other Salaries & Wages	318,344	309,007	309,149	290,033	256,256	241,321	280,835	291,072
- Cost of Fuel & Electricity	17,872	17,394	21,498	19,192	18,101	17,361	17,879	18,914
- Cost of Materials and Supplies Used	1,148,122	1,054,902	1,082,247	1,006,040	1,093,863	982,828	1,103,022	1,312,330
- Goods for Resale	214,723	253,236	268,190	233,525	177,274	203,925	184,951	199,844
EBITDA	836,182	831,150	697,189	668,136	728,032	906,975	1,096,070	1,239,071
Manufacturing Value Added	1,578,583	1,481,824	1,500,889	1,434,185	1,502,590	1,638,452	1,913,099	2,115,096
Total Value Added	1,742,611	1,682,411	1,674,376	1,516,777	1,532,610	1,668,653	1,954,608	2,126,610

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	1,427,000	1,325,000	1,379,000	1,198,000	1,202,000	1,179,000	1,270,000	1,314,000
Intramural R&D Expenditures	374,027	373,585	408,517	421,977	449,809	387,114	383,104	399,678
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	1,460,790	1,366,979	1,357,373	1,524,406	1,861,556	2,048,400	2,314,427	3,023,447
Total Exports (including Re-exports)	945,377	878,691	999,938	974,174	1,473,751	1,649,224	1,958,218	2,445,209
Trade Balance	(515,413)	(488,288)	(357,435)	(550,232)	(387,805)	(399,176)	(356,209)	(578,237)
Apparent Domestic Market	3,289,679	3,062,724	2,935,585	3,010,979	3,006,477	3,041,741	3,359,556	4,059,387

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 6.3**  
**ICT Manufacturing: 1990 - 1997**  
**Office, Store and Business Machine Industries (SIC 336)\***

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	8,340	7,886	8,826	8,743	8,974	9,585	9,409	10,402
Administrative and Other Employees	7,856	7,794	7,909	6,684	6,878	6,112	5,233	5,215
Total Employment	16,196	15,680	16,735	15,427	15,852	15,697	14,642	15,617

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	225	189	190	182	173	184	213	210
Revenue (total shipments)	3,739,459	3,786,257	4,096,673	4,062,458	6,077,021	8,014,627	6,548,488	5,744,989
- Manufacturing Shipments	3,208,158	3,297,202	3,353,379	3,655,312	5,496,222	7,559,498	6,365,447	5,507,883
- Non Manufacturing Shipments	531,301	489,055	743,294	407,146	580,799	455,129	183,041	237,106
Operating Expenses	2,958,790	3,290,647	3,631,642	3,428,045	5,404,623	7,489,575	5,951,035	4,541,664
- Total Salaries and Wages	538,197	565,209	595,473	610,758	638,329	670,887	588,557	597,316
- Production Salaries & Wages	211,811	218,263	233,737	247,138	263,516	335,967	307,341	322,851
- Administrative and Other Salaries & Wages	326,386	346,946	361,736	363,620	374,813	334,920	419,129	274,465
- Cost of Fuel & Electricity	13,020	12,711	12,528	13,980	14,894	15,704	15,903	15,031
- Cost of Materials and Supplies Used	2,118,547	2,468,110	2,532,752	2,610,536	4,522,583	6,497,644	5,182,698	3,790,039
- Cost of Goods for Resale	289,026	244,617	490,889	192,771	228,817	305,340	163,877	139,278
EBITDA	780,669	495,610	465,031	634,413	672,398	525,052	597,453	1,203,325
Manufacturing Value Added	1,049,582	841,478	788,092	1,079,661	1,000,602	1,104,352	1,127,521	1,653,572
Total Value Added	1,291,857	1,085,916	1,040,497	1,294,036	1,352,584	1,254,141	1,169,347	1,753,400

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	473,000	552,000	619,000	806,000	1,046,000	1,443,000	1,328,000	1,439,000
Intramural R&D Expenditures	298,816	329,102	344,553	309,209	325,095	321,505	320,162	355,624
Capital Expenditures	N/A	229,800	118,000	193,500	130,600	77,200	150,200	120,200

<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	6,132,416	6,757,094	7,806,797	8,945,374	7,859,131	8,962,505	9,746,439	11,391,482
Total Exports (including Re-exports)	3,183,948	3,580,441	4,153,853	4,649,141	6,366,793	8,129,069	7,123,789	7,140,691
Trade Balance	(2,948,468)	(3,176,652)	(3,652,945)	(4,296,232)	(1,492,338)	(833,436)	(2,622,650)	(4,250,791)
Apparent Domestic Market	6,156,626	6,473,854	7,006,324	7,951,544	6,988,560	8,392,934	8,988,097	9,758,674

All underlined figures are Industry Canada estimates.  
 See Sources and Technical Notes for more details.

\*Also referred to as Computer Equipment (aggregation of SIC 3361, 3362 & 3369)

**Table 6.3.1**  
**ICT Manufacturing: 1990 - 1997**  
**Electronic Computing and Peripheral Equipment Industry (SIC 3361)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	7,029	6,606	7,447	7,333	7,747	8,255	8,135	8,704
Administrative and Other Employees	5,130	4,405	4,448	3,650	6,002	5,244	4,204	4,248
Total Employment	12,159	11,011	11,895	10,983	13,749	13,499	12,339	12,952

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	182	148	149	142	137	148	168	161
Revenue (total shipments)	2,954,501	2,964,656	3,321,023	3,316,961	5,645,716	7,626,920	6,174,460	5,268,390
- Manufacturing Shipments	2,837,539	2,884,371	2,960,469	3,241,689	5,106,651	7,209,010	6,027,429	5,081,884
- Non Manufacturing Shipments	116,962	80,285	360,554	75,272	539,065	417,910	147,031	186,506
Operating Expenses	2,387,793	2,664,693	3,029,869	2,803,508	5,050,439	7,172,895	5,635,775	4,149,111
- Total Salaries and Wages	396,454	391,198	403,213	396,745	558,127	588,225	500,838	498,150
- Production Salaries & Wages	177,069	181,627	194,351	204,824	224,592	291,666	264,783	270,840
- Administrative and Other Salaries & Wages	219,385	209,571	208,862	191,921	333,535	296,559	236,055	227,310
- Cost of Fuel & Electricity	10,358	9,863	9,501	10,860	12,198	12,800	13,082	12,103
- Cost of Materials and Supplies Used	1,883,892	2,200,457	2,292,468	2,351,323	4,264,713	6,279,604	4,999,624	3,515,759
- Cost of Goods for Resale	97,089	63,175	324,687	44,580	215,401	292,266	122,231	123,099
EBITDA	566,708	299,963	291,154	513,453	595,277	454,025	538,685	1,119,279
Manufacturing Value Added	919,273	716,937	637,622	923,177	873,492	978,025	1,001,140	1,505,451
Total Value Added	939,146	734,047	673,489	953,869	1,197,156	1,103,669	1,025,940	1,568,858

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intramural R&D Expenditures	274,982	301,985	319,526	281,160	294,869	290,703	288,880	322,852
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	5,224,331	5,879,324	6,785,206	7,839,459	6,705,253	7,747,837	8,496,445	9,995,583
Total Exports (including Re-exports)	2,821,063	3,256,564	3,842,354	4,293,010	5,975,271	7,756,843	6,706,005	6,610,994
Trade Balance	(2,403,267)	(2,622,761)	(2,942,852)	(3,546,449)	(729,982)	9,006	(1,790,440)	(3,384,590)
Apparent Domestic Market	5,240,806	5,507,132	5,903,321	6,788,138	5,836,633	7,200,004	7,817,869	8,466,474

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 6.3.2**  
**ICT Manufacturing: 1990 - 1997**  
**Office, Store and Business Machine Industries, including Electronic (SIC 3368 = SIC 3362 & 3369)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	1,311	1,280	1,379	1,410	1,227	1,330	1,274	1,698
Administrative and Other Employees	2,726	3,389	3,461	3,034	876	868	1,029	967
Total Employment	4,037	4,669	4,840	4,444	2,103	2,198	2,303	2,665
<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	43	41	41	40	36	36	45	49
Revenue (total shipments)	784,958	821,601	775,650	745,497	431,305	387,707	374,028	476,599
- Manufacturing Shipments	370,619	412,831	392,910	413,623	389,571	350,488	338,018	425,999
- Non Manufacturing Shipments	414,339	408,770	382,740	331,874	41,734	37,219	36,010	50,600
Operating Expenses	570,997	625,954	601,773	624,537	354,184	316,680	315,260	392,553
- Total Salaries and Wages	141,743	174,011	192,260	214,013	80,202	82,662	87,719	99,166
- Production Salaries & Wages	34,742	36,636	39,386	42,314	38,924	44,301	42,558	52,011
- Administrative and Other Salaries & Wages	107,001	137,375	152,874	171,699	41,278	38,361	183,074	47,155
- Cost of Fuel & Electricity	2,662	2,848	3,027	3,120	2,696	2,904	2,821	2,928
- Cost of Materials and Supplies Used	234,655	267,653	240,284	259,213	257,870	218,040	183,074	274,280
- Cost of Goods for Resale	191,937	181,442	166,202	148,191	13,416	13,074	41,646	16,179
EBITDA	213,961	195,647	173,877	120,960	77,121	71,027	58,768	84,046
Manufacturing Value Added	130,309	124,541	150,470	156,484	127,110	126,327	126,381	148,121
Total Value Added	352,711	351,869	367,008	340,167	155,428	150,472	143,407	184,542
<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intramural R&D Expenditures	23,834	27,117	25,027	28,049	30,226	30,802	31,282	32,772
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	908,086	877,769	1,021,591	1,105,915	1,153,878	1,214,668	1,249,993	1,395,898
Total Exports (including Re-exports)	362,885	323,877	311,499	356,132	391,522	372,226	417,783	529,697
Trade Balance	(545,200)	(553,892)	(710,092)	(749,783)	(762,357)	(842,442)	(832,210)	(866,201)
Apparent Domestic Market	915,819	966,723	1,103,002	1,163,406	1,151,928	1,192,930	1,170,228	1,292,200

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 6.4**  
**ICT Manufacturing: 1990 - 1997**  
**Communications and Energy Wire and Cable Industry (SIC 3381)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	5,837	5,271	5,239	5,489	5,011	5,339	4,636	4,392
Administrative and Other Employees	2,822	2,611	2,014	1,872	1,857	1,768	1,482	1,280
Total Employment	8,659	7,882	7,253	7,361	6,868	7,107	6,118	5,672
<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	61	60	56	58	58	59	63	58
Revenue (total shipments)	2,012,377	1,634,221	1,535,591	1,557,419	1,855,292	2,045,616	1,832,186	1,908,277
- Manufacturing Shipments	1,954,778	1,567,519	1,472,777	1,512,455	1,803,968	2,014,470	1,790,304	1,857,716
- Non Manufacturing Shipments	57,599	66,702	62,814	44,964	51,324	31,146	41,882	50,561
Operating Expenses	1,521,382	1,339,445	1,273,182	1,287,745	1,436,344	1,619,343	1,512,706	1,509,436
- Total Salaries and Wages	329,503	311,302	293,519	298,950	288,214	295,945	263,129	247,996
- Production Salaries & Wages	197,085	186,601	190,799	200,307	185,782	199,995	180,194	175,152
- Administrative and Other Salaries & Wages	132,418	124,701	102,720	98,643	102,432	95,950	82,935	72,844
- Cost of Fuel & Electricity	26,051	21,739	23,442	24,390	25,485	25,795	25,209	20,765
- Cost of Materials and Supplies Used	1,106,814	939,422	897,611	919,215	1,070,269	1,262,329	1,180,972	1,195,198
- Cost of Goods for Resale	59,014	66,982	58,610	45,190	52,376	35,274	43,396	45,477
EBITDA	490,995	294,776	262,409	269,674	418,948	426,273	319,480	398,841
Manufacturing Value Added	827,249	570,704	531,742	583,921	739,285	714,679	581,085	645,274
Total Value Added	825,864	570,424	535,946	583,895	738,233	710,551	579,571	650,358
<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	497,000	430,000	411,000	453,000	488,000	473,000	493,000	563,000
Intramural R&D Expenditures	2,553	N/A	2,640	2,298	2,457	2,542	2,801	2,834
Capital Expenditures	N/A	97,300	68,700	60,600	24,700	20,700	47,400	50,100
<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	299,908	300,389	375,429	469,066	630,751	500,975	606,563	733,817
Total Exports (including Re-exports)	232,000	201,925	296,028	356,721	423,627	574,316	646,813	725,640
Trade Balance	(67,909)	(98,464)	(79,401)	(112,345)	(207,124)	73,341	40,250	(8,178)
Apparent Domestic Market	2,022,687	1,665,983	1,552,178	1,624,800	2,011,092	1,941,129	1,750,054	1,865,894

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 6.5**  
**ICT Manufacturing: 1990 - 1997**  
**Indicating, Recording, Controlling and Other Instruments**  
**and Related Products Industries (SIC 3911 & 3912)\***

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	10,913	11,490	11,733	11,026	10,645	12,002	12,409	12,068
Administrative and Other Employees	7,421	7,212	6,377	6,148	6,642	6,990	6,851	5,667
Total Employment	18,334	18,702	18,110	17,174	17,287	18,992	19,260	17,735

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	449	402	389	369	373	387	460	458
Revenue (total shipments)	2,336,970	2,474,404	2,434,356	2,544,130	2,798,699	3,102,500	3,353,902	3,399,922
- Manufacturing Shipments	1,846,243	1,885,652	1,928,812	1,971,173	2,163,242	2,396,486	2,635,289	2,758,796
- Non Manufacturing Shipments	490,727	588,752	505,544	572,957	635,457	706,014	718,613	641,126
Operating Expenses	1,787,006	1,785,587	1,790,367	1,836,517	1,990,098	2,215,721	2,278,528	2,293,068
- Total Salaries and Wages	607,889	640,269	633,754	614,277	633,891	698,818	723,018	685,220
- Production Salaries & Wages	292,383	313,719	333,594	316,964	317,434	362,013	382,269	369,097
- Administrative and Other Salaries & Wages	315,506	326,550	300,160	297,313	316,457	336,805	340,749	316,123
- Cost of Fuel & Electricity	18,573	16,903	17,469	16,826	17,116	18,095	17,122	16,562
- Cost of Materials and Supplies Used	825,709	808,626	847,830	843,953	942,351	1,089,475	1,119,171	1,198,380
- Cost of Goods for Resale	334,835	319,789	291,314	361,461	396,740	409,333	419,217	392,906
EBITDA	549,964	688,817	643,989	707,613	808,601	886,779	1,075,374	1,106,854
Manufacturing Value Added	989,024	1,047,120	1,069,301	1,123,566	1,209,149	1,359,810	1,499,147	1,532,735
Total Value Added	1,144,916	1,316,083	1,283,531	1,335,062	1,447,866	1,656,491	1,798,543	1,780,950

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)**	1,118,000	1,194,000	1,171,000	1,154,000	1,192,000	1,263,000	1,293,000	1,326,000
Intramural R&D Expenditures	64,862	63,373	67,235	69,687	80,482	82,163	95,540	99,053
Capital Expenditures**	N/A	111,300	51,700	64,300	91,500	105,500	90,200	114,000

<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	3,811,489	3,716,350	4,117,450	4,838,154	5,892,737	6,475,125	6,582,429	7,828,939
Total Exports (including Re-exports)	1,155,517	1,260,891	1,601,131	1,749,105	2,201,626	2,378,098	2,633,525	2,889,277
Trade Balance	(2,655,972)	(2,455,459)	(2,516,320)	(3,089,049)	(3,691,111)	(4,097,027)	(3,948,904)	(4,939,661)
Apparent Domestic Market	4,502,215	4,341,111	4,445,132	5,060,222	5,854,353	6,493,513	6,584,193	7,698,457

All underlined figures are Industry Canada estimates.  
 See Sources and Technical Notes for more details.

\*Also referred to as Instrumentation

\*\*Somewhat overstated due to the inclusion  
 of SICs 3913 and 3914.

**Table 6.5.1**  
**ICT Manufacturing: 1990 - 1997**  
**Indicating, Recording and Controlling Instruments Industry (SIC 3911)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	6,622	6,509	6,499	5,815	5,522	6,029	5,996	6,085
Administrative and Other Employees	4,830	4,334	3,985	3,863	3,907	4,110	4,057	3,430
Total Employment	11,452	10,843	10,484	9,678	9,429	10,139	10,053	9,515
<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	270	242	234	221	216	212	247	246
Revenue (total shipments)	1,317,861	1,286,427	1,282,708	1,313,436	1,405,389	1,505,970	1,626,251	1,594,277
- Manufacturing Shipments	1,075,575	1,025,508	1,053,380	1,031,833	1,116,696	1,207,790	1,307,494	1,307,294
- Non Manufacturing Shipments	242,286	260,919	229,328	281,603	288,693	298,180	318,757	286,983
Operating Expenses	985,573	929,975	921,418	875,295	931,724	1,053,158	1,055,888	1,014,289
- Total Salaries and Wages	364,802	353,271	356,688	337,470	342,786	381,421	387,241	369,017
- Production Salaries & Wages	174,721	178,574	186,881	168,790	159,481	183,292	186,528	183,687
- Administrative and Other Salaries & Wages	190,081	174,697	169,807	168,680	183,305	198,129	200,713	185,330
- Cost of Fuel & Electricity	10,128	7,861	8,186	7,621	7,619	7,685	7,418	7,350
- Cost of Materials and Supplies Used	466,442	435,372	436,907	393,747	432,687	496,838	498,303	508,974
- Cost of Goods for Resale	144,201	133,471	119,637	136,457	148,632	167,214	162,926	128,948
EBITDA	332,288	356,452	361,290	438,141	473,665	452,812	570,363	579,988
Manufacturing Value Added	595,495	575,978	611,791	641,260	670,358	707,346	794,926	780,200
Total Value Added	693,580	703,426	721,482	786,406	810,419	838,312	950,757	938,230
<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	575,000	561,000	580,000	613,000	631,000	640,000	686,000	697,000
Intramural R&D Expenditures	25,347	23,595	24,495	26,580	28,342	25,856	29,838	31,054
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	1,276,367	1,234,881	1,358,438	1,757,877	2,469,026	2,967,817	2,857,726	3,619,677
Total Exports (including Re-exports)	573,830	601,047	710,445	833,335	1,175,752	1,213,702	1,261,628	1,299,900
Trade Balance	(702,537)	(633,834)	(647,992)	(924,542)	(1,293,274)	(1,754,115)	(1,596,098)	(2,319,777)
Apparent Domestic Market	1,778,112	1,659,342	1,701,372	1,956,375	2,409,970	2,961,905	2,903,592	3,627,071

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.



**Table 6.5.2**  
**ICT Manufacturing: 1990 - 1997**  
**Other Instruments and Related Products Industry (SIC 3912)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Production Employees	4,291	4,981	5,234	5,211	5,123	5,973	6,413	5,983
Administrative and Other Employees	2,591	2,878	2,392	2,285	2,735	2,880	2,794	2,237
Total Employment	6,882	7,859	7,626	7,496	7,858	8,853	9,207	8,220
<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Number of Establishments (units)	179	160	155	148	157	175	213	212
Revenue (total shipments)	1,019,109	1,187,977	1,151,648	1,230,694	1,393,310	1,596,530	1,727,651	1,805,645
- Manufacturing Shipments	770,668	860,144	875,432	939,340	1,046,546	1,188,696	1,327,795	1,451,502
- Non Manufacturing Shipments	248,441	327,833	276,216	291,354	346,764	407,834	399,856	354,143
Operating Expenses	801,433	855,612	868,949	961,222	1,058,374	1,162,563	1,222,640	1,278,779
- Total Salaries and Wages	243,087	286,998	277,066	276,807	291,105	317,397	335,777	316,203
- Production Salaries & Wages	117,662	135,145	146,713	148,174	157,953	178,721	195,741	185,410
- Administrative and Other Salaries & Wages	125,425	151,853	130,353	128,633	133,152	138,676	140,036	130,793
- Cost of Fuel & Electricity	8,445	9,042	9,283	9,205	9,497	10,410	9,704	9,212
- Cost of Materials and Supplies Used	359,267	373,254	410,923	450,206	509,664	592,637	620,868	689,406
- Cost of Goods for Resale	190,634	186,318	171,677	225,004	248,108	242,119	256,291	263,958
EBITDA	217,676	332,365	282,699	269,472	334,936	433,967	505,011	526,866
Manufacturing Value Added	393,529	471,142	457,510	482,306	538,791	652,464	704,221	752,535
Total Value Added	451,336	612,657	562,049	548,656	637,447	818,179	847,786	842,720
<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intramural R&D Expenditures	39,515	39,778	42,740	43,107	52,140	56,307	65,702	67,999
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Trade Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Imports	2,535,122	2,481,469	2,759,013	3,080,277	3,423,711	3,507,308	3,724,703	4,209,262
Total Exports (including Re-exports)	581,687	659,845	890,685	915,770	1,025,875	1,164,395	1,371,897	1,589,378
Trade Balance	(1,953,435)	(1,821,624)	(1,868,328)	(2,164,507)	(2,397,836)	(2,342,912)	(2,352,806)	(2,619,884)
Apparent Domestic Market	2,724,103	2,681,768	2,743,760	3,103,847	3,444,382	3,531,608	3,680,601	4,071,386

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.



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**Section 7**  
**ICT Services Industry Tables:**  
**1990 - 1997**

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Table 7.0  
ICT Services: 1990 - 1997  
Total ICT Services

<i>Employment*</i>	1990	1991	1992	1993	1994	1995	1996	1997
Cable Television	9,827	9,780	9,127	9,225	9,432	10,500	9,483	9,321
Telecommunications Services	127,100	125,000	121,700	107,500	110,600	115,600	104,100	103,100
Wholesaling	<u>80,202</u>	<u>86,420</u>	<u>85,329</u>	<u>80,846</u>	<u>83,974</u>	<u>90,057</u>	<u>86,688</u>	<u>90,421</u>
Software and Computer Services	71,660	90,015	72,024	79,021	99,056	123,312	137,300	173,700
Office Furniture & Machinery Rental & Leasing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total ICT Services</b>	<b>288,789</b>	<b>311,215</b>	<b>288,180</b>	<b>276,592</b>	<b>303,062</b>	<b>339,469</b>	<b>337,571</b>	<b>376,542</b>

<i>Revenue (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997
Cable Television	1,643,534	1,792,022	1,948,435	2,155,085	2,337,623	2,534,880	2,681,549	2,787,380
Telecommunications Services	13,037,000	14,483,000	15,438,000	17,084,000	18,163,000	20,110,000	22,509,000	22,783,400
Wholesaling	19,746,406	18,714,676	19,610,676	21,986,922	24,732,055	27,325,474	30,936,341	<u>32,867,131</u>
Software and computer Services	5,700,821	6,032,411	6,377,000	8,081,500	9,895,700	10,916,000	11,829,000	<u>13,550,000</u>
Office Furniture & Machinery Rental & Leasing	249,000	257,000	256,000	255,000	268,000	266,000	<u>282,000</u>	<u>288,000</u>
<b>Total ICT Services</b>	<b>40,376,761</b>	<b>41,279,109</b>	<b>43,630,111</b>	<b>49,562,507</b>	<b>55,396,378</b>	<b>61,152,354</b>	<b>68,237,890</b>	<b>72,275,911</b>

<i>GDP (1992 constant dollars) (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997
Cable Television	1,043,000	1,141,000	1,128,000	1,085,000	1,084,000	1,006,000	1,016,000	1,027,000
Telecommunications Services	11,604,000	12,225,000	12,592,000	12,453,000	12,945,000	13,317,000	14,030,000	15,223,000
Wholesaling	N/A	N/A	N/A	<u>4,000,000</u>	<u>5,116,000</u>	<u>6,447,000</u>	<u>7,221,000</u>	<u>9,398,000</u>
Software and computer Services	3,160,000	3,396,000	3,425,000	4,651,000	5,569,000	6,378,000	6,970,000	7,923,000
Office Furniture & Machinery Rental & Leasing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total ICT Services</b>	<b>15,807,000</b>	<b>16,762,000</b>	<b>17,145,000</b>	<b>22,189,000</b>	<b>24,714,000</b>	<b>27,148,000</b>	<b>29,237,000</b>	<b>33,571,000</b>

<i>Intramural R&amp;D (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997
Cable Television & Telecom. Services**	138,875	147,113	172,975	252,604	244,077	184,719	157,853	159,227
Wholesaling	62,041	84,273	104,337	152,278	203,812	256,314	294,710	317,116
Software and computer Services	229,145	231,379	280,239	318,089	430,047	464,121	519,316	587,333
Office Furniture & Machinery Rental & Leasing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Total ICT Services</b>	<b>430,061</b>	<b>462,765</b>	<b>557,551</b>	<b>722,971</b>	<b>877,936</b>	<b>905,154</b>	<b>971,879</b>	<b>1,063,676</b>

\* Different methodologies were used in the collection of the employment data. See Sources and Technical notes for further details.

\*\* Cable and telecommunications services are combined to maintain confidentiality among respondents.

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 7.1**  
**ICT Services: 1990 - 1997**  
**Communications Services**  
**Cable Television Industry (SIC 4814)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Employees	9,827	9,780	9,127	9,225	9,432	10,500	9,483	9,321

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Total Revenue	1,643,534	1,792,022	1,948,435	2,155,085	2,337,623	2,534,880	2,681,549	2,787,380
- Basic	1,358,898	1,480,027	1,590,398	1,684,014	1,766,831	1,848,539	1,906,063	1,967,920
- Discretionary	284,636	311,995	358,037	471,071	570,792	686,340	775,486	819,460
Total Expenses	1,402,073	1,532,552	1,602,946	1,902,299	2,007,391	2,354,578	2,727,712	2,956,881
- Salaries and Benefits	347,104	356,206	371,187	386,073	391,750	411,294	412,502	376,437
- Interest	126,886	161,364	137,363	281,554	289,540	436,846	669,746	826,304
- Depreciation	220,054	250,619	260,948	291,890	304,108	332,787	370,457	412,613
- Other Expenses	708,029	764,363	833,448	942,782	1,021,993	1,173,651	1,275,007	1,341,527
Income (Loss) before Taxes and Adjustments	241,461	259,470	345,489	252,786	330,232	180,302	(46,163)	(169,501)
Adjustments-Income (Expenses)	9,554	7,429	8,438	11,896	55,143	254,133	217,224	340,251
Income (Loss) before Income Taxes	251,015	266,899	353,927	264,682	385,375	434,435	171,061	170,750
Net Income (Loss) after Income Taxes	181,209	188,735	270,095	170,047	260,104	326,150	149,075	175,283

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	1,043,000	1,141,000	1,128,000	1,085,000	1,084,000	1,006,000	1,016,000	1,027,000
Intramural R&D Expenditures*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Capital Expenditures	517,943	411,394	364,146	393,406	504,329	646,210	874,207	1,090,760

\* Combined with Telecom. Services, see table 7.0

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

Table 7.2  
ICT Services: 1990 - 1997  
Communications Services  
Telecommunications Services (SIC 482 & 483)

<i>Employment*</i>	1990	1991	1992	1993	1994	1995	1996	1997
Total Employment	127,100	125,000	121,700	107,500	110,600	115,600	104,100	103,100

<i>Financial Data (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997**
Operating Revenue	13,037,000	14,483,000	15,438,000	17,084,000	18,163,000	20,110,000	22,509,000	22,783,400
Operating Expenses	9,919,000	10,911,000	11,666,000	13,546,000	14,570,000	16,843,000	18,514,000	18,444,700
Operating Income (Loss)	3,177,000	3,571,000	3,771,000	3,537,000	3,593,000	3,267,000	3,995,000	4,338,700
Net Profit (Loss)	1,389,000	1,569,000	1,675,000	1,002,000	1,267,000	858,000	1,445,000	(2,384,400)
Total Assets	33,165,000	35,816,000	38,807,000	41,266,000	42,238,000	43,956,000	45,014,000	43,718,300
Total Liabilities	18,695,000	20,533,000	22,460,000	24,537,000	25,416,000	27,571,000	28,397,000	29,778,500
Total Equity	14,469,000	15,283,000	16,346,000	16,728,000	16,822,000	16,384,000	16,617,000	13,939,800
Profit Margin (%)	24.37	24.66	24.43	20.70	19.78	16.25	17.75	19.04

<i>Economic Data (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997
GDP (1992 constant dollars)	11,604,000	12,225,000	12,592,000	12,453,000	12,945,000	13,317,000	14,030,000	15,223,000
Intramural R&D Expenditures***	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Capital Expenditures	N/A	4,972,100	5,351,400	4,715,300	4,390,700	4,110,900	4,791,100	6,145,300

<i>Trade Data (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997
Payments	1,210,000	1,183,000	1,207,000	1,349,000	1,550,000	1,726,000	1,843,000	1,815,000
Receipts	1,220,000	1,291,000	1,247,000	1,417,000	1,618,000	1,707,000	1,956,000	1,917,000
Trade Balance	10,000	108,000	40,000	68,000	68,000	(19,000)	113,000	102,000

<i>Other Statistics</i>	1990	1991	1992	1993	1994	1995	1996	1997
Number of access lines in service at year end	15,295,819	15,815,450	16,246,589	16,716,802	17,250,407	17,567,397	17,974,181	18,636,924
Number of cellular subscribers at year end	583,766	775,831	1,026,611	1,332,982	1,865,779	2,589,780	3,420,318	4,207,019

\* Survey of Employment, Payrolls, and Hours, Statistics Canada.

\*\* The 1997 financial data are not strictly comparable to the data for previous years due to methodological differences.

\*\*\* Combined with Cable, see table 7.0

Note: Operating revenues differ from those found in Industry Canada, "The Canadian Telecommunications Service Industry: An Overview, 1997-1998", which were estimated by Industry Canada. The difference can be attributed to the different methodologies used to arrive at an estimate for industry revenues.

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 7.2.1**  
**ICT Services**  
**Communications Services**  
**Telecommunications Services 1997**

<i>Financial Data (\$'000)</i>	<i>Wired Telecom. Carriers</i>	<i>Wireless Telecom. Carriers (except satellite)</i>	<i>Telecom. Resellers</i>	<i>Satellite Telecom.</i>	<i>Other Telecom.</i>	<i>Total</i>
Operating Revenue	18,560,200	3,165,700	598,300	408,800	50,400	22,783,400
Operating Expenses	14,542,300	2,797,400	658,300	389,100	57,600	18,444,700
Operating Income/Loss	4,017,900	368,300	(60,000)	19,700	(7,200)	4,338,700
Net Profit	(1,731,300)	(431,300)	(136,900)	(113,600)	28,700	(2,384,400)
Total Assets	35,590,800	6,454,300	353,800	1,258,400	61,000	43,718,300
Total Liabilities	22,309,900	6,233,200	363,400	838,300	33,700	29,778,500
Total Equity	13,280,900	221,100	(9,600)	420,100	27,300	13,939,800
Profit Margin (%)	21.6	11.6	-10.0	4.8	-14.3	19.0

**Wired Telecommunications Carriers:**

Establishments engaged in operating and maintaining switching and transmission facilities to provide direct communications via land lines, microwave or a combination of land lines and satellite link-ups.

**Wireless Telecommunications Carriers (except Satellite):**

Establishments engaged in operating and maintaining switching and transmission facilities to provide direct communications via the airwaves. Establishments that provide cellular phone services, paging services and personal communication services are included.

**Telecommunications Resellers:**

Establishments engaged in purchasing access and network capacity from owners and operators of telecommunications networks and reselling telecommunications services to businesses, institutions or households. These establishments do not operate or maintain a full network.

**Satellite Telecommunications:**

Establishments primarily engaged in operating and maintaining satellite telecommunications facilities for the transmission of voice, data, text, sound and full motion picture videos. Resellers of satellite communications are also included.

**Other Telecommunications:**

Establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems.

**Table 7.3**  
**ICT Services: 1990 - 1997**  
**ICT Wholesaling (aggregation of SIC 5743, 5744 & 5791)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993*</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Employees	80,202	86,420	85,329	80,846	83,974	90,057	86,688	90,421

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993*</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Operating Revenue	19,746,406	18,714,676	19,610,676	21,986,922	24,732,055	27,325,474	30,936,341	32,867,131
- Sales of Goods Purchased for Resale on Own Account	N/A	N/A	N/A	18,699,752	20,141,047	22,047,548	28,788,916	N/A
- Commission Revenue	N/A	N/A	N/A	39,778	129,388	236,038	120,262	N/A
- Sales of Goods of Own Manufacture	N/A	N/A	N/A	545,089	875,561	1,589,882	743,490	N/A
- Other Operating Revenue	N/A	N/A	N/A	2,702,303	3,586,059	3,452,006	1,283,673	N/A
Total Operating Expenses	N/A	N/A	N/A	21,708,924	24,208,501	26,273,916	30,500,465	N/A
- Salaries, Wages and Benefits	N/A	N/A	N/A	3,449,303	3,985,515	3,990,006	4,285,644	N/A
- Cost of Goods Sold	N/A	N/A	N/A	15,309,710	17,398,452	19,118,168	23,116,455	N/A
- Other Operating Expenses**	N/A	N/A	N/A	2,949,911	2,824,534	3,165,742	3,098,366	N/A
EBITDA	N/A	N/A	N/A	277,998	523,554	1,051,558	435,876	N/A

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	N/A	N/A	N/A	4,000,000	5,116,000	6,447,000	7,221,000	9,398,000
Intramural R&D Expenditures	62,041	84,273	104,337	152,278	203,812	256,314	294,710	317,116
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Survey methodology changed in 1993, data are not strictly comparable to the data for previous years.

\*\* Excluding Depreciation and Interest.

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.



**Table 7.3.1**  
**ICT Services: 1990 - 1997**  
**ICT Wholesaling**  
**Computers, Packaged Software and Other Electronic Machinery, Wholesale (SIC 5743 & 5744)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993*</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Employees	<u>51,018</u>	<u>56,478</u>	<u>58,687</u>	<u>53,918</u>	<u>55,006</u>	<u>61,778</u>	<u>68,848</u>	<u>72,186</u>

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993*</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Operating Revenue	14,826,074	13,799,019	14,959,687	15,216,247	18,759,323	20,654,511	25,644,850	<u>27,440,000</u>
- Sales of Goods Purchased for Resale on Own Account	N/A	N/A	N/A	13,128,643	15,384,274	16,798,820	23,693,989	N/A
- Commission Revenue	N/A	N/A	N/A	36,815	118,468	210,771	115,866	N/A
- Sales of Goods of Own Manufacture	N/A	N/A	N/A	308,267	489,162	1,134,655	652,094	N/A
- Other Operating Revenue	N/A	N/A	N/A	1,742,522	2,767,419	2,510,265	1,182,901	N/A
Total Operating Expenses	N/A	N/A	N/A	14,999,738	18,531,417	19,880,081	25,156,951	N/A
- Salaries, Wages and Benefits	N/A	N/A	N/A	2,271,998	2,903,135	2,863,200	3,535,387	N/A
- Cost of Goods Sold	N/A	N/A	N/A	10,998,549	13,613,885	14,893,889	19,236,589	N/A
- Other Operating Expenses**	N/A	N/A	N/A	1,729,191	2,014,397	2,122,992	2,384,975	N/A
EBITDA	N/A	N/A	N/A	216,509	227,906	774,430	487,899	N/A

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	N/A	N/A	N/A	<u>2,837,000</u>	<u>3,855,000</u>	<u>5,094,000</u>	<u>6,531,000</u>	<u>8,661,000</u>
Intramural R&D Expenditures	60,838	82,949	102,979	151,170	202,188	255,259	293,695	316,028
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Survey methodology changed in 1993, data are not strictly comparable to the data for previous years.

\*\* Excluding Depreciation and Interest.

All underlined figures are Industry Canada estimates.  
 See Sources and Technical Notes for more details.

**Table 7.3.2**  
**ICT Services: 1990 - 1997**  
**ICT Wholesaling**  
**Office and Store Machinery, Equipment and Supplies, Wholesale (SIC 5791)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993*</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Employees	29,184	29,942	26,642	26,928	28,968	28,279	17,840	18,235

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993*</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Operating Revenue	4,920,332	4,915,657	4,650,989	6,770,675	5,972,732	6,670,963	5,291,491	5,427,131
- Sales of Goods Purchased for Resale on Own Account	N/A	N/A	N/A	5,571,109	4,756,773	5,248,728	5,094,927	N/A
- Commission Revenue	N/A	N/A	N/A	2,963	10,920	25,267	4,396	N/A
- Sales of Goods of Own Manufacture	N/A	N/A	N/A	236,822	386,399	455,227	91,396	N/A
- Other Operating Revenue	N/A	N/A	N/A	959,781	818,640	941,741	100,772	N/A
Total Operating Expenses	N/A	N/A	N/A	6,709,186	5,677,084	6,393,835	5,343,514	N/A
- Salaries, Wages and Benefits	N/A	N/A	N/A	1,177,305	1,082,380	1,126,806	750,257	N/A
- Cost of Goods Sold	N/A	N/A	N/A	4,311,161	3,784,567	4,224,279	3,879,866	N/A
- Other Operating Expenses**	N/A	N/A	N/A	1,220,720	810,137	1,042,750	713,391	N/A
EBITDA	N/A	N/A	N/A	61,489	295,648	277,128	(52,023)	N/A

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	N/A	N/A	N/A	1,163,000	1,261,000	1,353,000	690,000	737,000
Intramural R&D Expenditures	1,203	1,324	1,358	1,108	1,624	1,055	1,015	1,088
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

\*Survey methodology changed in 1993, data are not strictly comparable to the data for previous years.

\*\* Excluding Depreciation and Interest.

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 7.4**  
**ICT Services: 1990 - 1997**  
**Software and Computer Services (SIC 772)\***

<i>Employment**</i>	1990	1991	1992	1993	1994	1995	1996	1997
Total Employment	71,660	90,015	72,024	79,021	99,056	123,312	137,300	173,700
Employees	52,060	63,015	53,824	53,821	75,256	91,112	96,600	116,600
Self-Employed	19,600	27,000	18,200	25,200	23,800	32,200	40,700	57,100
<i>Financial Data (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997
Number of Firms	10,924	11,449	12,001	13,203	13,611	15,307	16,216	N/A
Total Revenue	5,785,656	6,115,850	6,453,000	8,194,200	10,038,100	11,044,000	12,011,000	<u>13,739,000</u>
- Operating Revenue	5,700,821	6,032,411	6,377,000	8,081,500	9,895,700	10,916,000	11,829,000	<u>13,550,000</u>
- Software Products Development	888,555	940,043	1,070,400	1,575,000	1,833,900	1,887,000	2,030,000	<u>2,330,000</u>
- Professional Services	2,126,242	2,315,545	2,330,000	3,191,700	4,316,900	4,049,000	5,444,000	<u>6,146,000</u>
- Data Processing Services	1,243,883	1,323,282	1,410,700	1,627,000	1,602,000	2,247,000	1,389,000	<u>1,902,000</u>
- Equipment Sales/Rentals/Repairs	1,150,947	1,172,739	1,177,200	1,306,900	1,455,500	1,974,000	2,230,000	<u>2,299,000</u>
- Other Operating Revenue	291,194	280,802	388,700	380,900	687,400	759,000	736,000	<u>873,000</u>
- Non-Operating Revenue	84,835	83,439	76,000	112,700	142,400	128,000	182,000	<u>189,000</u>
Total Operating Expenses	5,528,885	5,881,431	6,299,000	7,821,000	9,510,000	10,587,000	10,746,000	N/A
- Salaries, wages and benefits**	2,399,086	2,522,240	2,641,000	3,424,000	3,637,000	4,104,000	4,411,000	N/A
- Other Operating Expenses	3,129,799	3,359,191	3,658,000	4,397,000	5,873,000	6,483,000	6,335,000	N/A
Operating Profit	171,936	150,980	78,000	260,500	385,700	329,000	1,083,000	N/A
<i>Economic Data (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997
GDP (1992 constant dollars)	3,160,000	3,396,000	3,425,000	4,651,000	5,569,000	6,378,000	6,970,000	7,923,000
Intramural R&D Expenditures	229,145	231,379	280,239	318,089	430,047	464,121	519,316	587,333
Capital Expenditures	N/A	N/A	N/A	N/A	1,051,100	936,700	1,217,500	899,000
<i>Trade Data*** (\$'000)</i>	1990	1991	1992	1993	1994	1995	1996	1997
Payments	306,000	404,000	421,000	382,000	526,000	508,000	577,000	713,000
Receipts	506,000	586,000	775,000	995,000	1,072,000	1,307,000	1,575,000	1,532,000
Trade Balance	200,000	182,000	354,000	613,000	546,000	799,000	998,000	819,000

\*\* Employment and salaries data are from different sources.

\*\*\* Do not include computer software royalties and licenses.

\* Also referred to as Computer Related Services.

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

**Table 7.5**  
**ICT Services: 1990 - 1997**  
**Office Furniture and Machinery Rental and Leasing (SIC 9913)**

<i>Employment</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Employees	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<i>Financial Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Total Revenue (all firms)	249,000	257,000	256,000	255,000	268,000	266,000	282,000	288,000

<b>Firms with Revenue Greater than \$250,000</b>								
Total Revenue	N/A	N/A	N/A	N/A	263,579	259,023	N/A	N/A
- Operating Revenue	N/A	N/A	N/A	N/A	261,186	250,730	N/A	N/A
- Rental and Lease Revenues	N/A	N/A	N/A	N/A	121,889	123,240	N/A	N/A
- Repair Revenues	N/A	N/A	N/A	N/A	34,099	36,859	N/A	N/A
- Sales of Merchandise	N/A	N/A	N/A	N/A	103,017	88,531	N/A	N/A
- Other Operating Revenues	N/A	N/A	N/A	N/A	2,181	2,100	N/A	N/A
- Non-Operating Revenue	N/A	N/A	N/A	N/A	2,394	8,293	N/A	N/A
Total Expenses	N/A	N/A	N/A	N/A	237,617	231,444	N/A	N/A
- Cost of Goods Sold	N/A	N/A	N/A	N/A	50,107	42,191	N/A	N/A
- Wages, Salary & Benefits	N/A	N/A	N/A	N/A	73,684	69,456	N/A	N/A
- Depreciation	N/A	N/A	N/A	N/A	32,181	31,364	N/A	N/A
- Interest	N/A	N/A	N/A	N/A	3,736	3,223	N/A	N/A
- Other Expenses	N/A	N/A	N/A	N/A	77,909	85,210	N/A	N/A
Profit	N/A	N/A	N/A	N/A	25,962	27,579	N/A	N/A

<i>Economic Data (\$'000)</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
GDP (1992 constant dollars)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Intramural R&D Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Capital Expenditures	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

All underlined figures are Industry Canada estimates.  
See Sources and Technical Notes for more details.

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# Statistical Appendices

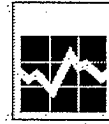
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# **Defining the Information and Communication Technology Sector**

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**Defining the Information and Communication Technology Sector**

**Adoption of the OECD definition  
and introducing  
the North American Industry Classification System**

**Prepared for Industry Canada  
by**

**Daniel April  
Statistics Canada  
March 1999**

**Contract U4525-7-0009  
Wired and Wireless Telecommunications Statistical Infrastructure and Economic Analysis  
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## Defining the Information and Communication Technology (ICT) Sector

### Introduction

Two recent events, the adoption by the OECD of a definition for the ICT sector and the adoption by the NAFTA countries of the new North American Industry Classification System (NAICS), will have a considerable impact on the statistics produced to describe this important sector of the economy. The purpose of this paper is to:

- describe the context in which the definition of this sector has evolved;
- present the latest international definition and the equivalent definitions in terms of national standards; and
- present the plans for implementation of NAICS in Canada, in particular for those surveys of interest for tracking the ICT sector.

### The context in which the definition of the ICT sector has evolved

For a number of years, policy makers and analysts in Canada and around the world have expressed an interest in understanding and measuring the importance of the so-called "ICT sector". In the absence of a standard definition for the ICT sector, it has been very difficult to monitor its development, to make international comparisons and to develop policies.

In an effort to stimulate discussions on this issue, Statistics Canada and Industry Canada published a working document entitled "Measuring the Global Information Infrastructure for a Global Information Society" in June 1996. The main thrust of this working document was to propose a definition for the ICT sector in terms of the existing Canadian Standard Industrial Classification (CSIC) and to present a statistical profile of the Canadian ICT sector. The proposed definition was based on the notion that the ICT sector should include industries "primarily engaged in producing goods or services, or supplying technologies, used to process, transmit or receive information". After some deliberation, the proposed Canadian industries were as follows:

Industry groupings	SIC	Industry titles
<i>Service industries</i>	4810	Broadcasting Industries
	4820	Telecommunication Carriers Industry
	4830	Other Telecommunication Industries
	7720	Computer and Related Services



<b>Goods Industries</b>	3340	Record Player, Radio and Television Receiver Industry
	3350	Communication and Other Electronic Equipment Industry
	3360	Office, Store and Business Machine Industry
	3911	Indicating, Recording and Controlling Instruments Industry
	3912	Other Instruments and Related Products Industry

For the first time, a standard list of industries was adopted to describe the ICT sector and Industry Canada prepared and published a statistical review of the ICT sector based on this definition.

Discussions continued at the OECD, and the Committee for Information, Computer and Communications Policy (ICCP) established an Ad Hoc Statistical Panel to address the issue of indicators for the information society. More specifically, the Panel was to develop definitions which would support the development of these indicators. The task set at the first meeting of the Panel in 1997 was agreement on a definition of the ICT sector, based on a list of industries drawn from the third revision of the International Standard Industrial Classification (ISIC, rev.3). This objective was realized at the June 1998 meeting of the Panel and the resulting definition was released by the OECD in September, 1998.

### **The OECD definition**

The panel has agreed to the following definition:

#### **Industry groupings ISIC Industry titles**

<b>Manufacturing</b>	3000	Manufacture of office, accounting and computing machinery
	3130	Manufacture of insulated wire and cable
	3210	Manufacture of electronic valves and tubes and other electronic components
	3220	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
	3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods
	3312	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment
	3313	Manufacture of industrial process control equipment
<b>Goods related services</b>	5150	Wholesale of machinery, equipment and supplies
	7123	Renting of office machinery and equipment (including computers)

<i>Intangible services</i>	6420	Telecommunications
	7200	Computer and Related Activities

Although the OECD definition of the ICT sector differs somewhat from the definition that was used in Canada, the underlying principle is very similar. In this case, the products of a candidate *manufacturing* industry must:

- be intended to fulfill the function of information processing and communication, including transmission and display; or
- use electronic processing to detect, measure and/or record physical phenomena, or to control a physical process.

Components primarily intended for use in such products are also included. The products of a candidate *service* industry must:

- be intended to enable the function of information processing and communication by electronic means; and,
- the service provided must go beyond simply the supply of goods.

More detail on this definition can be found in the OECD document DSTI/ICCP/AH/M(98)1. The main differences between the OECD definition and the definition previously used in Canada are:

- The exclusion of radio and television broadcasting;
- The inclusion of manufacturers of insulated wire and cable;
- The inclusion of wholesalers and lessors of ICT equipment.

### **Defining the ICT Sector in terms of national standards**

The purpose of the OECD definition is to provide a framework to compile statistics that are comparable from country to country. Given that ISIC is not used in North America<sup>1</sup>, it is necessary to develop a list of industries in terms of the national standard that is as close as possible in scope to the ISIC based definition.

The industry standard currently in use in Canada is the 1980 Canadian Standard Industrial Classification (1980 SIC). Existing Canadian ICT statistics are produced on the basis of this standard. However, the 1980 SIC will be gradually replaced by the new North American Industry Classification System (NAICS)<sup>2</sup>.

<sup>1</sup>Most developed countries use a national classification to describe their economy. ISIC provides a bridge between various national classifications.

<sup>2</sup>The Canadian version of NAICS was published in March 1998 (cat. 12-501 XPE). It is known as NAICS Canada 1997.

During this transition period, there will be a need for definitions to be expressed in terms of both national standards. These definitions are outlined below:

*1980 SIC based definition*

<i>Manufacturing</i>	3341	Record Players, Radio & TV Receivers Ind
	3351	Telecommunication Equipment Industry
	3352	Electronic Parts and Components Industry
	3359	Other Electronic Equipment Industries
	3361	Electronic Computers & Peripheral Equip.
	3362	Electronic Office, Store & Business Machine Industry
	3369	Other Office, Store & Business Machine Industries
	3381	Communications & Energy Wire & Cable Ind
	3911	Indicating & Recording Instruments Ind.
	3912	Other Instruments and Related Products
<i>Goods related services</i>	5743	Elec Mach, Equip & Supp (exc Comp), Whlse
	5744	Computer & Related Mach, Equip & Software, Whlse
	5791	Office and Store Machinery, Equip. and Supplies, Whlse
	9913	Office Furniture & Mach Rental & Leasing
<i>Intangible services</i>	4814	Cable Television Industry
	4821	Telecommunication Carriers Industry
	4839	Other Telecommunication Industries
	7721	Computer Services
	7722	Computer Equipment Maintenance & Repair

The main differences between this definition and the previously used 1980 SIC based definition are:

- The inclusion of SIC categories **3381** - Communications & Energy Wire & Cable Ind, **5743** - Elec Mach, Equip & Supp (exc Comp), Whlse, **5744** - Computer & Related Mach, Equip & Software, Whlse, **5791** - Office and Store Machinery, Equip. and Supplies, Whlse, and **9913** - Office Furniture & Mach Rental & Leasing.
- The exclusion of SIC categories **4811** - Radio Broadcasting, **4812** - Television Broadcasting and **4813** - Combined Radio and Television Broadcasting.

*NAICS based definition*

<b>Manufacturing</b>	<u>33331</u> <u>Commercial and Service Industry Machinery Manufacturing</u> <sup>1</sup>
	33411 Computer and Peripheral Equipment Manufacturing
	33421 Telephone Apparatus Manufacturing
	33422 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
	33431 Audio and Video Equipment Manufacturing
	33441 Semiconductor and Other Electronic Component Manufacturing
	<u>33451</u> <u>Navigational, Measuring, Medical and Controlling Devices Manufacturing</u>
33592 Communication and Energy Wire and Cable Manufacturing	
<b>Goods Related Services</b>	41731 Computer, Computer Peripheral and Pre-Packaged Software Wholesaler-Distributors
	41732 Electronic Components, Navigational and Communications Equipment and Supplies Wholesaler-Distributors
	41791 Office and Store Machinery and Equipment Wholesaler-Distributors
	53242 Office Machinery and Equipment Rental and Leasing
<b>Intangible Services</b>	51121 Software Publishers
	51322 Cable and Other Program Distribution
	51331 Wired Telecommunications Carriers
	51332 Wireless Telecommunications Carriers (except Satellite)
	51333 Telecommunications Resellers
	51334 Satellite Telecommunications
	51339 Other Telecommunications
	51419 Other Information Services
	51421 Data Processing Services
	54151 Computer Systems Design and Related Services
<u>81121</u> <u>Electronic and Precision Equipment Repair and Maintenance</u>	

<sup>1</sup> Contain a significant non-ICT components.

The above definitions were developed using the following process:

- C First a concordance between ISIC classes and the national standards were developed on the basis of Statistics Canada Standards Division's activity description data base;
- C Second, the "immaterial" links between the national classifications and those particular ISIC classes were eliminated. This exercise is somewhat subjective, but necessary, given the relatively large number of partial links between the classification systems. The final result is a list that does not include parts of industries, so that it is possible to compile statistics on the basis of the proposed definition.

*NAICS implementation plan*

The North American Industry Classification System will be gradually introduced into Statistics Canada's survey program. The following table outlines the plans, as they currently stand, for the surveys most relevant to those interested in the ICT sector.

Survey	Reference period	Level of detail	Availability
Annuals			
Annual Survey of Manufacturers	1997	6 digit	2 <sup>nd</sup> quarter 2000
Wholesaling and Retailing in Canada (Annuals)	1997	3 digit	2 <sup>nd</sup> quarter 2000
Annual Survey of Telecommunications Service Providers	1997	6 digit	2 <sup>nd</sup> quarter 1999
Cable Television and Other Program Distribution	1997	6 digit	1 <sup>st</sup> quarter 1999
Annual Survey of Computer Services	1997	5 digit	2 <sup>nd</sup> quarter 2000
Annual Survey of Consumer Goods Rental	1997	5 digit	2 <sup>nd</sup> quarter 2000
Annual Estimates of Employment, Earnings and Hours	2001	4 digit	2 <sup>nd</sup> quarter 2002
Industrial Research and Development - Intentions	2000	6 digit	4 <sup>th</sup> quarter 2000
Capital expenditures	1997	4 or 5 digits	3 <sup>rd</sup> quarter 1999
National Input-Output Accounts	1992-1997	unknown	2 <sup>nd</sup> quarter 2000
Provincial GDP by industry	1992-1999	unknown	4 <sup>th</sup> quarter 2001
Provincial Input-Output Accounts	1997	unknown	3 <sup>rd</sup> quarter 2000
Sub-Annuals			
Gross Domestic Product by Industry (Monthly)	01/1992 to 09/2000	3 digit	2 <sup>nd</sup> quarter 2000
Labour force information	Jan 1999	4 digit	1 <sup>st</sup> quarter 1999
Quarterly Financial Statistics for Enterprises	1 <sup>st</sup> Q 1999	3 or 4 digit	2 <sup>nd</sup> quarter 1999
Employment, Earnings and Hours	Jan 2001	3 digit	1 <sup>st</sup> quarter 2001
Quarterly Survey of Telecommunications Service Providers	1 <sup>st</sup> Q 1999	51331 51332	3 <sup>rd</sup> quarter 1999

### *The impact of introducing NAICS*

The introduction of a new classification system is typically accompanied by a break in time series. The transition from the 1980 CSIC to NAICS is no exception. In the case of ICT industries, however, the coverage at the aggregate level (i.e. ICT sector) is similar, whether expressed in terms of the 1980 SIC or NAICS. The new classification has the advantage of recognizing new industries<sup>1</sup>, especially in computer services and telecommunications industries, two fast growth areas. As well, with a few exceptions, it is possible to define the ICT sector in terms of 4-digit NAICS, thereby reducing the negative impact of different programs producing statistics at different levels of the classification.

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<sup>1</sup> For example wireless telecommunications and software publishing, two industries that did not exist at the time the 1980 SIC was designed.

Annex

Concordance between ISIC rev.3

and

the 1980 Canadian Standard Industrial Classification

and

the North American Industry Classification System



**ICT SECTOR - CONCORDANCE FOR REPORTING PURPOSES - 1980 SIC**

<b>ISIC3</b>	<b>ISIC title</b>	<b>SIC80</b>	<b>Canadian 1980 SIC title</b>
3000	Manufacture of office, accounting and computing machinery	3361	Electronic Computers & Peripheral Equip.
		3362	Electronic Office, Store & Business Machine Industry
		3369	Other Office, Store & Business Machine Industries
3130	Manufacture of insulated wire and cable	3381	Communications & Energy Wire & Cable Ind.
3210	Manufacture of electronic valves ant tubes and other electronic components	3352	Electronic Parts and Components Industry
3220	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	3351	Telecommunication Equipment Industry
		3359	Other Electronic Equipment Industries
3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods	3341	Record Players, Radio & TV Receivers Ind
3312	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment	3911	Indicating & Recording Instruments Ind.
3313	Manufacture of industrial process control equipment	3912	Other Instruments and Related Products
5150	Wholesale of machinery, equipment and supplies	5743	Elec Mach, Equip & Supp (exc Comp), Whlse
		5744	Computer & Related Mach, Equip & Software, Whlse
		5791	Office and Store Machinery, Equip. and Supplies, Whlse
6420	Telecommunications	4814	Cable Television Industry
		4821	Telecommunication Carriers Industry
		4839	Other Telecommunication Industries
		9913	Office Furniture & Mach Rental & Leasing
7123	Renting of office machinery and equipment (including computers)	9913	Office Furniture & Mach Rental & Leasing
7200	Computer and related activities	7721	Computer Services
		7722	Computer Equipment Maintenance & Repair

**ICT SECTOR - CONCORDANCE FOR REPORTING PURPOSES - ISIC to NAICS**

<b>ISIC3</b>	<b>ISIC title</b>	<b>NAICS</b>	<b>NAICS titles</b>
3000	Manufacture of office, accounting and computing machinery	33331	Commercial and Service Industry Machinery Manufacturing
		33411	Computer and Peripheral Equipment Manufacturing
3130	Manufacture of insulated wire and cable	33592	Communication and Energy Wire and Cable Industry
3210	Manufacture of electronic valves and tubes and other electronic components	33441	Semiconductor and Other Electronic Component Industry
3220	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	33421	Telephone Apparatus Manufacturing
		33422	Radio and TV Broadcasting and Wireless Communication Equipment Manufacturing
3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods	33431	Audio and Video Equipment Manufacturing
3312	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment	33451	Navigational, Measuring and Control Instruments Manufacturing
3313	Manufacture of industrial process control equipment		
5150	Wholesale of machinery, equipment and supplies	41731	Computer, Computer Peripheral and Pre-Packaged Software Wholesaler-Distributors
		41732	Electronic Components, Navigational and Communications Equipment and Supplies, Wholesaler-Distributors
		41791	Office and Store Machinery & Equipment, Wholesaler-Distributors
6420	Telecommunications	51322	Cable and Other Program Distribution
		51331	Wired Telecommunications Carriers
		51332	Wireless Telecommunications Carriers (except Satellite)
		51333	Telecommunications Resellers
		51334	Satellite Telecommunications
		51339	Other Telecommunications
7123	Renting of office machinery and equipment (including computers)	53242	Office Machinery and Equipment Rental & Leasing
7200	Computer and related activities	51121	Software Publishers
		51419	Other Information Services
		51421	Data Processing
		54151	Computer Systems Design and Related Services
		81121	Electronic and Precision Equipment Repair and Maintenance

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# Statistics Canada SIC Definitions

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## Industry Descriptions by SIC, with product/service classifications based on Standard Industrial Classification - 1980 Statistics Canada, (Cat. no. 12-501)

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### SIC 3341 Record Player, Radio and Television Industry

Establishments primarily engaged in manufacturing radio and television receiving sets, sound playing and recording equipment and parts (except electronic parts) and video recording and duplicating equipment. Establishments primarily engaged in producing automobile radios are classified here.

- audio and video recording and duplicating equipment
- loud speakers
- phonographs
- radio and phonograph combinations
- radio receiving sets, automobile, home, clock, etc.
- record player and tape recorder parts (except electronic)
- stereo amplifiers
- T.V. converters
- tape players
- television receiving sets, domestic
- video recording and duplicating equipment

### SIC 3351 Telecommunication Equipment Industry

Establishments primarily engaged in manufacturing telephone, telegraph and microwave transmitting and related equipment.

- carrier current equipment, telephone and telegraph
- central office and switching equipment, telephone or telegraph
- intercommunicating telephone sets
- micro-wave transmitting equipment
- multiplex equipment
- station apparatus
- telegraph equipment and parts

### SIC 3352 Electronic Parts and Components Industry

Establishments primarily engaged in manufacturing electronic components and parts.

- audio frequency amplifiers (excl. stereo amplifiers)
- capacitors
- connectors
- crystals (mounted) and holders
- electronic chips and bubbles
- integrated circuits
- power packs (non-rotating power supply converter units)
- printed circuits for electronic equipment
- receiving tubes
- resistors
- satellite parts and components (incl. for earth stations)
- semi-conductors (transistor, rectifier)
- television picture tubes (incl. rebuilt)
- transformers, electronic

## Industry Descriptions by SIC, with product/service classifications based on Standard Industrial Classification - 1980 Statistics Canada, (Cat. no. 12-501)

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### SIC 3359 Other Communication and Electronic Equipment Industries

Establishments primarily engaged in manufacturing electronic equipment not elsewhere classified. Establishments primarily engaged in the repair and overhaul of electronic equipment, except household equipment, are classified here.

- alarm and signals systems (excl. railway and street traffic)
- antennae (incl. parts and mountings)
- aviation radio equipment
- C.B. radio equipment
- closed circuit television equipment
- electronic navigational aids and related devices
- electronic process control equipment
- intercommunication systems (excl. telephone)
- land mobile radio communication equipment
- marine radio communication equipment
- micro-wave transmitting equipment (excl. telephone)
- point-to-point radio equipment
- public address systems
- radar equipment, commercial or defence
- radio broadcast equipment
- repair and overhaul of electronic equipment (excl. household)
- sonar equipment, commercial or defence
- studio equipment, radio or television broadcast
- television broadcast equipment
- transmitting equipment, radio and television broadcast (incl. antenna)

### SIC 3361 Electronic Computing and Peripheral Equipment Industry

Establishments primarily engaged in manufacturing electronic data processing equipment.

- analog electronic computing and processing equipment
- central processing units, electronic
- computer peripheral equipment, digital electric
- computers, single package
- control units
- disc drives
- drum drives
- electronic computers (excl. parts and components)
- electronic data processing machinery and equipment (excl. parts and components)
- input or output on-line devices (printers, plotters, readers)
- input-output devices, computer connectors (terminals-keyboard, punched cards)
- key-punch drives
- memory modules (basic and add on)
- peripheral processing units (incl. channels)
- tape drives

## Industry Descriptions by SIC, with product/service classifications based on Standard Industrial Classification - 1980 Statistics Canada, (Cat. no. 12-501)

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### SIC 3368 Office, Store and Business Machine Industry (including Electronic) (SICs 3362 and 3369)

Note: As the industrial classifications 3362 and 3369 are closely related, they are both listed under classification 3368.

#### SIC 3362 - Electronic Office, Store and Business Machine Industry

Establishments primarily engaged in manufacturing electronic office, store and business machines.

- accounting machines
- adding machines
- balances, for store, home, office or factory
- business machines and equipment
- calculating machines
- cash registers
- scales

#### SIC 3369 - Other Office, Store and Business Machine Industries

Establishments primarily engaged in manufacturing office, store and business machines and equipment (except electronic).

- accounting machines
- adding machines
- business machines and equipment
- calculating machines
- cash registers
- hair dryers
- scales for store, home, office or factory
- tape dispensing machines
- typewriters
- vending machines and parts

### SIC 3381 Communications and Energy Wire and Cable Industry

Establishments primarily engaged in manufacturing electric wire and cable both insulated or armoured and non-insulated including fibre optic cable.

- annunciator wire and cable, insulated
- asbestos covered electric wire and cable
- building wire and cable, electric, insulated
- electric fixture wire
- electric wire, non-insulated
- fibre optic cable
- flexible cords, electric, insulated
- heating cable, electric, insulated
- insulated wire and cable
- magnet wire and cable, insulated
- power cables, electric
- radio wire and cable, insulated
- telephone wire and cable, insulated
- television wire and cable, insulated

# Industry Descriptions by SIC, with product/service classifications

based on Standard Industrial Classification - 1980 Statistics Canada, (Cat. no. 12-501)

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## SIC 3911 Indicating, Recording and Controlling Instruments Industry

Establishments primarily engaged in manufacturing mechanical, electrical or electronic instruments for indicating, recording and controlling (except electronic process control and electrical industrial control).

- control panels
- control valves and regulators for measuring and measuring- controlling instruments
- controls and accessories for heating and ventilating
- flow and liquid level instruments and accessories
- flow regulators
- galvanometers
- gas meter mechanisms and parts
- indicating instruments, parts and accessories
- mechanical motion, rotation, timing and cycle instruments
- pressure regulators (incl. reducing valves)
- recording instruments, parts and accessories
- temperature regulators
- thermostats
- water meter mechanisms and parts

## SIC 3912 Other Instruments and Related Products Industry

Establishments primarily engaged in manufacturing professional and scientific instruments excluding electronic navigational instruments.

- aeronautical instruments
- balances, scientific
- engineering and geophysical instruments and apparatus
- medical and related instruments, apparatus and equipment
- navigational instruments (excl. electronic)
- ophthalmic (optical) examining and diagnostic equipment
- photographic equipment and supplies
- photographic film and plates (incl. X-ray), unexposed
- projectors (incl. image and cinematographic)
- pyrometers (incl. thermocouples) and accessories
- scales, scientific
- surgical instruments
- surveying instruments
- sutures and suture needles (incl. sutures with needles)
- thermometers and accessories
- X-ray equipment

## SIC 4814 Cable Television Industry

Establishments primarily engaged in broadcasting television and frequency modulated radio signals to subscribers by mean of co- axial cable and community antennas.

- cable television service
- community antenna service (CATV)

## Industry Descriptions by SIC, with product/service classifications based on Standard Industrial Classification - 1980 Statistics Canada, (Cat. no. 12-501)

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### SIC 4821 Telecommunication Carriers Industry

Establishments primarily engaged in operating telephone and other telecommunication transmission services by electro-magnetic means.

- broadband exchange service
- cable service, telephone
- overseas telephone service
- public telephone service
- satellite communications service
- telegraph communication service, wire or radio
- telephone carrier service
- telephone network service
- telephoto service
- teletype service
- ticker tape service

### SIC 4839 Other Telecommunication Industries

Establishments primarily engaged in telecommunications operations not elsewhere classified.

- closed circuit televisions (CCTV) service
- paging service, radio
- piped-in music service

### SIC 5743 Electronic Machinery, Equipment and Supplies, Wholesale

Establishments primarily engaged in wholesale dealing in new and used electronic navigational and communications equipment and supplies (except household, office, store and computers and related equipment). Establishments primarily engaged in the repair of such equipment are included here.

- alarm and signal systems and devices, electronic, (excl. household smoke detectors)
- electronic communications equipment
- electronic equipment repair (excl. data processing)
- electronic navigational equipment and devices
- intercommunication equipment, electronic
- public address systems
- radar equipment
- radio communications equipment
- sonar equipment



## **Industry Descriptions by SIC, with product/service classifications** based on Standard Industrial Classification - 1980 Statistics Canada, (Cat. no. 12-501)

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### **SIC 5744 Computer and Related Machinery, Equipment and Packaged Software, Wholesale**

Establishments primarily engaged in wholesale dealing in new and used electronic data processing machinery and related equipment and packaged computer software. Establishments primarily engaged in dealing in sales of computer hardware and software are classified in this industry regardless of whether their sales are considered to be wholesale or retail.

- computer and video apparatus (hardware and software)
- computers and peripheral equipment
- computers, household
- data processing machines, electronic
- electronic controllers, modems and related devices
- electronic data processing, peripheral equipment
- home computers
- packaged computer software

### **SIC 5791 Office and Store Machinery, Equipment and Supplies, Wholesale**

Establishments primarily engaged in wholesale dealing in new and used office and store machines, furniture, fixtures, supplies and parts. Establishments primarily engaged in the repair of office furniture and equipment are included here. Also included are establishments primarily engaged in wholesale dealing in commercial cooling and refrigeration machinery and equipment (electric and non-electric).

- addressing machines, wholesale
- business machine repair (excl. electronic data processing)
- calculating machines, desk, wholesale
- cash registers, wholesale
- commercial cooking and refrigeration equipment and supplies, wholesale
- dictating machines, wholesale
- display cases and fixtures, office and store, wholesale
- duplicating machines, wholesale
- furniture and fixtures, office and store, wholesale
- mail handling machines, wholesale
- office and store machinery repair
- office and store machines, wholesale
- scales, wholesale
- tape dispensing machines, wholesale
- telephone answering equipment, wholesale
- typewriters and desk calculators, repair
- typewriters, wholesale

## Industry Descriptions by SIC, with product/service classifications based on Standard Industrial Classification - 1980 Statistics Canada, (Cat. no. 12-501)

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### **SIC 7721 Computer Services**

Establishments primarily engaged in providing computer facilities on a rental, leasing or time sharing basis and such activities as programming, planning and systems work.

- computer consulting services
- computer input preparation services
- computer processing services
- computer programming services
- computer rental or leasing services (excl. finance leasing)
- computer services
- computer software services
- computer time-sharing services
- software packages, computer services
- systems analysis and design, computer services
- systems design, computer services

### **SIC 7722 Computer Equipment Maintenance and Repair**

Establishments primarily engaged in providing computer equipment maintenance and repair services.

- computer maintenance services
- computer repair services
- electronic data processing equipment, maintenance and repair

### **SIC 9913 Office Furniture and Machinery Rental and Leasing**

Establishments primarily engaged in renting and leasing office furniture and machines.

- adding machine rental
- calculating machine rental
- duplicating machine rental
- office furniture rental
- office machine rental (excl. computer and related electronic equipment)
- typewriter rental

Note: It is expected that the implementation of the North American Industrial Classification System (NAICS) will greatly improve reporting on the ICT sector. More information on the NAICS can be obtained from Statistics Canada and/or its website at:

<http://www.statcan.ca/english/Subjects/Standard/>

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# Financial and Statistical Definitions

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## Financial and Statistical Definitions

Readers are advised to consult with Statistics Canada on specific methodologies and definitions used throughout this publication, the relevant Statistics Canada documents contain such information.

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### General Definitions

EBITDA: Earning before interest, taxes, depreciation, and amortization.

GDP: is a measure of an industry's value-added to the economy. GDP at factor cost is essentially total sales by the industry (gross output) less inputs of goods and services provided by sources other than the industry itself.

Intramural R&D Expenditures: Expenditures for R&D work performed by the reporting company, including work financed by others.

Capital Expenditures: Capital expenditures include the cost of procuring, constructing and installing new durable plant and machinery and equipment, whether for replacement of worn or obsolete assets, as additions to existing assets or for lease or rent to others.

### Trade Data Definitions

There is a fundamental difference between trade and production data. Production data also captures secondary production which occurs at the establishment level and differs from the principal activity to which they are classified. Trade data, on the other hand, classifies products as they cross the border regardless of the principal activity of the producing establishment. This data is captured as a commodity rather than as an industry good. In an effort to quantify industry trade, Statistics Canada associates the exported commodity code with an industry code. A simple example would be the case of an exported automobile engine which would be attributed to the Canadian Motor Vehicle Engine and Engine Parts Industry even though it may have been produced by a plant classified to the Motor Vehicle Industry. The same concepts also apply to service data.

Readers should note that this is a crude estimation of industry trade and is susceptible to errors. However, in the absence of a better measurement method, this type of estimation is one of few means available to estimate industrial trade.

Imports: All goods which have crossed Canada's territorial boundary, whether for immediate consumption in Canada or stored in bonded customs warehouses.

Total Exports: Total exports include both domestic exports and re-exports. DOMESTIC exports include goods grown, extracted or manufactured in Canada, including goods of foreign origin which have been materially transformed in Canada. RE-EXPORTS are exports of foreign goods which have not been materially transformed in Canada, including foreign goods withdrawn for export from bonded customs warehouses.

Apparent Domestic Market: Total Imports minus Total Exports plus Manufacturing Shipments.

Payments: Total payments of companies located in Canada for services bought from abroad.

Receipts: Total receipts of companies located in Canada for services sold to clients located abroad.

Note: Payments and receipts refer to cross-border services. Where a subsidiary of a Canadian company located abroad either sells or buys a service in its local market, or trades a service with a third country, the transactions are outside the scope of the cross-border figures reported in this document. Such transactions abroad are between foreign resident parties, and are not covered by the Balance of payments data which deal only with transactions between Canadian residents and non-residents. Also, the domestic sales and purchases by Canadian subsidiaries of foreign companies with residents here in Canada are excluded from cross-border measures of trade, being resident-to-resident transactions.

## Financial and Statistical Definitions

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### Definitions Specific to Manufacturing Industries

Production Employment: Those employees engaged in processing, assembling, storing, inspection and maintenance.

Administrative and Executive Employment: Those employees designated as executive, administrative, clerical/office and sales staff.

Total Employment: Production employment plus administrative and executive employment.

Number of Establishments: Smallest operating unit in a business capable of reporting specified input and output data which are collected and published at the establishment level by the Survey of Manufacturing Technology.

Revenue (total shipments): This includes both manufacturing shipments and non-manufacturing shipments.

Manufacturing Shipments: Shipments of goods manufactured from the establishment's own materials, except consignment shipments.

Non-manufacturing shipments: Include wholesaling of goods, rental of new equipment, construction of buildings for the establishment's own use with its own labour, and the operation of cafeterias, laboratories, etc.

Operating Expenses: Include total salaries and wages, cost of fuel and electricity, cost of materials and supplies used, and cost of goods for resale.

Total Salaries & Wages: Production Salaries and Wages plus Administrative and Executive Salaries and Wages.

Production Salaries and Wages: Gross amount paid to production employees, including overtime, bonus and commissions, but before deductions for income tax and employee benefits.

Administrative and Executive Salaries & Wages: Gross amount paid to executive, administrative, clerical and sales staff, including overtime, bonuses and commissions, but before deductions for income tax and employee benefits.

Cost of Fuel and Electricity: Cost of fuel purchased for use in production and transportation and cost of electricity consumed for energy purposes, both in manufacturing and non-manufacturing operations.

Cost of Materials and Supplies Used: Raw materials, containers and supplies purchased and owned by the establishment and used in its manufacturing operations.

Cost of Goods for Resale: Cost of goods which were sold without a change in the condition (wholesaling).

Manufacturing Value Added: Value of shipments of goods of the establishment's own manufacture plus the net change in inventory of goods in process and finished goods, minus the cost of materials and supplies used, the cost of fuel and electricity, and the cost of goods for resale.

Total Value Added: Value added for manufacturing and non-manufacturing activities.

## Financial and Statistical Definitions

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### Definitions Specific to Software and Computer Services Industry

Software Products Development: Software products are produced for multiple sale, license or lease.

Professional Services: These services include corporate EDP consulting, systems and technical consulting, custom software development, contract programming, training and education, facilities management, provision of access to Internet, and other professional services.

Data Processing Services: These services include network services (electronic information systems and network applications), shared processing, data entry, and other processing services.

### Definitions Specific to Wholesaling

Sales of Goods Purchased for Resale on Own Account: Total net sales of goods purchased for resale on own account (less returns, adjustments and discounts). Includes sales value of trade-ins and parts used in repairs. Excludes taxes collected for remittance to a government.

Commission Revenue: Total gross commission revenue earned for buying and/or selling merchandise on account of others.

Sales of Goods of Own Manufacture: Sales of goods of own manufacture or goods manufactured for the reporting establishment on a custom basis, with materials owned by the establishment.

Cost of Goods Sold: This value is obtained by calculating: opening inventory + total purchases - closing inventory.

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# Sources and Technical Notes

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## Sources

### EMPLOYMENT

#### Manufacturing

Annual Survey of Manufactures (Cat. no. 31-203), Manufacturing, Construction and Energy Division, Statistics Canada.

#### Cable Television

Annual Return Cable Television (Cat. no. 56-205), Science and Technology Redesign Project, Statistics Canada.

#### Telecommunications Services

Survey of Employment, Payrolls and Hours (Cat. no. 72-002), Labour Division, Statistics Canada.

#### Software and Computer Services

Labour Force Survey (Cat. no. 71-001), Household Surveys Division, Statistics Canada.

### FINANCIAL DATA

#### Manufacturing

Annual Survey of Manufactures (Cat. no. 31-203), Manufacturing, Construction and Energy Division, Statistics Canada.

#### Cable Television

Annual Return Cable Television (Cat. no. 56-205), Science and Technology Redesign Project, Statistics Canada.

#### Telecommunications Services

For 1990 to 1996: Financial and Taxation Statistics for Enterprises (Cat. no. 61-219), Industrial Organization and Finance Division, Statistics Canada.

For 1997: Annual Survey of Telecommunications Services Providers, Science and Technology Redesign Project, Telecommunications Section, Statistics Canada.

#### Wholesaling

Annual Wholesale and Retail Trade Survey (Cat. no. 63-236), Distributive Trade Division, Statistics Canada.

#### Software and Computer Services

Annual Survey of Computer Services (Cat. no. 63-222), Services Division, Statistics Canada.

#### Office Furniture and Machinery Rental and Leasing

Survey of Business Services (Cat. no. 63-232), Services Division, Statistics Canada.



## Sources

### GROSS DOMESTIC PRODUCT (GDP)

Gross Domestic Product by Industry (Cat. no. 15-001), Industry Measures and Analysis Division, Statistics Canada.

### INTRAMURAL RESEARCH AND DEVELOPMENT (R&D) EXPENDITURES

Special tabulations for Industry Canada; Science and Technology Redesign Project, Statistics Canada.  
For Canadian total private sector R&D, Industrial Research and Development - 1997 intentions (Cat. no. 88-202).

### CAPITAL EXPENDITURES

For all industries except cable television: Private and public investment in Canada (Cat. no. 61-205), Investment and Capital Stock Division, Statistics Canada. For cable television: Annual Return Cable Television (Cat. no. 56-205), Science and Technology Redesign Project, Statistics Canada.

### TRADE

#### ICT Manufacturing

Trade Information Enquiry and Retrieval System (TIERS), International Trade Division, Statistics Canada.

#### ICT Services

Canada's International Transactions in Services (Cat. no. 67-203), Balance of Payments Division, Statistics Canada.

## Technical Notes

### EMPLOYMENT

#### Wholesaling

All wholesaling figures are Industry Canada estimates based on the Survey of Employment, Payrolls and Hours (SEPH). SEPH data are only available at the 3 digit SIC-E level of disaggregation. To estimate 4 digit employment values, Industry Canada uses 4 digit employee earnings and benefits figures from the Annual Wholesale and Retail Trade Survey to obtain a measure of the relative size (ratio) of each 4 digit component and applies these ratios to 3 digit employment figures from SEPH. In estimating 1997 employment figures, 1996 employee earnings and benefits ratios were used, since 1997 data from the Annual Wholesale and Retail Trade Survey were not available.

#### Software and Computer Services

Although the Labour Force Survey (LFS) is not an establishment-level survey but a household-based survey, the LFS is used because it is the only survey providing data on contract workers (self-employed). Since it is a well known fact that the software and computer services industry makes a high use of contract workers, the LFS has been identified as the best source of employment data for this industry.

### IMPORTANT NOTE

Different statistical methodologies were used in the collection of the employment data for the ICT services and manufacturing industries. The LFS, SEPH and Annual Survey of Manufactures use different statistical methodologies for providing data and were not intended to be aggregated. Industry Canada, however, feels that the aggregation of these survey results, despite their differences, does provide some insight into the performance of the Canadian ICT sector.

## Technical Notes

### FINANCIAL DATA

#### Wholesaling

1997 operating revenue for Computers, Packaged Software and Other Electronic Machinery (SIC 5743 & 5744) were estimated based on 12 periods of monthly data from the Monthly Wholesale Trade Survey. 1997 operating revenue for Office and Store Machinery, Equipment and Supplies (SIC 5791) was estimated using a linear regression with employment as the explanatory variable.

#### Software and Computer Services

For 1997, each revenue category was estimated using a linear or an exponential regression.

#### Office Furniture and Machinery Rental and Leasing

1996 and 1997 revenue figures were estimated using a linear regression.

#### Telecommunications Services

The 1997 data are not strictly comparable to the data for previous years due to methodological differences. Figures for the 1990 to 1996 period are derived from a sample of financial and taxation data submitted by corporations under the Canadian Income Tax Act. The reporting unit is the corporation and the tabulation unit is the enterprise (a family of corporation(s) under common ownership for which a set of consolidated statements is produced on an annual basis). Figures for 1997 are derived from an Annual Census of business units classified in the telecommunication industry and the target unit is the establishment. The definition of accounting variables may also vary.

## Technical Notes

### GROSS DOMESTIC PRODUCT (GDP)

Wholesaling: GDP figures for wholesaling were estimated by subtracting intermediate inputs from the output. For the wholesale trade industries, the output is defined as the gross margins on goods traded. The intermediate inputs were estimated as the operating expenses minus the employee earnings and benefits, depreciation and interest expenses. Since detailed data were not available for 1997, the GDP figures for this year were estimated based on the growth in employment.

The estimates in constant dollars of 1992 were obtained by using the following price indexes: the PCG 6366 "Electronic Computing Equipment" hedonic price index was used for the trade group "Computers, Packaged Software and Other Electronic Machinery" (SIC 5743 & 5744) and the industry product price index (IPPI) 225408 "Office Machines and Equipment" was used for the trade group "Office and Store Machinery, Equipment and Supplies" (SIC 5791).

### INTRAMURAL RESEARCH AND DEVELOPMENT (R&D)

R&D figures for the telecommunications services and cable industries have been combined to maintain confidentiality among respondents.

It should also be noted that the reporting unit is generally the company or enterprise. This unit is used because a firm, which may have several establishments or even subsidiaries, will often have a centralized research unit. In the case of a company with decentralized research units, the report unit may be the division, if the accounting system enables divisions to supply the required data. This procedure creates a problem when classifying data by industry. A company can only be assigned to one industry although that company may have establishments in several industries. The assignment is based on the activity from which the firm derived the greatest portion of its income.

### INTERNATIONAL TRADE IN ICT SERVICES

There have been significant revisions to the trade in services data as presented in last year's version of this publication (The Information and Communication Technologies Statistical Review: 1990-1996). For further details, please refer to the publication "Canada's International Transactions in Services", Statistics Canada (Cat. no. 67-203).

### GENERAL

All underlined figures in this publication are Industry Canada estimates based on Statistics Canada data.