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BC Digital Skills Study
Roundtable Discussion Pre-read

This 10-minute pre-read offers a brief background to the upcoming roundtable discussion hosted by Deloitte

Its contents include:

- Examples of Digital Skills

- Background on factors driving the need for Digital Skills in the Canadian economy

- Examples of Digital Skills used in specific industries

- Overview of expected job openings in STEM occupations (Science, Technology, Engineering, Math)

Digital Skills – Categories

The following represent a high-level overview of the breadth of digital skills required by businesses and organizations across the economy

Foundational Digital Skills

(e.g., word processing skills, email skills, search engine skills)

Business Planning & Strategy

(e.g., using digital tools to analyze or understand your organization's data, identifying digital transformation needs, enterprise architecture)

Client or Customer Management using Digital Tools

(e.g., digital skills for user research, user experience management, client relationship management)

Risk Management using Digital Tools

(e.g., using digital risk management software to monitor and report on business risks)

Digital Marketing Skills

(e.g., online advertising, email marketing, social media marketing)

Digital Privacy & Cybersecurity Skills

(e.g., cloud security, data protection, identity and access management, threat intelligence)

Talent Management using Digital Tools

(e.g., using digital tools for performance management, learning and development, succession planning)

Digital Skills for Finance and Other Business Operations

(e.g., using digital tools for purchasing, sales management, contract management, accounting)

ICT Management or Development

(e.g., technology needs identification skills, application development skills)

Data Analysis

(e.g., predictive modelling, spreadsheet analysis, big data skills, real-time analytics)

Data Visualization Skills

(e.g., the presentation of data using digital tools, such as Tableau or Power BI)

Advanced Digital Skills

(e.g., artificial intelligence skills, machine learning)

Digital Skills – Background

The current state of digital skills supply and demand in Canada and BC is driven by the continued digitization of the global economy and innovation

A Digitized World

The longer-term trend of society becoming more digital remains a key driver of digital skills demand.

- Economies across the globe are becoming more digital. This is often led by the technology sector itself but is increasingly impacting all industries and businesses. A 2021 survey of Canadian CEOs found that 71% expect to increase their digital investments during the next three years.

- Indeed, online activity, one measure of the digital world, continues to increase year-over-year in Canada. From digital news, online banking, entertainment, smart devices, social media, employment searching, and digital education. Our world is online.

- The pandemic accelerated this trend in several ways, including via an increase in demand for intelligent retail, digital health, and remote work. Moreover, challenges brought on by the pandemic, such as supply chain issues, may require digital solutions.

Innovative Trends

Several innovative trends are driving technology-related job growth and supporting the growing demand for digital skills.

- Shift in digital skills demand is driven by growth in both new industries (e.g., clean-tech, Information and Communications Technology), as well as the digital transformation in traditional industries, such as natural resources, transportation, and health.

- In Canada and BC, there are several areas of innovation that will drive growth in high-technology jobs and demand for digital skills. Growth in digital health, agri-tech, clean-tech, and the digitization of the creative industries are some of the innovative areas that are expected to drive job growth, and particularly high-technology job growth.

- Innovation is also helping to solve the most pressing challenges of today, including our aging workforce and the challenges this places on our healthcare system, as well as climate change. These forces will impact the skills needed by the workforce of tomorrow.

Digital Skills – Trends in Canada

While digitization is occurring across all industries, several industries stand out as creating strong demand for digital skills in Canada through technological innovation

Technology and innovation impact the skills needed within a workforce. In Canada, innovation in clean technologies, clean resources, healthcare, manufacturing, agriculture, and media are expected to drive economic growth. Employment in each of these industries is expected to expand over the medium term (i.e., to 2026) and the skills required to fill these roles are digital.

Innovation Area	Description	Employment Growth	Digital Skills Snapshot
Cleantech	With climate change as one of the top concerns for future generations, businesses are continually seeking new environmentally friendly goods and services. Technology is a core input into developing new, clean products and services.	Demand for cleantech workers is expected to reach roughly **41,000** by 2025.	One of the more digitally-intensive areas of innovation, the skills required by cleantech workers range from big data, to data visualization, to software and hardware development skills.
Clean Resources	Canada's natural resource sector requires significant change if it is to support in the fight against climate change. Innovation will support the clean transition for industries such as forestry, mining, and oil and gas. The switch to renewable resources will drive demand for new digital skills.	An additional roughly **14,000 workers** will be needed in the clean resource industry by 2025.	Jobs such as smart grid engineers require digitally-intensive skills such as computer programing.
Health and Biotech	Companies in the healthcare and biotechnology industry are innovating to find new medications, new digital health solutions, new medical devises, and more. They work in big data, 3D printing, robotics, and nanotechnology.	An additional roughly **14,000 workers** will be needed in the health and biotech industry by 2025.	Occupations in this industry require advanced data analysis, biostatistics, epidemiology, big data, and other statistical programming skills.
Advanced Manufacturing	Canada's manufacturing industry is adopting innovative technologies from robotics to 3D printing. The manufacturing industry is driven to reduce costs in a highly competitive environment and technology can assist with this.	An additional roughly **14,000 workers** will be needed in the advanced manufacturing industry by 2025.	Roles such as Additive Manufacturing Designer require digital design skills (e.g., computer-aided design), photoshop, 3D modelling skills, and others.
Agri-Food and Food Tech	Agri-food and food tech industries include multiple subsectors ranging from traditional agriculture and livestock rearing to industrial bioproduct development. Digitization in the industry is driven by the need to have more efficient food production systems as demand for food increases.	An additional **49,000 workers** are expected to be needed in this sector across Canada by 2025.	Workers in agriculture may need digital skills such as geographic information system (GIS) skills, data science skills (e.g., proficiency in R), and familiarity with remote sensing technologies.
Interactive Digital Media	Interactive Digital Media encompasses the digitization of Canada's creative industries. It includes subsectors such as animation, video game development, and music creation. Digitization in this industry is driven by international competition and the near exclusive digital consumption of these mediums in modern society.	An additional **103,000 workers** are expected to be needed in this sector across Canada by 2025.	Workers in interactive digital media may need Adobe skills, proficiency with social media platforms, data analysis, photoshop skills, and sophisticated user interface and user experience design skills.

Source: ICTC. (2021). Digital Talent Outlook for 2025.

Growing Demand for STEM Jobs in BC

The current BC government Labour Market Outlook projects job openings over the next decade. Below are examples of top STEM (Science, Technology, Engineering and Math) opportunities.

Description	Job Openings 10-years
Information Systems Analysts and Consultants	13,121
Computer Programmers and Interactive Media Developers	12,624
Software Engineers and Designers	9,354
User Support Technicians	8,806
Computer and Information Systems Managers	8,035
Graphic Designers and Illustrators	5,424
Civil Engineers	4,415
Computer Network Technicians	4,407
Web Designers and Developers	4,310
Electronic Service Technicians (Household and Business Equipment)	3,743
Electrical and Electronics Engineers	2,432
Mechanical Engineers	2,209
Electrical and Electronics Engineering Technologists and Technicians	2,025
Computer Engineers (except software engineers and designers)	1,668
Engineering Managers	1,592
Other Technical and Coordinating Occupations in Film Broadcasting and Arts	1,588
Database Analysts and Data Administrators	1,529
Civil Engineering Technologists and Technicians	1,141

- The BC Labour Market Outlook projects over 1,000,000 job openings in BC over the next 10 years.

- Science and technology jobs will be in high demand with 111,000 job openings projected over the ten years (the list here has examples of occupations with a large number of job openings).

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