Nova Scotia

A Rapidly Growing Innovation Hub Ripe for Investment

Cisco Canada Digital Readiness Index 2023

Nova Scotia

Provincial Insights Brief

DRI Score: -0.23 | Ranking: 7th

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
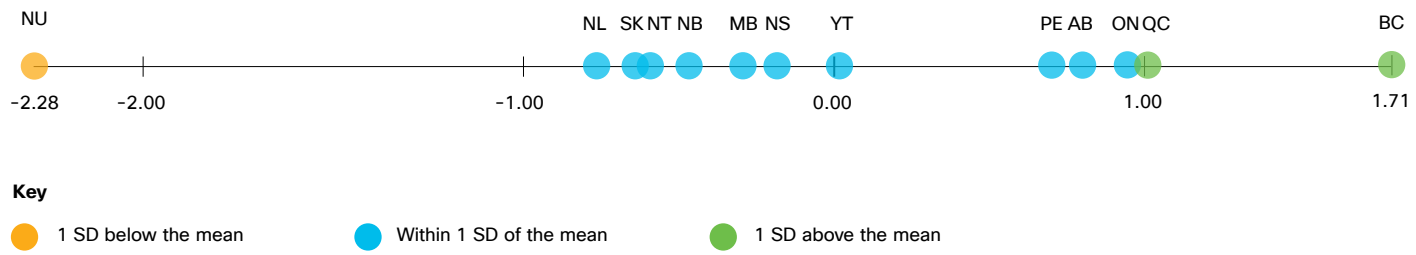- Online sales

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.

Nova Scotia's Digital Readiness Index

DRI score: -0.23 | Ranking: 7th

Nova Scotia ranks 7th in digital readiness in Canada, placing it in the middle of the pack among other provinces and territories. The Government of Nova Scotia has started to adopt technologies for both its internal and external functions, demonstrating a commitment to keeping pace with a digital economy. The province is also growing as a technology hub, creating an opportunity for economic growth and innovation. To further enhance digital inclusion in Nova Scotia, the provincial government should continue to build a digitally skilled labour force and ensure privacy is at the forefront of digitized services.

Nova Scotia's DRI score was close to average, driven by the province's Ease of Doing Business. With the third highest broadband availability rate and sixth highest LTE coverage, Nova Scotia has made concerted investments to connect its population.

DRI Scores: A breakdown by component

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

-0.13
10th

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

- Nova Scotia ranks low in Basic Needs, with the lowest food security score of any province. Poor housing affordability and a large percentage of low-income residents in the province also impacted the score.
- The province needs to focus on its Basic Needs as it rapidly expands due to high population growth rates.

-0.21
8th

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

- As a regional hub for research, Nova Scotia scores high in government (research and development) but remains weak in business R&D and infrastructure investment per capita.
- These weaknesses bring Nova Scotia down below the national average in this component.

0.31
5th

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

- Ranking fifth overall, this is Nova Scotia's strongest DRI component.
- Nova Scotia businesses reported high business confidence and are faced with low internal trade barriers.
- As the province grows, favourable conditions to raise Nova Scotia's moderate business growth rate and low business density are likely to materialize.

-0.30
10th

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

- Low labour force participation (61%) and a low youth population (13.8%) weakens Nova Scotia's Human Capital score.
- However, the province has found success with net migration where it ranks third in Canada. This growth is due to both inter-provincial migration and international immigration.

-0.85
11th

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

- Nova Scotia scores slightly above average in access to financing, but slightly below average in both business entries (10th) and venture capital investment totals (ninth).
- Nova Scotia's low venture capital investments per capita likely creates barriers to accessing financing and achieving growth for start-ups.

-0.26
7th

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

- Nova Scotia ranks seventh across each of the three Technology Adoption metrics. However, the broadband subscription rate is above the national average.

0.36
7th
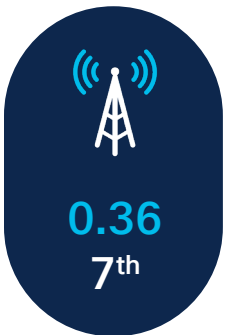
Modern technology infrastructure is key to economic growth and the delivery of services.

- With the third highest broadband availability rate and sixth highest LTE coverage, Nova Scotia has made concerted investments to connect its population.
- However, internet affordability impacts the province's score in this component. Nova Scotia ranks ninth in Technology Infrastructure due to the large percentage of Nova Scotians that are considered low-income.

Nova Scotia's Opportunities

A Path Forward

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

Cultivating digital skills for Nova Scotia's labour force

The technology sector in Nova Scotia is rapidly growing, with global companies setting up technology and innovation hubs in the province. The sector's growth has created a demand for digital skills talent but Nova Scotia is struggling to keep up. Employers in the Atlantic provinces' tech sector continue to express that recruiting and retaining digital talent is a significant obstacle to growth.

Recent provincial and federal investments have recognized this talent gap by funding digital skills training programs across Nova Scotia, including Digital Nova Scotia, NPower and Skills for Hire Atlantic. Upskilling residents prepares them for opportunities in the digital economy, fuels the growth of this sector and improves prosperity. Average hourly wages for digital workers in Nova Scotia are 75% higher than the provincial average for all occupations, and the unemployment rate for digital workers in Atlantic provinces is 3%, compared to 12% regionally.

In addition to groups like Digital Nova Scotia and NPower, governments should work with private sector partners to design and deliver a broader range of skills training programs that prepare more people for in-demand jobs in the digital economy. These programs should be strategically developed to align training opportunities with diverse learner needs, industry talent gaps and varied delivery modes and structures.

Expanding access to virtual healthcare

Many rural and Indigenous communities in Nova Scotia face barriers to accessing healthcare due to staff shortages or limited availability of medical services in their area. Digital healthcare, including virtual primary care, should be part of a solution to increase access for these underserved regions. Jurisdictions like Estonia, Denmark and Sweden that lead in the global Digital Readiness Index have been proactive in embracing digital tools for health service delivery. Improving access to care in rural areas is a priority of the Government of Nova Scotia; in the 2023 budget, they invested $37 million for a rural healthcare institute and $3.9 million for digital healthcare projects.

While wide internet coverage makes digital healthcare an option for most Nova Scotians – 99.5% of households and businesses are expected to have access to high-speed internet by the end of 2023 – it is only a first step in digital inclusion and access to virtual care.

The Government of Nova Scotia can work with public, private and non-profit health system partners to ensure that the digital infrastructure is in place to support secure and reliable digital health. They should also work to ensure health professionals are supported with the necessary skills and specialized talent to innovate with hybrid and virtual care models. Further, digital healthcare services should be designed to meet the accessibility and language needs of diverse communities and promoted through targeted outreach strategies.

Building capacity for data privacy in digital services

The Government of Nova Scotia's Digital Service team has been working to enhance online service offerings through the development of a digital strategy and standards manual, along with improved digital platforms that will enable the scaling and sustainability of digital services. A successful transition to these online services will rely on the development and implementation of strong privacy policies and practices. Recent reviews of digital health record handling show that Nova Scotia has room to improve in this area. The provincial Information and Privacy Commissioner has identified several cases where patients' digital data was mishandled by service providers and administrators, including both privacy breaches and improper adherence to breach procedures.

As more services are offered online and more user data is integrated, the risk and scale of privacy breaches will increase. It is important that the risks do not prevent the adoption of new technologies. Instead, the Government of Nova Scotia and the Government of Canada should work to adopt strong cybersecurity infrastructure and practices that will increase data protection and the public's trust in digital systems. The Government of Nova Scotia, service providers and system developers and administrators should also proactively manage the privacy risks of digital services to ensure responsible data handling.
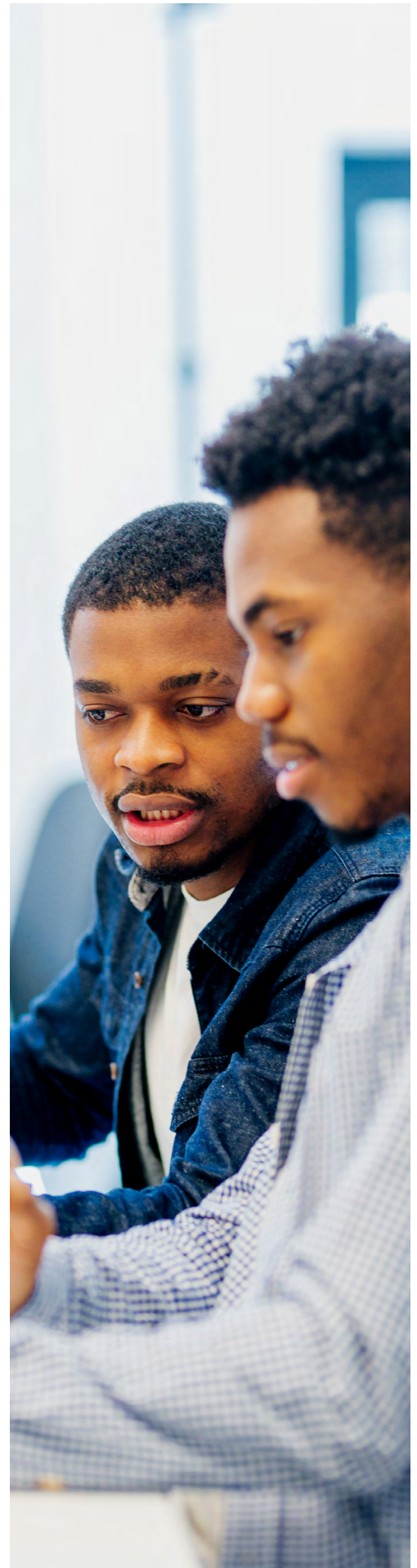
Conclusion

As a rapidly growing business and technology innovation hub, Nova Scotia is increasingly seen as an environment where businesses can invest and grow. To capitalize on this momentum, the Government of Nova Scotia has made strategic investments to support R&D and innovation across business and industry. Nova Scotia can further fuel the dynamism of its growing tech sector by addressing low levels of labour force participation.

This can be done through steady investments in IT skills training to address the need for qualified digital workers. As digital technologies and services are scaled across businesses and government, the province must also manage privacy and security risks to ensure full and successful adoption and help advance Nova Scotia's overall digital readiness.