



QUARTERLY DIGITAL ECONOMY PULSE:

Workforce Development in Canada

June 2026

Research by



Canada 

Preface:

The Information and Communications Technology Council (ICTC) is a neutral, not-for-profit, national centre of expertise with the mission of strengthening Canada's digital advantage in the global economy. For more than 30 years, ICTC has delivered forward-looking research, practical policy advice, and capacity-building solutions for individuals and businesses. The organization's goal is to ensure that technology is utilized to drive economic growth and innovation and that Canada's workforce remains competitive on a global scale.

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Abbreviations

ECA	Educational credential assessment
GDP	Gross domestic product
HR	Human resources
ICT	Information and communications technology
ICTC	Information and Communications Technology Council
NAICS	North American Industry Classification System
NOC	National Occupational Classification
OECD	Organisation for Economic Co-operation and Development
WIL	Work-integrated learning



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Executive Summary

Canada's digital economy is a driving force for national productivity, innovation, and global competitiveness. Employing 2.4 million people, it reflects the country's evolving workforce. This briefing, part of ICTC's Quarterly Digital Economy Pulse series, explores the composition of Canada's digital economy and offers recommendations to build a stronger, more inclusive, skilled talent pipeline.

Despite progress, ongoing representation and equity gaps remain in Canada's digital workforce. While women now make up 32.6% of the digital economy workforce, their representation has only increased by 2.1 percentage points over nearly two decades from 2006 to 2024. Additionally, as of 2021, just 1.4% of employed Indigenous-identifying individuals worked in technology roles.

Immigrants made up 37% of the digital economy workforce in 2024, marking a significant 11-percentage-point rise since 2007. However, many professionals with international education remain underemployed despite their strong technical skills. While employers express interest in hiring newcomers who could fill the gap in mid- to senior-level talent, they also prefer workers with Canadian workplace experience that can contribute immediately.

At the same time, youth remain underrepresented in the digital economy. Youth make up just 6.7% of the workforce in the digital economy compared to 13.2% in the overall economy. Factors such as

the rising demand for advanced education and practical experience contribute to this issue. Employers report that while post-secondary education remains a minimum requirement, there is an increasing need for practical experience, micro-credentials, and upskilling opportunities. Work-integrated learning (WIL) programs are essential pathways for students and new graduates to gain hands-on experience and establish connections with employers.

To address representation challenges and the shortage of skilled workers, Canada must strengthen its talent pipeline by continuing to invest in work-integrated learning programs, incentivizing investment in employer-sponsored training, and enhancing the integration of internationally educated professionals. Focusing on these areas is essential for building a strong digital workforce, supporting inclusivity, improving the country's global competitiveness, and fostering long-term prosperity.



Key Takeaways



Equity-deserving communities remain underrepresented in the digital economy. Women's representation increased only slightly over nearly two decades, from 30.5% in 2006 to 32.6% in 2024. As of 2021, just 1.4% of employed Indigenous-identifying individuals were working in technology occupations.



Youth participation in the digital economy has declined over the past two decades, while the share of workers aged 55 years and older has grown.



As of 2024, immigrants accounted for 37% of the digital economy workforce, but many were underutilized despite possessing technical skills.



Educational attainment in the digital economy has steadily increased with the proportion of workers holding graduate degrees rose from 11% in 2006 to 20% in 2024. During the same period, the proportion holding bachelor's degrees rose from 29% to 40%. University degrees are increasingly seen as a baseline qualification.



Employer-led upskilling and WIL programs are crucial for bridging skills gaps and providing new graduates with practical experience.



Introduction

Canada's digital economy is a key driver of innovation and growth – shaping the country's future and influencing the way Canadians live, work, connect, and create. The digital economy relies on a diverse workforce with a wide range of backgrounds, skills, and experiences, which has been essential for driving advancements across industries and helping Canada compete on the global stage. Yet, as the digital economy grows and evolves, it continues to face persistent challenges around representation, equity, and the full integration of available talent. An analysis of demographic information in Canada's digital economy reveals a few points of concern, including a lack of equitable representation and compensation, an aging workforce that isn't yet being replaced with adequately skilled entrants to the field, and the underutilization of skills and knowledge brought to Canada by newcomers.

To begin addressing these challenges, Canada must pursue a workforce development plan that will support a more inclusive and well-structured talent pipeline leading to a stronger, more resilient economy. This report provides a comprehensive look

at the talent powering Canada's digital economy, explores the composition of the digital economy, gaps and barriers facing digital talent, and offers strategies that can help build a more inclusive, innovative, and competitive workforce.

[Read more from ICTC](#)

Quarterly Digital Economy Pulse: Digital Adoption in Canada, March 2026 [↗](#)

Canada's digital economy is a critical lever for the nation's overall productivity, innovation, and global competitiveness. This briefing, part of ICTC's quarterly Digital Economy Pulse series, outlines key opportunities and challenges shaping digital adoption across the Canadian economy.



Who Works in Canada's Digital Economy?

GENDER REPRESENTATION AND EQUITY GAPS

The Canadian digital economy benefits from the expertise of workers from diverse backgrounds; however, significant representation and equity gaps persist. The representation of women in the digital economy has improved only marginally over the past two decades, rising to 32.6% in 2024 from 30.5% in 2006 (Figure 1).¹ Similarly, individuals from Indigenous communities in Canada have long been underrepresented in technology occupations: in the last census, only 1.4% of individuals who identified as Indigenous worked in tech.²

Inequity also exists for those employed in technology occupations. A recent analysis found that the gender pay gap in technology roles is widening. In the 2021 Census, men in Canadian technology jobs

earned, on average, \$20,000 more than women in those jobs, while the gap was \$7,200 in 2016.³ The same report indicated that, while workers from racialized communities were more likely to occupy technology positions, they also earned \$14,200 less than their non-racialized counterparts on average.⁴ Technology workers from Indigenous communities, meanwhile, experienced a salary gap of \$14,800 in the most recent census.⁵

It should be noted that the 2021 Census allowed respondents in Canada to identify as non-binary, but there is still insufficient data to make broad observations or draw conclusions about the experience of non-binary workers in Canada's technology sector.

Employment by Gender in the Digital Economy Workforce, 2006–2024

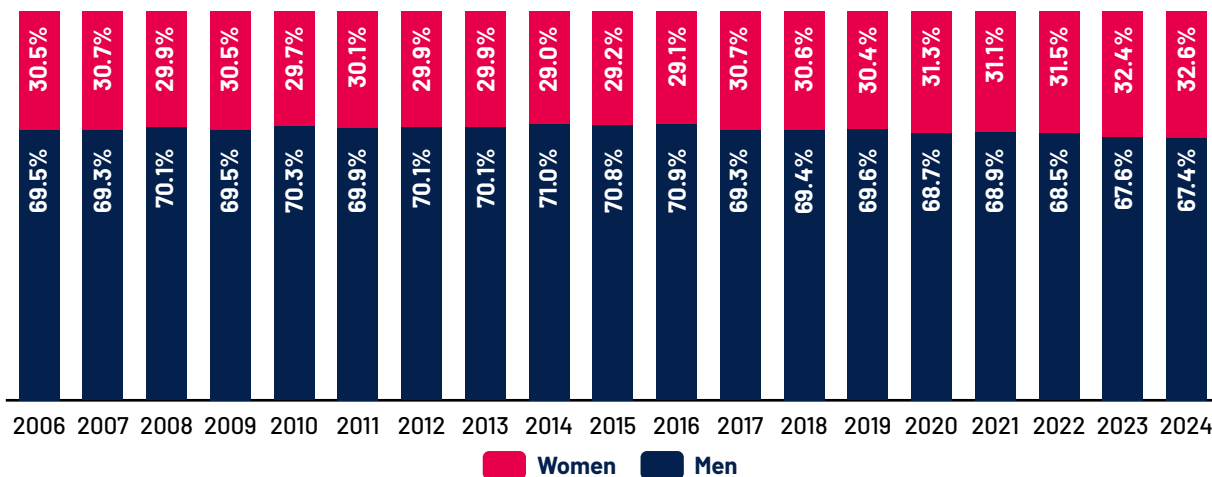


Figure 1: Employment by Gender in the Digital Economy Workforce, 2006–2024. Source: ICTC calculations using Statistics Canada Monthly Labour Force Survey (January 2025).

¹ Prior to 2022, the Statistics Canada Labour Force Survey used the variable “sex at birth.” After January 2022, the survey began collecting both sex at birth and gender. ICTC uses the terms “women” and “men” to encompass data from both time periods. Data for non-binary labour force participants is collected, but Statistics Canada typically suppresses this data under a certain proportion for privacy reasons.

² Angus Lockhart and Viet Vu, “Canada’s Got Tech Talent: Diversity of Canada’s Tech Workers,” The Dais, June 2024, 6, <https://dais.ca/wp-content/uploads/2024/06/Canadas-Got-Tech-Talent-Chapter-02.pdf>.

³ Ibid., 6.

⁴ Ibid., 6.

⁵ Ibid., 24.



➤ Read more from ICTC

Pathways to Equity: Recommendations to Boost Women's Workforce Inclusion in the Digital Economy

To ensure economic transformation is inclusive, competitive, and resilient, ICTC's latest policy brief – in collaboration with Women in Communications & Technology (WCT) – outlines six, evidence-based recommendations for the ecosystem supporting women's economic empowerment in Canada.



AGE COMPOSITION AND YOUTH PARTICIPATION

The digital economy in Canada is experiencing a shift in its age composition. Over the last 20 years, the proportion of young workers (aged 15–24) has gradually declined from 9.2% to 6.7%. During this same period, the proportion of workers aged 55 and over has increased. While these trends reflect demographic changes in the broader Canadian workforce (where approximately one in five workers is over 55), there are also significant differences. Notably, the digital economy has a higher proportion of workers aged 25–44 than the general economy does.

While 6.7% of the digital economy consists of youth (aged 15–24), the general economy has approximately double that proportion, with 13.2% of Canada's workers fitting in the 15–24 age group.⁶ As will be explored later in this report, the digital economy is increasingly made up of occupations that require more education and experience. This may be one reason why young people are underrepresented; many could be delaying their entry into the labour force until after completing a graduate degree program. The rapid acceleration of technological change has also driven a wave of upskilling, leading to more diverse pathways such as higher degrees and specialized AI-related training programs.

Digital Economy Workforce: Employment by Age, 2006–2024

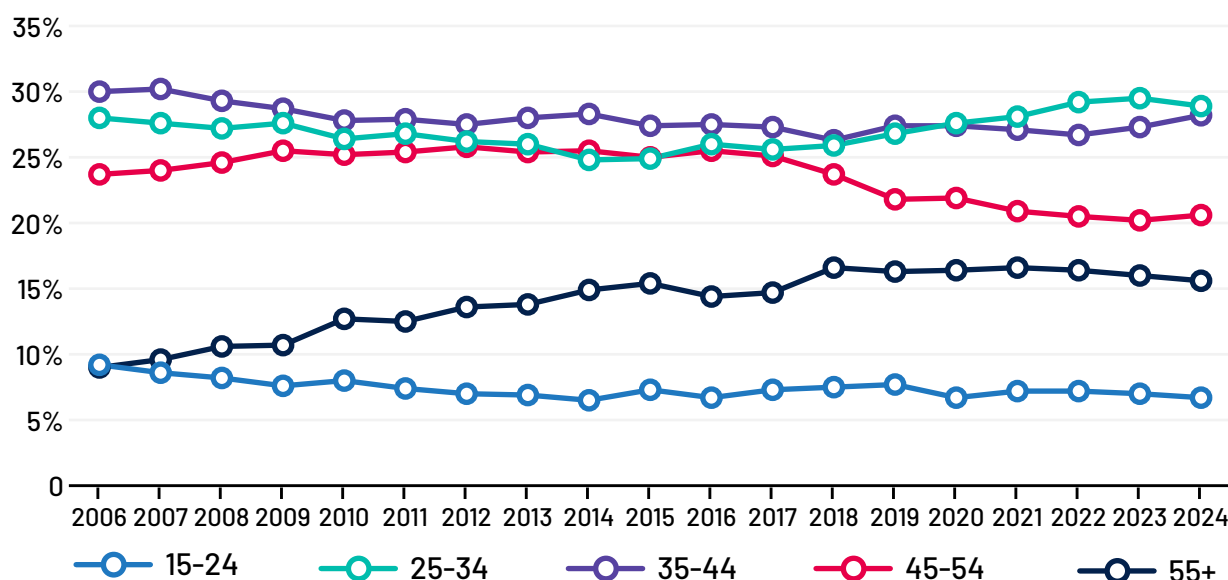


Figure 2: Digital Economy Workforce: Employment by Age, 2006–2024. Source: ICTC calculations using Statistics Canada Monthly Labour Force Survey (January 2025).

6 ICTC analysis, Statistics Canada Labour Force Survey, January 2025 (2024 data).



IMMIGRANT REPRESENTATION AND WORKFORCE INTEGRATION

Both the general Canadian economy and the digital economy have a growing proportion of workers who are immigrants (Figure 3 and Figure 4). In the digital economy, the high proportion of immigrants is likely linked to the Canadian immigration strategy that has historically prioritized education and skills.⁷ As of 2024, the digital economy employs 885,800 immigrants,⁸ which constitutes 37% of digital economy employment. This share has increased from 26% in 2007. The percentage of non-landed immigrants⁹ (temporary foreign workers) has also seen a significant rise. In 2007, 2% of employment in the digital economy was made up of non-landed immigrants. By 2024, this figure had increased to 6%.

Digital economy employers interviewed for this study often had immigrant workers on staff, or were themselves immigrants. However, several also mentioned that they struggle to hire newcomers because these individuals were often unfamiliar with Canadian workplace culture. Many commented that newcomers typically have all the technical skills required to succeed in the workplace but “really struggle with Canadian working culture.”

The underemployment of newcomers to Canada, given their existing technical and professional skills, represents a significant gap in the country’s labour market. As one subject matter expert remarked, “Canada really underemploys the talent that comes into the country... their skills are not being utilized to the full extent.” Several factors continue to contribute to this persistent challenge. Despite incremental progress made in improving the recognition of foreign education, training, and professional credentials, many internationally trained workers still face barriers in having their qualifications fully acknowledged by employers. The underutilization of foreign credentials persists even with initiatives such as Canada’s 2013 educational credential assessment (ECA) process, which was designed to evaluate the equivalence of immigrants’ foreign credentials for skilled worker

applicants. Research shows that the effectiveness of ECAs varies by country of origin, underscoring the need for more equitable assessment practices among employers. At the same time, cultural and institutional factors, such as employers’ preference for “Canadian experience” and uncertainty about how international qualifications translate into local job requirements, further constrain newcomers’ access to roles that align with their expertise. Together, these structural and cultural barriers help explain why many skilled immigrants remain underemployed, even as the digital economy faces ongoing talent shortages.

Addressing this gap can take two forms. Employer-side interventions may involve revising hiring and onboarding practices to better recognize newcomers’ credentials and provide time for new hires to adapt to workplace norms. Newcomer-focused strategies, on the other hand, can offer programs that teach relevant skills, such as preparing resumes and cover letters that align with Canadian employer expectations. Progress on either front would help reduce the underemployment and underutilization of internationally trained technology professionals, an important step toward meeting Canada’s growing demand for experienced, mid-career tech workers.

Some employers have implemented newcomer-hiring strategies within their organizations. One employer mentioned reaching out to an immigrant services association for help with building an intercultural workplace and providing unconscious bias training to support interviews and performance appraisals. “We actually incorporated that into our quarterly leadership review,” the employer noted. They also added, “[An immigrant services association] identified gaps we had, and areas we could improve.” These efforts illustrate how employer-side interventions can help create more inclusive hiring practices and better support the integration of internationally trained professionals.

7 “Attracting Tech Talent to Canada,” IRCC, Government of Canada, last modified April 24, 2024, <https://www.canada.ca/en/immigration-refugees-citizenship/campaigns/tech-talent.html>.

8 According to Statistics Canada’s definition, “immigrant” refers to a person who has been granted the right to live in Canada permanently by immigration authorities. Immigrants who have obtained Canadian citizenship by naturalization are included in this group.

9 A non-landed immigrant is a person from another country who has a usual place of residence in Canada but who has not been granted the right to live in Canada permanently by immigration authorities.



Workforce Composition in the General Economy: Immigrant and Born in Canada, 2007–2024

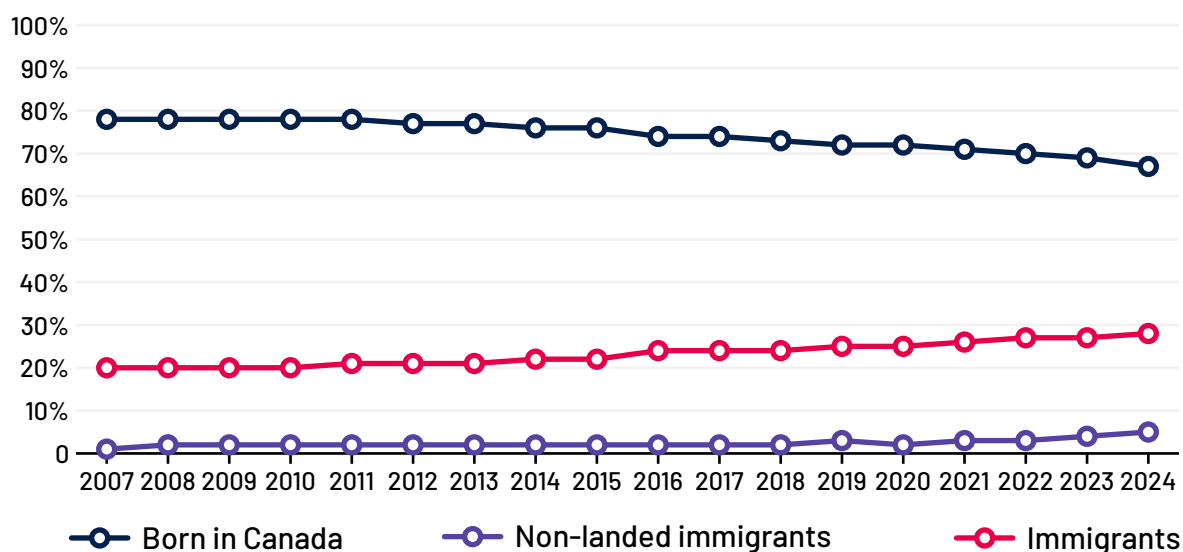


Figure 3: Workforce Composition in the General Economy: Immigrant and Born in Canada, 2007–2024. Source: ICTC calculations using Statistics Canada Monthly Labour Force Survey (January 2025).

Workforce Composition in the Digital Economy: Immigrant and Born in Canada, 2007–2024

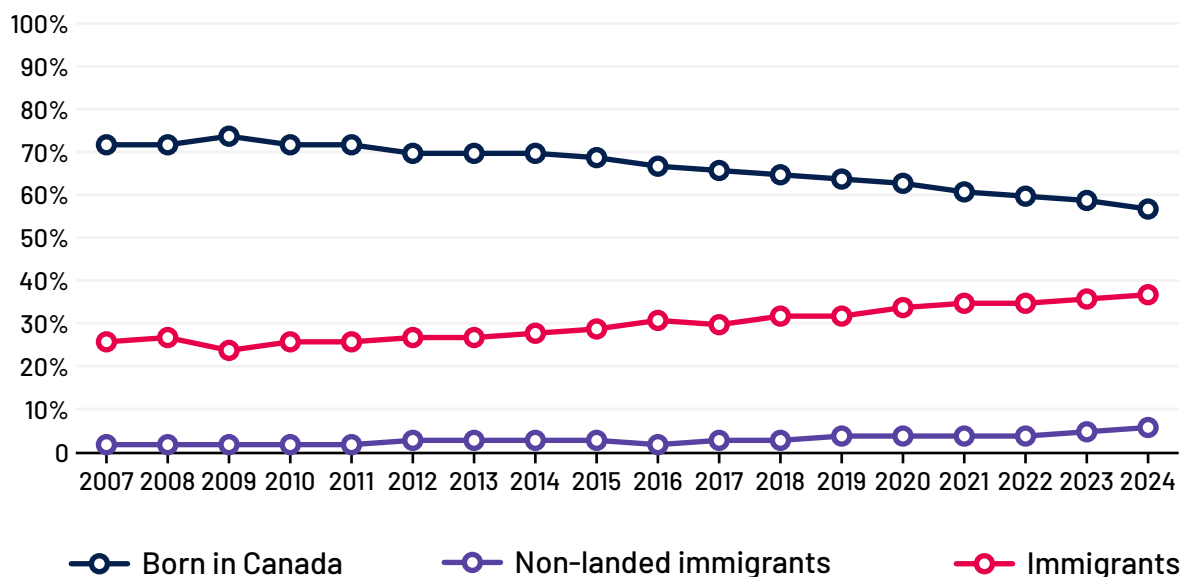


Figure 4: Workforce Composition in the Digital Economy: Immigrant and Born in Canada, 2007–2024. Source: ICTC calculations using Statistics Canada Monthly Labour Force Survey (January 2025).



EDUCATION AND SKILLS REQUIREMENTS

Workers throughout the Canadian economy and those in technology occupations possess increasingly high levels of education (Figure 5 and Figure 6). Employers interviewed for this study sometimes remarked that they felt university degrees were becoming less significant in their assessments. However, when probed further, this actually indicated that they often regarded post-secondary qualifications as baseline credentials and sought additional proof of experience, certifications, or micro-credentials to showcase extracurricular interests.

One major technology sector employer noted, “Honestly, I think university degrees have less and less weight in evaluations now. To me, it’s what you’ve done... [University degrees] can put you in the pile of people to talk to, but it’s not a fait accompli.” Meanwhile, a cybersecurity employer remarked that they value shorter-term, modular credentials (particularly those provided by post-secondary institutions) as an alternative to degrees and as a means to regain skills when existing

professional qualifications have become outdated: “It’s more the timeline shrinking, so people can retool, reskill, or upskill. You want to do that quickly, in a modular fashion that is applicable to them.” In other words, applicants will still likely need degrees to succeed, employers claim they are valuing post-secondary education less only because it is assumed that applicants possess it.

The following figures show education levels for technology occupations and for all professions in Canada (in aggregate), with variability by role. Note that there is variability by role. A human resources (HR) professional commented, “If you’re doing quantum computing, there’s lots of PhDs in those companies, and that’s necessary. But if you’re in a software company or building games, there’s so many roles where you don’t need a degree.” Another employer added, “We do hire out of bootcamps because really great talent doesn’t need a ton of credentials. But not everyone who comes out of a bootcamp is good.”

ICT Professionals: Level of Education, 2006–2024

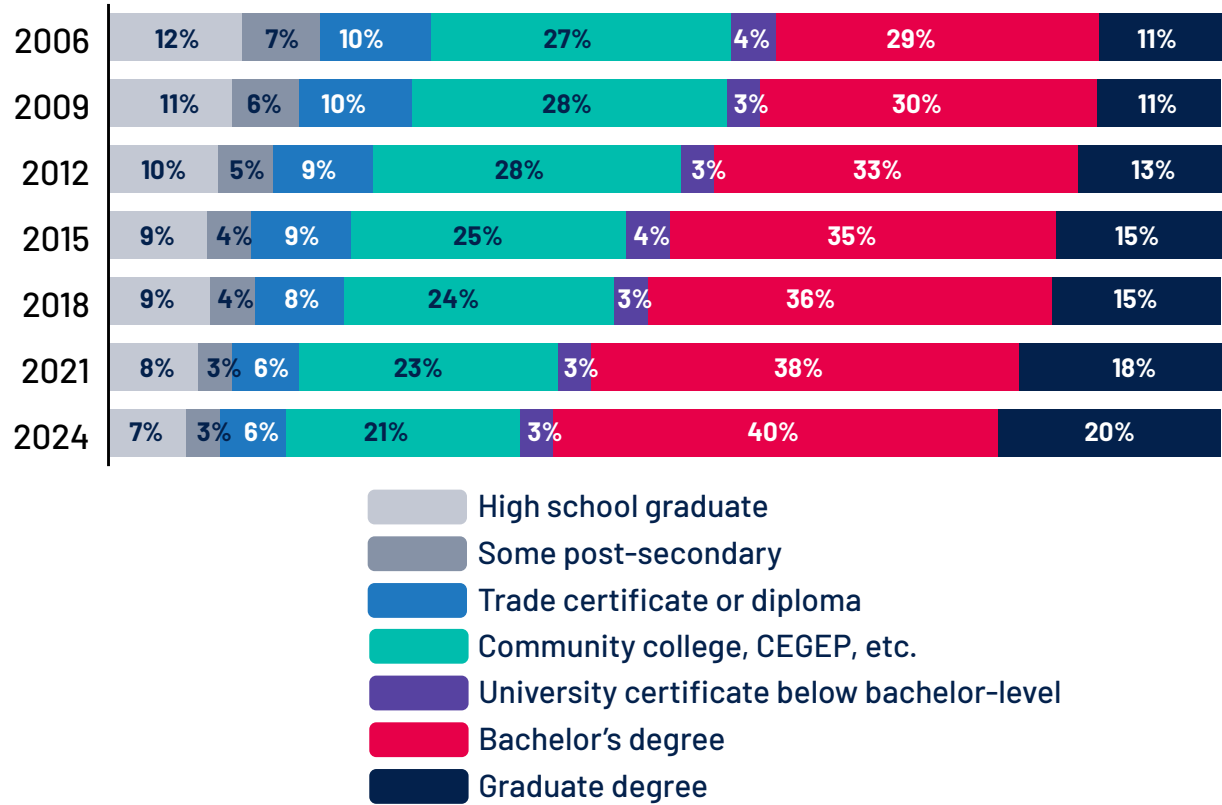


Figure 5: ICT Professionals: Level of Education, 2006–2024. Source: ICTC calculations using Statistics Canada Monthly Labour Force Survey.



All Professionals in Canada: Level of Education, 2006–2024

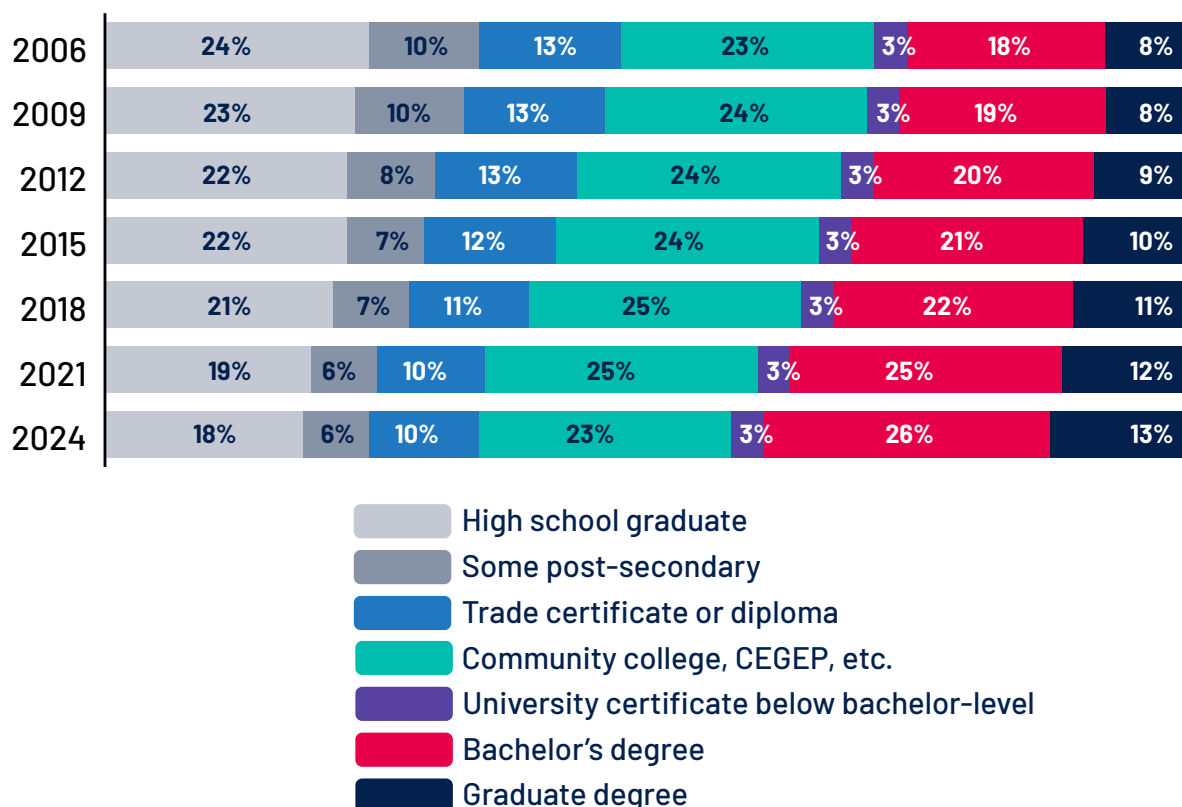


Figure 6: All Professionals in Canada: Level of Education, 2006–2024. Source: ICTC calculations using Statistics Canada Monthly Labour Force Survey.

It is likely that the increasing proportion of workers in the Canadian economy with higher education correlates with the growing number of immigrant workers because newcomers with higher education are generally prioritized in the immigration process via skilled workforce visas.

Moreover, the makeup of the Canadian and digital economies has evolved over time. For example, employment for software developers and software

engineers is expanding at a faster rate than for user technicians.¹⁰ As the economy creates more jobs that demand experience at a rapid pace, the proportion of individuals in higher-experience roles will increase, creating further change.

Ultimately, workers who want to compete in Canada's digital economy need to know that the average requirements for level of education and experience are on the rise.

¹⁰ See Appendix A.

Workforce Development for the Digital Economy

A key priority for workforce development in Canada's digital economy is addressing the unemployment and underemployment of potential technology workers. As previously illustrated, youth unemployment in Canada is high, as is the underemployment of internationally educated professionals in information and communications technology (ICT) occupations.

SUPPORTING STUDENTS AND NEW GRADUATES TO BUILD WORK-READY EXPERIENCE

Many specialized technology occupations remain in high-demand by Canadian employers,¹¹ and have high career potential for young people. However, many young people may be faced with a long runway of co-ops, internships, and experiential learning before they meet an employer's hiring criteria. New workforce entrants can be supported in gaining this experience via WIL programs and employer-led pathways.

WIL Programs

Students depend on post-secondary WIL programs to build relationships with employers and gain necessary experience.

Building this pathway requires collaboration between industry, post-secondary institutions, and students themselves. A subject matter expert from this research remarked, "I would be advising any student in a computer science, data analytics, [or] computer engineering program...to be in a co-op program. It provides you the chance to be at a business, and even though your first- and second-year jobs probably aren't great, you see how teams work together, how a technology team talks to a business team." When asked about the type of training they valued most on a resume, another major employer stated, "Co-ops, one hundred percent. Real-world experience is really what we look for... have you worked in a similar professional environment?"

Synthetic WIL

In national investigations, WIL has been shown to provide significant benefits for both students and employers.¹² However, a major challenge in WIL is finding employers with the time and resources to take on a student—particularly in Canada, where smaller employers may struggle to dedicate supervisory staff.

Some post-secondary organizations that partner with ICTC have even created "synthetic" WIL programs, where students work in an innovation hub on self-directed projects and are supervised by an entrepreneur in residence. Students may also tackle a challenge-based scenario derived from a real-world business problem.

Synthetic WIL experiences scale more readily, though their impact is yet to be measured. In ICTC's research on WIL, a key benefit identified is the connections formed between employers and students. ICTC WIL alumni surveys show that approximately a third of students return to the employer who supervised their co-op program for a job after graduation.¹³ This benefit is more difficult to achieve in synthetic WIL.

¹¹ Maryna Ivus, Todd Legere, Christopher Lindstrom, Sheldon Lopez, and Faun Rice. Digital Economy Pulse: Productivity and Employment Trends in Canada, Information and Communications Technology Council (ICTC). 2025. Ottawa, Canada.

¹² Alexandra Cutean, Letitia Henville, and Faun Rice, "The Impact of Work-Integrated Learning on Student Success and the Canadian Economy: An Evaluation of Canada's Student Work Placement Program," ICTC, August 2023, <https://ictc-ctic.ca/reports/the-impact-of-workforce-integrated-learning-on-student-success-and-the-canadian-economy>.

¹³ Allison Clark, Noah Lubendo, and Lisa Wolfram, "Work-Integrated Learning in the Quebec Digital Economy," ICTC, forthcoming.



STRUCTURED ADVANCEMENT AND UPSKILLING PATHWAYS

Encouraging structured, employer-led upskilling initiatives and advancement pathways can facilitate new graduates’ transition from entry-level positions to in-demand roles that require greater experience and specialization.

Interviewees from large organizations described tailored internships or extended onboarding processes. Many companies represented by interviewees supported online training, providing funding for their staff to obtain certificates or micro-credentials that were beneficial for their positions. One interviewee in the sustainable technology sector noted that they sent their staff to conferences and encouraged them to write papers and present, as a means to develop skills: “We have a culture of learning, figuring out how to do things better and be more efficient” and, consequently, “we’ll allocate a budget to take additional courses or go to conferences.” An HR lead, on the other hand, detailed mentorship programs that paired internal subject matter experts with junior staff over several months to help the less experienced worker in each team learn a new skill.

Upskilling and reskilling are effective ways to tackle the shortage of skills in a workplace. Participants in ICTC’s employer survey reported that upskilling is a more common approach than automation or offshoring (Figure 7). For many digital economy employers, reskilling existing staff is often among the first strategies implemented to address a gap between their workforce’s abilities and required activities. A large technology employer noted, “Sometimes you might have an amazing employee, and the job they’re working in might not actually be the best place for them to be. We don’t want to lose them, but maybe we need to figure out another place for them to be... [For team leads,] we try to offer that internally to folks.” Another interviewee concurred: “If there’s a person that shows a lot of promise in one domain, it’s not a stretch to believe that they’ll do well in another domain as well... so, within reason, obviously, we’re happy to create a transition for somebody that’s showing promise.”

Strategies Used to Address Tech Staff Skill Deficiencies

In the last 12 months (multiple select)



Figure 7: Strategies Used to Address Tech Staff Skill Deficiencies. Source: ICTC’s 2024 Digital Economy Employer Survey.



Other employers describe reskilling staff who possess extensive domain expertise, typically in non-routine or cognitively demanding roles, not because they are misplaced, but because specific tasks within their jobs have been automated or their positions have otherwise become redundant. In these cases, employers aim to retain valuable institutional and technical knowledge by transitioning these workers into new roles rather than losing them altogether.

To enhance workforce productivity, employers in the digital economy employ a combination of tools, including supporting reskilling for current staff but also implementing automation technologies. Importantly, the impact of automation on the

workforce in the Canadian technology sector is not yet fully understood or realized. As discussed in ICTC's last Quarterly Digital Economy Pulse report on digital adoption,¹⁴ the adoption of productivity tools in Canada can be slow. For example, interviewed employers indicated they are waiting to see the full effects of tools like Microsoft Copilot in their workplaces. A large software employer noted, "My belief is that it's going to change software engineering considerably, but adoption is a bit slow." A subject matter expert in the creative technology industries added, "We're not seeing the full impact of AI-assisted development just yet, but [we] certainly [will] by 2030."

¹⁴ Maryna Ivus, Todd Legere, Christopher Lindstrom, Sheldon Lopez, and Faun Rice. Digital Economy Pulse: Digital Adoption in Canada, Information and Communications Technology Council (ICTC), 2025. Ottawa, Canada.



Working Toward a Representative Workforce

Canada's digital economy has proven resilience and continues to grow. However, the digital economy continues to face ongoing challenges around workforce diversity, inclusion, and equity, and the effective integration of talent. To meet these challenges, Canada must prioritize strong workforce development initiatives. One key strategy is to further expand WIL programs, which not

only help students gain real-world experience but also offer significant benefits to small and medium-sized enterprises (SMEs). By bringing in youth, who are often digitally savvy, SMEs can access fresh ideas, up-to-date technical skills, and new perspectives that can help drive technology adoption and innovation within their businesses.

Conclusion

Canada's digital economy stands at a pivotal moment. The talent powering it is increasingly educated, globally diverse, and technically capable, yet persistent gaps in representation, equity, and the effective integration of available talent continue to constrain its full potential. Women remain underrepresented, comprising just 32.6% of the digital workforce, while Indigenous workers and youth are similarly sidelined. Immigrants now account for 37% of digital economy employment, yet many continue to have their skills underutilized due to unfamiliarity with Canadian workplace norms and structural barriers to credential recognition. These are not incidental shortcomings; they reflect systemic gaps that, left unaddressed, will limit Canada's ability to compete and innovate on the global stage.

Strengthening Canada's digital economy workforce requires deliberate, coordinated action across government, industry, and post-secondary institutions. Expanding and sustaining WIL programs will remain central to connecting students and new graduates with the real-world experience employers increasingly expect as a baseline. At the same time, structured upskilling and reskilling pathways, supported by employer investment and government incentives, can

help retain experienced workers and accelerate the development of in-demand skills. Equally important is the full integration of internationally educated professionals, whose technical expertise represents an underutilized national asset. By addressing these priorities together, Canada can build a more inclusive, resilient digital workforce – one that is equipped to drive innovation, sustain economic growth, and ensure that the benefits of the digital economy are broadly shared.



Appendix A: Additional Tables and Figures

NATIONAL OCCUPATIONAL CLASSIFICATION (NOC) CODES FOR THE DIGITAL ECONOMY

00014 Senior managers (trade, broadcasting and other services)	22221 User support technicians
10022 Advertising, marketing and public relations managers	22222 Information systems testing technicians
10030 Telecommunication carriers managers	22302 Industrial engineering and manufacturing technologists and technicians
11202 Professional occupations in advertising, marketing and public relations	22310 Electrical and electronics engineering technologists and technicians
12111 Health information management occupations	22311 Electronic service technicians (household and business equipment)
12112 Records management technicians	52110 Film and video camera operators
20010 Engineering managers	52111 Graphic arts technicians
20012 Computer and information systems managers	52112 Broadcast technicians
21210 Mathematicians, statisticians and actuaries	52113 Audio and video recording technicians
21211 Data scientists	52120 Graphic designers and illustrators
21220 Cybersecurity specialists	53111 Motion pictures, broadcasting, photography and performing arts assistants and operators
21221 Business systems specialists	62100 Technical sales specialists (wholesale trade)
21222 Information systems specialists	72011 Contractors and supervisors, electrical trades and telecommunications occupations
21223 Database analysts and data administrators	72201 Industrial electricians
21230 Computer systems developers and programmers	72202 Power system electricians
21231 Software engineers and designers	72203 Electrical power line and cable workers
21232 Software developers and programmers	72204 Telecommunications line and cable installers and repairers
21233 Web designers	72205 Telecommunications equipment installation and cable television service technicians
21234 Web developers and programmers	92021 Supervisors, electronics and electrical products manufacturing
21310 Electrical and electronics engineers	94201 Electronics assemblers, fabricators, inspectors and testers
21311 Computer engineers (except software engineers and designers)	
21399 Other professional engineers	
22220 Computer network and web technicians	



CODES FOR THE DIGITAL ECONOMY IN THE NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS)

3341	Computer and peripheral equipment manufacturing	5162	Media streaming distribution services and other media networks and content providers
3342	Communications equipment manufacturing	5173	Wired and wireless telecommunications carriers (except satellite)
3343	Audio and video equipment manufacturing	5174	Satellite telecommunications
3344	Semiconductor and other electronic component manufacturing	5179	Other telecommunications
3345	Navigational, measuring, medical and control instruments manufacturing	5182	Data processing, hosting, and related services
3346	Manufacturing and reproducing magnetic and optical media	5192	Web search portals, libraries and archives, and all other information services
3359	Other electrical equipment and component manufacturing	5415	Computer systems design and related services
4173	Computer and communications equipment and supplies merchant wholesalers	5417	Research and development in the physical, engineering and life sciences
5121	Motion picture and video industries	8112	Electronic and precision equipment repair and maintenance
5132	Software publishers		



Appendix B: Research Methods and Tools

ICTC employs a mixed-methods approach to collect and analyze both primary and secondary research. Its key research tools are listed below.

Literature Review and Secondary Data

The secondary research component of this study focused on analyzing existing data and literature. This included qualitative reviews of the sectors under consideration as well as reviews of key events occurring in the global and Canadian economies from 2022 onward. This research also relied heavily on secondary data obtained from other organizations, including Statistics Canada, the Bank of Canada, and the Organisation for Economic Co-operation and Development (OECD). Publicly available growth forecasts for the Canadian and other major economies (produced by the OECD, IMF, Canadian banks, and others) informed our economic models and forecasts. Analyzing the aforementioned datasets was useful for tracking macroeconomic and labour market trends, monitoring supply trends, and analyzing business growth in innovative areas.

Digital Economy Employer Survey

In summer 2024, ICTC conducted a survey via the market research vendor Leger. The survey targeted technology companies and businesses that employ technology talent, aiming to gain insight into their current business conditions, expectations, labour challenges, and the skills and competencies they seek in new hires. Through this research, ICTC also sought information about the strategies respondents implemented to address labour gaps. The survey was designed based on Statistics Canada's Canadian Survey on Business Conditions, enabling a meaningful comparison of

metrics between the general economy and digital economy when the Statistics Canada dataset was used as a control group and responses from the digital economy survey as a treatment group. Insights from the survey informed assumptions about the outlook of the digital economy in relation to the general economy, which subsequently aided in generating employment forecasts.

Representatives from 406 companies completed the survey. All respondents were senior executives with significant influence on key decisions related to hiring and business strategy. These included founders, executives, and managers with oversight of operations, finance, or HR. The survey was targeted at digital businesses across Canada, which were screened for eligibility based on whether they employ technology professionals or produce, design, manufacture, or sell technology.

Limitations: Overall, the quality of survey responses was very high, with most respondents completing all questions. However, low response rates in certain regions and sectors remain a limitation. While the survey received 406 responses, there were no participants from Nunavut or the Yukon. Additionally, several questions included in the survey pertained to workforce challenges and skills, but are absent from the Statistics Canada business conditions survey. This intentional misalignment in question sets was carried out because ICTC has a primary interest in workforce development issues and seeks tailored insights from technology companies and organizations that hire technology talent. However, this approach also has the drawback of limiting comparability with the results from Statistics Canada's business conditions survey.



Key Informant Interviews

From July 2024 to October 2024, ICTC conducted 26 semi-structured key informant interviews with a mix of subject matter experts and large employers from industries across Canada. A diverse group of participants and organizations were chosen to ensure a wide range of perspectives and input for the report. The interviewed organizations varied in size, location, business maturity level, revenue, and employment needs. ICTC aimed to identify trends in the digital economy while seeking context for developments in digital adoption, investment, hiring and workforce needs, talent availability, in-demand roles and skills, as well as challenges, opportunities, and weaknesses.

Limitations: ICTC aimed to engage a sample of participants who could address hiring and adoption trends across the economy. However, due to the vast number of sectors undergoing digitalization, representation from industries outside of technology was limited.

Advisory Committee

A project advisory committee was established to guide this study and assess and validate the results. The advisory committee consisted of 12 members from industry, industry associations, government, and academia, all with connections to the digital economy and/or innovation areas covered in this study. The committee convened three times throughout the duration of this study. The committee was consulted during the production of this report to discuss the digital economy labour market, its talent needs, and the level of adoption of emerging technologies in the Canadian digital economy.





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