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# 2016

## Canadian ICT Sector Profile

Automotive, Transportation and Digital Technologies Branch

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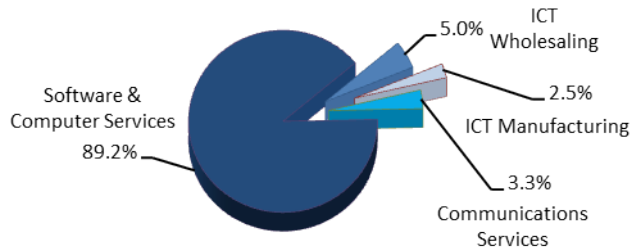
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Aussi offert en français sous le titre :  
*Profil du secteur canadien des TIC – 2016 (Technologies de l'information et des communications)*

## Industry Structure

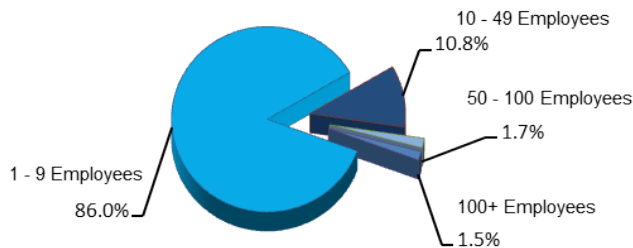
There are over 39,000 companies in the Canadian Information and Communications Technologies (ICT) sector. The large majority (over 34,000) fall within the software and computer services industries.

**Figure 1: Companies by ICT Sub-sector, 2016**



The ICT sector consists mainly of small companies, with over 33,500 of them employing fewer than 10 people. The number of large companies employing over 500 individuals is relatively small, accounting for approximately 110 firms, including subsidiaries of foreign multinational corporations.

**Figure 2: Companies by Employee Size for Total ICT Sector, 2016**



Manufacturing stands out as the sub-sector with larger companies. In 2016, 16.1% of ICT manufacturing companies had more than 50 employees, while across the whole ICT sector this share was only 3.2%.

### ICT Sector Industries

#### **ICT manufacturing**

- Computer and peripheral equipment
- Communications equipment
- electronic components
- Audio and video equipment
- Magnetic and optical media

#### **ICT wholesaling**

#### **Software and computer services**

- Software publishers
- Computer systems design
- Data processing
- Electronic and precision equipment repair and maintenance

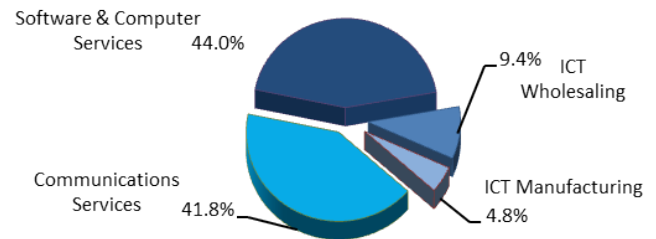
#### **Communications services**

- Wireless telecommunications carriers
- Wired telecommunications carriers
- Cable and other program distribution

## GDP Contribution

The ICT sector makes a substantial contribution to Canada's GDP. In 2016, the sector's GDP was \$73 billion (in 2007 constant dollars), and accounted for 4.4% of national GDP.

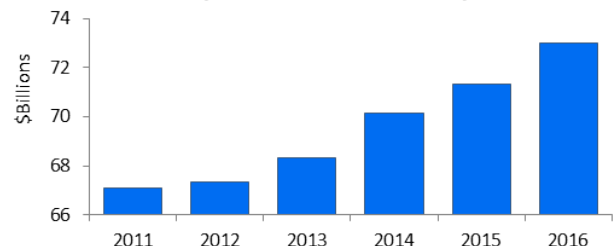
**Figure 3: GDP by ICT Sub-sector, 2016 (Total: \$73 Billion)**



ICT sector growth accelerated in 2016, as the sector increased by 2.3%, nearly twice as fast as the total Canadian economy (+1.2%). The software and computer services sub-sector experienced the fastest growth in GDP in 2016, up 6.4%. ICT wholesaling increased 1.4%, while the communications services sub-sector remained flat. Meanwhile, the manufacturing industries GDP declined, down 1.7%.

Since 2011, the ICT sector has posted slightly weaker annual growth than the total economy. On average, annual growth in this sector has been 1.7%, compared to 1.9% for the overall economy. However, annual growth by ICT sub-sector varies widely with software and computer services (+4.8%) and ICT wholesaling (+1.9%) expanding during the period while both communications services (-0.2%) and ICT manufacturing (-5.7%) experienced declines.

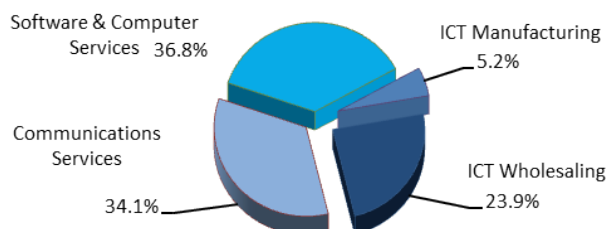
**Figure 4: ICT Sector GDP, 2011-2016 (2007 Constant Dollars)**



## Revenues

Revenues in the ICT sector increased by 3.5% in 2016, led by the software and computer services sub-sector (+6.9%) and the manufacturing industries (+4.2%). The communications services and wholesaling sub-sectors posted growth rates of 2.4% and 0.1%, respectively. This was the second consecutive increase in ICT manufacturing revenue after 4 years of decline.

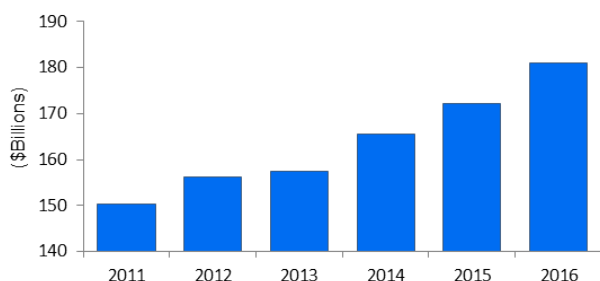
**Figure 5: Revenues by ICT Sub-sector, 2016 (Total: \$181 Billion)**



From 2011 to 2016, ICT sector revenues grew from \$149.6 billion to \$181 billion, a 21% increase. During this period, the ICT manufacturing industries declined by 17.9%. On the other hand, all of the services sub-sectors posted gains: the software and computer services, wholesaling, and the communications services sub-sectors increased by 42.4%, 20.3%, and 11.6% respectively.

Over the same period, manufacturing industries' revenue dropped from 7.7% to 5.2% of total ICT sector revenue.

**Figure 6: ICT Sector Revenues, 2011-2016**



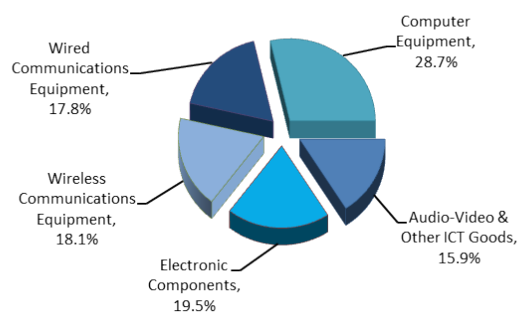
## Exports

The Canadian ICT manufacturing sub-sector relies heavily on the export market. About 80% of ICT products manufactured in Canada were exported in 2016.

Canadian exports of ICT goods declined by 2.1% in 2016 to \$11.3 billion. Exports of computer and peripheral equipment (+\$72 million) and wired communications equipment (+\$51 million) increased, while the other categories declined.

Between 2011 and 2016, exports of ICT goods increased by 1.7% total. Since 2011, exports of electronic components (-15.2%) fell the most while exports of audio and video equipment (+14%) and computer and peripheral equipment (+14%) increased the most.

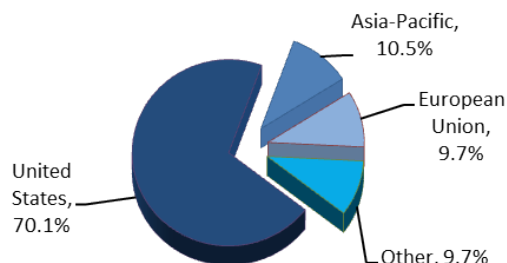
**Figure 7: Exports of ICT Goods by Product Group, 2016 (Total: \$11.3 Billion)**



Exports of ICT goods to the United States declined by 1.9% in 2016, but still make up over two-thirds (\$7.9 billion) of all ICT goods exported from Canada. Exports to the Asia-Pacific region increased by 2.9% in 2016, while exports to the European Union decreased by 2.7%. Exports to all other countries accounted for \$1.1 billion of Canadian ICT goods exports in 2016, down 8.3% from 2015.

## Research & Development

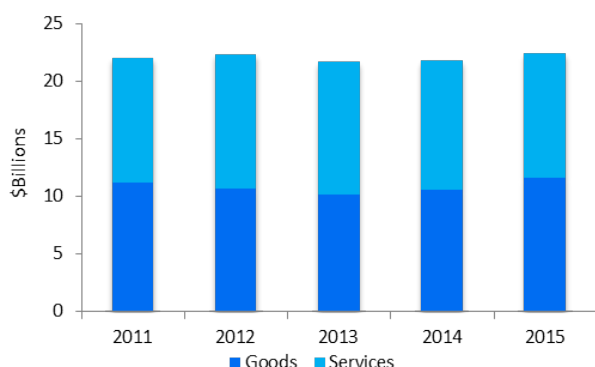
**Figure 8: Exports of ICT Goods by Region, 2016**  
Share of Total ICT Goods Exports



The ICT services industries are more domestically oriented. In 2015 (the most recent data as of the publication date), exports of communications services grew by 3.9%, totaling \$2.0 billion, while software and computer services dropped 5.5% to \$8.8 billion. Exports accounted for 14.3% of software and computer services revenues, and less than 3.4% of communications services revenues. Overall exports of ICT services totaled \$10.8 billion, down 3.9% from 2014.

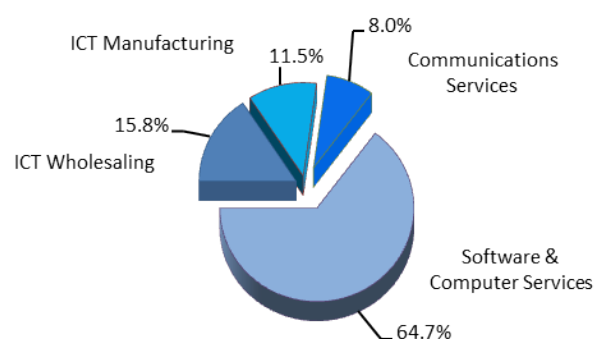
There has been little change in total ICT exports over the period from 2011-2015, as exports only grew 1.7%.

**Figure 9: Exports of ICT Goods and Services 2011-2015**



ICT industries are the largest performers of R&D in the Canadian private sector. In 2016, the sector held a 30.8% share of all private sector R&D expenditures in Canada. ICT sector R&D expenditures totaled \$5.5 billion in 2016, falling 2.5% from the previous year. The decline is due to drops in R&D expenditures by the communications services (-20.9%) and software and computer services (-2.6%) sub-sectors. The decline in R&D expenditures in the software and computer services sub-sector was primarily due to a 9.3% drop in the software publishing industry.

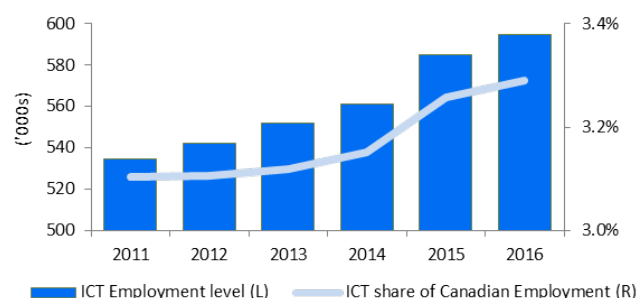
**Figure 10: R&D Expenditures by ICT Sub-sector, 2016 (Total: \$5.5 Billion)**



## Employment

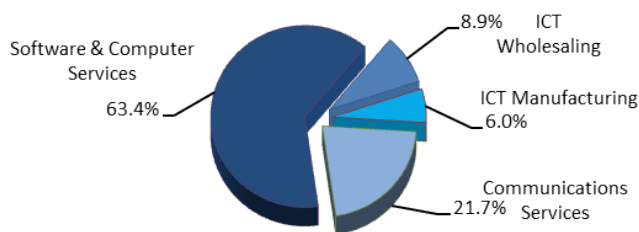
The ICT sector accounts for 3.3% of national employment. Employment in the ICT sector increased 1.7% in 2016, amounting to 594,871 jobs. This growth was much faster than that of the overall economy (+0.7%).

**Figure 11: ICT Sector Employment, 2011-2016**



The sector's strong employment growth in 2016 was solely driven by software and computer services, which grew by 4.0%. Manufacturing was flat, while employment in the communications services and ICT wholesaling sub-sectors decreased by 1.3% and 5.2%, respectively.

**Figure 12: Employment by ICT Sub-sector, 2016  
(Total: 594,871 Workers)**



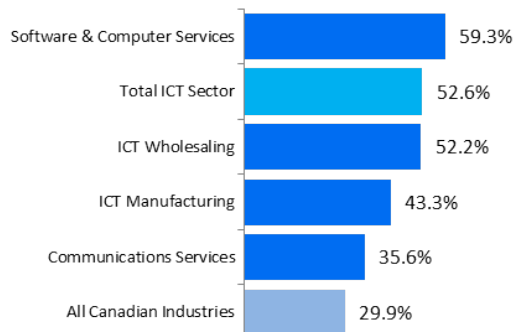
Since 2011, employment growth in software and computer services has significantly outpaced the overall growth in the ICT sector. Software and computer services' share of employment has increased from 56.6% to 63.4% over the time period.

## Education

The ICT sector is characterized by a knowledge-intensive workforce, with over half of its workers holding a university degree, compared to 29.9% within all Canadian industries.

The software and computer services sub-sector employs the largest proportion of university educated workers within the ICT sector (59.3%).

**Figure 13: Percentage of Workers with a University Degree by Major ICT Industry, 2016**



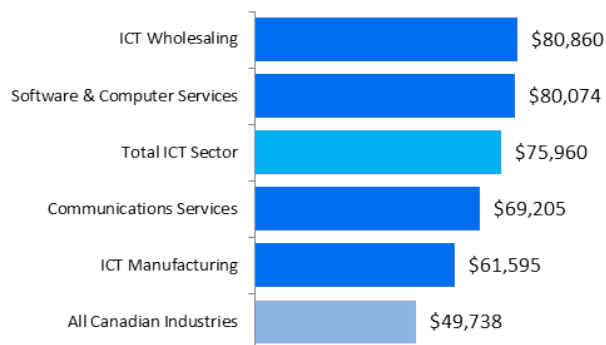
## Employee Earnings

Employees in the ICT sector earn on average over \$75,000 a year. In 2016, these workers earned 52.7% more than the economy-wide average, with the highest earners coming from the wholesaling and software and computer services sub-sectors.

Despite being the lowest paid workers in the ICT sector, employees in the ICT manufacturing sub-sectors still earned 23.8% more than the national average in 2016.

From 2011 to 2016, the average salary in the ICT sector grew more quickly than salaries in the overall economy, up 13% compared to 8.7%.

**Figure 14: Average Annual Earnings by Major ICT Industry, 2016**



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## DATA SOURCES

### I. Companies:

- o ISED calculations using data from Statistics Canada's Business Registry.

### II. Revenues:

- o Manufacturing: Statistics Canada CANSIM table 301-0008;
- o Software and Computer Services: Statistics Canada CANSIM table 354-0009 and custom tabulations;
- o Communications Services: Statistics Canada CANSIM table 356-0004;
- o Wholesale: Statistics Canada CANSIM table 081-0017; and
- o ISED estimates for the most recent year presented (for all ICT industries).

### III. GDP:

- o Statistics Canada custom tables.

### IV. Employment:

- o Statistics Canada, Survey of Employment, Payroll, and Hours (SEPH) for the number of employees and Labour Force Survey (LFS) for the number of self-employed (custom tables).

### V. Research & Development:

- o Statistics Canada CANSIM table 358-0510.

### VI. Education:

- o Statistics Canada, Labour Force Survey custom tables.

### VII. Employee Earnings:

- o ISED calculations using Statistics Canada CANSIM tables 281-0024 and 281-0027.

### VIII. Exports:

- o Goods: ISED calculations using Trade Data Online data;
- o Services: Statistics Canada, CANSIM table 376-0033.