## Yukon

# Leading the North in Digital Readiness

Cisco Canada Digital Readiness Index 2023

# Yukon

# Provincial Insights Brief

## DRI Score: 0.04 | Ranking: 6th

**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

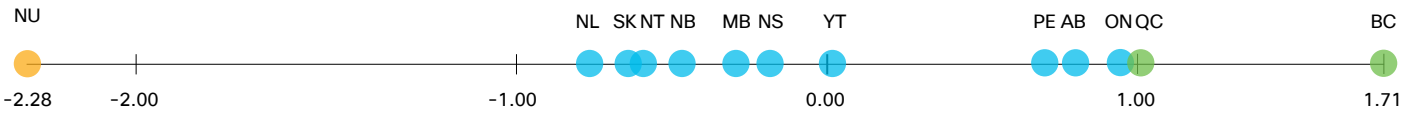
## Technology Infrastructure

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




**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.

# Yukon's Digital Readiness Index

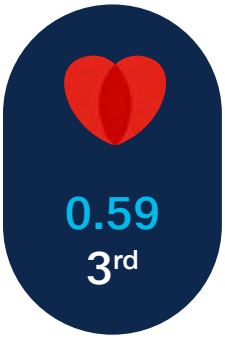
## DRI Score: 0.04 | Ranking: 6th

Yukon is leading the North in digital readiness and ranks in the middle of the pack amongst its peers. The territory has a strong advantage in Human Capital with a very high labour force participation and the second highest net migration rate. To improve its digital readiness and adapt to an increasingly digital world, Yukon has the opportunity to play to its strengths by investing in its digital infrastructure, start-up ecosystem and skills training with a specific focus on Indigenous communities.

Yukon DRI score of 0.04 reflects its strong performances in Basic Needs and Human Capital.

## DRI Scores: A breakdown by component

The following section will explore how Yukon 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.

- Yukon performed very strongly in this component – it has the lowest percentage of low-income population (8.9%) in Canada, well below the median of 13.9% and high of 23% in Nunavut.
- The territory also scores above average in housing affordability (cost as percentage of post-tax median income) at 22.4%. B.C. received the highest score in this metric at 35.6%.


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

- Yukon has relatively low business R&D per capita of $93, compared to the median of $199 and high of $687 in Ontario.


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

- Yukon has the highest level of business density in the country (44.1 vs. median of 34.3).
- The territory also has the second highest business confidence rate in the country (17.0% net positive outlook vs. median of 14.5%).


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

- Yukon ranks first in this component due to above-average scores across all metrics.
- The territory has a very high labor force participation rate (72.6% vs. the median of 66%) and second highest net migration rate.
- It also scores above average in youth population and post-secondary education.


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

- Yukon ranks relatively low in Start-up Environment.
- However, the territory scored first in the new business entries (per capita) metric.
- The concern for Yukon is the other two metrics: there is no venture capital investment and a relatively high percentage of businesses that consider lack of access to financing to be an obstacle.


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

- Yukon ranked third in zero-emission vehicles and fifth in online sales.
- Both scores are great results for the territory, given its relative geographic isolation.
- Yukon is held back by the second lowest broadband subscription rate in the country.


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

- Yukon ranked 11th in this component.
- The territory is tied for last in internet affordability alongside the other territories.
- It had one of the lowest scores in broadband availability.

# Yukon's Opportunities

## A Path Forward

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

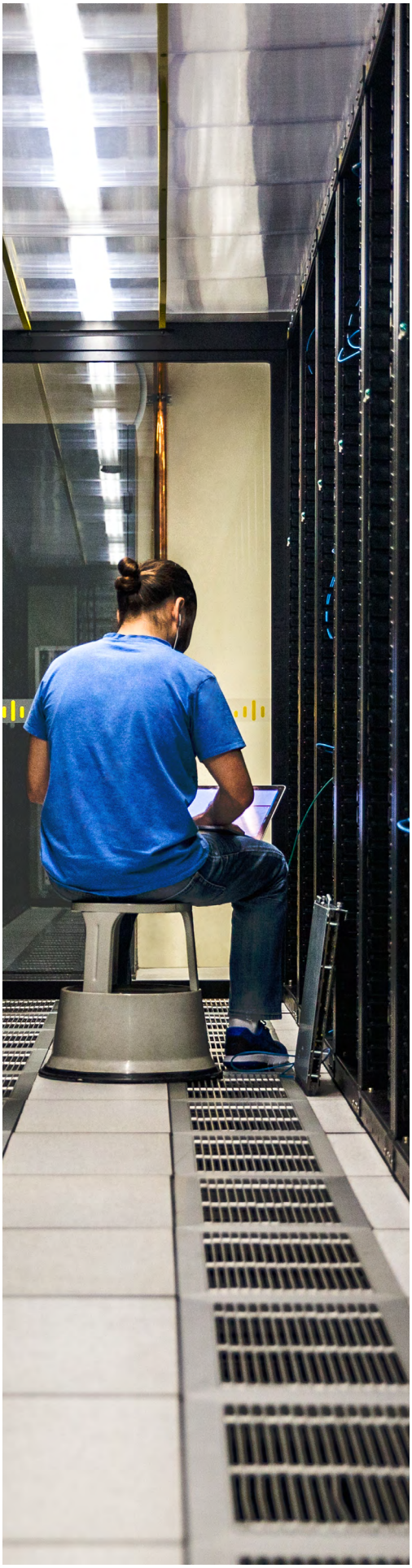
### Supporting the digitization of businesses

Yukon has an emerging start-up ecosystem with the highest rate of new business entries in Canada per capita. Yukon created the first innovation hub north of the 60th parallel, which supports entrepreneurs and start-ups in the territory. To diversify and grow the start-up environment, the Government of Canada should consider working with Yukon to create programs and policies that encourage the development of start-ups across a broad spectrum of sectors, including IT, tech and retail.

Currently, a major barrier to the success of Yukon start-ups is access to capital. There is limited venture capital investment in Yukon and the angel investment ecosystem would benefit from stronger coordination. When companies do not get the necessary access to funding, especially early in their formation, it prevents them from reaching their full potential and limits the benefits of the incubation hub. The Government of Yukon and the Government of Canada together with First Nations should engage partners such as the National Angel Capital Organization, Yukon Venture Angels and the Canadian Venture Capital Association to explore options to mobilize early-stage capital for businesses in Yukon. A particular focus should be placed on access to financing for Indigenous-led businesses.

### Monitoring and increasing access to broadband

Yukon has one of the lowest availabilities of broadband in the country. Similar to the other territories, no households had access to unlimited broadband internet in 2019, which is a component of the CRTC standard for high-speed internet. While 61% of households have access to download speeds above 50 Mbps, no households on First Nation reserves have access to download speeds above 25 Mbps and 27% of households do not have access to the internet.[2] There have been several public and private infrastructure projects recently to improve access to the internet, including Starlink's launch of a new satellite internet service in 2022 and the construction of the Dempster fibre line funded by the territorial and federal governments. However, more investments should be made to secure accessible high-speed internet for all residents of Yukon.



The Government of Yukon and the Government of Canada in partnership with private sector partners and Indigenous leaders should increase investments into broadband in the Yukon and examine alternative technological solutions that can help increase connectivity. To realize the full economic benefits of broadband, there should be targeted efforts focused on training communities in the Yukon to co-develop, manage and implement broadband projects.

## Improving training opportunities for students to build digital skills

A digitally ready society is one where all individuals have the necessary skills to excel in the jobs of the future. While Yukon has the highest score in the human capital component of the DRI, there are disparities between Indigenous people and non-Indigenous people in terms of unemployment rates and educational attainment. In 2021, the Indigenous unemployment rate was 13% compared to 4% of non-Indigenous people.[3] The disparity can be partially attributed to the education gaps: 24% of Indigenous people have not completed high school compared to 6% of non-Indigenous people.[4] As Yukon's economy grows and becomes increasingly digital, it is important that Indigenous people have an equal opportunity to access the jobs of the future.

Secondary and post-secondary schools should introduce students to potential career paths and help them build the necessary skills to participate in a digital economy. Industry should also partner with post-secondary institutions and training providers to foster connections with students and help educational institutions design programs that will meet current labour market needs. New initiatives can build on recent pilots and research and can be carried out in collaboration between the Future Skills Centre, the Government of Yukon, the Government of Canada, Yukon University and other skills training providers. Special consideration should be given to the range of barriers to participation Indigenous people face when designing skills-training programs.

*2 https://crtc.gc.ca/eng/publications/reports/policyMonitoring/2020/cmr4.htm#a2.3*

*3 https://yukon.ca/sites/yukon.ca/files/ybs/fin-yukon-employment-annual-review-2021.pdf*

*4 https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=9810041401&pickMembers%5B0%5D=1.170&pickMembers%5B1%5D=5.1&pickMembers%5B2%5D=4.1&pickMembers%5B3%5D=3.5&pickMembers%5B4%5D=2.1*

# Conclusion

The Yukon is the leader in digital readiness in Canada's North. With a growing natural resource-based economy, the country's first northern university, the highest rate of new business entries per capita in Canada, high levels of business confidence and high labour force participation, the territory has the foundation to build on its core strengths. The start-up environment should be further fueled with improved access to capital.

However, broadband coverage and capacity across the Yukon remains inadequate, slowing the rate of progress. Working in partnership with First Nations communities, the territory should continue to invest in connectivity. Parallel investments should also be made to provide digital skills for Indigenous peoples and the high number of immigrants to ensure that bandwidth is fully leveraged for social and economic gains.