Saskatchewan

High Labour Force Participation and a Young Population Can Support Future Digital Capabilities

Cisco Canada Digital Readiness Index 2023

Saskatchewan

Provincial Insights Brief

DRI score: -0.62 | Ranking: 11th

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
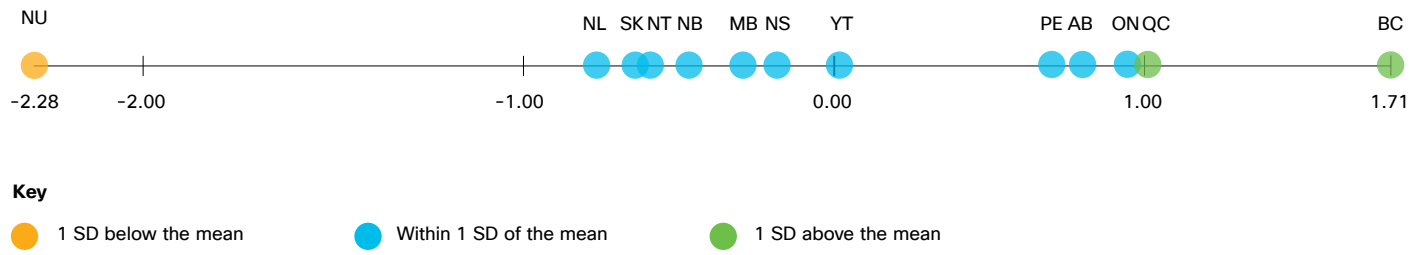- Online sales

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.

Saskatchewan's Digital Readiness Index

DRI score: -0.62 | Ranking: 11th

Saskatchewan's 11th place ranking indicates an emphasis on digital readiness could better position the province for increased prosperity and opportunity. Saskatchewan scores at or below average in all the DRI components with the most room to improve on its Technology Adoption and Start-up Environment. The lack of adequate broadband connections may contribute to residents' low uptake of internet subscriptions, preventing them from connecting to an increasingly digital economy.

While Saskatchewan does have more public and private research and development (R&D) investments per capita compared to other provinces and territories, many businesses still struggle to access financing which create additional challenges for start-ups in the space.

The Government of Saskatchewan has demonstrated a willingness to adopt innovative approaches to improve the province's digital readiness, which it should continue to build on in the future.

Saskatchewan's DRI score of -0.62 placed the province below the national average. Saskatchewan's high labour force participation rates and a high youth population are assets for the province.

DRI Scores: A breakdown by component

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

0.16
7th

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

- Saskatchewan scored moderately above average in this category, held back by a high percentage of the population who are considered low-income.

-0.04
6th

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

- Government R&D is a strength for the province, but has below average Infrastructure Investment and Business R&D.

-0.21
9th

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

- Saskatchewan has the third fewest internal trade barriers and the sixth highest business density rate in the country.
- However, the province has the second lowest business confidence and slightly below average business growth.

-0.20
8th

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

- Size, age and training of a labour force impact how fast an economy can grow, adapt and digitize.
- High labour force participation rates and a high youth population are assets for Saskatchewan.
- There is room for growth in net migration rates and post-secondary education attainment, where 64% of the population aged 25 to 64 have a university or college degree or a trades degree/apprenticeship.

-0.97
12th

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

- Saskatchewan has a high amount of venture capital investment per capita, impressive considering that even after adjusting for population, it was still heavily correlated with population.
- However, it also ranks second last in access to financing for businesses. If Saskatchewan can address the lack of financing options for businesses, this will reduce many barriers to entry and growth.

-1.03
12th

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

- This category is a weakness of Saskatchewan, where it ranks 12th overall and 10th at best in the metrics.
- Broadband subscriptions and online sales are particularly low in the province.

-0.61
10th

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

- Saskatchewan has the second highest LTE coverage in the country but is held back by some of the lowest broadband availability rates in Canada.
- In addition, the province has very weak broadband affordability and few EV charging stations.
- The broadband affordability challenge is largely due to the large percentage of low-income residents.

Saskatchewan's Opportunities

A Path Forward

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

Improving broadband access in rural and Indigenous communities

Strong broadband connectivity is necessary for businesses and individuals to participate in an increasingly digital economy, yet Indigenous and rural communities in Saskatchewan lack adequate access. The Canadian Radio-television and Telecommunication Commission (CRTC) set the target for high-speed internet at 50/10 Mbps and unlimited data. 81% of Saskatchewan households have access to internet at these speeds, but this number drops to 23.9% for households in rural Saskatchewan and 1.7% for households on First Nations reserves.

While Saskatchewan has experienced significant improvements in broadband access over the past three years, more work should be done to ensure all residents are connected to the digital economy. The Government of Saskatchewan and the Government of Canada should work together with rural communities and Indigenous partners to prioritize broadband infrastructure to areas currently lacking access. The Government of Saskatchewan should create a broadband connectivity strategy outlining their plans for when they aim to deliver high-quality broadband across the province, with an emphasis on rural and Indigenous communities. The strategy should incorporate the calls to action from the 2022 Indigenous Connectivity Summit, including creating an active and meaningful consultation process with Indigenous communities. Additionally, the strategy should consider setting high-speed internet targets above the CRTC's 50/10 Mbps targets to keep up with an increasingly digital world.

Incentivizing the adoption of local tech solutions

As part of the Government of Saskatchewan's 30 goals for 2030, the provincial government wants to triple the size of Saskatchewan's technology sector. Investing in the technology sector can help diversify Saskatchewan's economy and foster new innovations in the province. Through Innovation Saskatchewan, the provincial government has created a number of supports for emerging technology companies.

The Government of Saskatchewan should continue to find new ways to help support technology start-ups by developing new partnerships with the private sector which can in turn benefit from innovations made in Saskatchewan.

To support the success of Saskatchewan technology start-ups, the Government should find ways to encourage local SMEs to adopt technology solutions created by Saskatchewan start-ups. Innovation Saskatchewan could work to connect SMEs to technology start-ups and work to reduce the communications and administrative barriers they may face when working together.

Digital literacy guide for K–12 education

To prepare the next generation for the jobs of the future, schools should empower students to thrive in a constantly evolving technological landscape. The Government of Saskatchewan recognizes the importance of digital readiness in schools. This is evident by its $23 million investment in the start-up and operation of the Saskatchewan Distance Learning Corporation, which will increase students' access to online courses and learning opportunities.

Students living in rural communities or on First Nations reserves may face additional barriers to developing digital skills due to infrastructure gaps or barriers to completing education. The lack of broadband in these communities may mean that students do not use technology as regularly at home as their peers living in urban areas. Additionally, First Nations students in Saskatchewan face increased barriers to completing formal education. 26% of Indigenous people in Saskatchewan aged 25 to 64 have not completed high school compared to only 8% of non-Indigenous people. By not finishing high school, Indigenous students may not learn the necessary skills to participate in a digitally ready society, creating digital equity gaps

In 2015, the Ministry of Education published a Digital Citizenship Education in Saskatchewan policy planning guide for K–12 schools. While a digital citizenship curriculum teaches students how to behave online, it does not equip students with the skills and knowledge of how to use emerging digital technologies. Saskatchewan's Ministry of Education should build on the current digital citizenship curriculum with a digital literacy framework based on National Education Technology Standards for Students developed by the International Society for Technology in Education. The Ministry should engage industry and community partners to ensure the framework is regularly updated to provide Saskatchewan students with the foundational modern digital skills to succeed in post-secondary education and in the labour market. Additionally, the Ministry should ensure all schools, regardless of where they are located, have access to high-speed internet and up-to-date technology so that students are able to learn how to engage with emerging technologies regardless of their access at home.
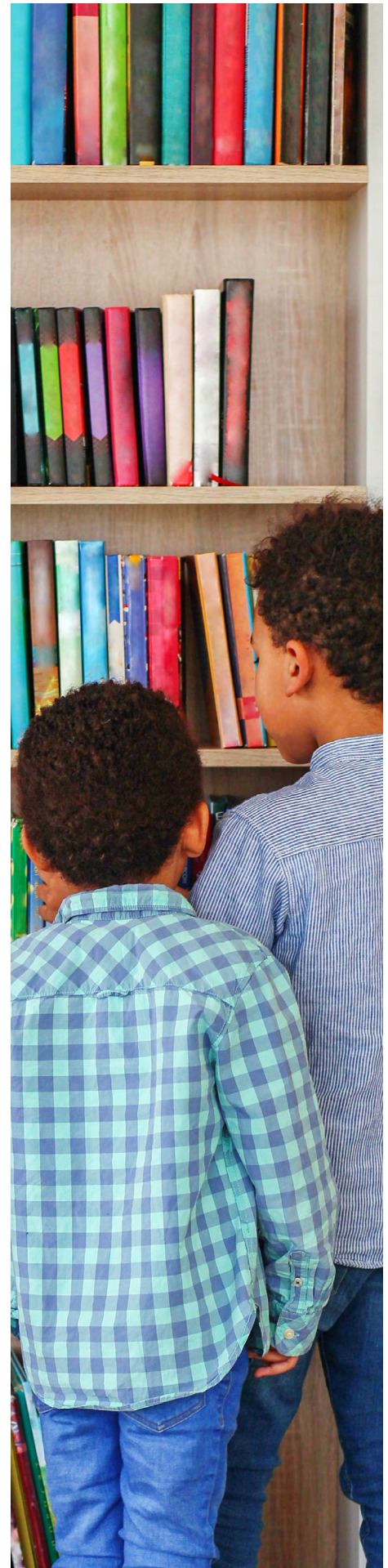
Conclusion

The Government of Saskatchewan has taken meaningful steps to address emerging opportunities as the province progresses purposefully on its journey to digitization. Saskatchewan's high labour force participation and young population are necessary building blocks for a vibrant digital economy. The province can leverage this strength by supporting digital skills development at the K–12 level, while also improving access to education and training through distance learning.

A skilled and digitally ready work force for tomorrow can bring dynamism to the SME sector and, coupled with incentives to encourage SMEs to adopt and leverage technology, can position the province for long term growth. Continued prioritization of investments to improve broadband access for remote and rural Indigenous communities will help ensure digital equity and inclusion and support better social and economic outcomes in those communities.