CISCO

British Columbia

# An Innovation and Technology Powerhouse

Cisco Canada Digital Readiness Index 2023

# Provincial Insights Brief

## DRI Score: 1.71 | Ranking: 1st

**In today's world, digitally mature countries have the infrastructure, governance, labour force, digital services and technologies to support social development, economic growth and global competitiveness.**

Major technology trends including mobility, 5G networks, cybersecurity, Internet of Things (IoT) and cloud solutions have compelled countries to reimagine government, enhance access to public services, promote innovation and drive technology adoption.

At Cisco, we are fuelled by our purpose to 'Power an Inclusive Future for All' by leveraging our technology, our expertise and our extended ecosystem to bridge gaps of inequity and drive change. Cisco's desire to solve global problems and create a more inclusive world through technology led to our first Global Digital Readiness Index (DRI) in 2017. In 2023, we completed the Cisco Canada Digital Readiness Index, a comprehensive analysis of Canada to help provinces and territories better understand the building blocks of digital readiness and explore opportunities to improve their relative performance.

This holistic model measures digital readiness across many components beyond technology including basic needs, human capital and the business and start-up environment. While access to technology and the infrastructure to support digital technologies is critical, if, for instance, individuals' basic needs are not met, a country cannot maximize the benefits of digital opportunity. The Cisco Canada Digital Readiness Index provides an understanding of a province or territory's level of digital readiness and what interventions and investments could help them advance.

The Cisco Canada DRI is based on data published from 2019 to fall of 2022. For more information on Canada's national digital readiness score, the full report is available here.*

> This guide was developed to enable provinces and territories to understand their level of digital readiness and explore areas of opportunity to reach their full potential.

*https://www.cisco.com/c/m/en_ca/digitalreadiness-2022.html

# Measuring Digital Readiness: DRI Components

The Cisco Canada Digital Readiness Index (DRI) employs a comprehensive framework and model based on seven different components of digital readiness including **Basic Needs; Business and Government Investment; Ease of Doing Business; Human Capital; Start-Up Environment; Technology Adoption; and Technology Infrastructure.** Unique, market-specific metrics serve as proxies for performance in each of the components.

## Basic Needs

Basic needs for a population to survive and thrive

### Metrics

- Life expectancy
- Low Income
- Food insecurity
- Housing affordability

## Business & Government Investment

Private and public investment in innovation and technology

### Metrics

- Business expenditure on R&D
- Government expenditure on R&D
- Infrastructure investment

## Ease of Doing Business

Basic infrastructure/ policies needed to support business continuity

### Metrics

- Business density
- Business growth
- Business confidence
- Internal trade barriers

## Human Capital

Skilled labour force to support digital innovation (build and maintain)

### Metrics

- Labor force participation
- Youth population
- Post-secondary education
- Immigration

## Start-Up Environment

Environment which fosters innovation within a community

### Metrics

- Venture capital investment
- Business entries
- Access to financing

## Technology Adoption

Demand for digital products/services continuity

### Metrics

- Zero emission vehicle (ZEV) registrations
- Broadband subscriptions
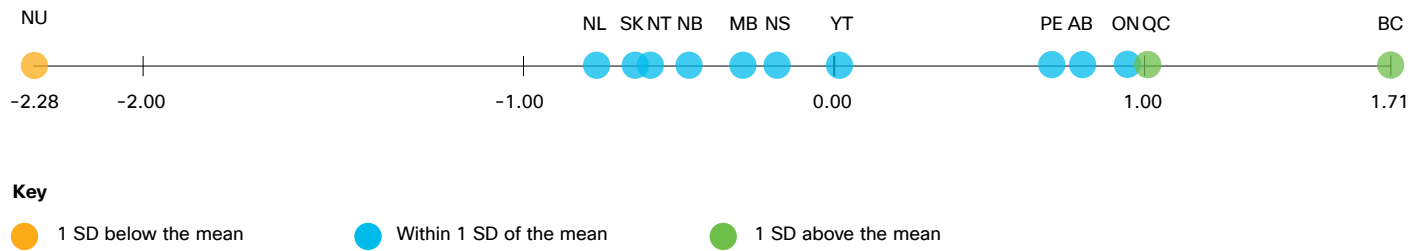- Online sales

## Technology Infrastructure

Infrastructure available to enable digital activities and connected to consumers (IoT, Cloud)

### Metrics

- Broadband availability
- LTE coverage
- EV charging stations
- Internet affordability

## Overall DRI Score Across Provinces and Territories

| NU | | | | NL | SK | NT | NB | | MB | NS | | YT | | | PE | AB | | ON | QC | | | BC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -2.28 | | -2.00 | | | -1.00 | | | | | | | 0.00 | | | | | | | 1.00 | | | 1.71 |

**Key**

🟠 1 SD below the mean    🔵 Within 1 SD of the mean    🟢 1 SD above the mean

The Cisco Canada DRI examines the performance of Canada's provinces and territories and provides a benchmark on their progress towards digital readiness[1]. British Columbia tops Canada's DRI ranking with a sizable lead, followed by Québec and Ontario, while the remainder of the provinces and territories fall closer to Canada's national average DRI score. The exception is Nunavut, which faces unique digital readiness challenges.

[1] Z-scores are a way to measure how far away a particular data point is from the average (or "mean") of a group of data points, and how unusual or "extreme" that value is compared to the rest of the group. If a score is below the mean, it is expressed as a negative number, and if above the mean, it will be a positive number.

# British Columbia's Digital Readiness Index

## DRI Score: 1.71 | Ranking: 1st

British Columbia's first-place ranking reflects the province's ability to thrive in an increasingly digital society. The province has a dynamic business environment where new businesses have been able to enter the market, access funding and grow – even during the economic challenges of the pandemic. The province also ranks first in Technology Adoption and performs strongly in Technology Infrastructure. For B.C. to maintain its momentum and future-readiness, governments, businesses and civic institutions need to continue to work together to deliver high-quality digital services and support people and businesses to thrive in a digital economy.

B.C.'s DRI score of 1.71 is the highest in Canada driven by its #1 scores on Ease of Doing Business, Start-Up Environment and Technology Adoption.

## DRI Scores: A breakdown by component

The following section will explore how B.C. scored in each of the DRI's seven components and what metrics drove performance.
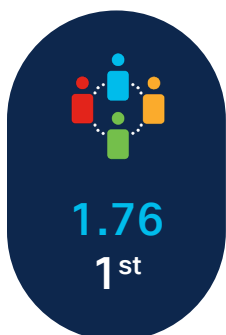
**-0.19**
**12th**

### Basic needs are an indicator of the health of a society.

- Basic Needs is the only component where B.C. scores below average with a second to last place ranking due to its acute housing affordability problem.
- While B.C. has the second highest score in Canada for life expectancy, and average scores for other indicators, 36% of post-tax income is spent on housing – the highest in the country.
- Vancouver is the third least-affordable housing market in the world behind Hong Kong and Sydney, Australia.

**0.73**
**4th**

### The capacity of government and businesses to invest in their future is a key factor in enabling digital readiness.

- B.C. ranks fourth in Business and Government Investment. The good news is there have been substantial increases in business research and development in the province in recent years.
- Both B.C.'s government research and development spend per capita as well as infrastructure investment, were close to the national medians.

**1.76**
**1st**

### An environment where businesses can invest and grow with ease and confidence is a core foundation to digital readiness.

- B.C.'s first place ranking in this component is driven by its year-over-year business growth, the highest in Canada.
- The province also ranks third in business density and has above average business confidence.

## 0.36
**4th (t)**

### Human Capital – a society's ability to build and maintain a skilled labour force – is intrinsic to digital innovation and readiness.

- B.C. is tied for fourth place with Ontario in Human Capital behind Yukon, PEI and Alberta.
- The province ranks fourth in net immigration as a percentage of overall population, with positive net foreign migration and domestic migration.
- B.C. also has very high post-secondary educational attainment at 72%, above the national median.
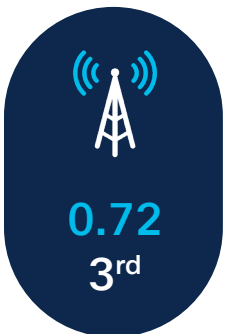
## 2.50
**1st**

### Start-ups are an important source of innovation and economic growth.

- B.C. ranks first in Start-up Environment due to its leading amount of venture capital investment per capita and relatively high number of business entries per capita.
- This high ranking demonstrates B.C.'s success in nurturing a healthy start-up ecosystem which is foundational to strong future business growth.

## 2.11
**1st**

### Technology Adoption serves as a proxy for the population's willingness and ability to use new and emerging technologies.

- B.C. is ahead of its peers in adopting new technologies in business and public settings – a necessary component of a digitally ready society.
- For example, the province has a significantly high percentage of new electric vehicle registrations in the country compared to the margin (13.0% vs. the median of 1.6%).
- B.C. also has the second-highest percentage of online sales in the country.

## 0.72
**3rd**

### Modern technology infrastructure is key to economic growth and the delivery of services.

- B.C. scores third in Technology Infrastructure with close to median scores in broadband availability, internet affordability and LTE coverage.
- The province's highest metric was for EV charging stations, a proxy for improvement in adopting cutting-edge technology.

# British Columbia's Opportunities

## A Path Forward

The Cisco Canada DRI identifies strengths and opportunities for B.C. to further improve its digital readiness.

### Improving training opportunities for digital skills

Both the provincial and federal governments have recognized the importance of digital skills in the labour market. The Government of B.C. has created a digital literacy strategy for those in K-12 and the Government of Canada has funded the Digital Skills for Youth Program (DS4Y) to increase the employability of youth under 30. However, there is a gap in opportunity for older adults who may not have had the opportunity to gain the necessary digital literacy skills of today in their formal education.

The United Kingdom has created national standards for essential digital skills that adults need to undertake in most jobs and to engage in further studies.[2] For individuals who do not meet the standard, they can access free digital skills training opportunities. To support residents of B.C. in developing and maintaining their digital skills over time, the Government of B.C., in collaboration with employers, could develop a set of provincial standards for essential digital skills and offer access to training to improve participation in the digital economy.

### Opening the doors of procurement for B.C. start-ups

B.C. currently has a thriving start-up environment across different digital economy sectors. Vancouver was selected as the home of the Government of Canada-funded Digital Technology supercluster and the province is also seeing growth in the cleantech sector and increased presence in life sciences, information and communications technology, and fintech. These clusters have been supported by considerable provincial and federal investments; B.C. businesses are able to access venture capital, tax credits and research funding specific to developing clean technology.

However, this active support is often contrasted with the challenges start-ups and scale-ups face in doing business with governments – even when those governments have provided funding to those businesses. For instance, start-ups often face challenges bidding on government contracts because of lengthy and complicated procurement processes.

[2] https://www.gov.uk/government/publications/national-standards-for-essential-digital-skills

To help companies scale and promote innovation, the B.C. government could improve its efforts as a "buyer of first resort" to help companies build proof of concepts.[3] Other alternative procurement approaches, like the federal government's Innovative Solutions Canada, help make it easier for start-ups and scale-ups to do business with the large public sector marketplace.

Before the pandemic, the Government of B.C. piloted a Start-up-In-Residence program (STIR) that brought together small tech firms and government agencies to develop new technologies. The program was said to be a "game changer" for early-stage tech companies operating throughout B.C. and streamlined the approach of working with government. To build on this success, the Government of B.C. could review the outcomes of the STIR program and, if successful, consider adopting it as an ongoing program.

## Transforming health care services with digital solutions

Given B.C.'s leading scores in Technology Adoption and Technology Infrastructure, the province is well-placed to accelerate its adoption of digital health services, in support not only of the basic needs of its citizens but also of its digitally competitive economy.

In response to growing pressures on the health care system, British Columbia is working to implement new digital technologies that help to streamline services, increase access to care and improve patient experience. As part of the Ministry of Health's 2023/24-2025/26 service plan, it has an objective to modernize digital health care services and tools to provide a connected, safe and trusted system. Digital health solutions such as virtual primary care can be part of the solution to increase access, especially for the regions of B.C. that face shortages of family doctors, long travel for services and extended wait times for specialized care. Jurisdictions like Estonia, Denmark and Sweden – which lead in the global Digital Readiness Index – have been proactive in embracing digital tools for health service delivery.

Digitization is an important part of the solution to ensure British Columbians' basic needs are met. Alongside public, private, and non-profit health system partners, the Government of British Columbia can continue to ensure that the needed digital infrastructure is in place to support secure and reliable digital health, and that health professionals are supported with the necessary skills and specialized talent to innovate with hybrid and virtual care models.

[3] https://worksinprogress.co/issue/buyers-of-first-resort

# Conclusion

B.C. is the Canadian leader in digital readiness – well ahead of its peers. The province has created the conditions for an attractive environment for businesses to start, grow and thrive. Residents of B.C. are also eager to adopt new technologies, leading the country in EV adoption and online sales. But in a constantly evolving world, it's important for B.C. to continue this momentum to keep pace.

B.C. should continue to invest in initiatives that support digital readiness including skills training for the next generation of workers; a dynamic and supportive start-up environment; and shift to a digitally-advanced health care system. These investments will help the province continue to advance and ensure it will continue to lead in a digitally competitive world.