



RESEARCH

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

The Information and Communications Technology Council | 2020 Q3





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Preface:

ICTC is a national center of expertise on the digital economy. With over 25 years of experience in research and program development related to technology, ICTC has the vision of strengthening Canada's digital advantage in the global economy. Through forward-looking research, evidence-based policy advice, and creative capacity building programs, ICTC fosters innovative and globally competitive Canadian industries, empowered by a talented and diverse workforce.

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The opinions and interpretations in this publication are those of the authors and do not necessarily reflect those of the Government of Canada.



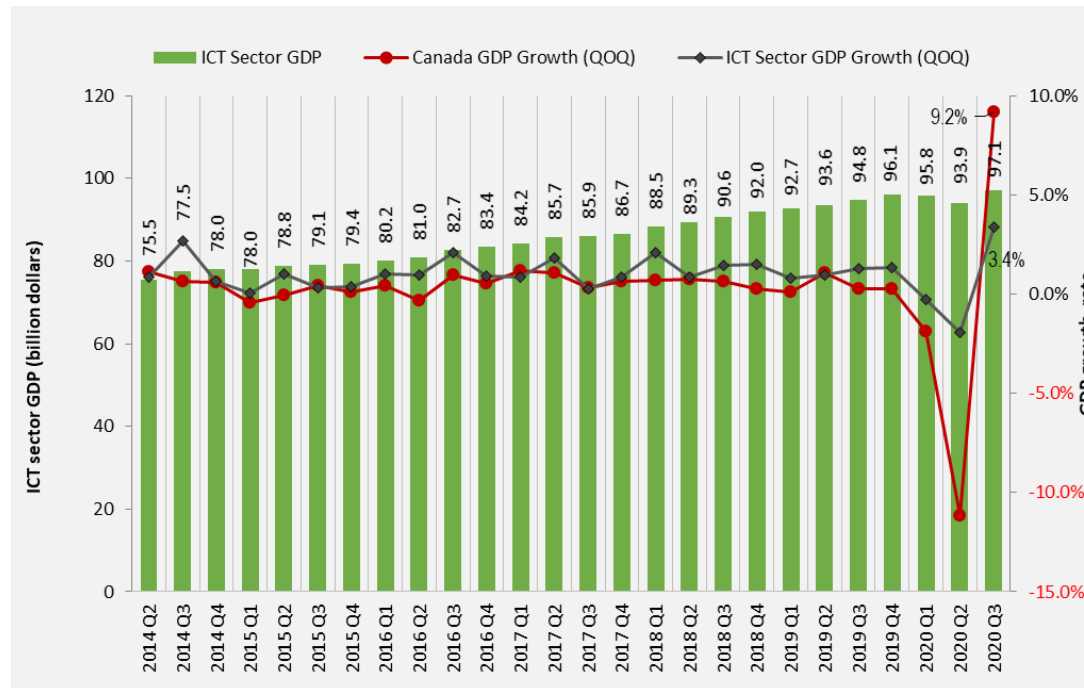
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OUTPUT AND OUTLOOK

GDP Growth

Figure 1 – ICT sector GDP



Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ The ICT Sector suffered a mild decline due to the COVID-19 pandemic in the second quarter¹ (Q2) of 2020, while the wider Canadian economy took a substantial hit. Both reprised growth in the third quarter² (Q3).
- ❖ Real GDP^{3,4} in the ICT sector grew by 3.4% in Q3 of 2020 when compared to Q2 of 2020. The ICT services⁵ subsector grew by 3.1%, while the ICT manufacturing⁶ subsector saw a 12.2% jump. The Canadian economy as a whole grew by 9.2% in Q3. The very high growth rates of the wider Canadian economy and the ICT manufacturing subsector represent a ‘return to normal’ after rapid decline in Q2, and are not expected to continue long-term.
- ❖ The ICT sector contributed approximately \$97.1 billion in GDP to Canada’s economy, accounting for roughly 5.1% of Canada’s total economic output (GDP). This is a decline from Q2, when the ICT sector represented 5.4% of Canada’s economic output.

¹ April 2020 – June 2020

² July 2020 – September 2020

³ In 2012 chained dollars. Chained dollars are real dollar amounts adjusted for inflation.

⁴ 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

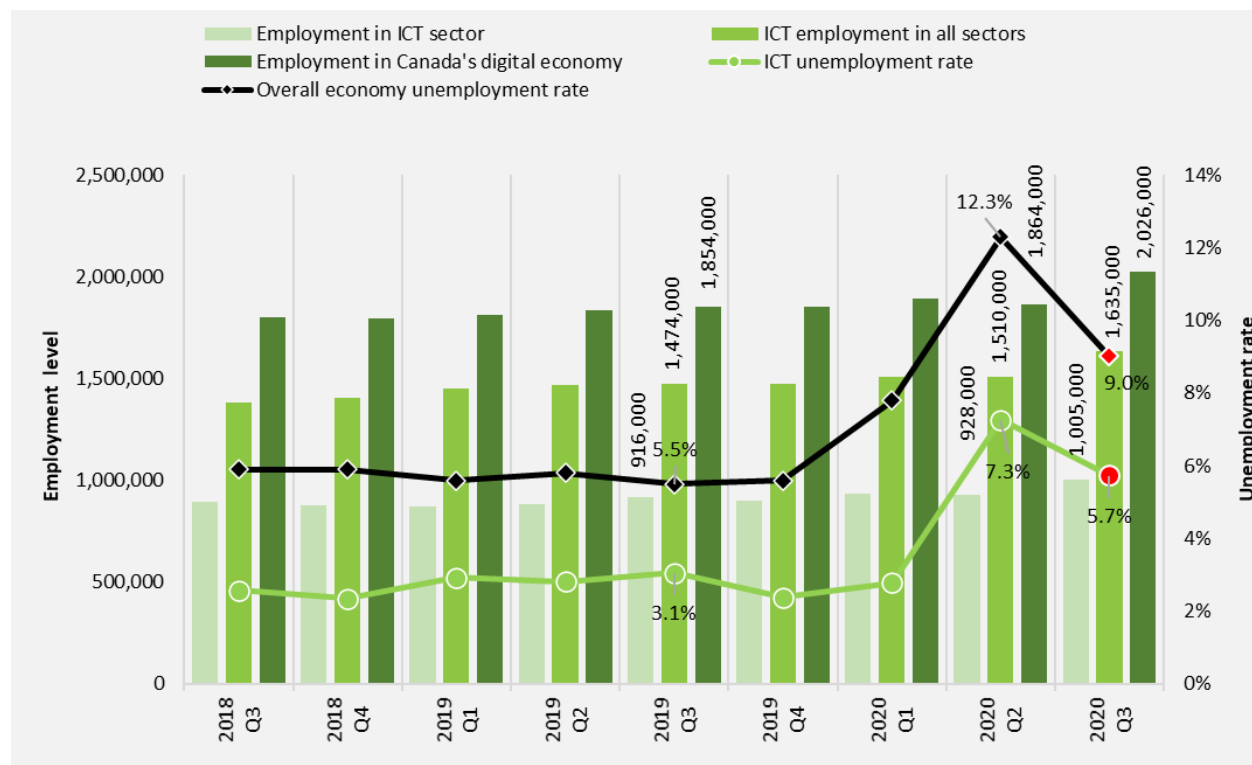
⁵ This combines the North American Industry Classification System (NAICS) codes 4173, 5112, 517, 518, 5415, 8112. See Appendices

⁶ 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 2,026,000 individuals were employed across the Canadian digital economy in Q3 of 2020. This included 613,500 ICT professionals working in the ICT sector; 1,021,200 ICT professionals working in non-ICT sectors; and another 391,200 non-ICT professionals working in the ICT sector.
- ❖ In Q3 of 2020, there were approximately 1,635,000 ICT professionals employed across all sectors of the Canadian economy. This represented an increase of 8.3% or approximately 125,000 jobs when compared to Q2 of 2020. Compared to the same period last year, ICT employment experienced an increase of 10.9%, resulting in a net gain of approximately 161,000 positions.
- ❖ Employment in the Canadian ICT sector increased by 8.3% or 77,000 jobs in Q3 of 2020 when compared to Q2 of 2020. On a year-over-year basis, employment in the ICT sector rose by 9.7%, corresponding to a net increase of 89,200 jobs.
- ❖ The unemployment rate among ICT professionals dropped from 7.3% in Q2 of 2020 to 5.7% in Q3 of 2020, while the national unemployment rate dropped from 12.3% to 9.0% over the same time period.

Gender Diversity

Figure 3 – Women’s employment and unemployment



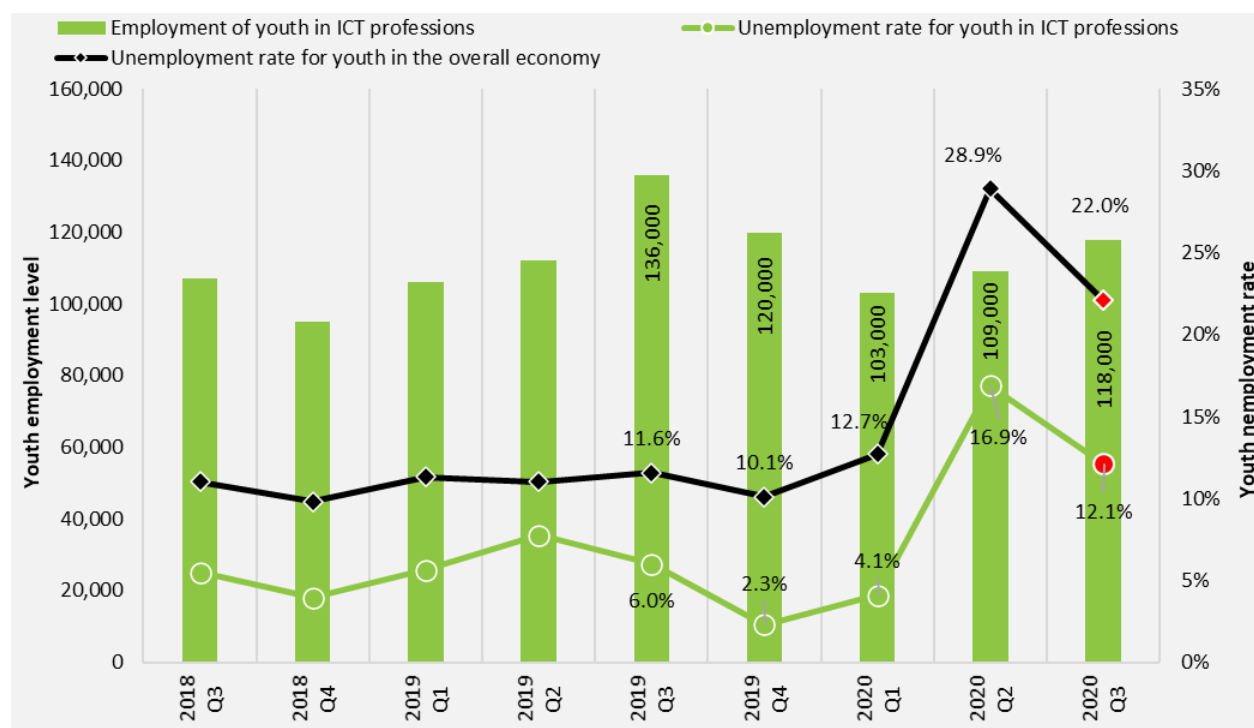
Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ The number of women employed as ICT professionals grew by 42,000 to reach 448,000 in Q3 of 2020. This represented an increase of 10.3% from Q2 of 2020, and an increase of 15.8% from Q3 of 2019.
- ❖ The share of women among ICT professionals increased slightly in Q3 of 2020. Women accounted for 27.4% of the employed ICT workforce in Canada, compared to 26.9% in Q2 of 2020 and 26.3% in Q3 of 2019.
- ❖ The unemployment rate among women in ICT-related professions decreased from 8.4% in Q2 to 6.5% in Q3 of 2020. The national unemployment rate among women in all sectors decreased from 13.2% to 10.6% over the same time period.

Youth Inclusion

Figure 4 – Youth employment and unemployment



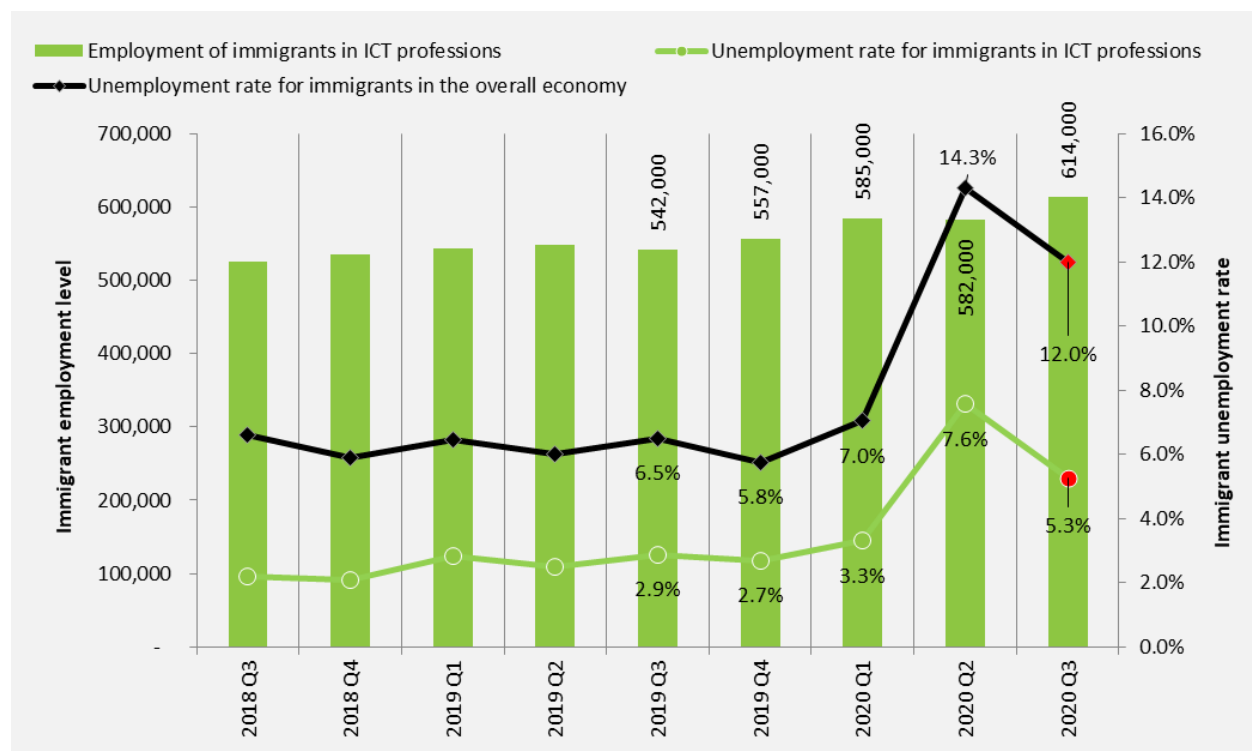
Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ Youths (15-24 years old) accounted for 12.9% of the employed workforce in Canada in Q3 of 2020. The share of youth among ICT professionals remained stable at 7.2%. In total, 118,000 youth worked as ICT professionals in Q3 of 2020.
- ❖ ICT employment among youth increased by 8.3% or approximately 9,000 jobs in Q3 of 2020, compared to Q2 of 2020. Year over year, youth employment in ICT decreased by 13.2%, corresponding to a net loss of approximately 18,000 jobs.
- ❖ The overall unemployment rate for youth workers in ICT declined to 12.1% in Q3 of 2020, compared to 16.9% in Q2 of 2020. Over the same period, the unemployment rate among youth across all sectors of the Canadian economy decreased from 28.9% to 22.0%.

Immigrant Integration

Figure 5 – Immigrant employment and unemployment



Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ As technology diffuses across a wide cross-section of industries in the Canadian economy, demand for digital talent from abroad remains stable, even during the COVID-19 pandemic.
- ❖ There were approximately 614,000 immigrants⁷ working as ICT professionals in Q3 of 2020. These individuals accounted for 37.6% of the employed ICT workforce in Canada.
- ❖ In Q3 of 2020, employment among immigrants in professional ICT roles increased by 5.5% compared to Q2 of 2020. This corresponds to a net gain of approximately 32,000 positions. On a year-over-year basis, the number of immigrants working as ICT professionals grew by 72,000 or 13.3%.
- ❖ The unemployment rate among immigrants in ICT professions decreased from 7.6% in Q2 of 2020 to 5.3% in Q3 of 2020. The unemployment rate among immigrants in ICT is less than half of the national unemployment rate among all immigrants, which decreased from 14.3% to 12.0% over the same time period.

⁷ Immigrants are defined as persons who were not born in Canada and who were not Canadian citizens by birth.

In-Demand jobs

Prior to COVID-19, demand for ICT talent was high in Canada and was expected to increase over the next five years. For a detailed understanding of the medium to long-term factors affecting ICT talent and skills in Canada (prior to the COVID-19 pandemic), please refer to [ICTC's 2023 Labour Market Outlook](#).

COVID-19 has brought instability to all sectors of the Canadian economy. For an analysis of the potential impacts of COVID-19 on the Canadian ICT sector and digital economy, please refer to ICTC's recent whitepaper, [Economic Resiliency in the Face of Adversity](#). For a post-pandemic revision of projections made in the 2023 Labour Market Outlook report, please refer to [The Digital-Led New Normal: Revised Labour Market Outlook for 2022](#).

In Q3 of 2020, employment growth was strongest among the following ICT professions:

- ❖ User support technicians – 26,600 new jobs, 28% increase from Q2 2020
- ❖ Electricians – 24,700 new jobs, 34% increase from Q2 2020
- ❖ Information systems analysts and consultants – 13,300 new jobs, 5% increase from Q2 2020
- ❖ Professional occupations in advertising, marketing, and publishing – 11,000 new jobs, 7% increase from Q2 2020
- ❖ Software Engineers and Designers – 10,700 new jobs, 15% increase from Q2 2020

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