



**Q3 of 2019  
QUARTERLY MONITOR  
of Manitoba's  
ICT Labour Market**

**TECH MANITOBA**

RESEARCH BY:



THE INFORMATION AND COMMUNICATIONS TECHNOLOGY COUNCIL (ICTC)

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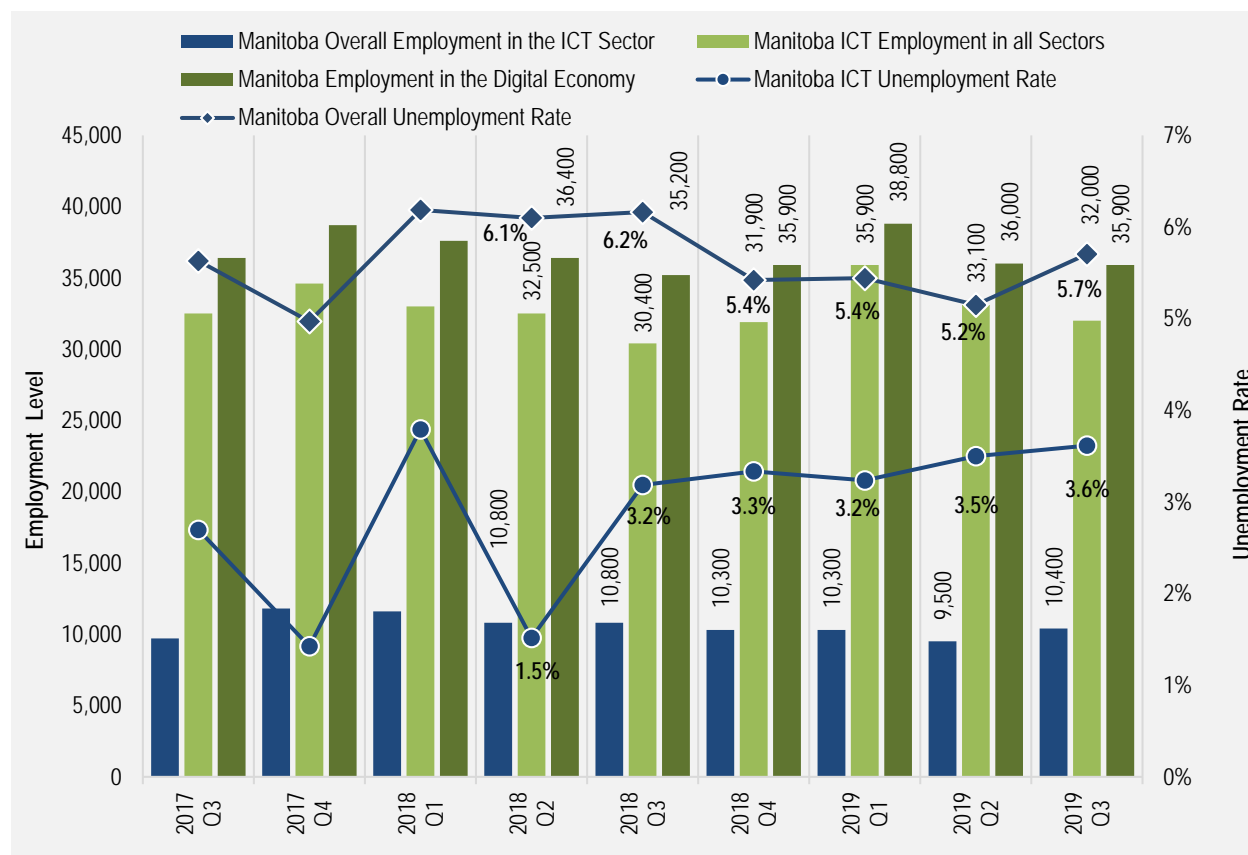
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## LABOUR MARKET TRENDS

### Employment in Manitoba

Figure 1 – Employment in the digital economy of Manitoba



Source: ICTC; Statistics Canada LFS survey

### Analysis and Insights

- ❖ In Q3 (July to September of 2019), an estimated 35,900 professionals were employed in the digital economy<sup>1</sup> of Manitoba (MB). During this period, the digital economy of MB included 6,500 ICT<sup>2</sup> professionals working in the ICT sector<sup>3</sup>, 25,500 ICT professionals working in other sectors of the economy, and 3,900 non-ICT professionals working in the ICT sector.
- ❖ In Q3 of 2019, there were approximately 32,000 ICT professionals employed across all sectors of MB's economy. This represented a decrease of 3.3% or approximately 1,100 fewer positions when compared to Q2 of 2019. However, on a year-over-year basis, ICT employment across all sectors of MB's economy experienced 5.3% growth, resulting in a net job gain of approximately 1,600 positions when compared against the same period in the previous year.
- ❖ Similarly, overall employment in the digital economy of MB experienced a marginal decline of 0.3% in Q3 of 2019 compared to Q2 of the same year, which represented 100 fewer jobs. However, comparing it on a year over year basis, employment in the digital economy of MB experienced growth of 2% in Q3 of 2019 when compared against Q3 of 2018, which represented 700 additional jobs that were created.

<sup>1</sup> This encapsulates the widespread employment of ICT workers across all sectors of the economy and the total labour output of the ICT sector.

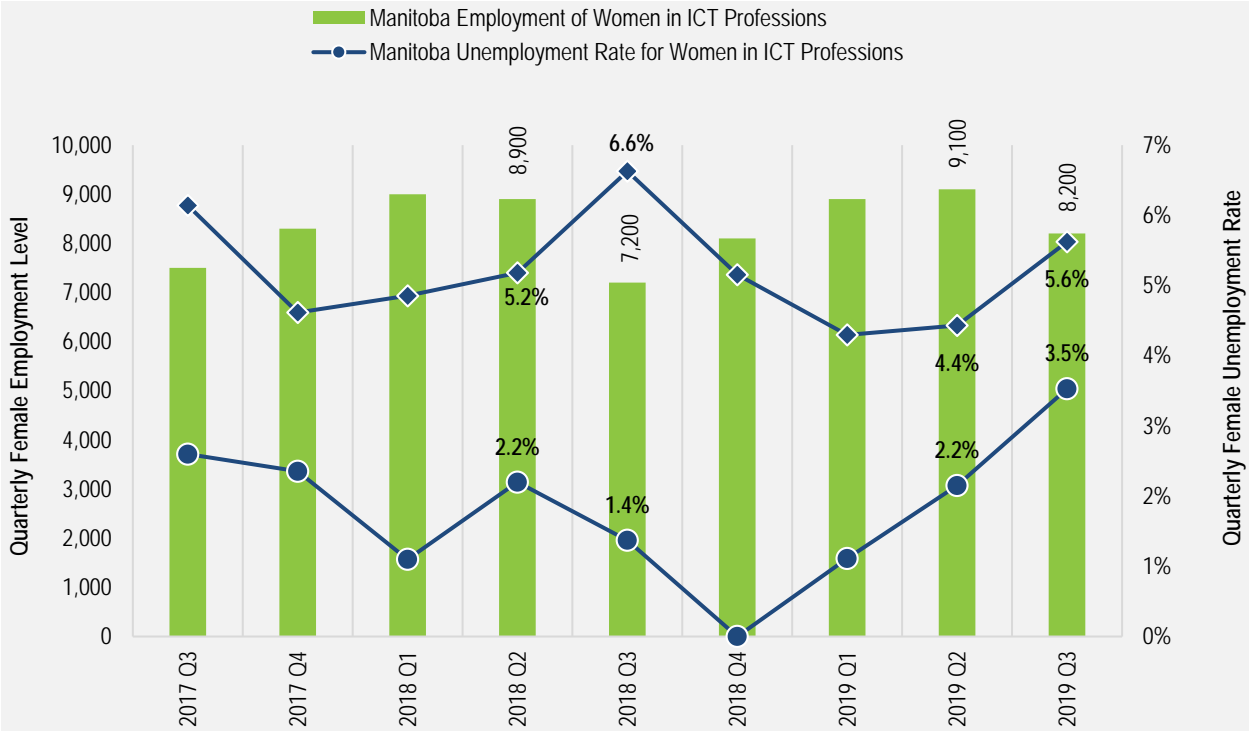
<sup>2</sup> This combines 25 NOC codes. See Appendices

<sup>3</sup> This combines 15 NAICS codes. See Appendices

- ❖ Employment in the Canadian ICT sector increased by 9% in Q3 of 2019 when compared against Q2 of 2019, which resulted in a net increase of 900 jobs. However, employment in the ICT sector relative to Q3 of 2018 experienced a decline of 3.7% or a loss of 4,400 jobs.
- ❖ During Q3 of 2019, the unemployment rate among ICT professions totaled only 3.6%. This figure is 2.1% lower than Manitoba's overall unemployment rate which sits at 5.7%.

### Gender Diversity in Manitoba

Figure 2 – Women's employment and unemployment in Manitoba



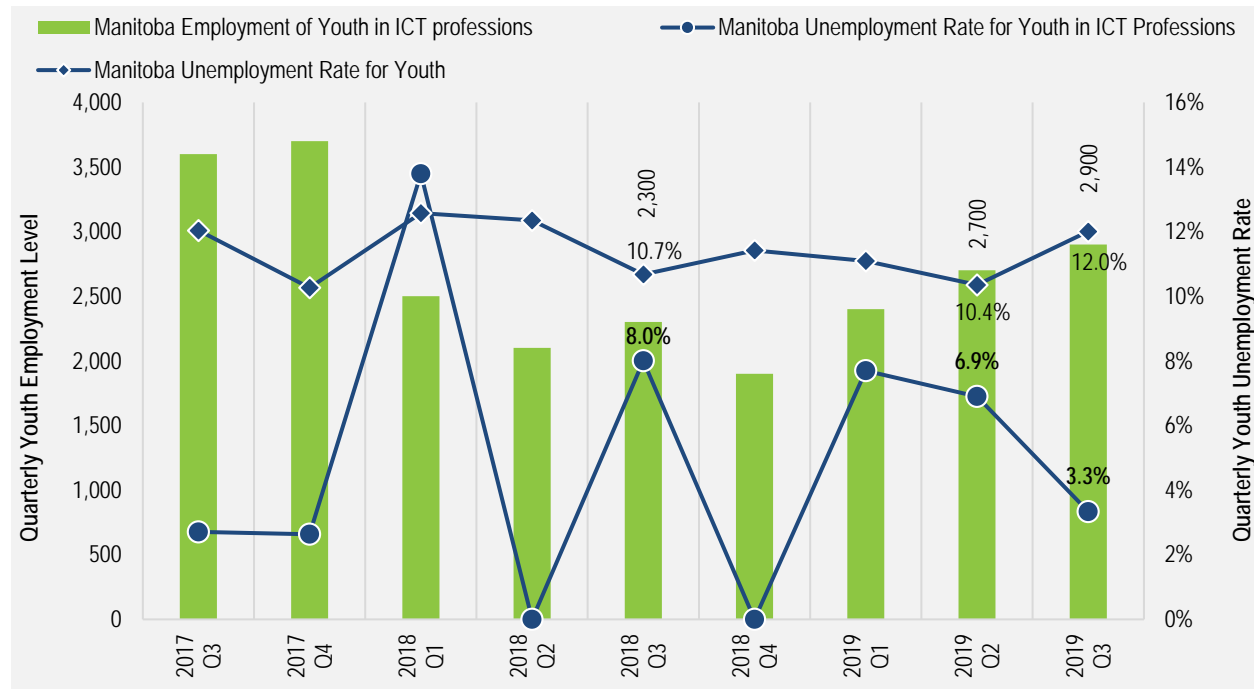
Source: ICTC; Statistics Canada

### Analysis and Insights

- ❖ Women represented 46% of MB's employed workforce in Q3 of 2019. When it comes to the ICT workforce, women represent approximately 26% of MB's ICT workforce, a figure that is 2% higher than the national average of women in the ICT workforce which currently totals 24%.
- ❖ The participation of women in ICT professions decreased from 9,100 in Q2 to 8,200 in Q3, representing a 10% decrease. 8,200 women participating in ICT professions does however represent a year-over-year increase of 14% or an additional 1,000 jobs when compared against Q3 of 2018.
- ❖ MB's unemployment rate for women in ICT professions was at 3.5% in Q3, 2019. This figure is 0.7% higher than the 2.8% national unemployment rate among women in ICT professions, and approximately 2% lower than the 5.6% rate for women participating in MB's overall economy.

## Youth Inclusion in Manitoba

Figure 3 – Youth employment and unemployment



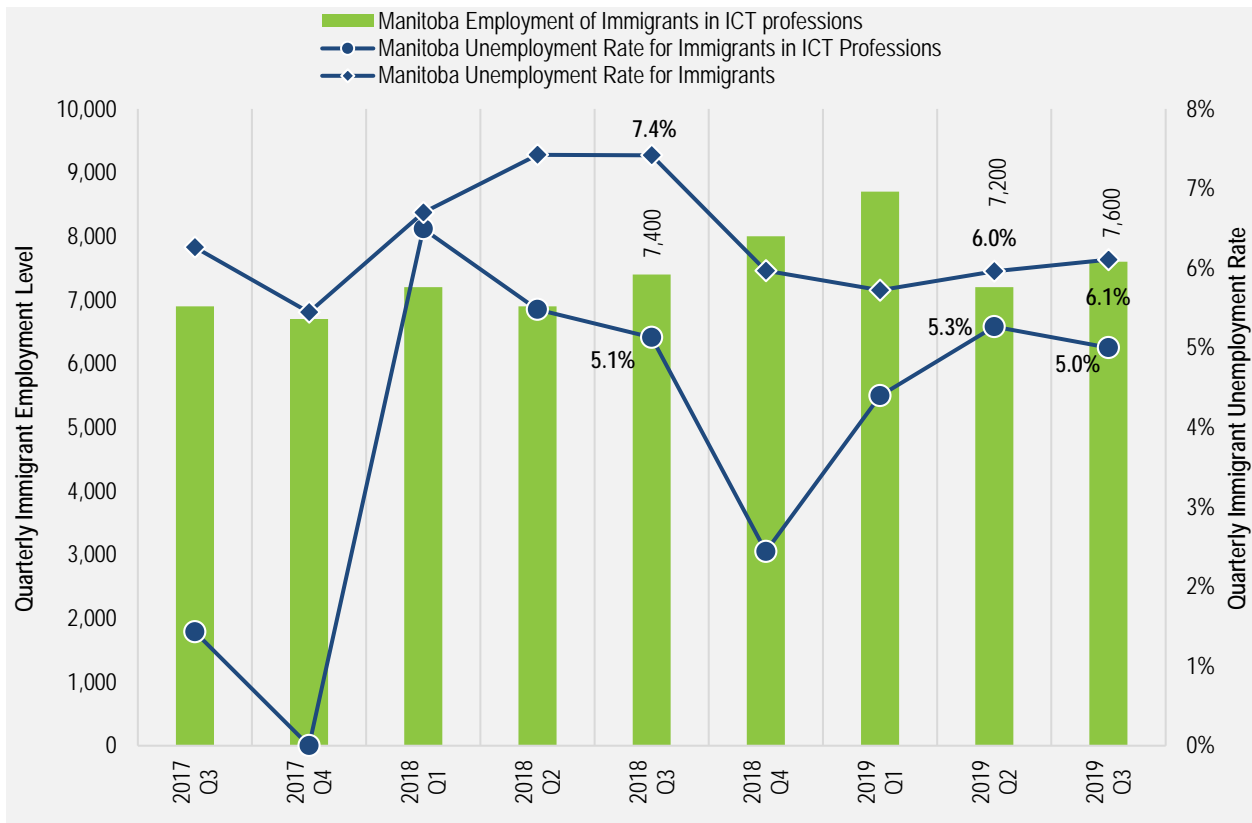
Source: ICTC; Statistics Canada

### Analysis and Insights

- ❖ Youth (15-24 years old) accounted for approximately 16% of MB's employed workforce in Q3 of 2019. The proportion of youth participating in ICT jobs increased marginally in Q3 of 2019 relative to the previous quarter. Youth represented 9.1% of the total number of ICT workers in MB during Q3 of 2019 which represents almost a one percentage point increase over Q2 of 2019. Across Canada, youth represented 9.2% of the employed ICT workforce in Q3 2019.
- ❖ ICT employment among youth in MB increased by 7.4% to 2,900 jobs in Q3 of 2019 when compared to the previous quarter. This represents the third consecutive quarterly growth in employment among youth working in ICT professions. On a year over year basis, ICT employment among youth in MB was even more robust, increasing by 26.1%, which translated into approximately 600 net new jobs when compared to Q3 of 2018.
- ❖ MB's unemployment rate for youth in ICT professions fell to 3.3% in Q3 of 2019, a figure that is lower than the 6% national unemployment rate among youth in ICT professions, and significantly lower than the 12.0% unemployment rate for youth participating in MB's overall economy over that same period.

## Immigrant Integration in Manitoba

Figure 4 – Immigrant employment and unemployment



Source: ICTC; Statistics Canada

### Analysis and Insights

- ❖ In Q3 of 2019, approximately 24% of all employed ICT professionals in MB were immigrants. This number is in line when compared to Q3 of 2018. However, this number continues to be well below the national average which sits at close to 37% of all the ICT professionals employed across all sectors of the Canadian economy.
- ❖ In Q3 of 2019, there were approximately 7,600 immigrants employed in ICT jobs in Manitoba. This represented an increase of 5.6% representing 400 net new jobs when compared to the previous quarter Q2 of 2019, and also represented a 2.7% increase or approximately 200 more jobs when compared to Q3 of 2018.
- ❖ The unemployment rate for immigrants in ICT professions was 5.0% in Q3 of 2018, a slight decrease from the 5.3% that was recorded in the previous quarter. This figure continues to be above than 2.9% national unemployment rate for immigrants in ICT professions, but lower than the 6.1% unemployment rate for immigrants participating in MB's overall economy over that same period.

## In-Demand jobs

The demand for ICT talent and skills remains very high in MB, 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 2023 Labour Market Outlook](#).

In Q3 of 2019, employment growth in MB was strongest among the following ICT occupations:

- ❖ NOC 2174 Computer programmers and interactive media developers – 570 net job gain from Q2 2019
- ❖ NOC 2173 Software engineers and designers – 530 net job gain from Q2 2019
- ❖ NOC 2161 Mathematicians, statisticians and actuaries – 500 net job gain from Q2 2019
- ❖ NOC 2281 Computer network technicians – 470 net job gain from Q2 2019.
- ❖ NOC 7241 Electricians (except industrial and power system) – 430 net job gain from Q2 2019.

## Critical skills for in-demand jobs

The demand for ICT talent and skills remains very high in MB, and especially among occupations like software engineers and designers, computer programmers and interactive media developers, and network technicians. While attracting and retaining skilled talent to fill these roles is critical for the province, it is equally important to understand the critical skills that shape and support these roles. By understanding what these critical skills look like, new graduates and local job seekers can create better and action-oriented plans for education, training, upskilling, and retraining as needed. The following showcases the critical skills in relation to the core ICT occupations in MB during Q3 of 2019:

Occupation	Critical Skills
Interactive Media Developer	<ul style="list-style-type: none"> <li>- Proficiency with Maya</li> <li>- Proficiency with node-based digital composing applications like Nuke</li> <li>- Proficiency with cross-platform game engines like Unity</li> <li>- Proficiency with modern programming languages like JavaScript, C#, SQL, Python</li> <li>- Proficiency with data visualization platforms like Tableau, Sinsense</li> </ul>
Software Engineer	<ul style="list-style-type: none"> <li>- Proficiency with modern programming languages like Java, SQL, Python, C++</li> <li>- Proficiency with open-source version control platforms like Git</li> <li>- Knowledge of front and back end development practices and procedures</li> <li>- Proficiency with cloud platforms and like AWS or Azure</li> <li>- Ability to work with and create APIs</li> </ul>
Computer Network Technician	<ul style="list-style-type: none"> <li>- Proficiency with cloud computing and platforms like AWS or Azure</li> <li>- Experience with test automation and troubleshooting</li> <li>- Experience with networking and database architecture</li> <li>- Strong understanding of message queuing tools and QA practices and procedures</li> <li>- Knowledge of API architecture</li> </ul>



## 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 Occupational Classification (NOC)	Occupation Title
1	15	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 researchers and consultants
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 installation 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 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