



2020 Canadian ICT Sector Profile

Automotive, Transportation and Digital Technologies Branch

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2020 ICT Sector Snapshot

Canada's ICT sector posted strong growth in 2020 despite the impacts of the pandemic, especially in ICT services, and outperformed the overall Canadian economy in terms of output, employment, and innovation growth.

	 Revenue (est.)	 GDP	 Good Exports	 Service Exports
Size	\$230_B	\$96.8_B	\$9.3_B	\$17.3_B
2020 Growth	+5.0%	+2.9%	-22.1%	+4.1%
Share of Economy	N/A	5.1%	2.0%	23.7%

44,001 Companies





Innovation	2020 Growth	Share of Economy
\$8.0_B in Business R&D Spending	+6.8%	42.1%

55% of workers have a University degree

Workforce	2020 Growth	Share of Economy
671,109 Workers	+1.1%	3.7%
\$83,342 in Annual Average Salary	+2.0%	N/A

Average salary is 46.2% higher than Canadian Average

Sub-Sector Trends

		Revenues (\$millions)		Employment		GDP (millions)		R&D (\$millions)	
		2020	CAGR 5 year	2020	CAGR 5 year	2020	CAGR 5 year	2020	CAGR 5 year
	ICT Manufacturing	7,864 ▼	-2.4%	33,883 ▼	-1.1%	3,205 ▼	-2.5%	618 ▼	-2.6%
	Software & Computer Systems	95,741 ▲	9.4%	463,071 ▲	4.9%	46,031 ▲	5.5%	5,181 ▲	3.8%
	Communications Services	68,495 ▲	2.6%	115,650 ▼	-2.4%	39,349 ▲	3.4%	1,183 ▲	0.6%
	ICT Wholesaling	58,266 ▲	6.2%	58,505 ▼	1.0%	8,204 ▲	4.2%	1,042 ▲	5.0%






Sector Outlook amid COVID-19

In recent years, the ICT sector has demonstrated strong economic performance with all ICT services and some ICT manufacturing industries (e.g., electronic components) outperforming the rest of the Canadian economy. However, the trends of the 2010s have been interrupted by the ongoing COVID-19 pandemic and the long-term impacts are yet to be determined.

While the ICT sector has weathered the pandemic better than most sectors, it is still expected to see a significant decline in sales, creating challenges for many ICT firms. While not every firm will face reduced sales, all of them will have to continue to adapt to shifting demand, strained supply chains and altered working arrangements. The Canadian ICT sector is facing significant headwinds in the form of a global semiconductor shortage, increased viability of remote work that could spark higher competition for talent, and implementation of “buy local” policies in major export markets such as the U.S. or France.

Fortunately, the ICT sector is well positioned to benefit from the economy-wide recovery as demand is expected to reflect accelerating adoption of many technology solutions and private and public investments in digital infrastructure.

Economic and Employment Impacts of ICT (2020)

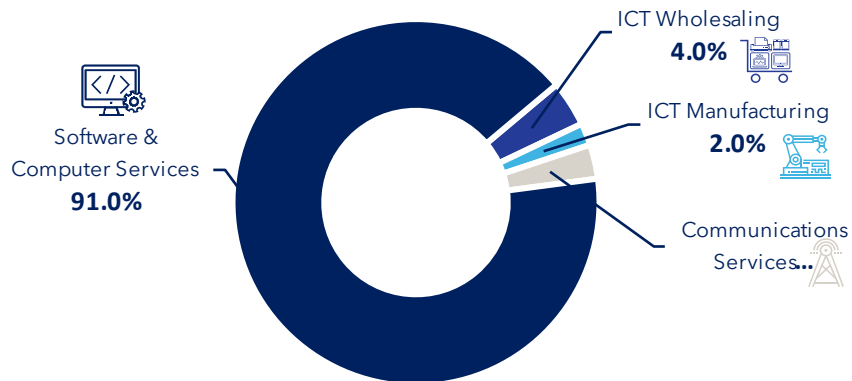
		Impact on Canadian GDP (\$ Million)				Impact on Canadian Employment (Persons)			
		Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
	ICT Manufacturing	3,205	1,482	1,447	6,134	33,683	15,449	15,514	64,646
	Software & Computer Systems	46,031	22,084	23,289	91,404	352,071	215,034	203,020	770,125
	Communications Services	39,349	16,708	9,343	65,400	114,750	137,979	80,786	333,515
	ICT Wholesaling	8,204	2,664	3,521	14,389	55,705	24,085	30,837	110,627
	ICT Total	96,789	42,938	37,600	177,327	556,209	392,548	330,156	1,278,912

The ICT sector creates important economic and employment impacts within the economy, indeed each direct job in the ICT sector supports an additional 1.3 jobs within the Canadian economy and each \$1 million of direct GDP generated within the ICT sector leads to an additional \$832,000 in GDP generated for Canada. Within the ICT sector, software and computer services generates the highest impact multiplier in terms of GDP, whereas communications services has the highest impact multiplier in terms of employment (1.9 multiplier).

Industry Structure

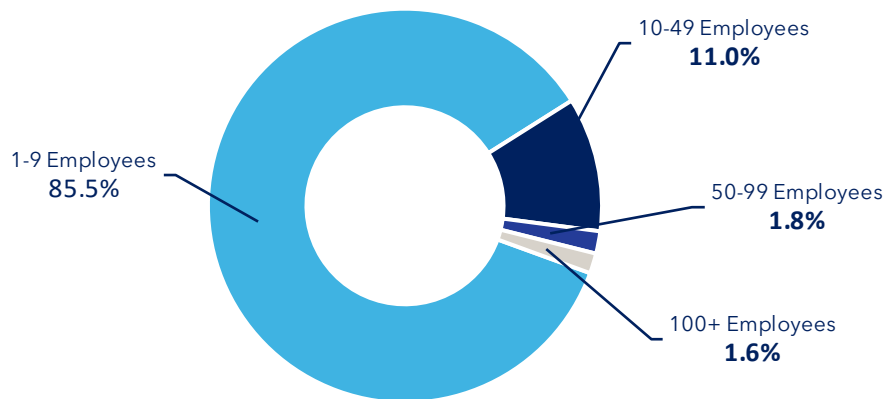
There are over 44,000 companies in the Canadian Information and Communications Technologies (ICT) sector and the large majority (over 40,000) fall within the software and computer services industries.

Figure 1: Companies by ICT sub-sector, 2020







The ICT sector consists mainly of small companies, with approximately 37,600 of them employing fewer than 10 people. There are just 119 large companies employing over 500 individuals, including subsidiaries of foreign multinational corporations. Manufacturing stands out as the sub-sector with a larger share of large firms. In 2020, 9.7% of ICT manufacturing companies had more than 100 or more employees, while across the whole ICT sector this share was only 1.9%.

Figure 2: Companies by employee size for total ICT Sector, 2020



ICT Sector Industries

ICT Manufacturing	Software and Computer Services
<ul style="list-style-type: none"> • Computer and peripheral equipment • Communications equipment • Electronic components • Audio and video equipment • Magnetic and optical media 	<ul style="list-style-type: none"> • Software publishers • Computer systems design • Data processing • Electronic and precision equipment repair and maintenance 
ICT Wholesaling	Communications Services
<ul style="list-style-type: none"> • Computer, computer peripheral and pre packaged software merchant wholesalers • Electronic components, navigational and communications equipment and supplies merchant wholesalers 	<ul style="list-style-type: none"> • Wireless telecommunications carriers • Wired telecommunications carriers • Cable and other program distribution 

GDP Contribution

**Figure 3: GDP by ICT sub-sector, 2020
(Total: \$96.8 Billion)**



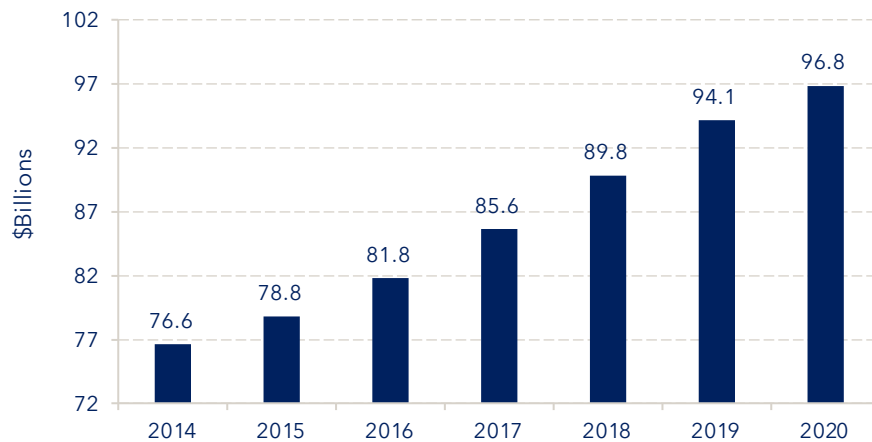
The ICT sector contributes substantially to Canada’s GDP. In 2020, the sector’s GDP was \$96.8 billion (in 2012 constant dollars), accounting for 5.1% of national GDP, continuing a trend of taking a higher share of national GDP. The ICT sector is also responsible for 27.2% of national GDP growth between 2015 and 2020.

Since 2015, the ICT sector has posted a stronger annual growth than the total economy. On average, the compound annual growth rate in this sector has been 4.2% over a 5 year period, compared to 0.7% for the overall economy.

The sector’s strong growth continued in 2020 with GDP up 2.9%, outpacing the Canadian economy that saw GDP contract by 5.1% due to COVID-19. All ICT services sub-sectors experienced positive growth in 2020, however ICT manufacturing saw a 12.7% contraction in output. Communications services posted the strongest growth, up 4.2%. Meanwhile, software and computer services expanded by 2.9% and ICT wholesaling by 3.2%.

However, annual growth by ICT sub-sectors varied widely. Software publishing companies posted the fastest annual GDP growth (+6.2%) in 2020, while manufacturing sub-sectors such as semiconductor and electronic component manufacturing (-14.2%) and communications equipment manufacturing (-12.6%) experienced steep declines.

**Figure 4: ICT sector GDP, 2014-20
(2012 Constant Dollars)**



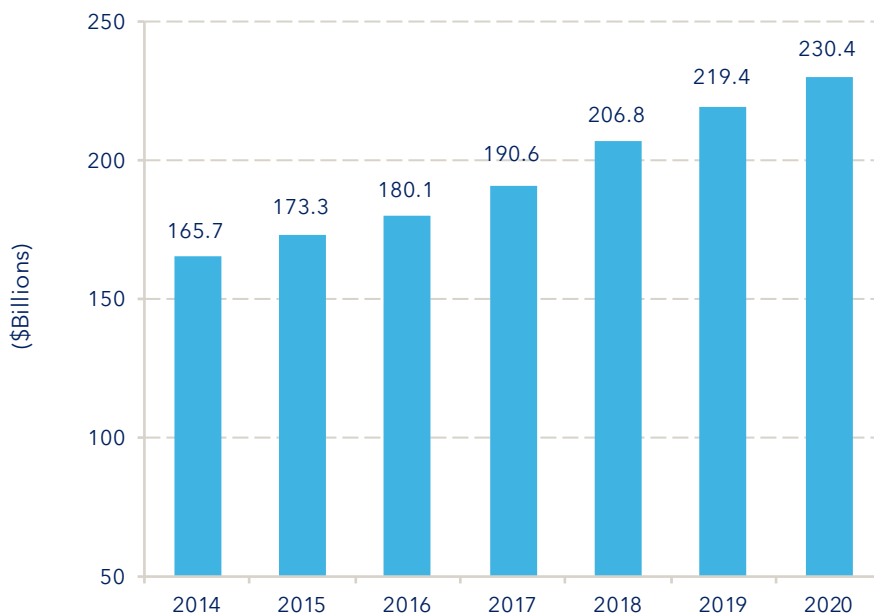
Revenues

ICT sector revenues reached an estimated \$230 billion in 2020. All ICT sub-sectors recorded positive growth in 2020, except for ICT manufacturing, which saw its revenues contract by 14.4% with communications equipment manufacturing revenue falling 17.3% last year. ICT wholesaling led this growth with a jump in revenues of 7.5%, while software and computer services (+6.6%) and communications services (+3.5%) also grew despite a pandemic.

Figure 5: Revenues by ICT sub-sector, 2020
(Total: \$230 Billion)



Figure 6: ICT sector revenues, 2014-2020

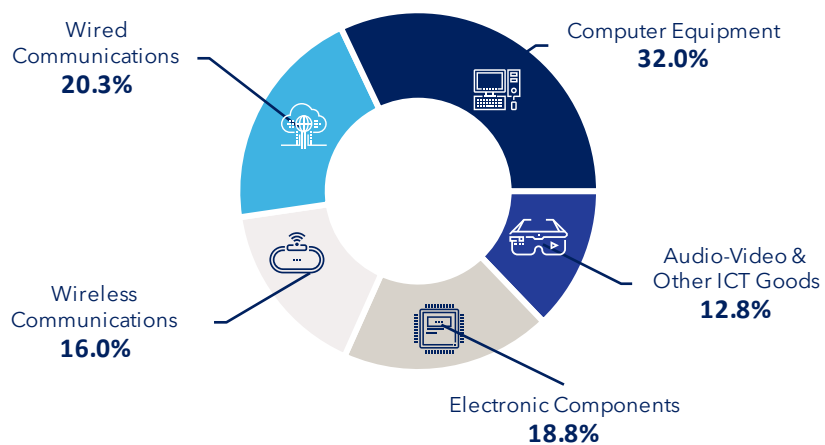


From 2015 to 2020, ICT sector revenues grew from \$173 billion to \$230 billion, a 32.9% increase. During the same 5-year period, manufacturing industries saw their revenues decline by 11.7%. On the other hand, all service sub-sectors posted gains: the software and computer services, ICT wholesaling, and the communications services sub-sectors increased by 56.8%, 35.3%, and 13.6% respectively. Over the same time period, manufacturing industries' also saw their revenue share drop from 5.1% to 3.4% of total ICT sector revenues.

Exports

The Canadian ICT manufacturing sub-sector relies heavily on the export market, which was significantly reduced as a result of COVID-19 lowering economic activity throughout 2020. ICT goods account for almost 2% of total Canadian exports. Total Canadian exports of ICT goods decreased by 22% from 2019 to \$9.3 billion in 2020. Exports of electronic components and computer equipment decreased the most (36% year-on-year decline), while communications equipment exports fell 19% from 2019 figures.

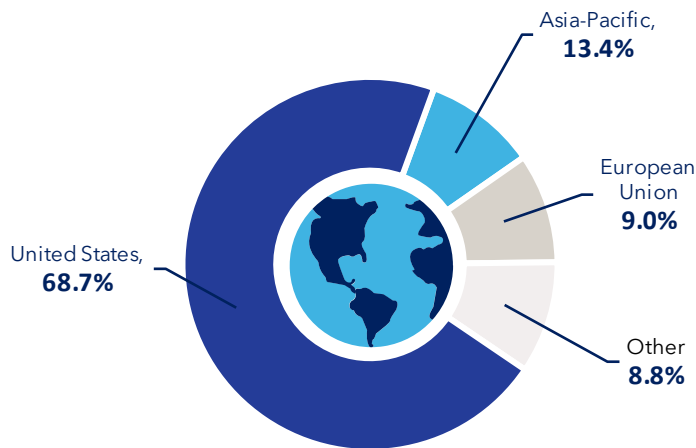
Figure 7: Exports of ICT goods by product group, 2020
(Total: \$9.2 Billion)



Between 2015 and 2020, exports of ICT goods fell 4.3% compared to a 1.9% 5-year growth in imports. Since 2015, exports of audio and video equipment fell the most (-10.9%) while no sub-sector showed an increase in exports.

Exports of ICT goods to the United States fell 3.7% to about \$6.4 billion in 2020 accounting for 68.7% of all ICT goods exported from Canada. In 2020, exports to the Asia-Pacific region increased by 23.3%, while they increased slightly to the European Union, up 3.1%. The Asia-Pacific region accounted for 13.4% of all Canadian exports of ICT goods, while the European Union accounted for just 9%, compared to 8.8% in 2019. Exports to all other countries also fell in 2020 (-1.5%).

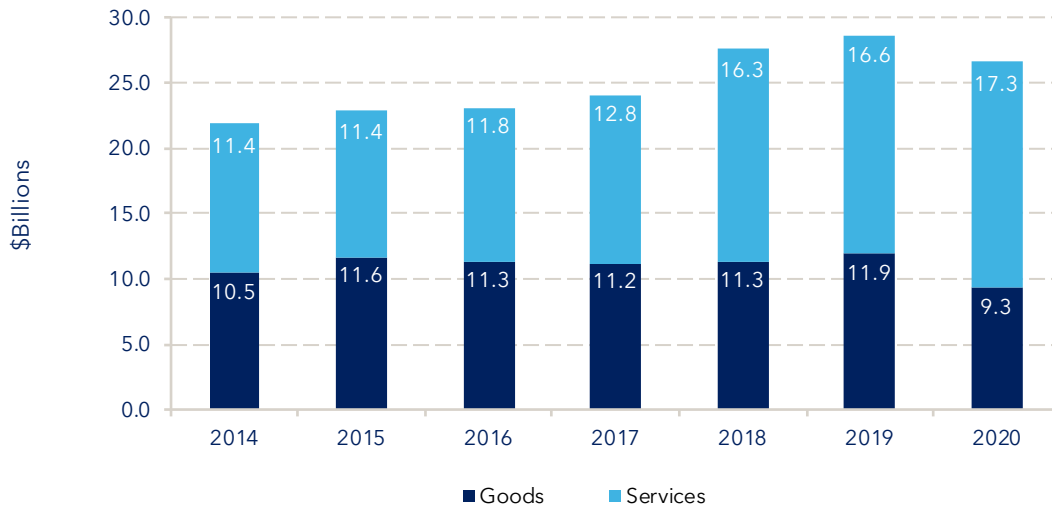
**Figure 8: Exports of ICT goods by region, 2020
(Share of Total)**



While ICT service industries are very domestically oriented they provide an important contribution to increasing export diversification. In 2020, exports of ICT communications services fell by an estimated 7.8%, to \$1.6 billion, while software and computer service exports grew by an estimated 5.4% to \$15.7 billion. Exports accounted for about 16% of software and computer services revenues, while the figure was just 2% for communications services revenues. Overall exports of ICT services were projected to reach \$17.3 billion in 2020, up 4.1% from 2019.

It is estimated that overall Canadian exports of ICT goods and services fell annually between 2019 and 2020 by 6.8%, but grew at a 5.5% CAGR from 2015 to 2020 to reach \$26.6 billion.

Figure 9: Exports of ICT goods and services, 2014–2020



Research & Development

ICT industries are the largest performers of R&D in the Canadian private sector. In 2020, the sector held a 42.1% share of all private sector R&D expenditures in Canada. ICT sector R&D expenditures totaled \$8 billion in 2020, up 6.8% from the previous year. Communications services saw the largest reduction in R&D spending (-5.7%), while the largest increase was in ICT services (+7%).

**Figure 10: Percentage of ICT R&D Spending by Sub-sector, 2020
(Total: \$8 Billion)**

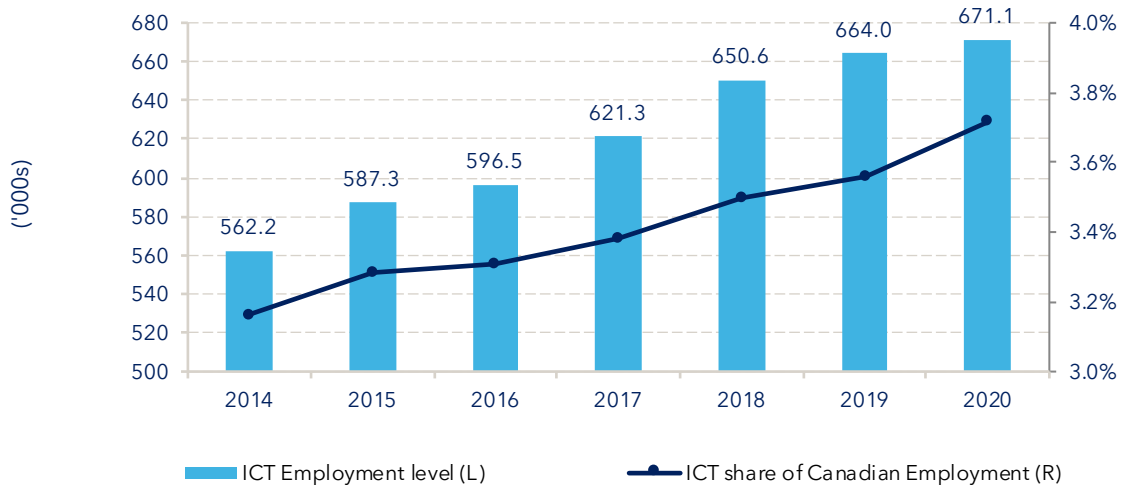


Employment

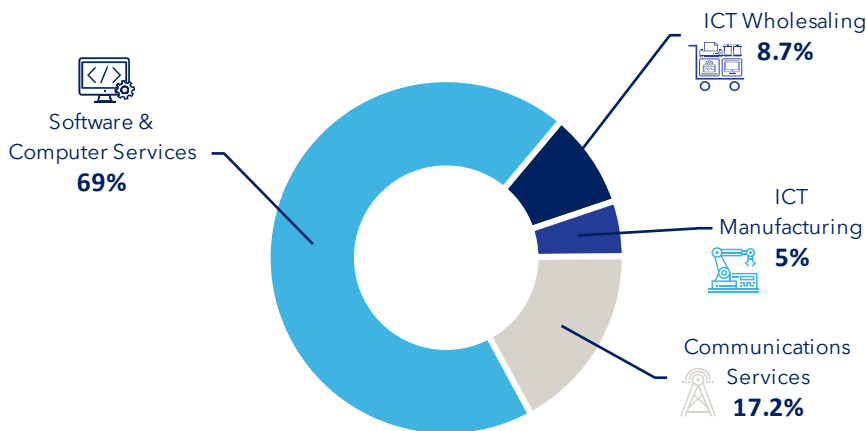
Employment growth in the ICT sector has been outpacing the overall economy for many years, between 2015 and 2020 average annual growth for ICT was 2.7%, but just 0.1% for the overall economy. In 2020 the ICT sector saw growth (+1.1%) compared to a 3.2% decline in the overall economy. In 2020, more than 671,109 individuals were working in the ICT sector, accounting for more than 3.7% of the Canada's total employment.

The sector's performance in 2020 was led by a 10.4% jump in the data processing, hosting and related services sub-sector's workforce. Employment levels in ICT manufacturing and communications services sub-sectors both decreased by 5.7% and 2.6% respectively while employment in software and computer services grew by 3.2%.

Figure 11: ICT sector employment, 2014-2020



**Figure 12: Employment by ICT sub-sector, 2020
(Total: 671,109 Workers)**

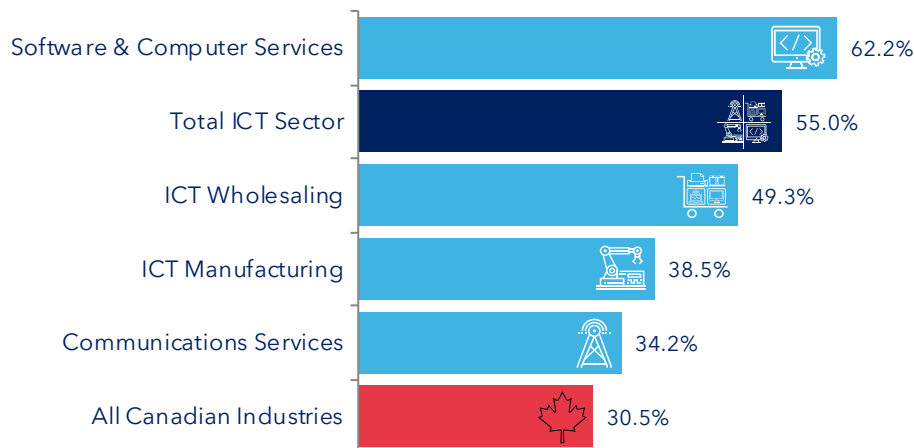


Between 2015 and 2020, total employment growth in software and computer services has outpaced overall growth in the ICT sector (4.9% vs. 2.7%). Total ICT workforce grew 14.3% from 587,000 in 2015 to just over 671,000 in 2020. Software and computer services' share of employment has increased from 62.2% to 69% over that same time period, reflecting the rising proportion of service firms in the ICT sector compared to other sub-sectors such as manufacturing.

Education

The ICT sector is characterized by a knowledge-intensive workforce, with over half of its workers holding a university degree, compared to 30.5% within all Canadian industries. The software and computerservices sub-sector employs the largest proportion of university educated workers within the ICT sector (62.2%).

Figure 13: Percentage of workers with a university degree by industry category, 2017



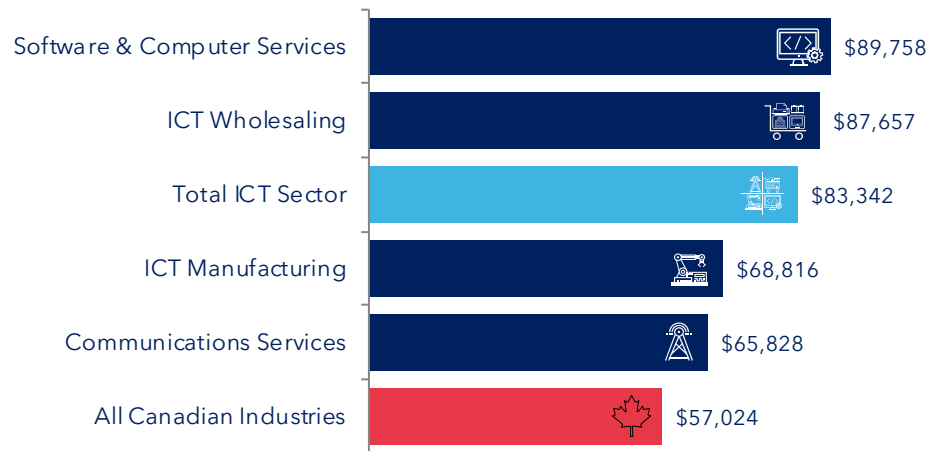
Employee Earnings

Employees in the ICT sector earn on average over \$83,300 per year. In 2020, they earned 46.2% more than the economy-wide average, down from the 53.7% premium in 2019.

The highest earners in the ICT sector were those in software and computer services and wholesaling sub-sectors. Despite being the lowest paid workers in the ICT sector, employees in the communications services sub-sectors still earned 15.4% more than the national average in 2020.

From 2015 to 2020, the average salary in the ICT sector grew 2.4% compared to 2.9% growth in salaries in the overall economy.

Figure 14: Average annual earnings by industry category, 2017



Data Sources

- i. **Companies:**
 - ISED calculations using data from Statistics Canada’s Business Registry.
- ii. **Revenues:**
 - Manufacturing: Statistics Canada, Table 16-10-0117-01;
 - Software and Computer Services: Statistics Canada, Table 22-10-0087-01 and custom tabulations;
 - Communications Services: Statistics Canada, Table 22-10-0003-01;
 - Wholesale: Statistics Canada Table, 20-10-0077-01; and
 - ISED estimates for the most recent year presented (for all ICT industries).
- iii. **GDP:**
 - Statistics Canada custom tables.
- iv. **Employment:**
 - 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:**
 - Statistics Canada, Table 27-10-0333-01.
- vi. **Education:**
 - Statistics Canada, Labour Force Survey custom tables.
- vii. **Employee Earnings:**
 - ISED calculations using Statistics Canada, Tables 14-10-0202-01 and 14-10-0204-01.
- viii. **Exports:**
 - Goods: ISED calculations using Trade Data Online data;
 - Services: Statistics Canada, Table 36-10-0006-01.
- ix. **Outlook**
 - Worldwide Black Book 3rd Platform Edition, 2017-2023, IDC, 2020.