



RESEARCH

STRENGTHENING CANADA'S DIGITAL ADVANTAGE

QUARTERLY MONITOR OF CANADA'S DIGITAL ECONOMY

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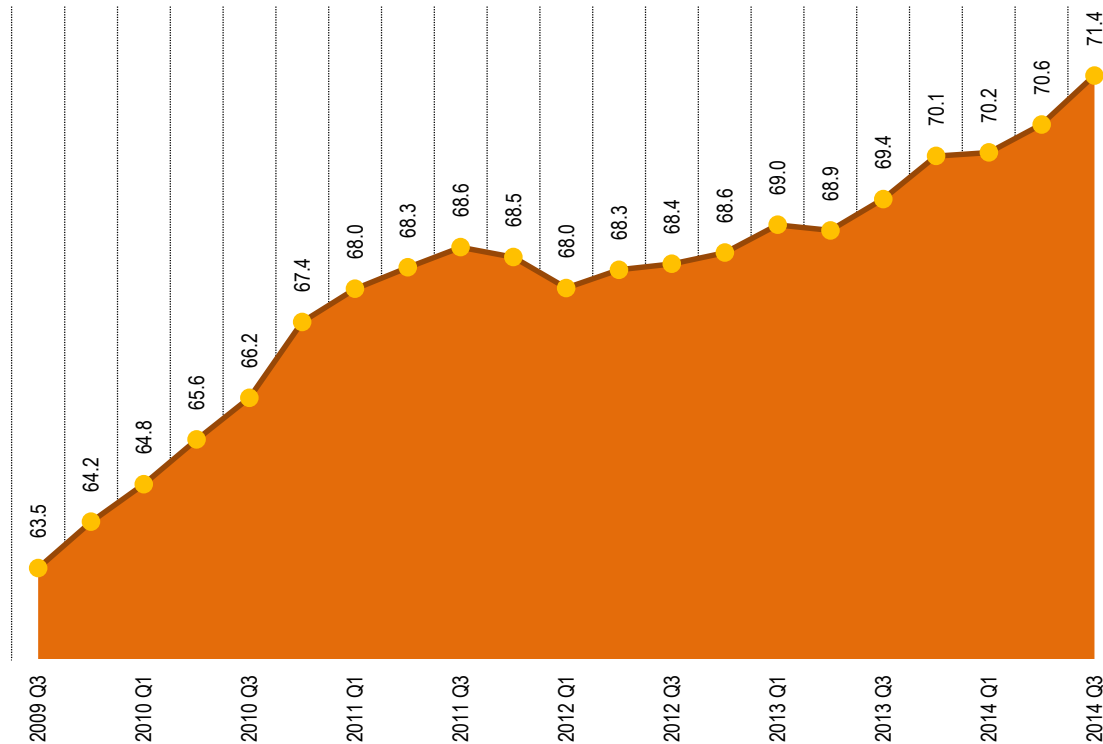
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OUTPUT AND OUTLOOK

Figure 1. ICT sector GDP (in billion dollars)



Source: ICTC; Statistics Canada

- Real gross domestic product (GDP) produced by the Canadian ICT sector increased significantly (▲\$783 million) for the second consecutive quarter.
- In the third quarter of 2014 (2014 Q3), the ICT sector contributed \$71.4 billion to Canadian GDP (figure 1).^{1,2}
- The ICT sector accounted for 4.4% of Canada's total output of \$1,629 billion in 2014 Q3.

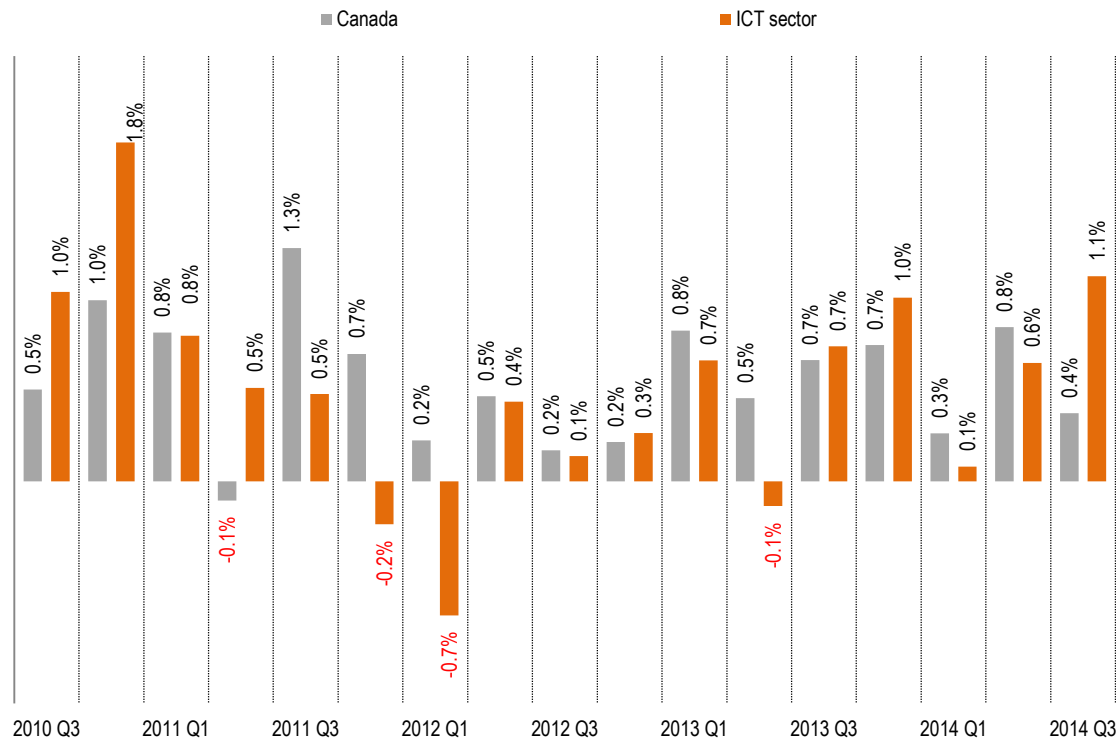
Takeaway

- Technological renaissance is impacting businesses like never before. Boosting technology adoption through supportive policies to capitalize on opportunities and minimize costs and risks is of critical importance. Sharing adoption best practices with all stakeholders will yield benefits for all stakeholders. With that vision ICTC is about to launch its [Digital Adoption Campaign](#).

¹ In 2007 chained dollars. Chained dollars are real dollar amounts adjusted for inflation.

² GDP figures for 2014 Q2 are calculated using up to April 2014 data, due to lag associated with availability of output data.

Figure 2. Quarterly GDP growth



Source: ICTC; Statistics Canada

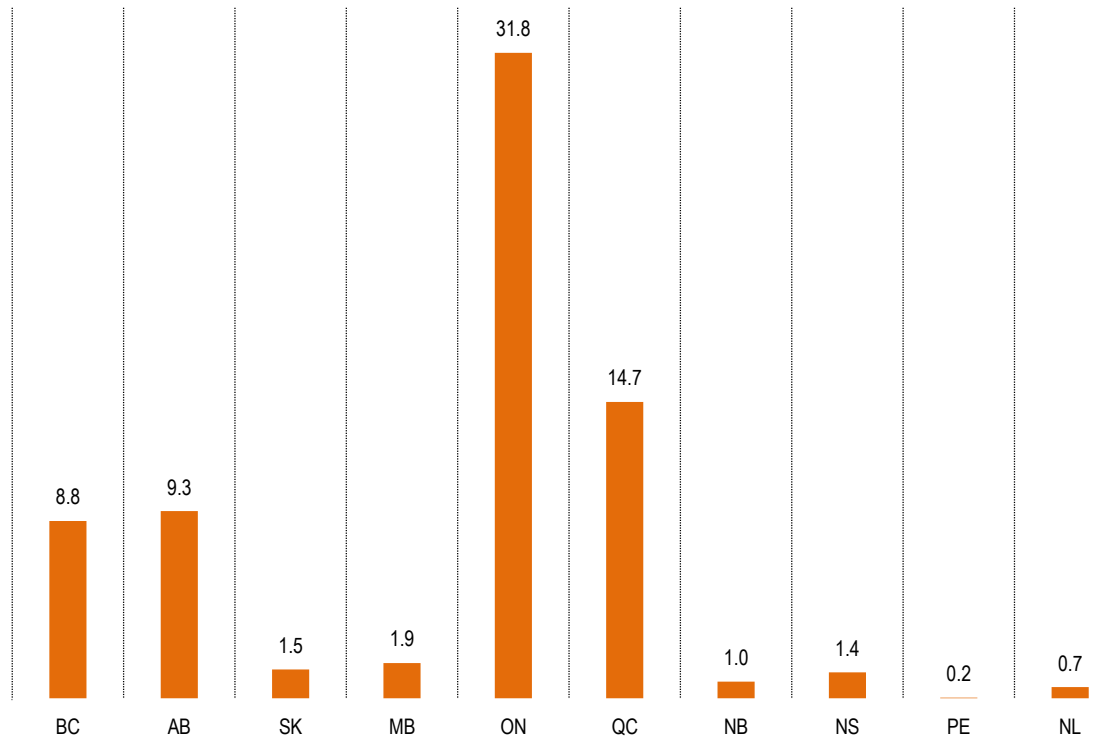
- ICT sector output of \$71.4 billion in 2014 Q3 was \$2 billion higher than it was in 2013 Q3 – a year-over-year (YOY) output growth of 2.9%.
- This output level represents a 4.4% increase compared to two years ago (2012 Q3).
- ICTs were a contributing factor to 0.4% (▲) quarterly growth in the overall Canadian economy in 2014 Q3.
- Growth in the overall Canadian economy was 2.2% (▲) in the third quarter of 2014 compared to the third quarter in 2013, and 4.4% (▲) compared to the third quarter in 2012.

Takeaway

- ICTs have a profound direct and enabling [impact](#) on the overall economy. These technologies enable workers and businesses to upgrade existing business strategies, workplaces, and operational procedures to improve productivity.

PROVINCIAL COMPARISON

Figure 3. ICT sector output by province (in billion dollars)



Source: ICTC; Statistics Canada

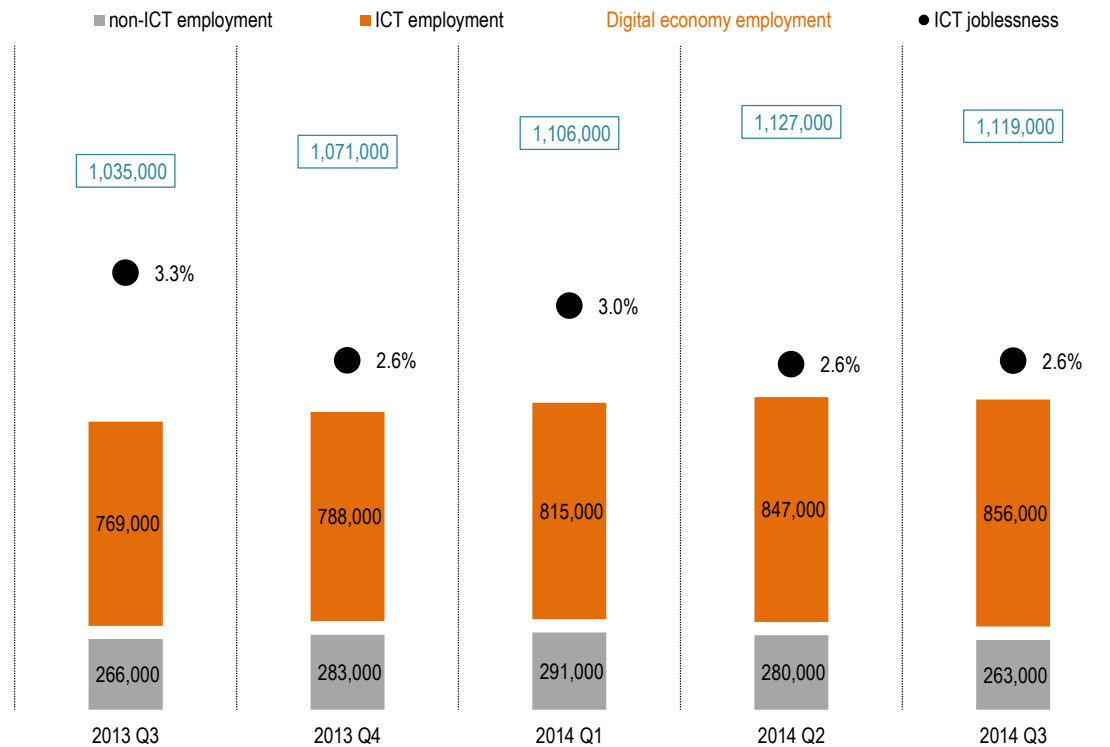
- Reflective of its ICT workforce and size of the sector, Ontario is Canada's ICT leader and contributed \$31.8 billion to the total Canadian ICT output in 2014 Q3.
- In the same period, other notable ICT output contributors were Quebec (\$14.7 billion), Alberta (\$9.3 billion), British Columbia (\$8.8 billion), Manitoba (\$1.9 billion), Saskatchewan (\$1.5 billion), and Nova Scotia (\$1.4 billion).

Takeaway

- Each province has its unique attribute that can be leveraged to gain competitive advantage in an increasingly connected global marketplace. These attributes include strong and robust industry verticals and clusters, pool of required skills, policy support, and enabling business environment.
- It is [vital](#) to raise awareness of technology options and benefits to encourage wider [adoption](#) and thus generate demand to increase output.
- A great example is Quebec creating an enabling environment by [supporting](#) innovative Canadian businesses.

LABOUR MARKET TRENDS

Figure 4. Employment in Canada's digital economy



Source: ICTC; Statistics Canada

- 856,000 ICT professionals were employed in Canada in 2014 Q3, an encouraging increase (▲9,000) compared to 2014 Q2.
- With more jobseekers looking for work, the jobless rate in ICT professions remained unchanged at 2.6% in 2014 Q3.
- Employment among non-ICT professionals in the digital economy decreased in 2014 Q3 to 263,000 (▼17,000) from 280,000 in 2014 Q2.
- The net effect of increase in ICT employment and sizable decrease in non-ICT employment was that employment in Canada's digital economy decreased by 8,000 (▼) in 2014 Q3 compared to the previous quarter, bringing the employment level in Canada's digital economy to 1,119,000.

Takeaway

- Non-ICT professionals working in the ICT sector are key contributors to Canada's digital economy and are included in our overall consideration of this economy.

Figure 5. Quarterly employment growth



Source: ICTC; Statistics Canada

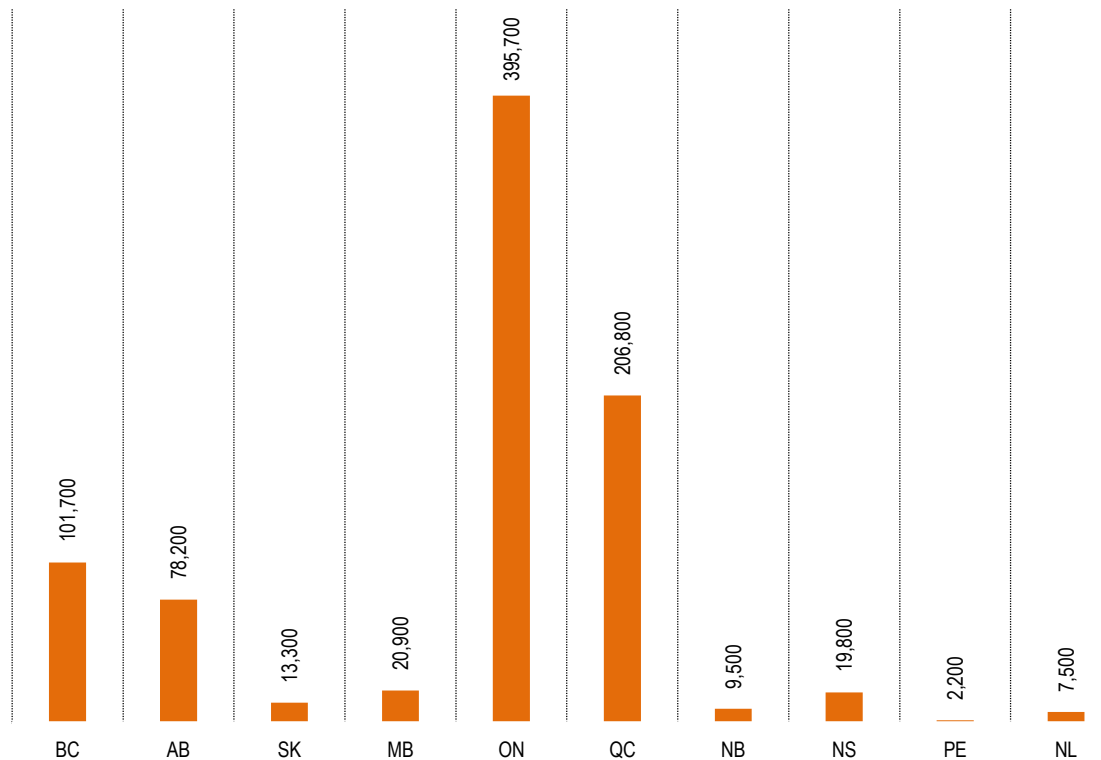
- The overall Canadian labour market experienced growth for the second consecutive quarter, as 140,000 jobs (▲0.8%) were created across all sectors in 2014 Q3.
- 18.1 million workers were employed in 2014 Q3, the highest ever employment level in Canada.
- ICT employment grew for four consecutive quarters at an average rate of 2.7% per quarter.
- In the previous 12 months (four quarters), employment across all sectors in Canada increased by 129,000, of which 87,000 were ICT jobs.

Takeaway

- For each non-ICT job created in Canada in the past year, two new ICT jobs were also created.
- All sectors of the economy employ ICTs to boost productivity, efficiency, and innovation. ICTs play a leading role in the growth of the overall Canadian labour market and economy.

PROVINCIAL COMPARISON

Figure 6. ICT employment by province



Source: ICTC; Statistics Canada

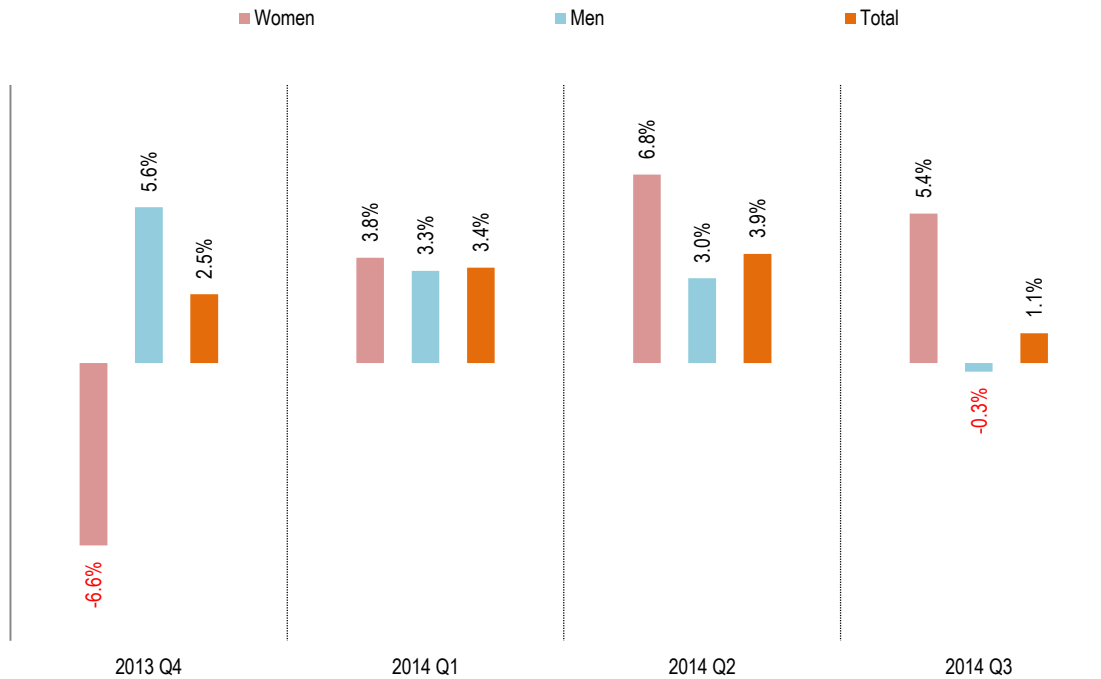
- ICT employment grew the most in Nova Scotia (↑6,000) and British Columbia (↑5,000) in 2014 Q3.
- ICT employment in British Columbia exceeded 100,000 for the first time, reaching 101,000 in 2014 Q3, increasing significantly (↑5.2%) compared to 2014 Q2.
- Among non-ICT professionals working in the digital economy, employment grew the most in Alberta in 2014 Q3 (↑4,000).
- ICT employment increased by 4,000 in Ontario and 3,000 in Alberta in 2014 Q3.
- In 2014 Q3, ICT employment in Ontario was 395,000, followed by 206,000 in Quebec, 101,000 in British Columbia, 78,000 in Alberta, 20,000 in Manitoba, 19,000 in Nova Scotia, 13,000 in Saskatchewan, 9,000 in New Brunswick, 7,000 in Newfoundland & Labrador, and 2,000 in Prince Edward Island.

Takeaway

- With respect to jobs in ICT professions, Ontario is Canada's largest employer.

GENDER

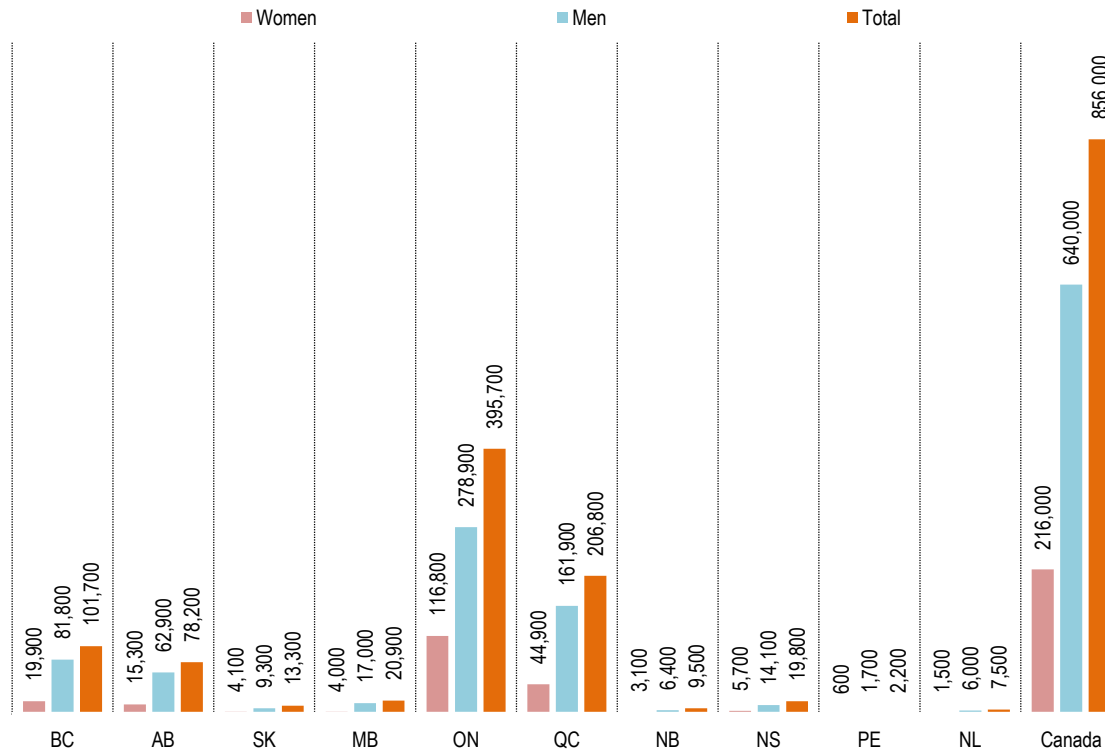
Figure 7. Quarterly employment growth by gender



- The number of women employed in ICT jobs grew for the third consecutive quarter at an average rate of 5% per quarter.
- In all three quarters in 2014, employment growth among women in ICT outstripped that among men and also the overall growth in ICT jobs.

Source: ICTC; Statistics Canada

Figure 8. ICT employment by gender and province



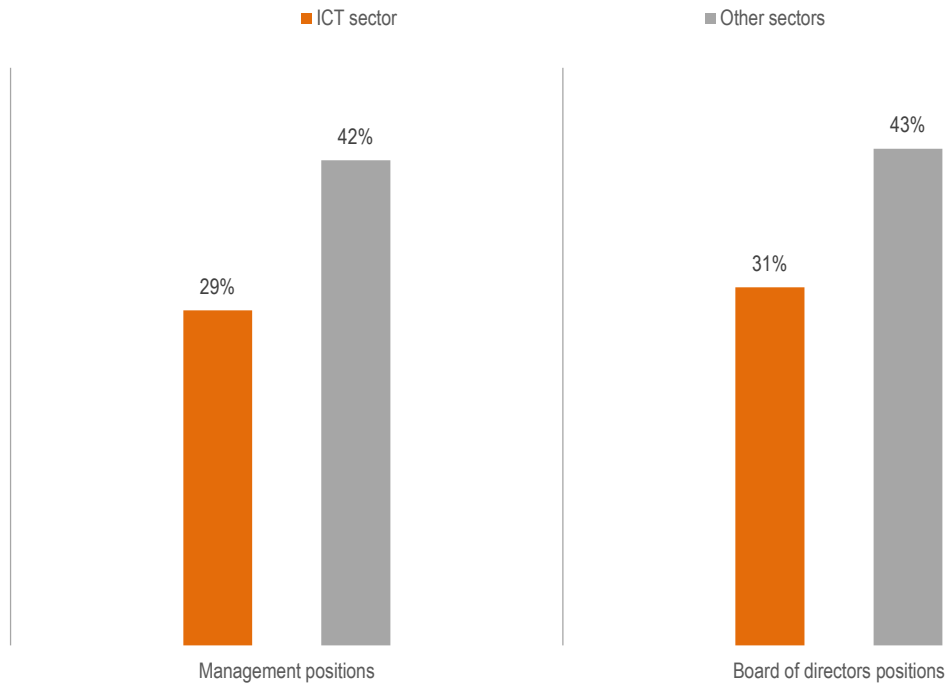
Source: ICTC; Statistics Canada

- 216,000 women were employed in ICT occupations in 2014 Q3, compared to 640,000 men.
- As Canada's largest digital economy employer, Ontario is naturally the hub where the highest number of women is employed in ICT – 116,000 in 2014 Q3.
- ICT employment for women in 2014 Q3 was 44,000 in Quebec, 19,000 in British Columbia, 15,000 in Alberta, 5,000 in Nova Scotia, 4,000 in Manitoba and in Saskatchewan, and 3,000 in New Brunswick.

Takeaway

- Despite some recent gains, women are still not proportionately represented among ICT professionals. The incentives to attract them to the digital economy and their awareness of the benefits of participation in this growing and rewarding field remain low. Innovative solutions – such as the Government of Canada's [Women in Technology initiative](#) – are creating better opportunities and are enabling women to play a greater role in the Canadian digital economy.

Figure 9. Women decision makers by sector



Source: ICTC

- It appears that the leadership opportunities for women in the ICT sector are improving. This is according to the results of the Gender Equality in the Digital Economy [Survey 2014](#).
- 29% of management positions in the ICT sector are occupied by women, compared to 42% in other sectors.
- 31% members of the boards of directors in the ICT sector are women, compared to 43% in other sectors.

Takeaway

- Recent momentum in women's engagement in ICT needs to be harnessed and initiatives such as [Women in Technology](#) can be scaled up by piloting in other jurisdictions. Focused efforts on attraction, integration, retention, and promotion of women in Canada's digital economy and onto corporate boards and C-suite positions will help enable business innovation.

YOUTH

Figure 10. Employment



Source: ICTC; Statistics Canada

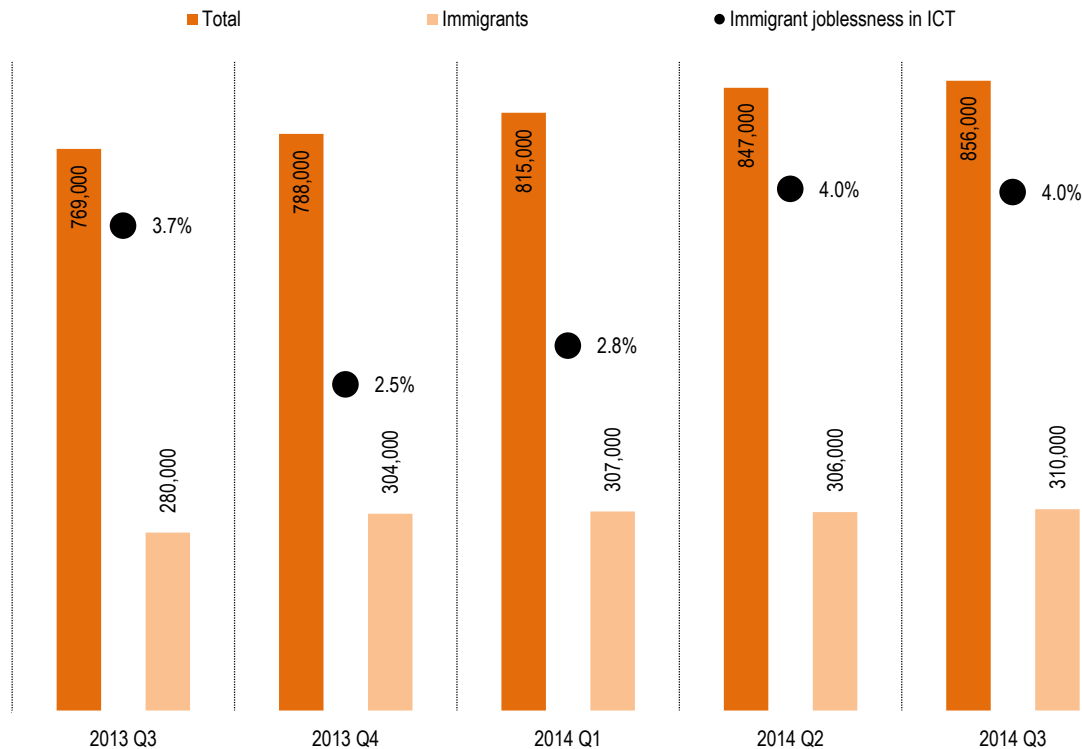
- Employment in ICT occupations among those aged 25 or younger saw a quarterly increase (↑5,000) in 2014 Q3, bringing the youth employment level in ICT to 46,000.
- Only 5% of all ICT jobs are held by youth currently, compared to 15% of the jobs held by youth below 25 in the overall economy.
- The jobless rate among those aged 25 or younger in Canada is 13.3% at present.
- In ICT occupations, joblessness among this age group is notably lower and is 5%.

Takeaway

- Given the high demand for ICT talent and skills, making relevant academic and job placement [programs](#) available from an early age will help Canada's youth gain the skills and work experience needed to make a successful transition into the labour market.

IMMIGRANTS

Figure 11. Employment



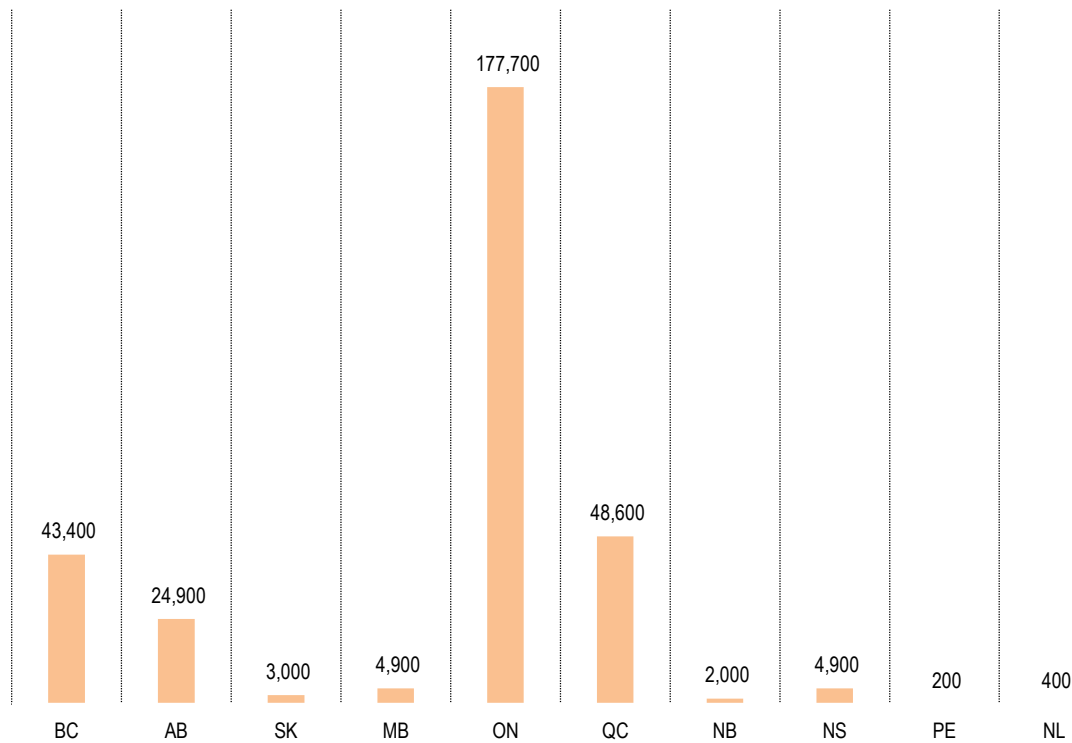
Source: ICTC; Statistics Canada

- Of the total employed workers in ICT occupations in 2014 Q3, 36% were immigrants.
- The jobless rate among immigrants in Canada is 8.3% at present.
- In ICT occupations, joblessness among immigrants is consistently lower and is 4.0% at present.

Takeaway

- The proportion of immigrants has been consistent in recent quarters at above a third of the ICT workforce.
- This is in sharp contrast with the overall economy, where a quarter of all jobs are held by immigrants.
- This is further evidence of strong demand for skilled ICT workers throughout the economy.

Figure 12. Immigrant employment by province



Source: ICTC; Statistics Canada

- 310,000 immigrants were employed in ICT occupations in 2014 Q3 – marginally up on the quarter (▲4,000).
- As Canada’s most popular arrival destination for immigrants and also the largest digital economy employer, Ontario is naturally the hub where the highest number of immigrants are employed – 177,000 in 2014 Q3.
- By comparison, ICT employment for immigrants in the same quarter was 48,000 in Quebec, 43,000 in British Columbia, 24,000 in Alberta, and nearly or above 5,000 in Manitoba and Nova Scotia.

Takeaway

- Identifying and cultivating international candidates who meet the needs of employers facing skill and labour shortages continue to be critical.
- Integration programs with co-op, internship or commensurate-to-skill-set work experience components to strengthen immigrants’ job market skills will help.

IN-DEMAND JOBS

In the [Summer 2014 edition of SCDA](#), we projected the Canadian digital economy labour market would remain robust with a continuing strong labour market in the third quarter of 2014. With the creation of 9,000 new ICT jobs in 2014 Q3, that is exactly how this has been borne out. We expect the momentum Canada's digital economy gained in 2014 to remain strong for the rest of the year and exhibit another strong labour market showing in the final quarter of 2014.

All industrial sectors in Canada use ICT products and services. The need for top ICT talent continues to grow economy-wide as a result. This has expanded career options for ICT professionals, placing competitive pressure on the employers seeking technical ICT talent.

It is a good time to be hunting ICT jobs in Canada. Based on active vacancies posted on job sites, employment growth in end-2014 is expected to be the highest for the occupations below:

- [software / graphical user interface \(GUI\) developers](#)
- [informatics / business systems analysts](#)
- [web / network support technicians/administrators](#)
- [web developers](#)
- [electronics / electrical engineers](#)
- [data analytics / database architects/administrators](#)
- [technical support analysts](#)
- [software engineers / designers](#)
- [electronics technicians](#)
- [multimedia designers / graphic illustrators](#)

Note: To begin your search, click on a job title above to view current vacancies. You can narrow your search by selecting a job location from the right-hand sidebar in the new browser window.

DIGITAL ECONOMY LABOUR FORCE

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, thereby driving the development of a more prosperous Canadian ICT workforce and industry in a 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 looking for work) in these occupations and workers in all other (non-ICT) occupations in the ICT sector (ICTC's framework of Canada's ICT sector is explained below) is the total digital economy labour force in Canada. The table below summarizes the core ICT occupations:

Index	National Occupational Classification (NOC)	Occupation Title
1	0131	telecommunication carrier managers
2	0213	computer and information system managers
3	2133	electrical and electronics engineers
4	2147	computer engineers
5	2171	information systems analysts and consultants
6	2172	database analysts and data administrators
7	2173	software engineers
8	2174	computer programmers and interactive media developers
9	2175	web designers and developers
10	2241	electrical and electronics engineering technologists and technicians
11	2281	computer network technicians
12	2282	user support technicians
13	2283	systems testing technicians
14	5224	broadcast technicians
15	5241	graphic designers and illustrators

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	Wired 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

ABOUT ICTC

The Information and Communications Technology Council (ICTC) is a leading not-for-profit national centre of expertise conducting research, policy development, and creating talent solutions for the digital economy.

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