



RESEARCH

**QUARTERLY MONITOR
OF CANADA'S ICT LABOUR MARKET**

The Information and Communications Technology Council | 2019 Q4





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ICTC's labour market research captures critical economic and labour market indicators to inform competitive business and human resource strategy planning, decision-making and career development in ICT. In so doing, this data will support the continued development of a more prosperous Canadian ICT workforce and industry in a global digital economy.

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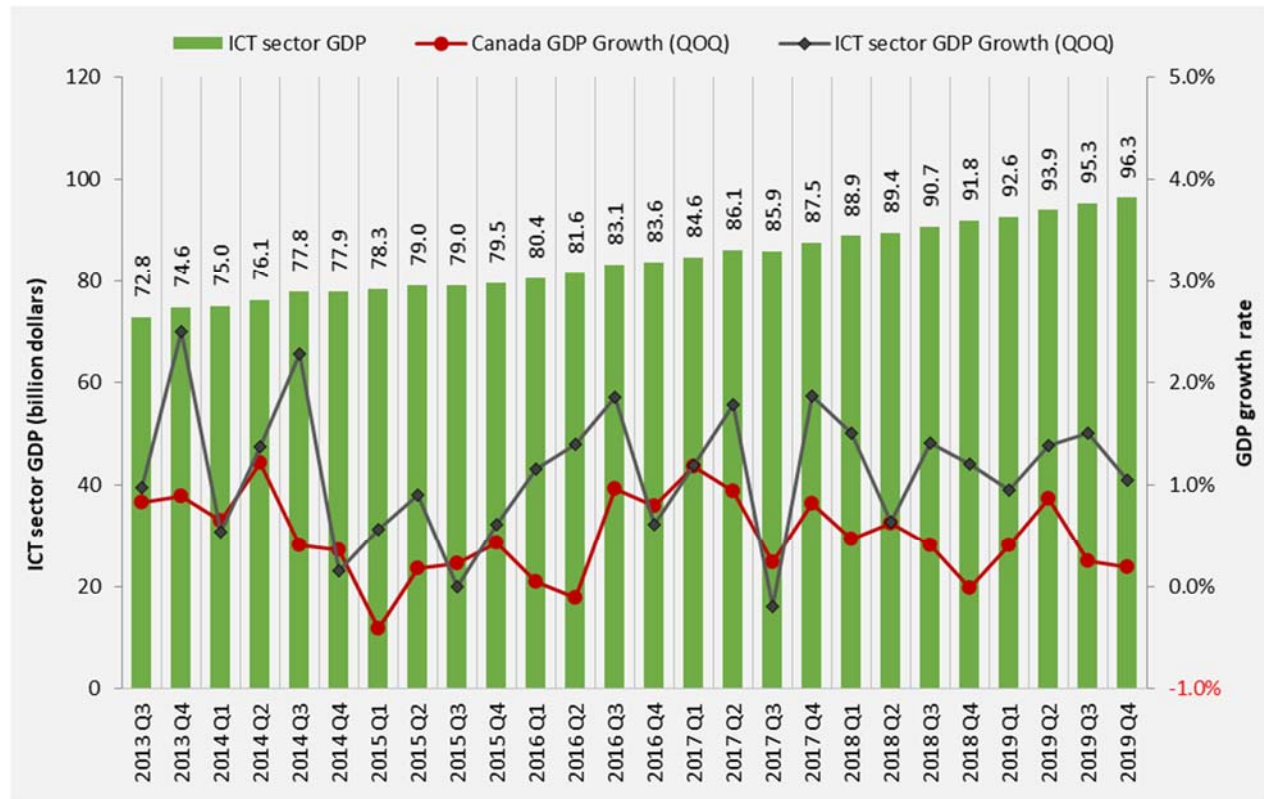
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OUTPUT AND OUTLOOK

GDP Growth

Figure 1 – ICT sector GDP



Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ Increased investment, particularly in the area of research of development, was one of the main factors driving the growth across the Canadian ICT sector. The emergence of new and innovative technologies continued to generate positive spillover effects, the impact of which are increasingly being felt across all segments of the Canadian economy.
- ❖ Real GDP^{1,2} in the ICT sector increased by 1.1% in the fourth quarter³ (Q4) of 2019 when compared to the third quarter (Q3) of 2019. The output in the ICT services⁴ subsector grew by 1.3% while the output of the ICT manufacturing⁵ subsector saw a 5.4% decline.
- ❖ The ICT sector as a whole contributed approximately \$96.3 billion in GDP to the national economy, and accounted for roughly 4.9% of Canada's total economic output (GDP).

¹ In 2012 chained dollars. Chained dollars are real dollar amounts adjusted for inflation

² The underlying concepts, methods, classification systems, and data sources of the Canadian System of Macroeconomic Accounts (CSMA) have been recently updated, and these modifications are reflected in the GDP levels compared to previous editions of this research series

³ October 2019 – December 2019

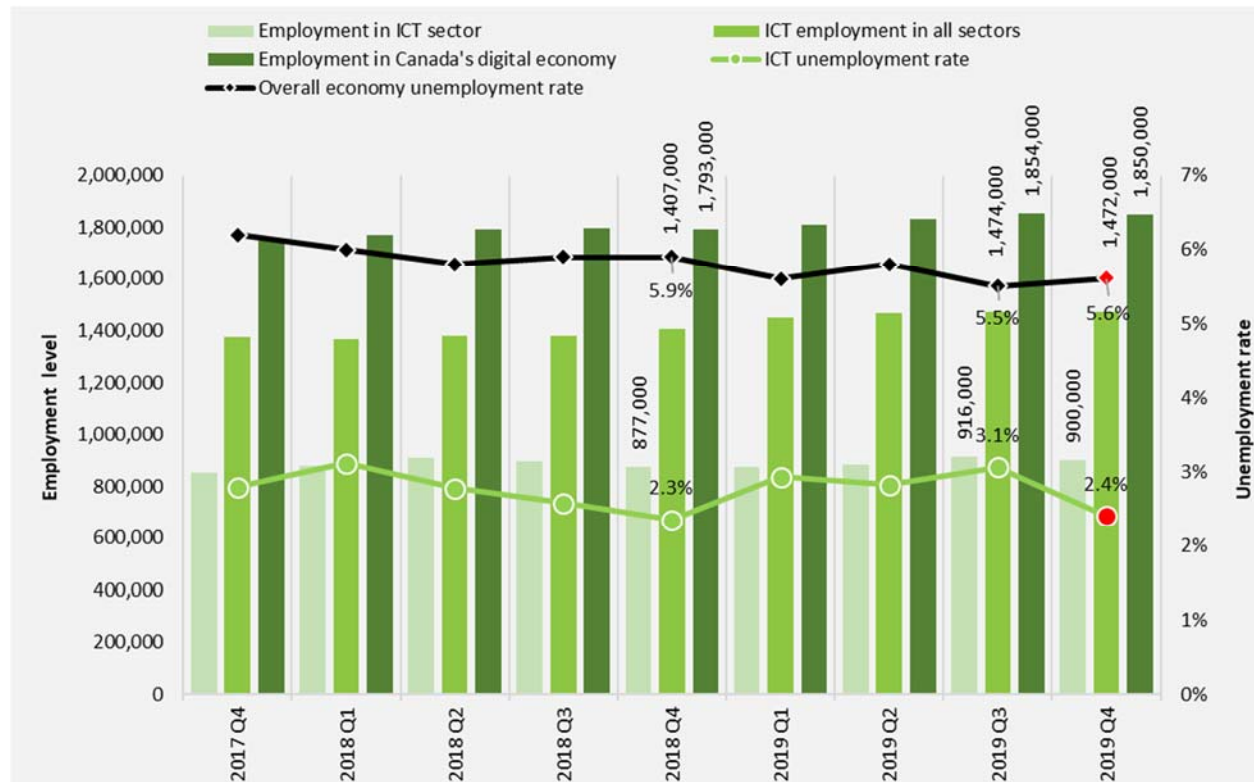
⁴ This combines the North American Industry Classification System (NAICS) codes 4173, 5112, 517, 518, 5415, 8112. See Appendices

⁵ This combines the North American Industry Classification System (NAICS) codes 3341, 3342, 3343, 3344, 3346. See Appendices

LABOUR MARKET TRENDS

Employment

Figure 2 – Employment in Canada’s digital economy



Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ An estimated 1,850,000 individuals were employed across the Canadian digital economy in the fourth quarter (Q4) of 2019. This included 521,700 ICT professionals working in the ICT sector, 949,800 ICT professionals working in non-ICT sectors and another 378,400 non-ICT professionals working in the ICT sector.
- ❖ In Q4 of 2019, there were approximately 1,472,000 ICT professionals employed across all sectors of the Canadian economy. This represented a decrease of 0.1% or approximately 2,000 jobs when compared to Q3 of 2019. On a year-over-year basis, ICT employment experienced a healthy increase of 4.6%, resulting in a net gain of approximately 65,000 net new positions when compared to the same period in the previous year.
- ❖ Employment in the Canadian ICT sector decreased by 1.7% or 16,000 jobs in Q4 of 2019 when compared to Q3 of 2019. On a year-over-year basis, employment in the ICT sector increased by 2.6%, corresponding to a net increase of 23,000 jobs.
- ❖ The unemployment rate among ICT professionals dropped by 0.7 percentage points to 2.4%, while the national unemployment rate edged up to 5.6%.

Gender Diversity

Figure 3 – Women’s employment and unemployment



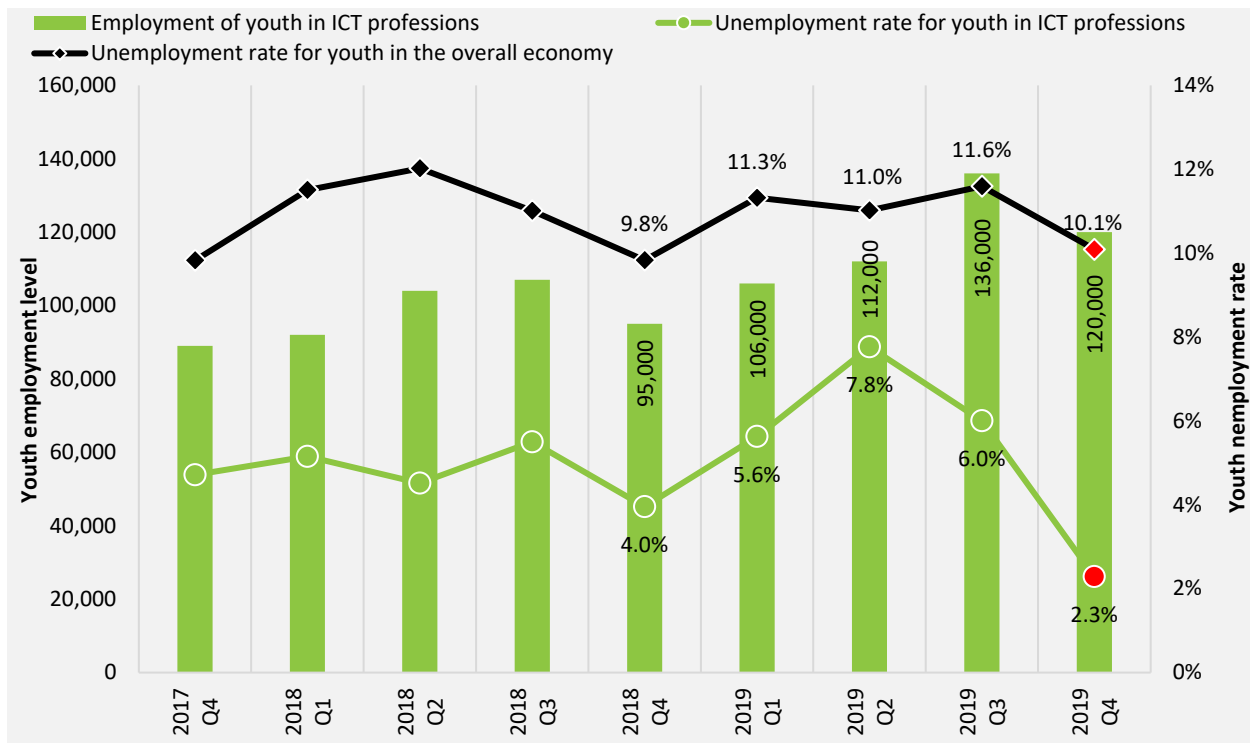
Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ The number of women employed as ICT professionals grew by 20,000 to reach 407,000 in Q4 of 2019. This represents an increase of 10.9% compared to the same period in the previous year.
- ❖ The share of women among ICT professionals increased in Q4 of 2019. Women accounted for only 27.6% of the employed ICT workforce in Canada in Q4 2019, which is 1.6 percentage points higher than the same period a year ago.
- ❖ The unemployment rate among women in ICT related professions decreased from 2.8% to 2.5% in Q4 of 2019. This figure continues to be below the national unemployment rate among women, which stood at 4.8% in Q4 of 2019.

Youth Inclusion

Figure 4 – Youth employment and unemployment



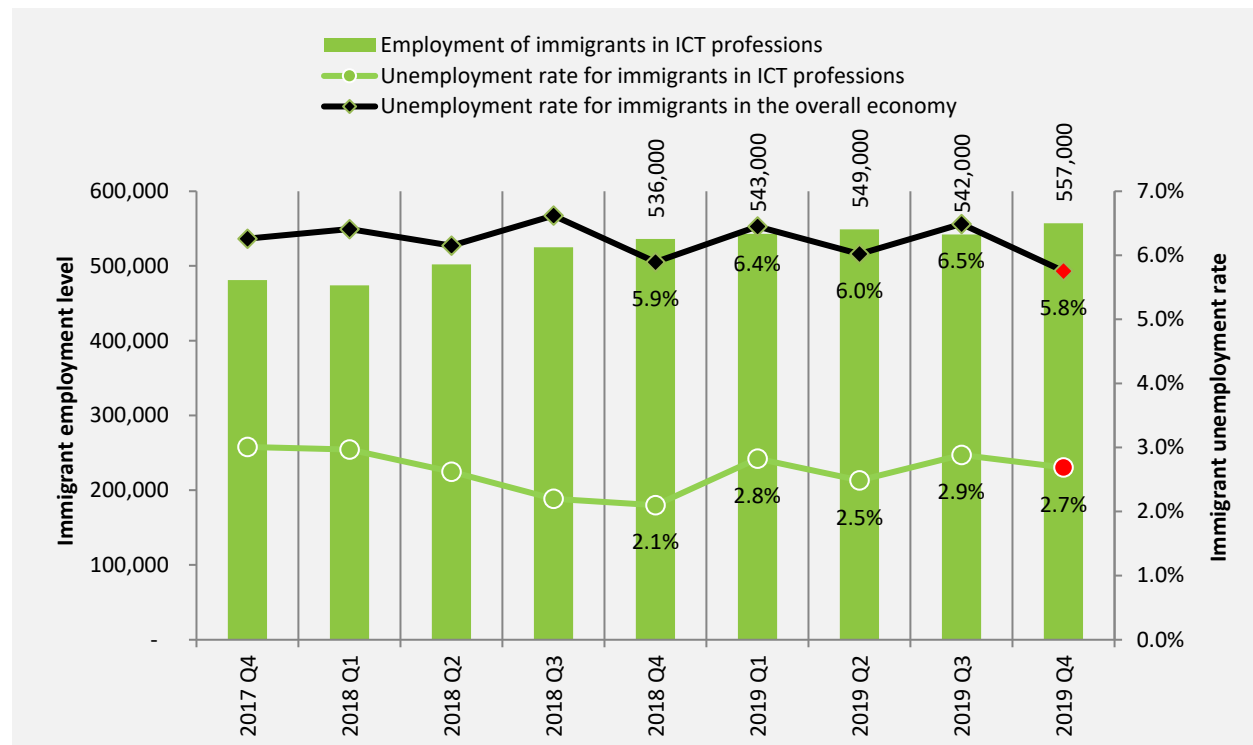
Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ Youths (15-24 years old) accounted for 12.8% of the employed workforce in Canada in Q4 of 2019. The proportion of youth who are working as ICT professionals was 8.2% in Q4 of 2019, a decrease from 9.2% in Q3 of 2019. In total, 120,000 youth worked as ICT professionals in Q4 of 2019.
- ❖ ICT employment among youth decreased by 11.8% or approximately 16,000 jobs in Q4 of 2019 when compared to the previous quarter. On a year-over-year basis, youth employment in ICT increased by 26.3%, corresponding to a net gain of approximately 25,000 jobs.
- ❖ The overall unemployment rate for youth workers in ICT decreased 3.7 percentage points to 2.3% in Q4 of 2019. The unemployment rate among youth across all sectors of the Canadian economy decreased by 1.5 percentage points to 10.1% over that same period.

Immigrant Integration

Figure 5 – Immigrant employment and unemployment



Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ As technology continues to permeate a wide cross section of industries throughout the Canadian economy, the demand for digital talent continues to increase at a rapid pace. The existing demand-supply imbalance, along with an aging domestic workforce, has created the conditions for an influx of foreign workers. The majority of these workers are arriving under different economic immigration streams. These various streams are designed to address the skills shortages that are currently prevailing in various segments of the Canadian labour market.
- ❖ There were approximately 557,000 immigrants⁶ working as ICT professionals throughout Q4 of 2019. These individuals now account for 37.9% of the employed ICT workforce in Canada.
- ❖ In Q4 of 2019, employment among immigrants working as ICT professionals increased by 2.8% when compared to Q3 of 2019. This corresponds to a net gain of approximately 15,000 positions. On a year-over-year basis, the number of immigrants working as ICT professionals grew by 21,000 or 3.9%.
- ❖ The unemployment rate among immigrants in ICT type professions decreased from 2.9% to 2.7% in Q4 of 2019. The unemployment rate among these individuals is less than half that of the national unemployment rate among immigrants, which decreased to 5.8% in Q4 of 2019.

⁶ Immigrants are defined as persons who were not born in Canada and who were not Canadian citizens by birth.



In-Demand jobs

The demand for ICT talent and skills remains very high in Canada and is expected to increase significantly over the next five years. For a detailed understanding of medium-term supply and demand dynamics related to ICT talent and skills in Canada, please refer to [ICTC's 2023 Labour Market Outlook](#).

In Q4 of 2019, employment growth was strongest among the following ICT professions:

- ❖ Information Systems Analysts and Consultants – 24,500 jobs, 11% increase from Q3 2019
- ❖ Other professional engineers, n.e.c. – 10,900 jobs, 48% increase from Q3 2019
- ❖ Business development officers and marketing – 6,100 jobs, 25% increase from Q3 2019
- ❖ Graphic arts technicians – 3,500 jobs, 57.6% increase from Q3 2019
- ❖ Mathematicians, statisticians, and actuaries – 2,100 jobs, 16% increase from Q3 2019



APPENDICIES

Digital Economy Labour Force

ICTC’s labour market research captures critical economic and labour market indicators, helping to inform competitive business planning, as well as strong human resource strategies and decision-making related to the ICT sector. Combined, this research forms the foundation for driving the development of a more prosperous Canadian ICT sector, and a highly-skilled workforce able to compete in the global digital economy.

The sum total of workers (workers that are employed in these occupations, as well as workers that are currently unemployed, but actively seeking employment) in these occupations and all other (non-ICT) occupations in the ICT sector (ICTC’s framework of Canada’s ICT sector is explained below) represent the total digital economy labour force in Canada. The table below summarizes the core ICT occupations:

Index	National Occupation Classification (NOC)	Occupation Title
1	0015	Senior managers - trade, broadcasting and other services, n.e.c.
2	211	Engineering managers
3	213	Computer and information systems managers
4	601	Corporate sales managers
5	1123	Professional occupations in advertising, marketing, and public relations
6	1253	Records management technicians
7	2133	Electrical and electronics engineers
8	2147	Computer engineers (except software engineers and designers)
9	2148	Other professional engineers, n.e.c.
10	2161	Mathematicians, statisticians and actuaries
11	2171	Information systems analysts and consultants
12	2172	Database analysts and data administrators
13	2173	Software engineers and designers
14	2174	Computer programmers and interactive media developers
15	2175	Web designers and developers
16	2241	Electrical and electronics engineering technologists and technicians
17	2281	Computer Network Technicians
18	2282	User support technicians
19	2283	Information systems testing technicians
20	4163	Business development officers and marketing
21	5223	Graphic arts technicians
22	5224	Broadcast technicians
23	5241	Graphic designers and illustrators
24	7241	Electricians (except industrial and power system)
25	7242	Industrial electricians



26	7243	Power system electricians
27	7244	Electrical power line and cable workers
28	7245	Telecommunications line and cable workers
29	7246	Telecommunications installations and repair workers
30	7247	Cable television service and maintenance technicians



ICT Sector

The table below summarizes the ICT sector:

Index	North American Industry Classification System (NAICS)	ICT Sub-sector
1	3333	Commercial & service industry machinery manufacturing
2	3341	Computer & peripheral equipment manufacturing
3	3342	Communications equipment manufacturing
4	3343	Audio & video equipment manufacturing
5	3344	Semiconductor & other electronic component manufacturing
6	3345	Navigational, medical & control instruments manufacturing
7	3346	Manufacturing and reproducing magnetic and optical media
8	4173	Computer & communications equipment & supplies wholesale distribution
9	5112	Software publishers
10	5121	Motion picture and video industries
11	5171	Wired telecommunications carrier
12	5172	Wireless telecommunications carrier (except satellite)
13	5174	Satellite telecommunications
14	5179	Other telecommunications
15	5182	Data processing, hosting, and related services
16	5191	Other information services
17	5415	Computer systems design & related serv.
18	7115	Independent artists, writers and performers
19	8112	Electronic & precision equipment repair & maintenance