



Newfoundland and Labrador

# Digitizing Government Services to Connect a Dispersed Population

Cisco Canada Digital Readiness Index 2023

# Newfoundland and Labrador



## Provincial Insights Brief

DRI Score: -0.73 | Ranking: 12th

**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.

# 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

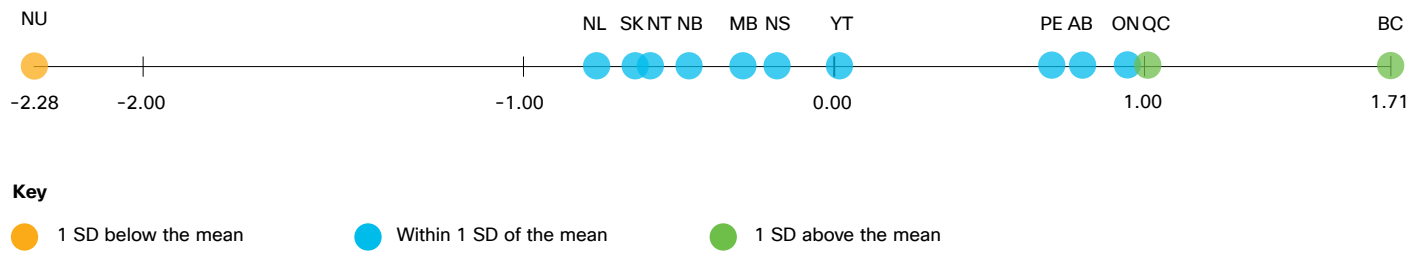
Infrastructure available to enable digital activities and connected to consumers (IoT, Cloud)

### Metrics

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



## Overall DRI Score Across Provinces and Territories



The Cisco Canada DRI examines the performance of Canada’s provinces and territories and provides a benchmark on their progress towards digital readiness<sup>1</sup>. 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.

<sup>1</sup> 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.

# Newfoundland and Labrador's Digital Readiness Index

DRI Score: -0.73 | Ranking: 12th

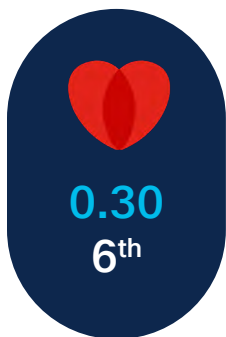
Newfoundland and Labrador's digital readiness score of -0.73 reflects a digital readiness gap with the rest of Canada. The province scored well in **Business and Government Investment** but received lower scores in **Human Capital** and **Ease of Doing Business** due to low labour force participation and a shrinking number of businesses.

Newfoundland and Labrador also experience discrepancies in digital readiness between urban and rural regions of the province and a proactive response is needed to create digital opportunity and inclusion. A digitally skilled labour force and strengthened infrastructure that supports widespread connectivity will improve the province's digital readiness and enable it to fully participate in the digital economy.

Newfoundland and Labrador's DRI Score of -0.73 is well below the national average. The province is held back by its Human Capital and Technology Infrastructure. However, the province is not sitting still, scoring very strongly in Business & Government Investment, and Start-up Environment.

## DRI Scores: A breakdown by component

The following section will explore how Newfoundland and Labrador scored in each of the DRI's seven components and what metrics drove performance.



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

- Newfoundland and Labrador ranked sixth in the country and scored above average in this category.
- The province has one of the most affordable housing markets in the country and has improved its food affordability.
- The province's rank was negatively impacted due to a below average life expectancy of 79.5 years (compared to the national average of 82.1).



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

- Newfoundland and Labrador received its highest component score in Business and Government Investment, ranking third. The province had the second highest government investment in research and development (R&D), and fifth highest business investment in R&D in Canada.
- The province scored just below-average in infrastructure investment.



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

- Newfoundland and Labrador has the lowest business confidence score in the country and the third lowest business growth rates.
- These are critical challenges for the future of Newfoundland and Labrador's economy and are likely holding back potential investment.



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

- Newfoundland and Labrador ranks last in Human Capital, with the lowest labour force participation rate, lowest youth population and third lowest immigration rate.
- Overall, the province is well educated but will need to grow its population in the years ahead.



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

- Newfoundland and Labrador fosters a positive start-up environment and has ranked fourth in Start-up Environment.
- The province has near average business entries and venture capital investment, and businesses report a high amount of access to financing.



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

- Considering the geography, Newfoundland and Labrador has done very well in broadband subscriptions, ranking above average.
- However, the province has low online sales and very few zero-emission vehicles.



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

- The province has the fourth best internet affordability in the country, but very low broadband availability and LTE coverage.
- Continued investment in this infrastructure will allow more people and businesses to participate in the digital economy.

# Newfoundland and Labrador's Opportunities

## A Path Forward

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



### Supporting SMEs through job incentives and regulatory review

Between 2016–2021, Newfoundland and Labrador was the only province or territory that saw net negative business growth year-over-year and continues to have the lowest labour force participation in Canada. To begin to close the digital readiness gap, the province should focus on supporting small and medium-sized entities to create an economic environment that is more responsive to technologies of the future. According to the Atlantic Canada Chamber of Commerce, SMEs are struggling with regulatory burden, increased cost of doing business and attracting and retaining skilled employees.<sup>2</sup> These concerns could contribute to Newfoundland and Labrador's ongoing stagnation in business growth.

The Government of Newfoundland and Labrador and the Government of Canada should, through the Atlantic Growth Strategy, create more job incentives for SMEs to attract and retain skilled workers. These governments should also explore more comprehensive ways to measure and report on regulatory burdens impacting SMEs. This can include improving the process of complying with existing regulations.



### Expanding broadband and cellular coverage to all areas

To achieve digital inclusion in Newfoundland and Labrador, all residents need to have access to high quality internet and cellular coverage. Nationally, Newfoundland and Labrador has the lowest broadband availability, with only 49.6% of rural households able to access to 50/10 Mbps broadband service.<sup>3</sup> Remote communities in Labrador, who often rely on telehealth services and virtual appointments to get access to healthcare, also experience connectivity challenges.

<sup>2</sup> [https://chambermaster.blob.core.windows.net/userfiles/UserFiles/chambers/1721/CMS/Atlantic\\_Impressions\\_Atlantique/2022-2023\\_Atlantic\\_Insights/2023-Atlantic-Insights\\_Final\\_EN\\_FEB2023\\_high.pdf](https://chambermaster.blob.core.windows.net/userfiles/UserFiles/chambers/1721/CMS/Atlantic_Impressions_Atlantique/2022-2023_Atlantic_Insights/2023-Atlantic-Insights_Final_EN_FEB2023_high.pdf)

<sup>3</sup> Page 6 <https://www.gov.nl.ca/iet/files/22034-Connectivity-Strategy-March-2.pdf>



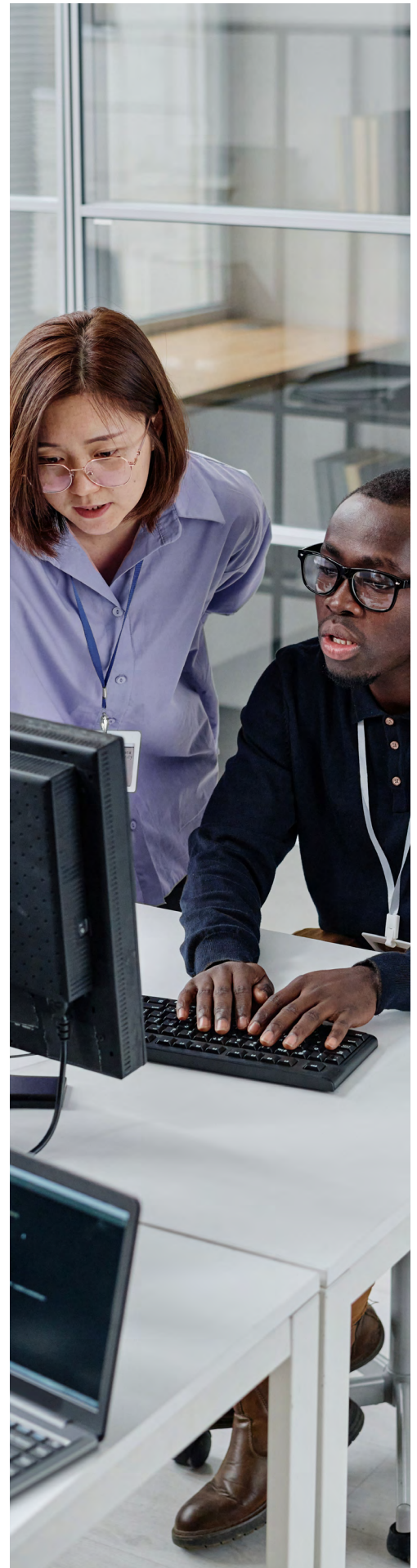
The provincial government's release of a Connectivity Strategy in 2022 is a positive step to expanding connectivity in Newfoundland and Labrador and improving digital inclusion. However, the Government of Newfoundland and Labrador, in partnership with the Government of Canada and Indigenous communities, could also consider investing in existing and new initiatives to ensure that all residents of Newfoundland and Labrador have access to high-speed internet, much sooner than the Government of Canada's target of 2030.

## Creating a cybersecurity strategy

As technology infrastructure begins to expand and more services and businesses digitize, Newfoundland and Labrador should consider how to improve its cybersecurity readiness and resilience when attacked, while maintaining adequate data privacy and protections. The 2022 ransomware attack on an Eastern Health network drive shows the urgent need to advance Newfoundland and Labrador's cybersecurity readiness and protect the province from threats that continue to grow and evolve.

Canadian organizations are falling behind their global peers on cybersecurity preparedness according to [Cisco's Cybersecurity Readiness Index](#). This study found a mere 9% of Canadian organizations have the 'mature' level of readiness needed to be resilient against today's modern cybersecurity risks, compared to 15% globally.

Newfoundland and Labrador needs to take significant and meaningful steps to increase their cybersecurity readiness and improve their resilience against the emerging threat landscape. To achieve this, the Government of Newfoundland and Labrador should consider working with cybersecurity experts, like the Canadian Centre for Cyber Security, to develop a strategy and framework for the province with ambitious targets and timelines to spur immediate action.





# Conclusion

Newfoundland and Labrador's 12th place DRI ranking indicates that it trails most of Canada when it comes to being positioned for digital economy opportunities and ensuring digital inclusion. The province also experiences discrepancies in digital readiness between urban and rural regions.

To ensure that Newfoundland and Labrador can participate in emerging digital economy opportunities, the province will need to depend on a digitally skilled labour force and strengthened technology infrastructure that connects all communities in the province.

