Nunavut

Supporting Basic Needs to Help a Young Population Thrive

Cisco Canada Digital Readiness Index 2023

Provincial Insights Brief

DRI Score: -2.28| Ranking: 13th

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
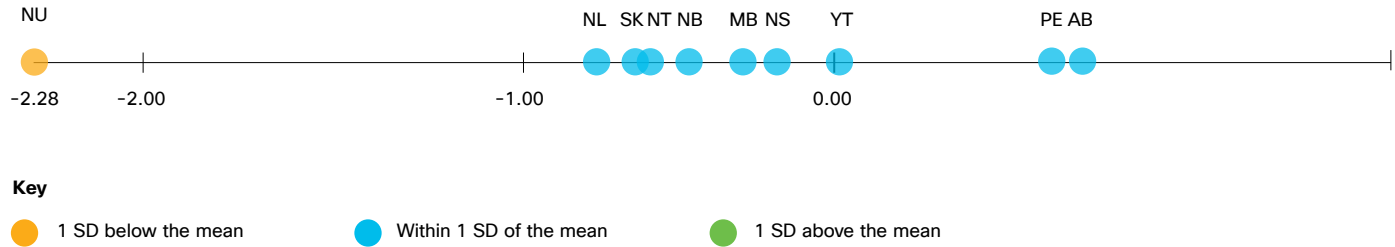- Online sales

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

-2.28   -2.00   -1.00   0.00

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.

Nunavut's Digital Readiness Index

DRI Score: -2.28| Ranking: 13th

All Canadian residents, including the majority-Inuit population of Nunavut, should have the opportunity to learn, grow and participate in Canada's digital economy. However, Nunavut lags considerably in its digital readiness compared to the rest of Canada. Although Nunavut scores below average in almost all measures of Cisco's DRI, the widest gap comes in the Basic Needs component. A province or territory cannot be ready to adapt to and leverage the benefits of emerging technologies and innovations if its residents are actively experiencing significant food, housing and income insecurity. Therefore, governments, businesses, and partners need to prioritize Nunavut in the creation of a digitally equitable and inclusive society for everyone in Canada.

Nunavut's DRI score of -2.28 – the lowest in Canada – reinforces the need for all levels of government to address Basic Needs of the population and build a solid, enduring foundation for digital readiness.

DRI Scores: A breakdown by component

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

-3.25
13th

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

- Nunavut faces difficult challenges with the lowest life expectancy, the highest low-income population and the worst food insecurity in Canada.
- Basic Needs should remain the primary focus for investment in Nunavut, as it is a limiting factor for success in other components.

-1.23
12th

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

- Nunavut has the third highest infrastructure investment per capita but is still behind Yukon and the Northwest Territories. The high cost of building infrastructure in these remote areas means the territories often need to spend significantly more to achieve outcomes seen in the south.
- The territory has the lowest business research and development (R&D) and weak government R&D per capita.
- While business and government investment should focus on Basic Needs, government and business R&D focused on climate change effects in the North would be a worthwhile focus.

-2.10
13th

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

- The lowest scores for business density and business growth are significant challenges for Nunavut.
- However, the territory has the third highest business confidence in the country.

-0.94
11th

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

- Nunavut has the lowest post-secondary education and immigration rates in Canada.
- The territory does have the highest youth population in Canada – followed by New Brunswick and Newfoundland and Labrador – and the fifth highest labour force participation.

-1.73
13th

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

- The territory has the lowest business entry rate in the country but the fourth highest rate of businesses that state they have good access to financing.
- Start-ups take many different shapes. While new companies forming in Nunavut will not likely focus on the same products or services as seen in the south, they will take advantage of the resources and skills of the North.

-1.00
12th
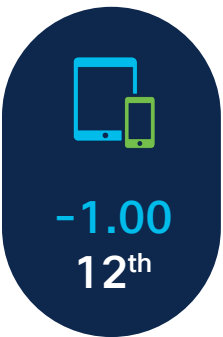
Technology Adoption serves as a proxy for the population's willingness and ability to use new and emerging technologies.

- It is not expected that Nunavut would have many zero-emission vehicles, so this is a less relevant data point.
- However, Nunavut has higher online sales than PEI, Newfoundland and Labrador, and Saskatchewan, which should be considered a strength.

-0.41
9th

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

- Nunavut performs very well in this component once the data point for electric vehicle charging stations is removed.
- The territory has the highest broadband availability and second highest LTE coverage in Canada. The challenge is the significant size of Nunavut's low-income population – internet services are less affordable for residents and a barrier to access.

Nunavut's Opportunities

A Path Forward

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

❤ Prioritizing basic needs to support a more digitally ready population

Nunavut's largest gap to becoming digitally ready is not related to direct measures of technology, but rather inadequacy of basic needs. Nunavut has the highest level of food insecurity in Canada and the highest level of overcrowding due to housing shortages.[2] These challenges are exacerbated by the fact that Nunavut has the highest percentage of the population that are considered low-income in Canada.

Inadequacy in basic needs negatively impacts all aspects of a digital economy: education, training, businesses and innovation. Nunavut needs a stronger business environment and skilled labour force to adapt to technologies of the future and this starts with a strong, healthy population.

The Government of Nunavut and the Government of Canada need to work together with Inuit groups to address the quality-of-life gaps. Only then can they begin to address gaps in digital readiness. The Government of Canada, in collaboration with the Government of Nunavut and Inuit communities, should explore innovative approaches and technologies that support building housing in the arctic at a lower cost. Additionally, increased federal investment is needed to support the building of new affordable housing and repairing of damaged homes in Nunavut.

$ Building educational opportunities

Although Nunavut is lagging in many measures of digital readiness, it has the youngest population in Canada. This gives Nunavut enormous potential but only if these young people have access to opportunities they need to thrive. Nunavut can unlock this potential by enhancing education and skills training for youth and encouraging early adoption of technologies. The introduction of digital technologies that support virtual learning, experiential learning opportunities and training are examples of tools that help prepare the next generation to participate in the digital economy.

The private sector should recognize that they have an important role to play in helping communities prepare for the future through collaboration and the co-development of support programs.

[2] Page 20 https://www.tunngavik.com/files/2020/10/2020.10.20-Nunavuts_Infrastructure_Gap_Report_vf.pdf
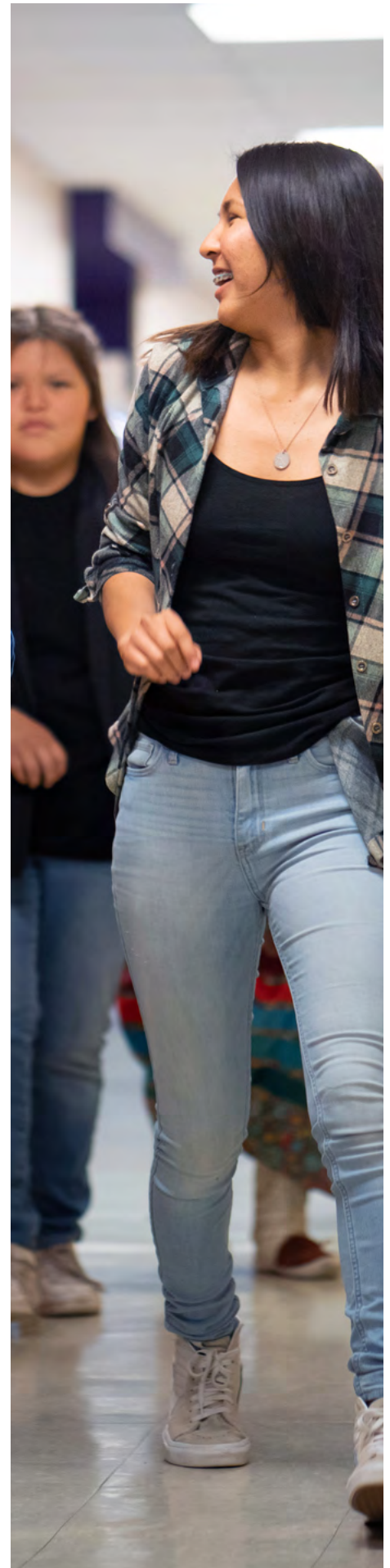
Initiatives like Cisco's *Connected North*[3] are proof that businesses can leverage their expertise and resources to create positive change in their community. In the case of *Connected North*, Cisco has supported the educational outcomes and success of youth in Indigenous communities across Canada since 2013.

Additionally, the Government of Nunavut and the Government of Canada should consider working with Inuit groups, business leaders and educational partners to create more opportunities for Nunavut's youth to obtain the skills they need to thrive in a highly digitized society. These opportunities should come with training and facilitation support to ensure they are implemented successfully and build capacity alongside community.

Increasing connectivity in Nunavut

Nunavut is the least connected province or territory in Canada, both in terms of physical and digital infrastructure. Although basic broadband and LTE coverage are now found across Nunavut, the quality, speed and high cost of internet still creates barriers for Nunavut's digital readiness. Nunavut's internet connection is entirely dependent on unreliable satellite communication and until 2022, Nunavut did not have any access to high-speed internet. When the quality of internet and cellular phone connection is inadequate, tasks that are commonplace when working or studying online become cumbersome and, in some cases, unachievable.

The Government of Nunavut, the Government of Canada, and local Inuit communities have taken steps to improve speed and affordability of internet in Nunavut to improve digital inclusion. For example, provincial and federal governments are funding an initiative to connect Iqaluit to fiber optic internet[4] and the Inuit-owned corporation, Nukik, is working to increase Nunavut's connectivity through the Kivalliq Hydro-Fiber project.[5] However, given the state of Nunavut's digital infrastructure, there should be even more intentional, coordinated efforts from governments, private sector partners and community to improve connectivity in Nunavut.

The Government of Nunavut and the Government of Canada should build on the work of *High-Speed Access to All: Canada's Connectivity Strategy* to meet the goal of 50 Mbps download and 10 Mbps upload speeds for all Canadians and improve access to the mobile wireless services in Nunavut. The Government of Nunavut should also work in partnership with Indigenous communities and the federal government to ensure that there are targeted investments toward new and ongoing initiatives that help Nunavut close its connectivity gap.

[3] https://www.cisco.com/c/m/en_ca/csr-connected-north.html
[4] https://gov.nu.ca/community-and-government-services/news/gn-reaches-milestone-internet-fibre-link
[5] https://www.nukik.ca/kivalliq-hydro-fibre-link/

Conclusion

Despite the significant social challenges, high levels of poverty and lack of safe and adequate housing, the people of Nunavut show great resilience. With the youngest population in Canada, high levels of business confidence, and an understanding of, and demand for, the benefits of high-speed internet access, there is significant human resource potential.

To realize this potential, the territorial government must continue to work in partnership with the federal government to improve affordable internet access and coverage, explore access to enhanced education opportunities through digital learning and address the territory's profound gap with the rest of Canada in basic human needs.