New Brunswick

Building a Digitally Ready Workforce

Cisco Canada Digital Readiness Index 2023

New Brunswick

Provincial Insights Brief

DRI score: -0.49 | Ranking: 9th

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

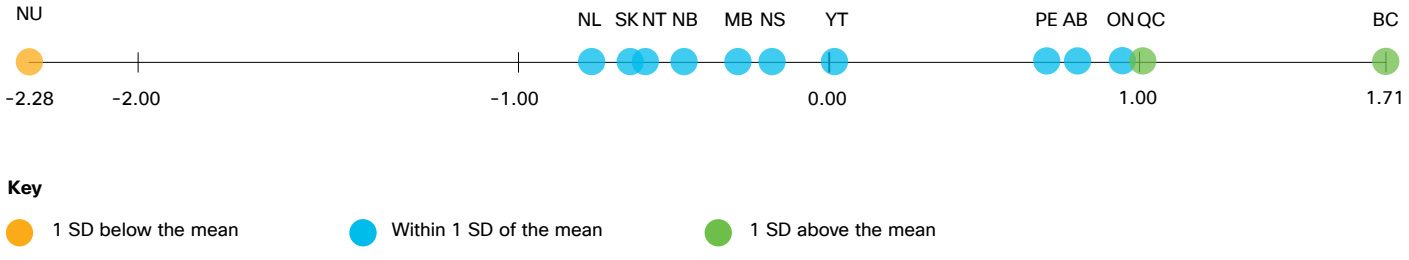
Technology Infrastructure

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



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.

New Brunswick's Digital Readiness Index

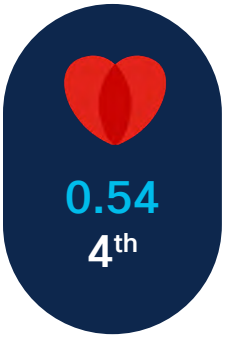
DRI score: -0.49 | Ranking: 9th

New Brunswick scores above average in Basic Needs, Start-up Environment, and Technology Infrastructure, but falls below the national average in digital readiness with lower scores on Human Capital and Business and Government Investment. Given the province's comparatively affordable livability, it has a strong foundation for digital inclusion, talent attraction and business investment. To build on this potential and unlock economic opportunities, governments and the private sector should focus on reskilling efforts that will help to address the province's emerging Human Capital challenges and promote adoption of digital technology practices to keep pace with peer jurisdictions.

New Brunswick scored below the national average with lower scores on Human Capital and Business and Government Investment. However, its above average scores in Basic Needs, Start-up Environment and Technology Infrastructure provide the province with a strong foundation for business investment, talent attraction and inclusion.

DRI Scores: A breakdown by component

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

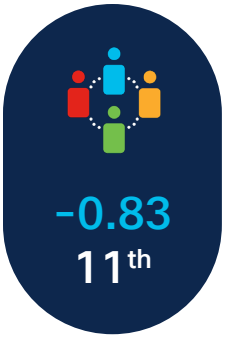


Basic needs are an indicator of the health of a society.

- New Brunswick leads the country in housing affordability and ranked second in food security.
- However, due to rapidly evolving economic conditions, this study may not accurately capture anticipated housing cost increases in New Brunswick.
- The province has above-average life expectancy, but its Basic Needs score is impacted by a just below average percentage of low-income residents.

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

- New Brunswick ranks last in the country in this component, with well below average scores in all metrics including business research and development, government R&D and infrastructure investment.



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

- While New Brunswick ranks very low in this component, it hovers around the average for most of the metrics including business density, business growth and business confidence.
- However, high internal trade barriers in the province negatively impacted the score.

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

- A high net migration rate in New Brunswick positively impacted scores in this component.
- However, the province has the second lowest labour force participation rate and a very low youth population.

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

- Only 7.4% of businesses in New Brunswick list access to financing as an obstacle to growth.
- The province also has above average venture capital investments but is held back by a low business entry rate.

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

- Below average online sales and zero-emission vehicle registrations negatively impacted New Brunswick's score in this component.
- However, 91% of households in the province have a broadband subscription, which is very high given the province's low broadband availability score.

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

- New Brunswick has the best internet affordability in the country and above-average LTE coverage.
- It would be a major improvement for the province to expand their low broadband availability to more residents.

New Brunswick's Opportunities

A Path Forward

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

Retaining and attracting top young talent

New Brunswick's technology ecosystem has significant potential, yet it faces labour market shortages that could limit the growth and success of its businesses. Digital talent remains in short supply as the province faces an aging population with low labour force participation. While New Brunswick's affordability relative to other provinces has led to a significant population increase, this is not guaranteed to continue. New Brunswick should focus on reducing internal trade barriers and increase its investment in Business and Government R&D to help improve job creation.

To retain talent, New Brunswick's post-secondary programs should offer pathways more closely tailored to in-demand digital economy labour market opportunities. This can be done by increasing support for new and existing work-integrated learning programs, soliciting industry input on post-secondary curriculum and regularly surveying skills demand in the province's digital economy.

Incentivizing digitization in industry

Worldwide, digital technologies are rapidly transforming businesses by allowing them to elevate productivity and strengthen services. New Brunswick has caught on, in many ways. For example, Atlantic Canada has a thriving ocean economy that is being amplified by technological developments, a Digital Main Street initiative is providing digital transformation grants and the McKenna Institute was founded in 2022 to help drive digital transformation. At the same time, however, there is a need for more uptake of technology among New Brunswick's businesses. Compared to other provinces, New Brunswick has fewer IT professionals across most sectors, and fewer businesses planning to adopt new technologies in the coming year.

Organizations looking to advance technology uptake – such as the McKenna Institute and the New Brunswick Innovation foundation – should collaborate to help connect local businesses looking to buy and sell technology tools and services. This could be facilitated by the creation of a directory of digital services businesses and resources, and by a "digital adoption officer" tasked with connecting technology stakeholders.

R&D for a leading cybersecurity ecosystem

The continued proliferation of digital technologies necessitates strong cybersecurity infrastructure, practices and institutions. New Brunswick is a Canadian cybersecurity hub and is home to the Canadian Institute for Cybersecurity, Siemens' Critical Infrastructure Defense Center (CIDC) and the National Innovation Centre for Cybersecurity. Recent private sector partnerships to offer Grade 9-12 students Cybersecurity skills under the umbrella of the province's Centre of Excellence will help to prepare New Brunswick's next generation of digital workers.

The Government of New Brunswick should convene partners from across sectors to explore opportunities for new public-private-academic-community partnerships that can build on existing strengths to commercialize research, support innovations to scale, and ready residents to participate in the labour market opportunities generated by the sector.

Conclusion

New Brunswick has an opportunity to develop its digital capability and economic success by building on areas of strength and addressing some of the challenges that could hold them back. The province's positive housing affordability has helped attract immigrants to grow the workforce. With above average venture capital investment per capita and above average access to financing, it is a friendly environment to establish and build a business.

The province must continue to invest in incentives to support its Start-up Environment while also taking action to address the long-term impact of low labour force participation and an aging population. The current strategy to offer broad access to skills training will serve the province well for the future. By introducing a new generation of students and newcomers to the opportunities in the digital economy, New Brunswick is laying the foundation for future digital readiness.