RESEARCH

STRENGTHENING CANADA’S DIGITAL ADVANTAGE

Quarterly Monitor of Canada’s Digital Economy

The Information and Communications Technology Council | Fall 2015
This publication was prepared by Sharif Faisal 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.

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OUTPUT AND OUTLOOK

GDP Growth

Figure 1. ICT sector GDP (in billion dollars)

Analysis and Insights

- In the third quarter of 2015, the ICT sector contributed $71.8 billion to Canadian GDP, accounting for nearly 5% of Canada’s total output of $1,647.3 billion.\(^1\)
- Ontario is Canada’s ICT leader and contributed $31.9 billion to total Canadian ICT output in 2015 Q3. In addition, Quebec contributed $14.7 billion, Alberta $9.7 billion, and British Columbia contributed $8.8 billion to GDP.
- Compared to the third quarter in 2014, the ICT sector contributed an additional $954 million (1.3%) to the economy. The software and computer services industries and the ICT communication services sub-sectors accounted for much of this growth.
- In fact, the Canadian ICT sector grew in seven of the previous ten quarters, recording a 5.6% ($3.8 billion) growth over that period. The overall Canadian economy grew by 4.3% in that same period.
- ICTs contribute directly as well as indirectly to all industries. How technologies are transforming various economic sectors are highlighted in ICTC’s Trend Focus series. The latest edition in this series outlines the business opportunity of monetizing the Internet of Things (IOT).
- 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. Innovations in the ICT sector enable organizations throughout the economy to increase productivity, reduce operational costs, and boost business opportunities. ICTC’s Digital Adoption Compass initiative continuously highlights the importance of digital adoption for Canadian businesses and also lists digital solutions for businesses to improve their efficiencies and offerings.

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\(^1\) In 2007 chained dollars. Chained dollars are real dollar amounts adjusted for inflation.
LABOUR MARKET TRENDS

Employment

Figure 2. Employment in Canada’s digital economy

37,800 new ICT jobs were created in Canada in the third quarter. As a result, 857,800 ICT professionals were employed in 2015 Q3, which represents quarterly growth rate of 4.6% (▲).

With an overall job growth rate of 0.8% across all occupations, one in every four new jobs created in Canada in 2015 Q3 was in an ICT profession.

A large majority (28,700 or 76%) of these new jobs were created in the ICT sector. ICTC’s in-depth research and analytics of job postings on Canada’s first online talent and skills insights for the digital economy indicate that emerging digital technologies such as mobile technologies and apps, digital platforms, cloud architectures, and the Internet of Things are driving job growth.

57,000 new ICT jobs have been created in the past two quarters (2015 Q2 and 2015 Q3), more than offsetting the job losses incurred during the first quarter of the year.

With many people looking to join the workforce seeing the upward surge in the labour market, the unemployment rate in ICT professions increased marginally to 2.4% in 2015 Q3.

Source: ICTC, Statistics Canada

Analysis and Insights
Gender Diversity

Figure 3. Women’s employment and unemployment

Despite 37,800 new ICT jobs being created in Canada in 2015 Q3, not many of these jobs have gone to women. 5,000 women exited the ICT workforce this quarter, bringing the number of women employed in ICT jobs down to 197,300, a 2.5% quarter-over-quarter loss in jobs.

With total employment in ICT professions increasing significantly in 2015 Q3, the gender composition of the workforce changed to 23% women, the lowest ratio for women in 12 quarters.

The unemployment rate among women in ICT professions increased 0.3 percentage points and rose to 2.3%. In the overall Canadian labour market, the unemployment rate among women increased significantly in 2015 Q3, rising to 7.0% from 6.2% in the previous quarter.

In the near future, ICTC intends to undertake further research on which alternative careers women are choosing upon exiting ICT jobs to understand their reasons for leaving and career paths.

Concerted, cooperative promotion and outreach efforts are needed to counter the perceptions that there are fewer opportunities in STEM and ICT for women and that the careers are not stimulating. ICTC’s multiple projects and initiatives to improve women’s participation in ICT professions are getting some early success. Industry taking an active role in communicating career paths more effectively is also critical to the success of such initiatives. An outreach campaign to increase national awareness of jobs in the new economy will help draw attention of all demographic groups.

Source: ICTC, Statistics Canada

Analysis and Insights
Youth Inclusion
Figure 4. Youth employment and unemployment

ICT employment in all sectors  
ICT unemployment rate  
Canada unemployment rate

Source: ICTC; Statistics Canada

Analysis and Insights

- ICT employment among those aged 25 or younger increased by 1,400 (2.5%) to reach 56,800 in 2015 Q3, comprising 7% of all ICT jobs in Canada.
- In contrast, youth aged 25 or below held 15% of all the jobs in the overall Canadian economy.
- 136,600 new youth found work in the overall economy in 2015 Q3, pushing the unemployment rate among Canada’s youth to 13.3%.
- The unemployment rate among Canada’s youth in ICT professions in comparison was significantly lower in 2015 Q3 at only 5.3%. Skills and qualifications required to secure these jobs, pays and benefits associated with these careers, academic programs offering relevant certifications, and live job postings in these professions are all detailed in ICTC’s one-stop talent and skills solution www.etalentcanada.ca.
- Interventions are needed at an early enough stage – when students are still making decisions about their courses and career options – to encourage more youth to choose ICT careers. To this end, ICTC – in partnership with Microsoft Canada – is developing a national digital talent strategy to outline detailed policies and programs needed to develop digital talent and position Canada as a leader in the global digital economy. The national digital talent strategy will be released on March 9, 2016.
Immigrant Integration

Figure 5. Immigrant employment and unemployment

Source: ICTC; Statistics Canada

Analysis and Insights

- 336,000 (39%) of all the employed ICT professionals were immigrants\(^2\) in 2015 Q3. In contrast, immigrants represent 25% of the workforce in the overall economy.

- Employment among immigrants in ICT professions increased by 30,700 (10%) in 2015 Q3, compared to 2% employment growth among all immigrants in the overall Canadian economy.

- The unemployment rate among immigrants in ICT professions is 2.4%, compared to the unemployment rate among immigrants in the overall Canadian economy of 7.7%.

- ICTC has ongoing bridging programs such as Integrated Work Experience Strategy (IWES) to help more internationally educated professionals become employment ready.

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\(^2\) 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. To understand the ICT talent and skills supply-demand dynamics in Canada in the medium term, please refer to ICTC’s 2015-2019 Labour Market Outlook.

In 2015 Q3, the employment growth was strongest in these ICT professions:

- electronics / electrical engineers
- electronics technicians
- software engineers / designers
- technical support analysts
- web developers

It is a good time to be searching jobs in ICT professions in Canada. To review live job postings by occupation, please click here. Please note that your search can be narrowed by using the available keyword, city, and province filters.
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:

<table>
<thead>
<tr>
<th>Index</th>
<th>National Occupational Classification (NOC)</th>
<th>Occupation Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0131</td>
<td>Telecommunication carrier managers</td>
</tr>
<tr>
<td>2</td>
<td>0213</td>
<td>Computer and information system managers</td>
</tr>
<tr>
<td>3</td>
<td>2133</td>
<td>Electrical and electronics engineers</td>
</tr>
<tr>
<td>4</td>
<td>2147</td>
<td>Computer engineers</td>
</tr>
<tr>
<td>5</td>
<td>2171</td>
<td>Information systems analysts and consultants</td>
</tr>
<tr>
<td>6</td>
<td>2172</td>
<td>Database analysts and data administrators</td>
</tr>
<tr>
<td>7</td>
<td>2173</td>
<td>Software engineers</td>
</tr>
<tr>
<td>8</td>
<td>2174</td>
<td>Computer programmers and interactive media developers</td>
</tr>
<tr>
<td>9</td>
<td>2175</td>
<td>Web designers and developers</td>
</tr>
<tr>
<td>10</td>
<td>2241</td>
<td>Electrical and electronics engineering technologists and technicians</td>
</tr>
<tr>
<td>11</td>
<td>2281</td>
<td>Computer network technicians</td>
</tr>
<tr>
<td>12</td>
<td>2282</td>
<td>User support technicians</td>
</tr>
<tr>
<td>13</td>
<td>2283</td>
<td>Systems testing technicians</td>
</tr>
<tr>
<td>14</td>
<td>5224</td>
<td>Broadcast technicians</td>
</tr>
<tr>
<td>15</td>
<td>5241</td>
<td>Graphic designers and illustrators</td>
</tr>
</tbody>
</table>
ICT Sector

The table below summarizes the ICT sector:

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

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