



RESEARCH

STRENGTHENING CANADA'S DIGITAL ADVANTAGE

QUARTERLY MONITOR OF CANADA'S DIGITAL ECONOMY

The Information and Communications Technology Council | Summer 2015





RESEARCH BY:



THE INFORMATION AND COMMUNICATIONS TECHNOLOGY COUNCIL (ICTC)

FUNDING PROVIDED BY:



THE GOVERNMENT OF CANADA'S SECTORAL INITIATIVES PROGRAM

© 2015 The Information and Communications Technology Council

All rights reserved. Published 2015.



This publication was prepared by Ersin Asliturk under the guidance of President Namir Anani and Senior Director Dr. Meenakshi Gupta.

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.

This study was funded by the Government of Canada's Sectoral Initiatives Program. The authors made all reasonable efforts to ensure accuracy in compiling the document. The opinions and interpretations in this publication are those of the authors and do not necessarily reflect those of the Government of Canada.

Technical comments regarding this publication can be directed to:

Ersin Asliturk

e.asliturk@ictc-ctic.ca



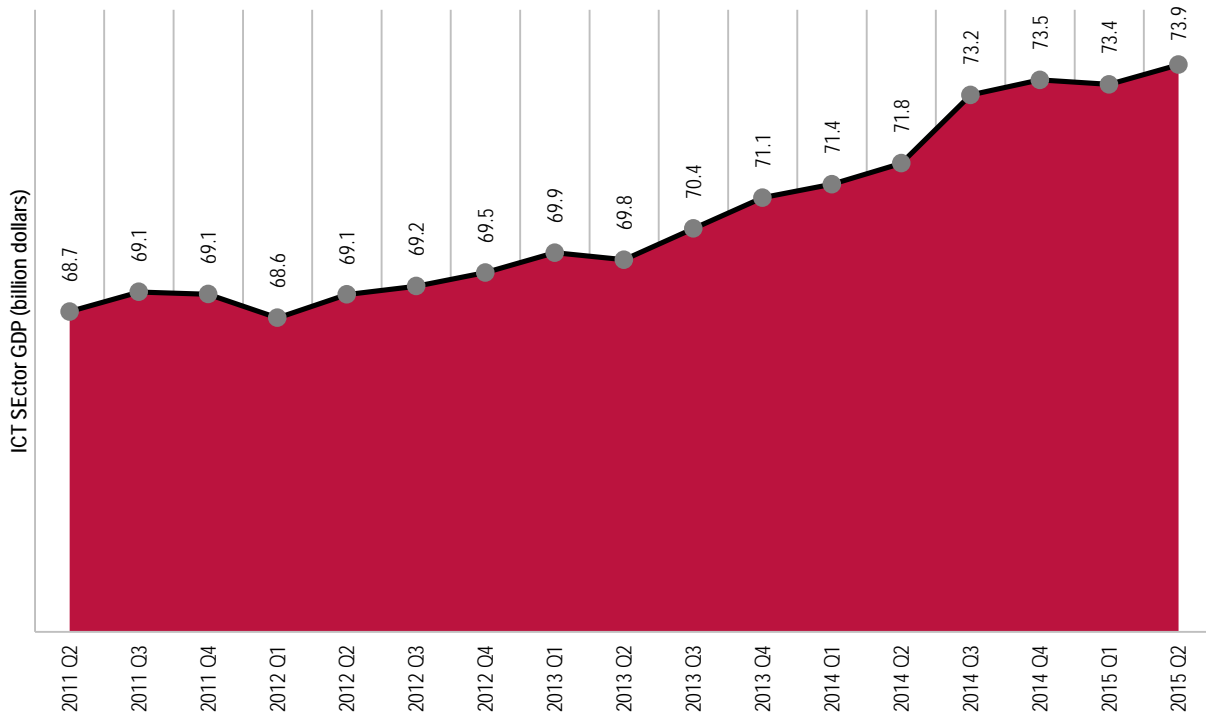
TABLE OF CONTENTS

OUTPUT AND OUTLOOK	1
GDP GROWTH	1
PROVINCIAL COMPARISON: ICT SECTOR OUTPUT.....	3
LABOUR MARKET TRENDS	4
EMPLOYMENT	4
WOMEN EMPLOYMENT.....	6
YOUTH.....	8
IMMIGRANTS	10
IN-DEMAND JOBS	12
DIGITAL ECONOMY LABOUR FORCE	13
ICT SECTOR.....	14
ABOUT ICTC	15

OUTPUT AND OUTLOOK

GDP Growth

Figure 1. ICT Sector GDP (In Billions of Dollars)



Source: ICTC; Statistics Canada

- In the second quarter¹ of 2015 the ICT sector contributed \$73.9 billion to Canadian GDP (*Figure 1*)² and accounted for 4.5% of Canada's total output of \$1,645 billion.
- Real GDP produced by the Canadian ICT sector increased marginally in the second quarter (↑\$440 million). This is despite ↓\$5.65 billion loss in Canadian total GDP (from \$1,650.2 to \$1,644.5 billion) in the second quarter.
- In sum, while Canada's GDP contracted in both the first (↓0.2%) and the second quarter (↓0.3%) of 2015, the ICT sector's contribution to GDP increased marginally quarter-over-quarter and substantially so year-over-year (↑0.6%, see next, *Figure 2*).

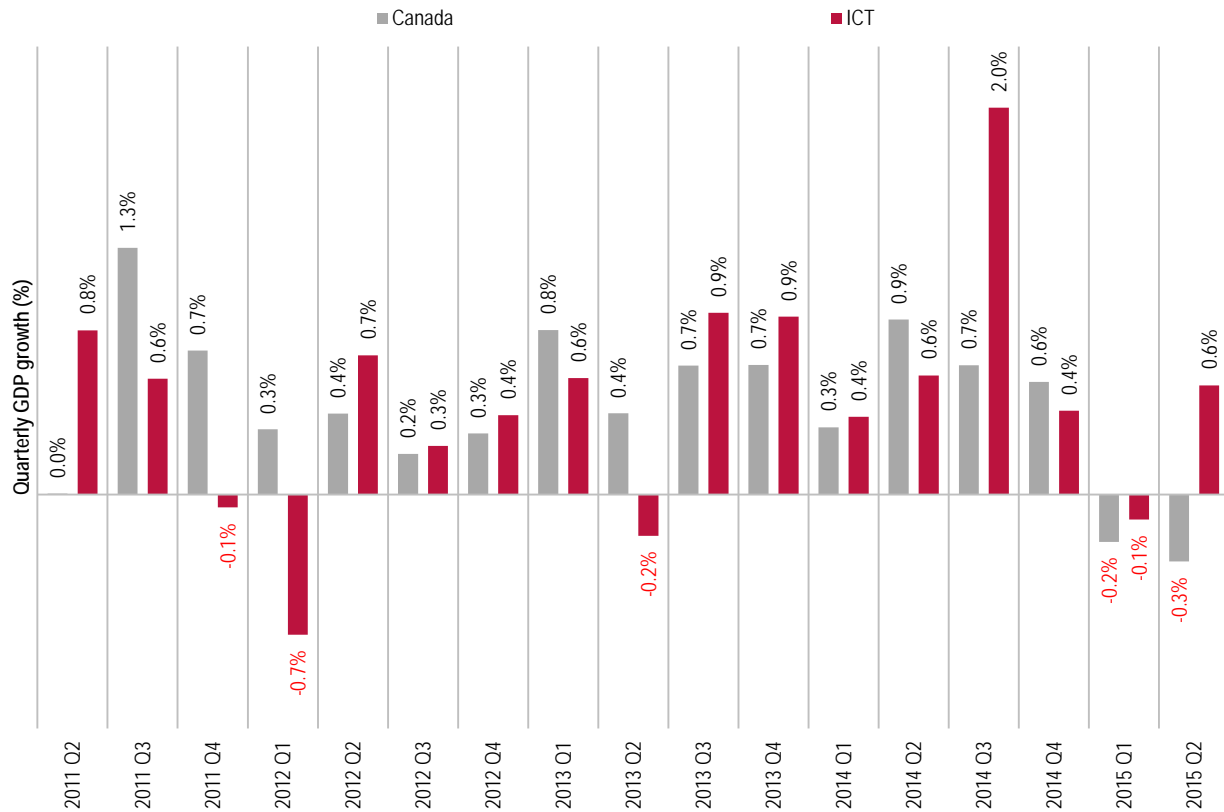
Takeaway:

- **The digital economy is important and continues to grow!** As digital technologies continue to permeate every aspect of our economy and culture, it is critical for the industry including SMEs to understand how digital adoption can boost their businesses. ICTC has launched [Digital Adoption Compass](#) to help SMEs leverage digital technologies to expand their scale and scope.

¹ GDP figures for 2015 Q2 are calculated using the average value of April and May 2015 values, due to lag associated with availability of output data of the last month (June).

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

Figure 2. Quarterly ICT Sector GDP Growth



Source: ICTC; Statistics Canada

- ICT sector output in the second quarter of 2015 increased by \uparrow 2.9% or \$2.1 billion from year-ago levels (2014 Q2).
- This output level represents a \uparrow 5.8% increase compared to two years ago (2013 Q2).
- GDP produced by the overall Canadian economy declined in 2015 Q2 by \downarrow \$5.65 billion.
- Compared to year-ago levels (2014 Q2), the overall Canadian economy expanded marginally \uparrow 0.7%. Growth in output compared to 2013 Q2 was significant \uparrow 3.3%.

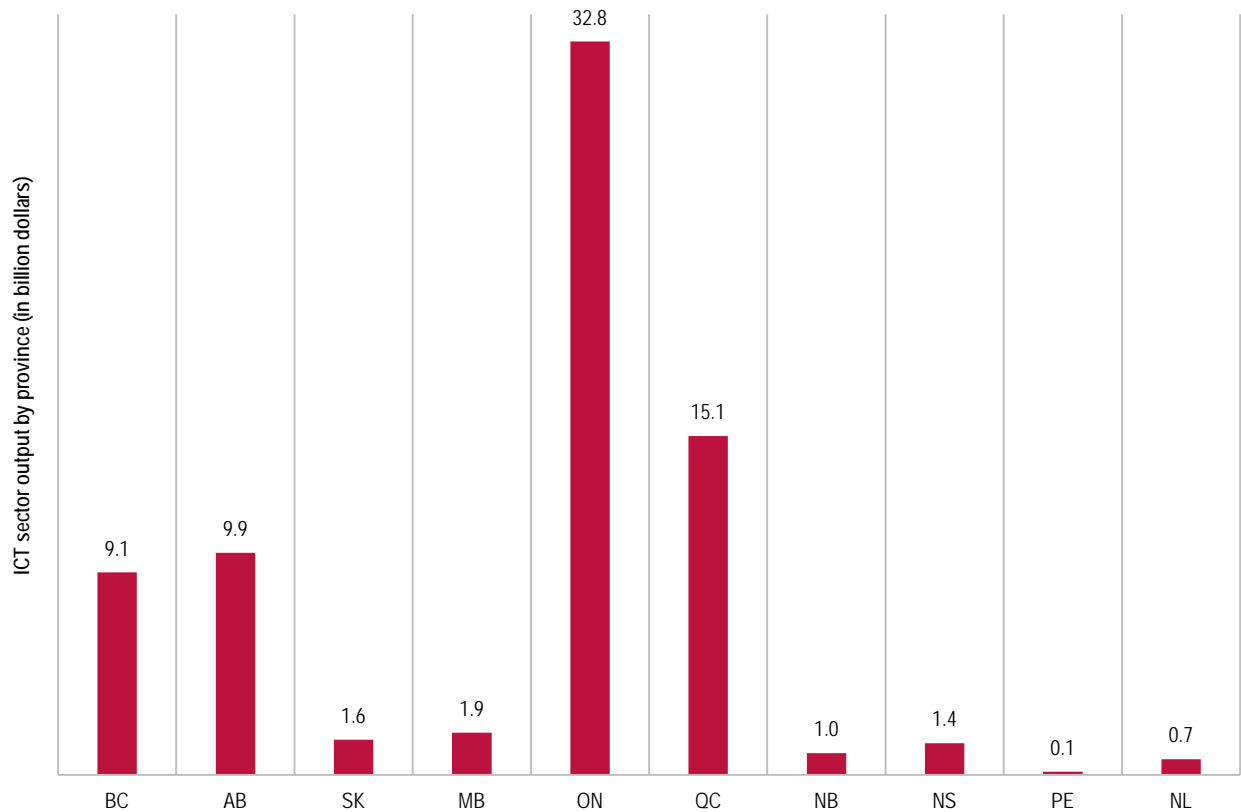
Takeaway:

- **Investing in the knowledge economy and creating an enabling environment for innovation is critical!** Innovations in the ICT sector enable organizations throughout the economy to increase productivity, reduce operational costs, and boost business opportunities.
- ICTC's latest report on [Automation and Robotics \(A&R\)](#) found that Canada's industrial automation sector generates \$2 billion annually in revenues. Users of industrial automation also report higher productivity, lower expenditure, and higher demand for skilled workers as a result of A&R adoption.



Provincial Comparison: ICT Sector Output

Figure 3. ICT Sector Output by Province (In Billions of Dollars)



Source: ICTC; Statistics Canada

- Ontario is Canada's ICT leader and contributed \$32.8 billion to total Canadian ICT output in 2015 Q2.
- Among other major ICT sector contributors, Quebec contributed \$15.2 billion, Alberta \$9.9 billion, and British Columbia contributed \$9.1 billion to GDP.

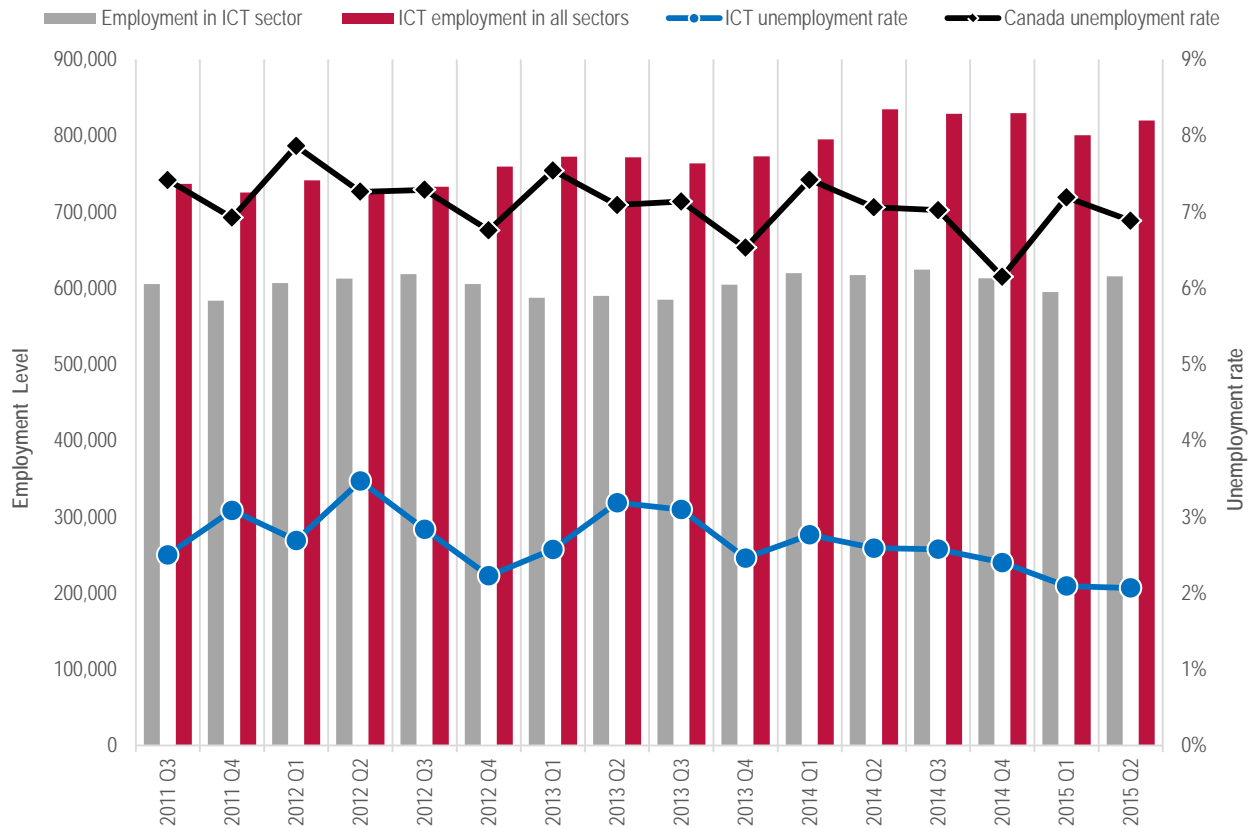
Takeaway:

- **The key driver is the ICT sector!** The ICT sector boosts economic activity throughout Canada and has a "horizontal" impact on the Canadian economy, given its direct and indirect contribution to virtually every sector.
- This "horizontal impact" can be observed in ICTC's latest [Trend Focus](#) report, which highlights the growing impact of digital technologies on Canada's payments landscape. The growing demand for mobile payments – the process of sending money or paying for goods and services electronically using mobile phones – is creating a competitive environment in Canada's small payments market.

LABOUR MARKET TRENDS

Employment

Figure 4. Employment in Canada's Digital Economy



Source: ICTC; Statistics Canada

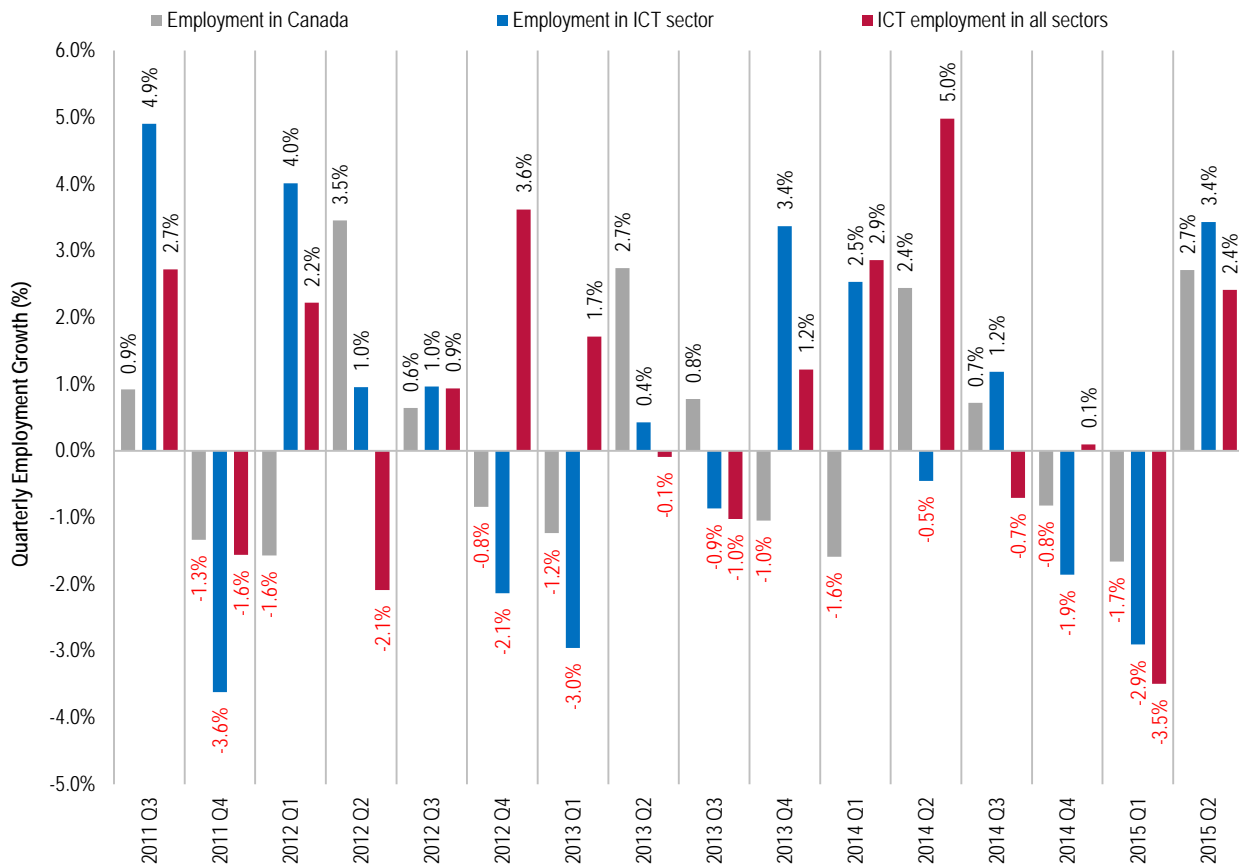
- ICT employment in all sectors of Canada increased from 800,700 to 820,000 in the 2015 Q2 (▲19,300, 2.4%)³.
- The jobless rate in ICT professions remained steady at 2.1% in 2015 Q2.
- Employment in the ICT sector increased to 615,400 in 2015 Q2 from 595,000 in 2015 Q1 (▲20,400, 3.4%).

Takeaway:

- **The ICT labour market is resilient!** Despite uncertainties in Canada's overall labour market, ICT employment in ICT and non-ICT sectors remain stable, highlighting a strong demand for skilled talent.
- ICTC's [Series on Emerging Subsectors](#) explores how new digital technologies are impacting ICT employment. ICTC's forthcoming study on Big Data will explore how advances in data analytics are impacting ICT employment throughout Canada.

³ From this point in the report, the second quarter includes average value of all three months (April, May, June).

Figure 5. Employment Growth



Source: ICTC; Statistics Canada

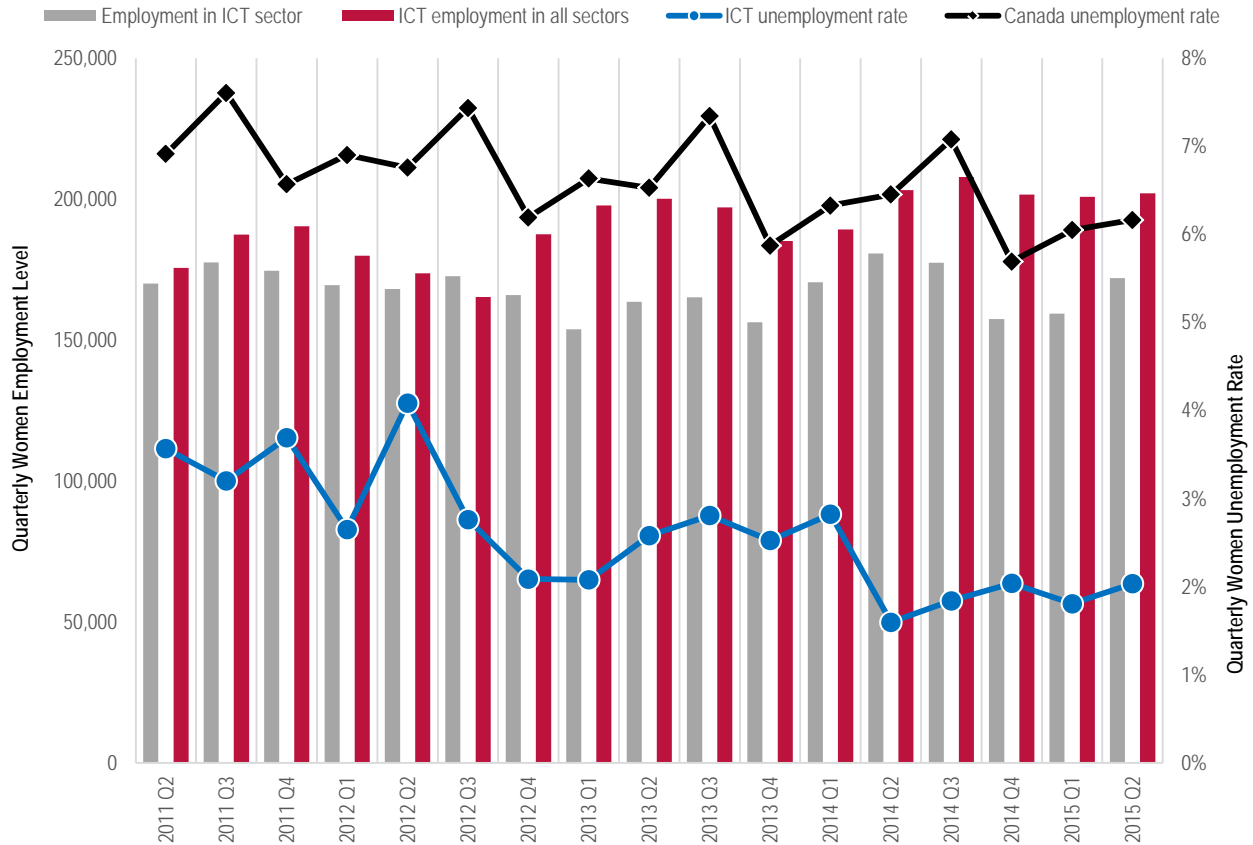
- A total of 18.04 million workers were employed in Canada in 2015 Q2 and it increased by \uparrow 2.7% (or 475,700) from the previous quarter (2015 Q1). Compared to year-ago levels, overall employment across all sectors in Canada increased by \uparrow 159,800, of which 14,800 were ICT jobs.
- ICT employment in all sector increased by \uparrow 2.4% (or 19,300) in 2015 Q2.
- Employment in the ICT sector increased by \uparrow 3.4% (or 20,400) in 2015 Q2.

Takeaway:

- **Employment in ICT professions as well as in the overall economy grew at similar pace in 2015 Q2!** Based on ICTC's [latest outlook report](#), ICT employment is expected to increase significantly this year. ICTC's latest research series "[Digital Economy Supply](#)" focuses on talent issues and challenges with respect to Canada's digital economy. The first edition of the series focuses on the supply flow of ICT talent from Canada's post-secondary education stream and finds that over 527,000 students are graduating from the post-secondary education system in Canada in 2015. Of them, over 29,000 (6%) students are ICT graduates.

Women Employment

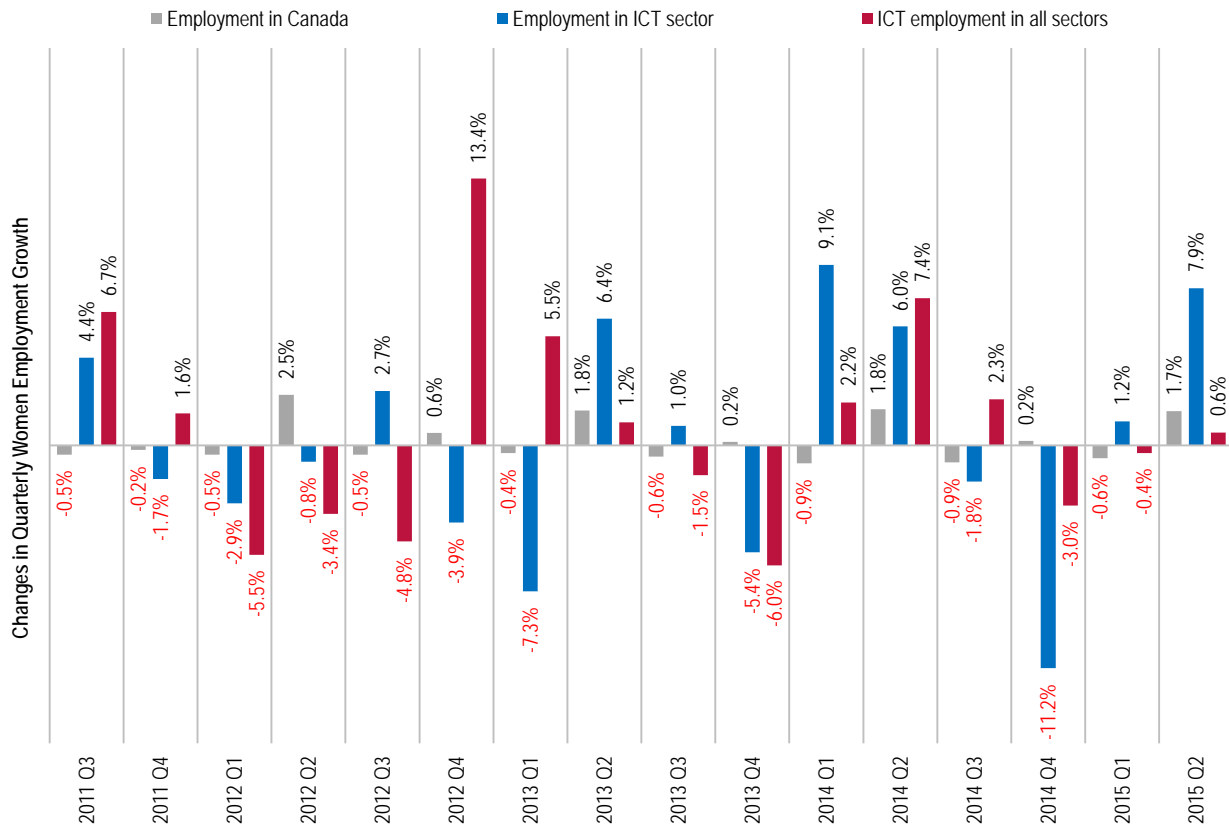
Figure 6. Women's Employment



Source: ICTC; Statistics Canada

- The number of women employed in ICT jobs increased slightly in 2015 Q2 (↑202,100) compared to the previous quarter (200,800).
- Compared to year-ago levels (2014 Q2), the number of employed women in ICT jobs remained same.
- Among women, ICT unemployment rate has been relatively stable over the last year (2% in 2015 Q2, increased from 0.8% 2015 Q1 indicating that more women in the ICT labor market).

Figure 7. Women's Employment



Source: ICTC; Statistics Canada

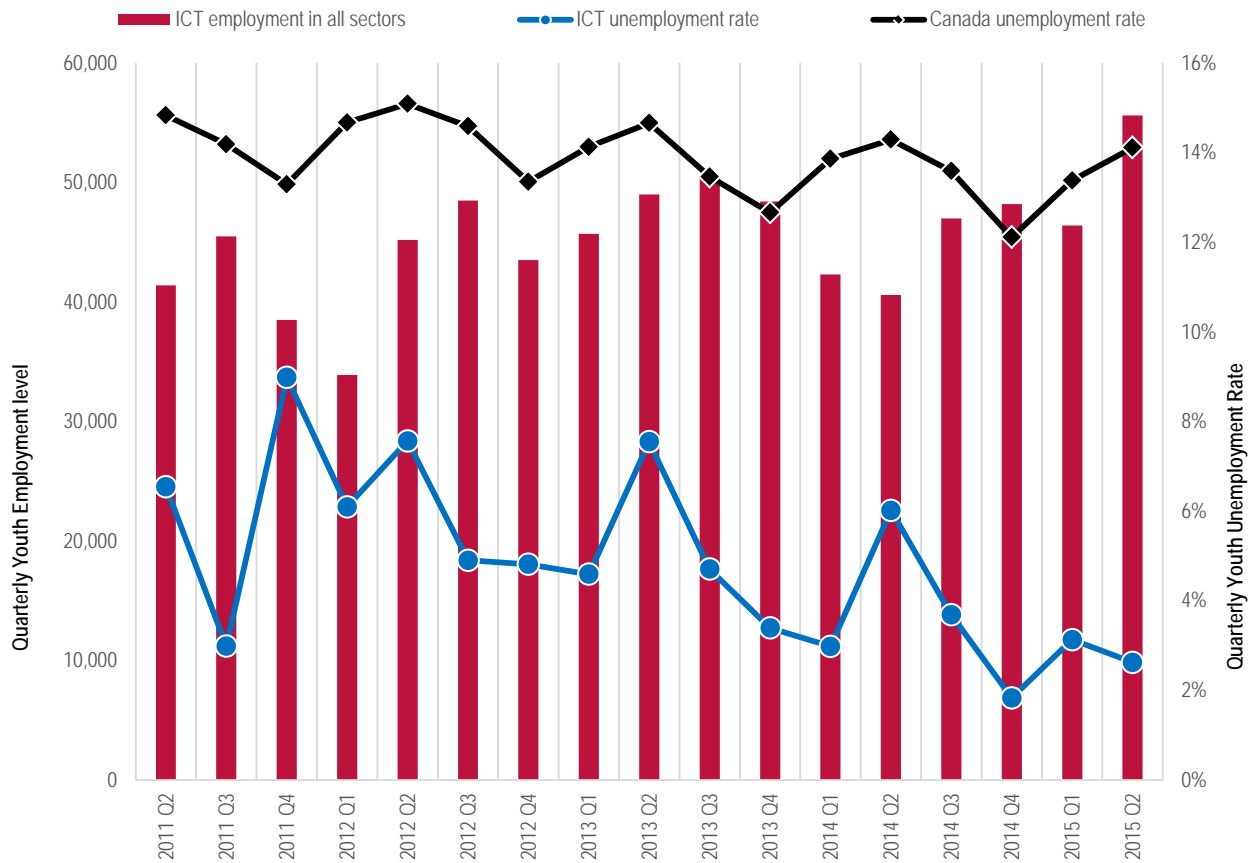
- Compared to the previous quarter, the number of women employed in the ICT sector increased significantly by **↑7.9%**.
- Compared to year-ago levels (2014 Q2), the number of women employed in the ICT sector declined only slightly, **↓-0.6%**.
- The number of women employed in ICT jobs across all sectors increased **↑0.6%** from the previous quarter.

Takeaway:

- It is important to continually attract, retain, and advance more women in ICT professions! To that end, ICTC is delivering multiple projects and initiatives to improve women's participation in the ICT sector and workforce, including the [Women in Technology \(WIT\) Initiative](#).

Youth

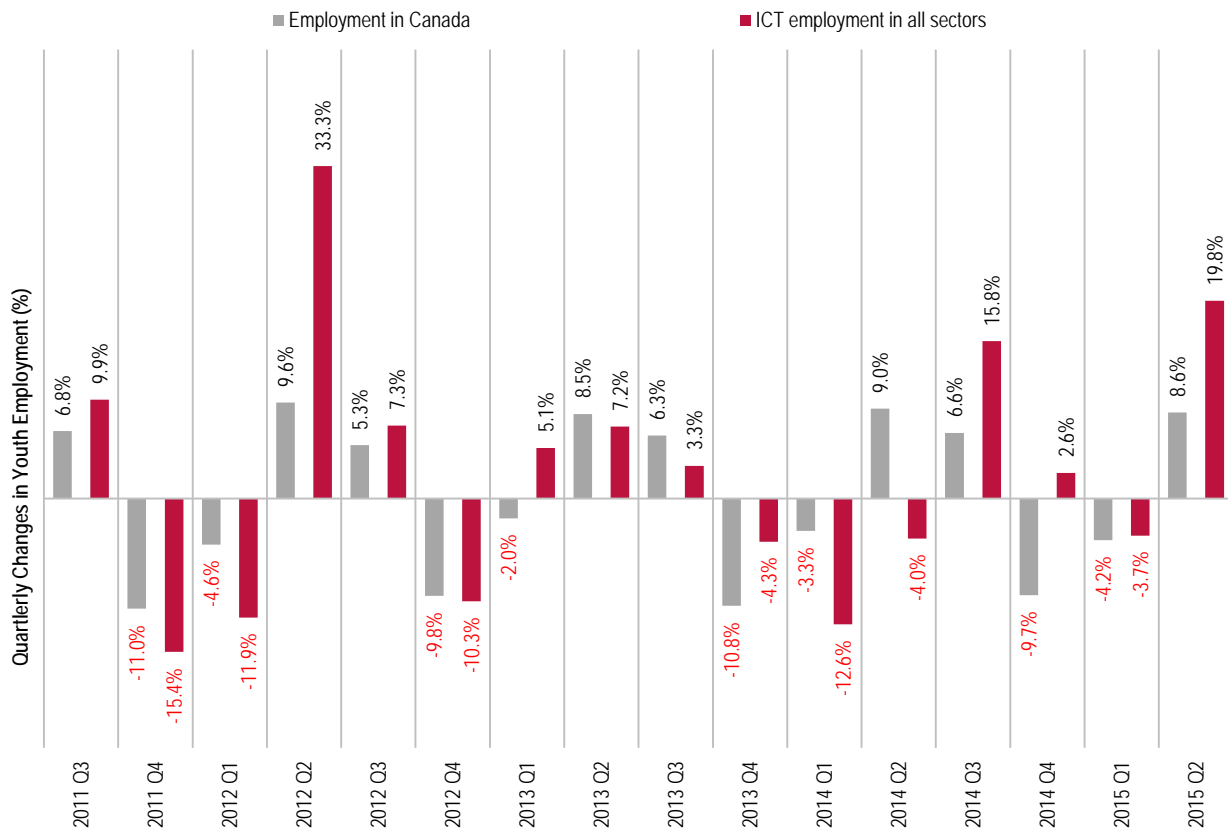
Figure 8. Youth Employment and Unemployment



Source: ICTC; Statistics Canada

- ICT employment in all sectors among those aged 25 or younger increased significantly to 55,600 in 2015 Q2 from 46,400 in 2015 Q1. There are 9,200 new ICT professionals (aged between 15 and 24) employed in the sector.
- Currently, only 7% of ICT jobs in Canada are held by youth, compared to 14% of the jobs in the overall economy.
- Youth unemployment in Canada was 14.1% in 2015 Q2. For ICT occupations, however, youth unemployment is significantly lower at 2.6%.

Figure 9. Youth Employment Rates



Source: ICTC; Statistics Canada

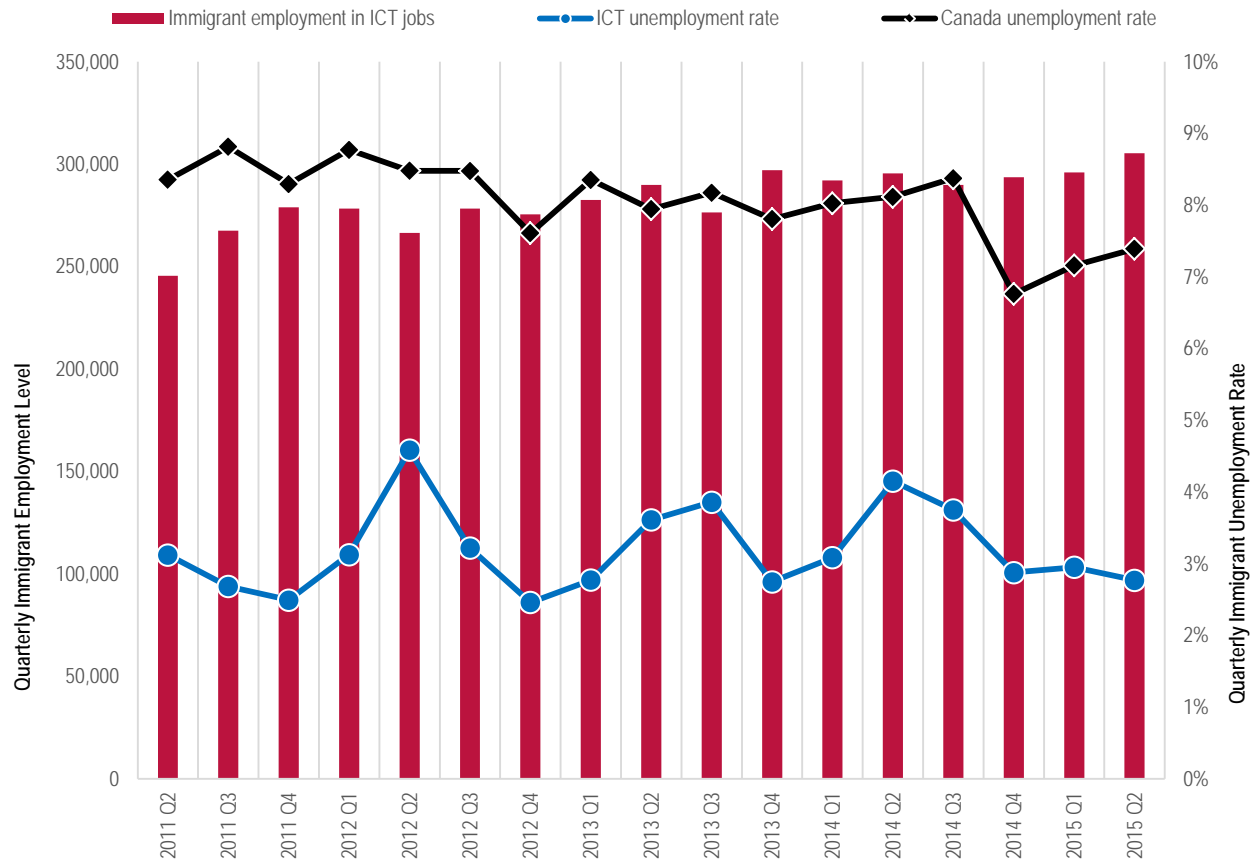
- Overall youth employment in the Canadian economy increased by \uparrow 8.6% in 2015 Q2 compared to the previous quarter. For ICT occupations, youth employment increased highly significantly by \uparrow 19.8%.

Takeaway:

- **Youth unemployment in the ICT workforce is much lower than overall youth unemployment in Canada!**
- Boosted by short-term summer employment, youth engagement in the ICT workforce has increased substantially in 2015 Q2.
- Youth can explore in-demand ICT jobs by province at [ICTC's e-talent Canada portal](#) and begin upskilling for those jobs.
- [Career Connect](#) wage subsidy program and the [Focus on Youth Careers](#) Java training program are among many of the ICTC's initiatives promoting youth participation in the ICT workforce.

Immigrants

Figure 10. Immigrant Employment and Unemployment



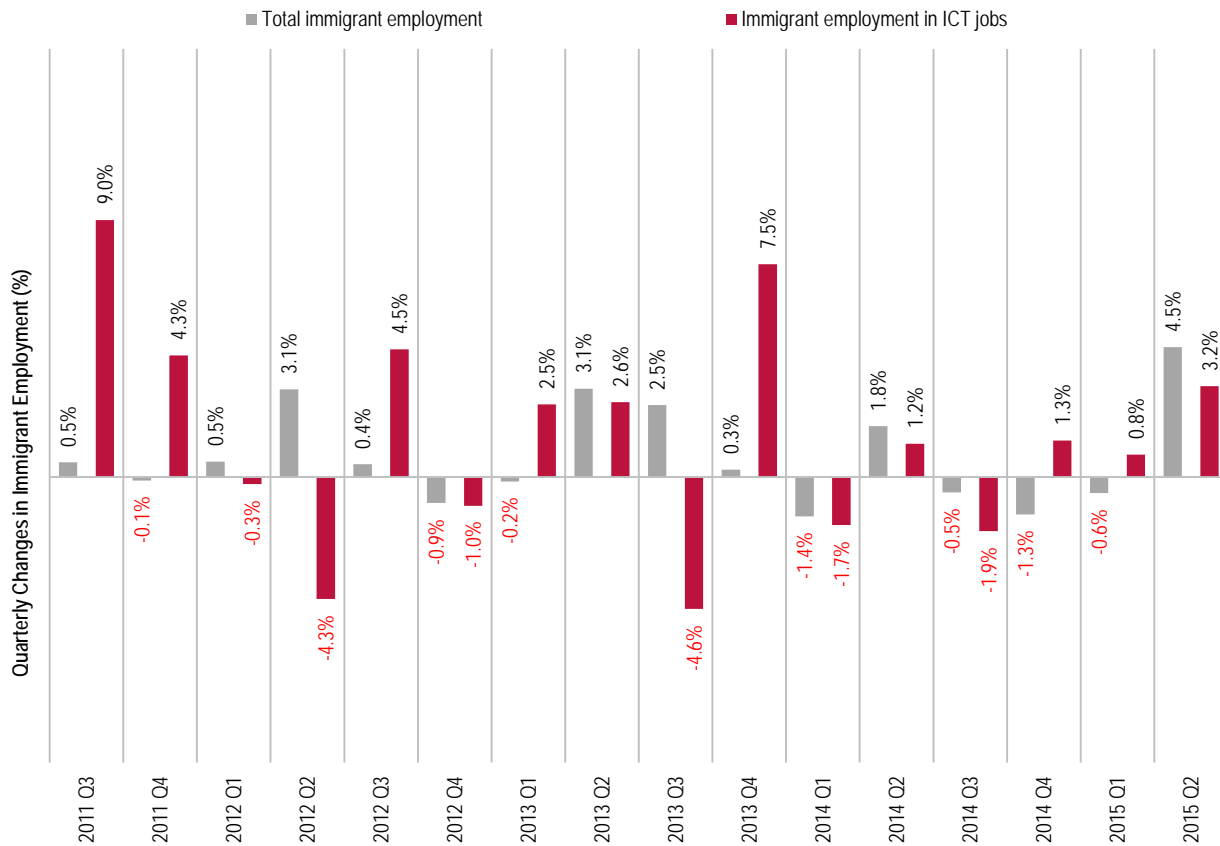
Source: ICTC; Statistics Canada

- Of the 820,000 employed ICT workers in 2015 Q2, 37% or 305,300 were immigrants.
- The jobless rate for immigrants in ICT is 2.8%. By comparison, the immigrant unemployment rate in the rest of the economy is 7.4%.

Takeaway:

- **Immigrants continue to play a critical role in Canada's ICT workforce!** Immigrants consistently represent around one-third of all ICT workers across Canada (37% in 2015 Q2). This is in contrast to the overall economy, where only a quarter (24%) of all jobs are held by immigrants.
- [Integrated Work Experience Strategy \(IWES\)](#) and [Coaching to Career](#) are bridging programs of ICTC, which are both designed to help internationally educated professionals become employment ready.

Figure 11. Immigrant Employment Rates



Source: ICTC; Statistics Canada

- Immigrant employment in Canada increased by \uparrow 4.5% in 2015 Q2, while immigrant employment in ICT jobs increased at \uparrow 2%. Over the past four years (since 2011 Q1) however, average increase in immigrant employment in ICT jobs (\uparrow 1.4%) was double of average increase immigrant employment in Canada (\uparrow 0.7%).
- ICT employment among immigrants has increased by \uparrow 5% over the past three years (since 2012 Q2).

For more immigrant and province-specific granular data for the digital economy, please visit [e-Talent Canada](#).



In-Demand jobs

Demand for ICT professionals remains very high in Canada and is expected to increase significantly over the next five years. To understand the ICT supply/demand balance in Canada over the next five years, please refer to [ICTC's 2015-2019 Labour Market Outlook](#). To review current ICT vacancies by occupation and province, please [click here](#).

The ICT workforce remains one of Canada's tightest labour markets, with an unemployment rate of 2.1%, a fraction of the national average (6.9%).



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.

Technical comments regarding this publication can be directed to:

Ersin Asliturk
e.asliturk@ictc-ctic.ca

- ✓ You can access Canada's first online Talent insights for the digital economy at www.etalentcanada.ca
- ✓ You can receive ICTC publications by clicking [here](#)
- ✓ **You can heighten your company's visibility and expand your business opportunities through joining the ICTC Community by e-mailing lmi@ictc-ctic.ca**