



RESEARCH

QUARTERLY MONITOR
OF CANADA'S ICT LABOUR MARKET



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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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Technical comments regarding this publication can be directed to:

Maryna Ivus, Senior Research Analyst
m.ivus@ictc-ctic.ca



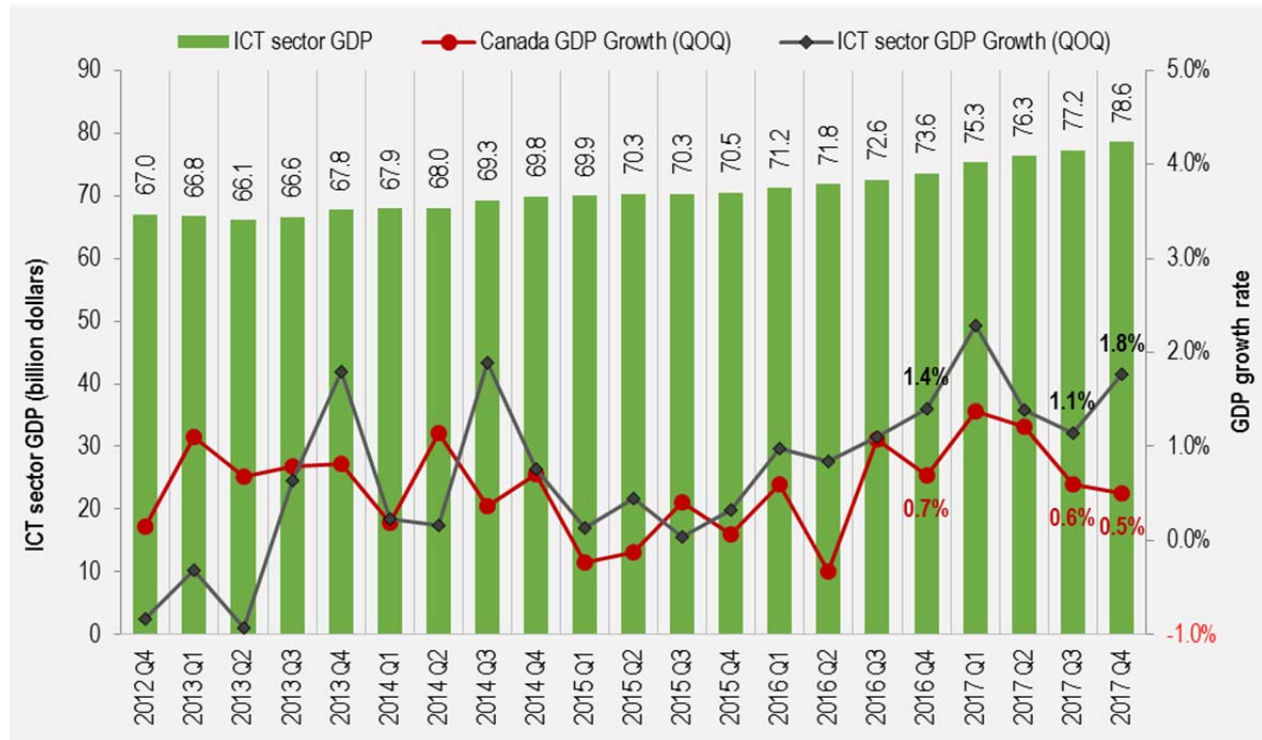
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OUTPUT AND OUTLOOK

GDP Growth

Figure 1 – ICT sector GDP



Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ In the fourth¹ quarter (Q4) of 2017, the ICT sector continued to grow, contributing \$78.6 billion in total, or an additional \$1,362 million (from Q3 of 2017) to the overall Canadian GDP^{2,3}. This contribution accounted for approximately 4.5% of the total Canadian GDP during this period.
- ❖ ICT sector growth accelerated in Q4 of 2017 increasing by 1.8% from Q3 of 2017, and 6.7% from Q4 of 2016. Moreover, ICT sector growth continued to surpass the overall growth in the Canadian economy during Q4, which grew by 0.5% from Q3 of 2017 and by 3.7% from Q4 of 2017.
- ❖ During Q4 of 2017, ICT services⁴, representing 95% of the total Canadian ICT sector GDP, grew by 1.6% or \$1,147 million from Q3. By contrast, ICT manufacturing⁵, contributing approximately 5% to the total Canadian ICT sector GDP, has increased by 5.9% or \$215 million from Q3.

¹ October 2017 – December 2017

² In 2007 chained dollars. Chained dollars are real dollar amounts adjusted for inflation

³ 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

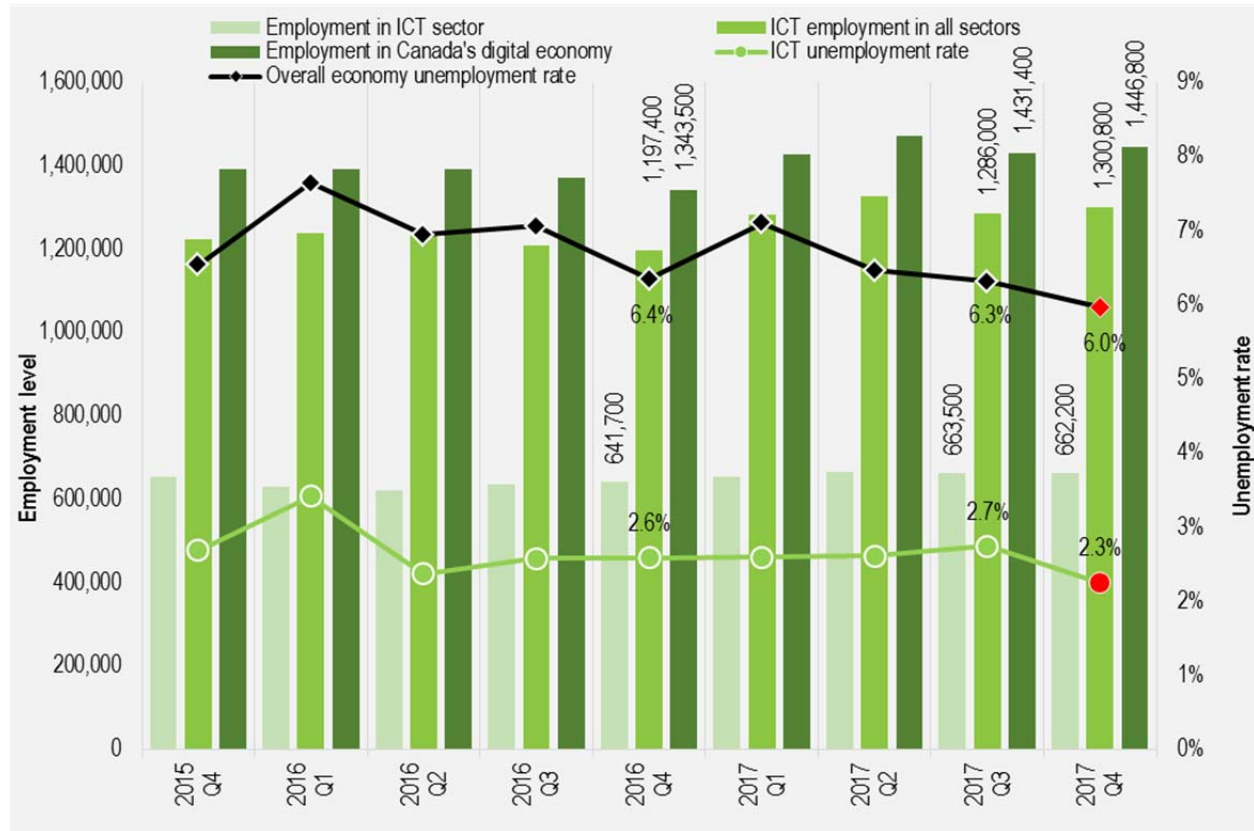
⁴ This combines the North American Industry Classification System (NAICS) codes 4173, 5112, 517, 518, 5415, 8112. See Appendices

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

- ❖ In Q4 of 2017, 1,446,800 professionals were employed in the Canadian digital economy. This figure includes 516,200 ICT professionals working in the ICT sector, 784,600 ICT professionals working in non-ICT sectors and 146,000 non-ICT professionals working in the ICT sector.
- ❖ 1,300,800 ICT professionals were employed across all sectors of the Canadian economy in Q4 of 2017. Driven by the increasing demand for ICT talent across all industries, employment in the digital economy grew substantially. In Q4 of 2017, ICT employment across all sectors of the economy grew by 14,800 positions, representing additional growth of 1.2% compared to Q3 of 2017. Compared with Q4 of 2016, ICT employment across all sectors of the economy grew by 103,400 positions or 8.6%.
- ❖ 1,300 jobs were lost in the Canadian ICT sector during Q4 of 2017, representing a decline of 0.2% from Q3 in 2017. However, compared with Q4 of 2016, employment in the ICT sector grew by 20,500 jobs, which represents a growth rate of 3.2%.
- ❖ During Q3 of 2017, the unemployment rate among those employed in ICT professions declined to a mere 2.3%. This figure is significantly lower than the average unemployment rate seen across the entire economy, which in Q4 of 2017 rested at 6%.

Gender Diversity

Figure 3 – Women’s employment and unemployment



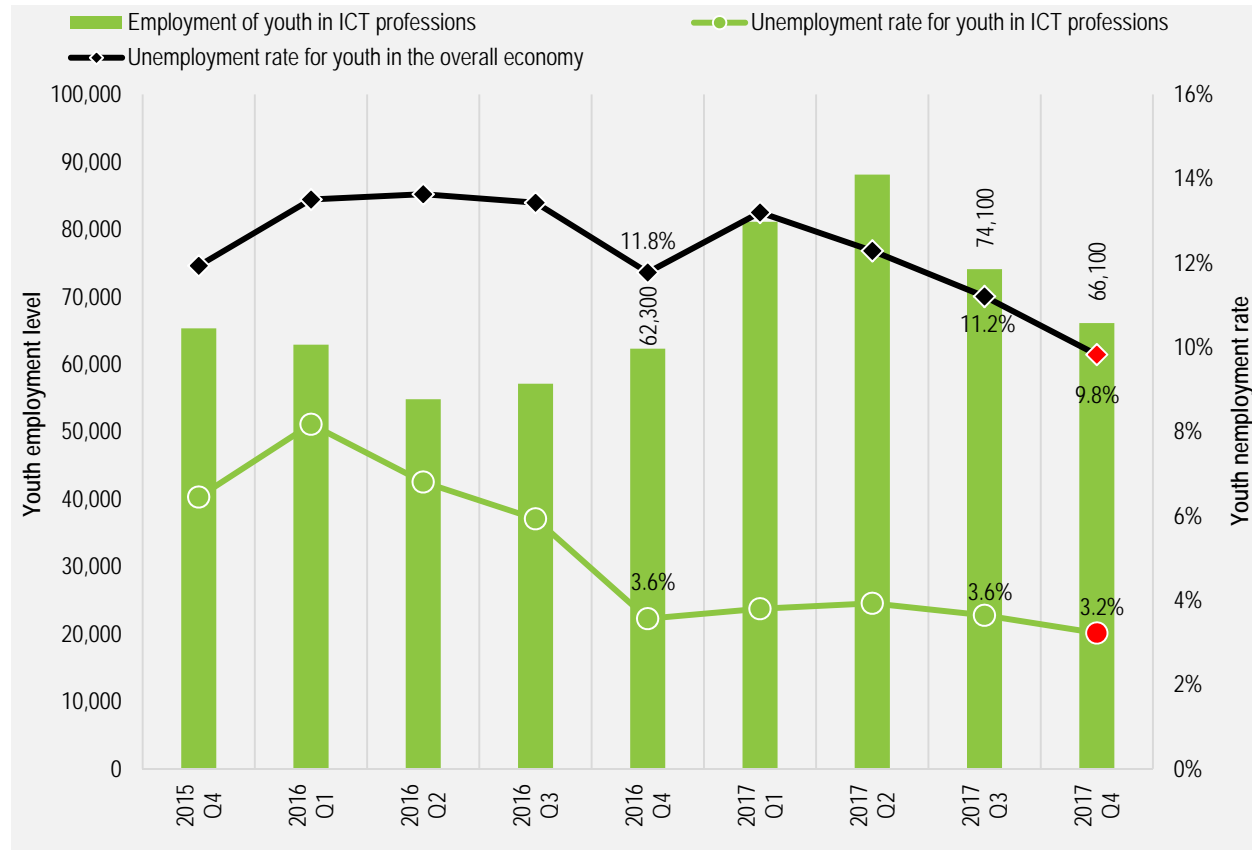
Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ The employment of women in the ICT workforce increased by 0.4% between the 3rd and 4th quarter of 2017, reaching 317,200 positions. Year over year, the employment of women in the ICT workforce increased by 11.1% compared to Q4 of 2016.
- ❖ During Q4 2017, a total of 14,800 new ICT jobs were created across the economy, but only 8% of them were occupied by women.
- ❖ Women represent 48% of all employed Canadians. However the participation of women in ICT professions has remained relatively constant, averaging between 24% and 25%, for more than 10 years. Women represented 24.4% of all ICT workers in Canada during Q4 of 2017. This represents a decrease of 0.2% from Q3 of 2017, but an increase of 0.6% from Q4 of 2016.
- ❖ The unemployment rate for women in ICT professions dropped to 2% in Q4 of 2017. This is a figure that is significantly lower than the 5.1% rate of unemployment seen among women participating in the overall Canadian economy during the same period.

Youth Inclusion

Figure 4 – Youth employment and unemployment



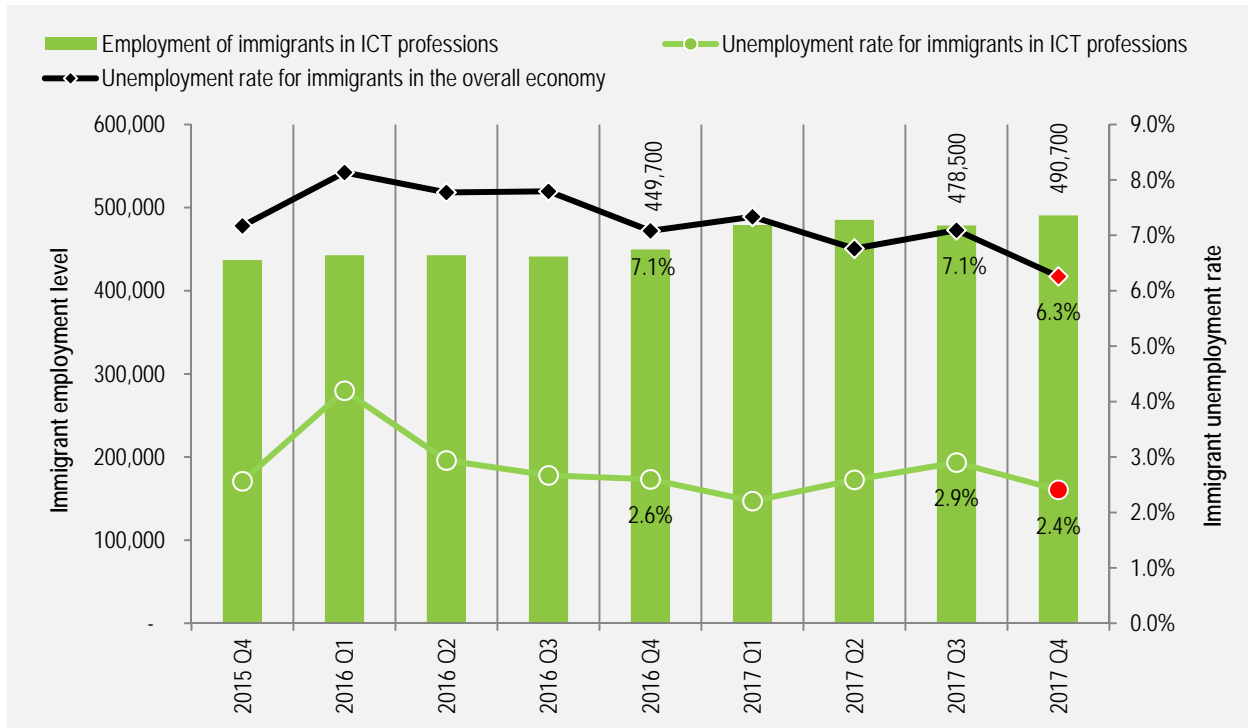
Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ ICT employment among youth (15-24 years old) reached 66,100 in Q4 of 2017.
- ❖ During Q4 of 2017, ICT employment among youth declined by 8,000 jobs or 10.8%. However, on an annual measure, the rate of employment among youth was found to grow by 3,800 jobs or 6.1%.
- ❖ Youth comprised 5.1% of the total number of ICT workers in Canada during Q4 of 2017. This represents a decrease of 0.7% from Q3 of 2017, where youth totaled 5.8% of the total number of ICT workers in Canada. By contrast, youth represented 13% of the overall Canadian workforce, across all sectors of the economy.
- ❖ The unemployment rate for youth employed in ICT professions has gradually decreased since Q1 of 2016, falling to 3.2% in Q4 2017. By comparison, the unemployment rate for youth in the overall Canadian economy during Q3 of 2017 was three times this rate, totaling 9.8%.
- ❖ The decline in the youth unemployment rate during Q3 of 2017 was partially due to fewer youth participating in the labour force. The total volume of youth in the ICT labour force fell by 8,600 or 11% in Q4 of 2017, compared to Q3 of 2017.

Immigrant Integration

Figure 5 – Immigrant employment and unemployment



Source: ICTC; Statistics Canada

Analysis and Insights

- ❖ During Q4 of 2017, 490,700 or 37.7% of all employed ICT professionals were immigrants⁶. By contrast, immigrants represented just 26.2% of the overall Canadian workforce, across all sectors of the economy.
- ❖ In Q4 of 2017, the employment of immigrants in ICT professions increased by 12,200 jobs or 2.5% from Q3. However compared to Q4 of 2016, the employment of immigrants in ICT professions grew by 41,000 new positions or 9.1%.
- ❖ During Q4 of 2017, a total of 14,800 new ICT jobs were created. Of these new roles, 82% were occupied by immigrants.
- ❖ This demand for immigrants in ICT professions was evident when it came to the unemployment rates, as well. The unemployment rate for immigrants in ICT professions decreased by 0.5%, totaling 2.4% in Q4 of 2017, a figure slightly lower than the 2.9% rate seen in Q3 of 2017. By comparison, the unemployment rate for immigrants in the overall Canadian economy during Q4 of 2017 was more than double that of the ICT sector, totaling 6.3%.

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 2021 Labour Market Outlook](#).

In Q4 of 2017, employment growth was strongest among the following ICT professions:

- ❖ Health information management occupations – 41% increase from Q3 2017.
- ❖ Engineering managers – 27% increase from Q3 2017.
- ❖ Audio and video recording technicians – 24% increase from Q3 2017.
- ❖ Electrical and electronics engineers - 21% increase from Q3 2017.
- ❖ Electronics assemblers, fabricators, inspectors and testers – 20% increase from Q3 2017.

To review live job postings by occupation, please [click here](#).



APPENDICES

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 Occupational Classification (NOC)	Occupation Title
1	131	Telecommunication carriers managers
2	211	Engineering managers
3	911	Computer and information systems managers
4	911	Manufacturing managers
5	1252	Health information management occupations
6	2133	Electrical and electronics engineers
7	2147	Computer engineers (except software engineers and designers)
8	2171	Information systems analysts and consultants
9	2172	Database analysts and data administrators
10	2173	Software engineers and designers
11	2174	Computer programmers and interactive media developers
12	2175	Web designers and developers
13	2241	Electrical and electronics engineering technologists and technicians
14	2242	Electronic service technicians (household and business equipment)
15	2243	Industrial instrument technicians and mechanics
16	2281	Computer network technicians
17	2282	User support technicians
18	2283	Information systems testing technicians
19	5222	Film and video camera operators
20	5223	Graphic arts technicians
21	5225	Audio and video recording technicians
22	5241	Graphic designers and illustrators
23	6221	Technical sales specialists - wholesale trade
24	9222	Supervisors, electronics manufacturing
25	9523	Electronics assemblers, fabricators, inspectors and testers



ICT Sector

The table below summarizes the ICT sector:

Index	North American Industry Classification System (NAICS)	ICT Sub-sector
1	3333	Commercial & Service Industry Mach. Manuf.
2	3341	Computer & Peripheral Equip. Manuf.
3	3342	Communications Equip. Manuf.
4	3343	Audio & Video Equip. Manuf.
5	3344	Semiconductor & Other Electronic Component Manuf.
6	3345	Navigational, Medical & Control Instruments Manuf.
7	4173	Computer & Comm. Equip. & Supplies Wholesale distribution
8	5112	Software Publishers
9	5171	Wired Telecommunications Carrier
10	5172	Wireless Telecommunications Carrier (except satellite)
11	5174	Satellite Telecommunications
12	5179	Other Telecommunications
13	5182	Data Processing, Hosting, and Related Services
14	5415	Computer Systems Design & Related Serv.
15	8112	Electronic & Precision Equip. Repair & Maintenance