



*Digital equity:
spotlighting
Canada's divide*

Introduction

Every day our lives become a little more connected to the digital world, as technology transforms how we work, learn, shop, and access essential services. The COVID-19 pandemic has accelerated this trend, condensing years of change into the space of a few months. As people sought to protect themselves by physically distancing from each other and staying home, the importance of digital connectivity—and digital connection—was amplified. Suddenly, many organizations and even entire economic sectors had to migrate to digital-first, or digital-only, offerings. And while Canadians can anticipate getting back to some semblance of “normal” as the pandemic abates, digital connectivity will continue to play an increasingly large role in our lives.





The digital transformation of society comes with risks. It can exacerbate existing social inequities, with some benefiting from the economic, social, and educational potential of digital technologies and others being left out. Those who face greater digital inequity can include Indigenous peoples in Canada, low-income households, racialized groups, older adults, rural residents, newcomers to Canada, and many other groups—far more than we can list here.

The pandemic has underscored this inequity, with parts of the population pivoting to a digital-first society at no personal cost and others facing insurmountable barriers to doing the same. For example, while schools in some parts of Canada were able to shift to online learning during the pandemic, others were hindered by poor connectivity; students at one school, in Garden Hill First Nation, even needed to repeat the school year.¹ A second divide has also developed between digitally empowered organizations that are recovering quickly and their less digitally advanced peers, which are continuing to suffer economic losses.

The digital world has the power to equalize by enabling more people and organizations to benefit from it—as long everyone is able to fully participate in that world. We have not yet ensured everyone is, and as a result, we face leaving parts of society behind.

In our first Catalyst report, *A vision for a thriving Canada in 2030*, Deloitte outlined a path to a better future. A strong and equitable digital economy is foundational to achieving that vision. It will require business leaders and governments at all levels to take bold action, with concerted effort to invest in digital equity for groups that are falling behind. **Canada must take a broader approach to digital equity, one that goes beyond internet access and that applies not only to people but also to organizations.** That will allow us to build a stronger, more competitive, and more prosperous society by 2030.



What does digital equity look like?

- **For people**, it means a higher quality of life, better-paying jobs, improved educational outcomes, fairer access to essential services, and increased participation in social and cultural activities. It also means better protection of personal data and privacy as well as an online environment that is trusted and secure.
- **For organizations**, it means increased competitiveness, productivity, and resilience in future crises. It means access to a larger consumer base and a higher-skilled talent pool, and a level playing field for organizations regardless of their size or financial backing.
- **For Canada**, it means an economy that rewards inclusive innovation, encourages digital investment and skills training, and guarantees data protection—and reaching that state will allow us to lead globally in equitable growth and shape the digital policies of the future.

As the first in a series, this report will introduce our framing of digital equity, outline the benefits that Canada stands to gain from greater digital equity, and assess the country's current performance on it. The following reports will provide practical recommendations to policymakers and business leaders, recognizing that both have a vital role to play in building a digitally equitable Canada by 2030.

In this report, organizations refers to corporations, non-profit institutions, unincorporated enterprises, and governments at all levels. These groups both face digital equity barriers themselves and have a role to play in improving digital equity in Canada.

Research approach

→ This report used the following methodologies to paint a picture of Canada's current state of digital equity and to project the challenges we're likely to face:

Literature review: We conducted an extensive literature review of secondary data sources, including academic journals, media reporting, government policies, and think tank reports. This research informed two strategic foresight methods, driver mapping and visioning, which helped us do two things: understand the trends that will impact digital equity over the next decade and envision a more digitally equitable Canada in 2030.

Data analysis: To understand the country's current state of digital equity, we analyzed more than 50 data points from secondary data sources and studies (conducted by such organizations as Statistics Canada, the Organisation for Economic Co-operation and Development (OECD), and universities), paying particular attention to specific population-level statistics (where available) as well as peer country comparisons. Our data dashboard brings together secondary data inputs related to digital infrastructure, digital adoption, digital literacy and skills, and policies that impact the broader digital ecosystem.

Specialist workshops: We conducted two workshops with Deloitte subject matter specialists to imagine what the digital space will look like in Canada in 2030 and to understand the broader forces that will shape digital equity over the next decade.

Advisory committee: We convened an advisory committee composed of representatives from organizations with expertise on a range of issues relevant to digital equity. As we develop this report series, the committee will continue to help us understand on-the-ground digital equity challenges by connecting us with the people and information sources that will inform our recommendations.

Advisory committee member organizations:

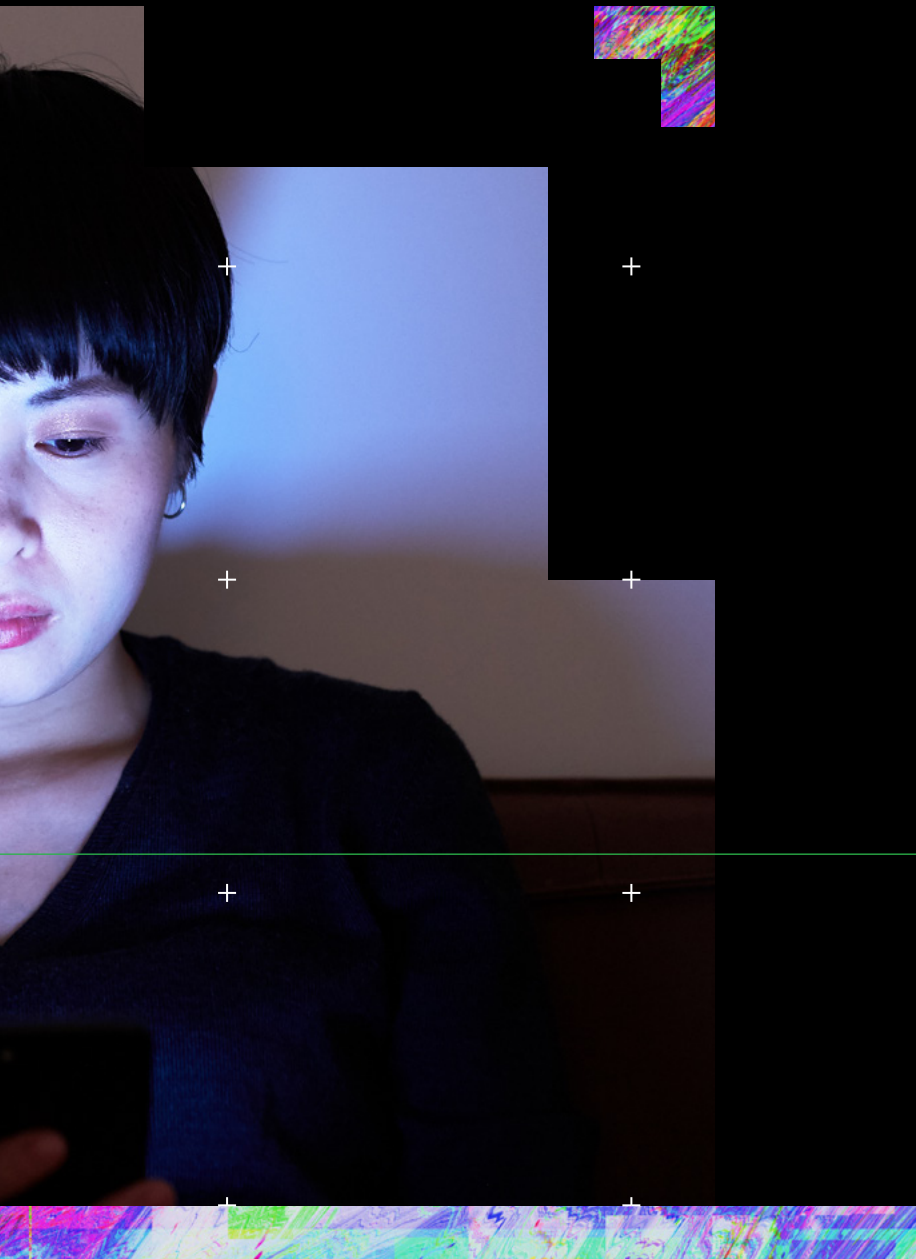
- ABC Life Literacy Canada
- The Council of Canadian Innovators
- CIO Strategy Council
- Maytree Foundation
- MediaSmarts
- Palette Skills

A photograph of a city street scene. In the foreground, there are several orange and black striped traffic barrels. A signpost with a red circle and a white horizontal bar (no entry sign) stands in the middle ground. The background shows tall city buildings and a few people walking on the sidewalk. The overall scene is brightly lit, suggesting daytime.

Redefining digital equity

HOW IT EVOLVED

Technology advances every single day, a rate of change that's upending many facets of our lives, from how we work and learn to how we shop and access essential services. For all the positive changes, advances in technology reinforce—and in many cases exacerbate—the inequalities that already exist between people, between organizations, and even between governments. As a result of this dichotomy, we've seen the language around what equity means in the digital world shift over the past several decades. Understanding this shift is important. It allows us to understand the changing nature of digital equity and to plan the solutions we'll need in the future. The following timeline ([Figure 1](#)) includes key milestones in the evolution of digital equity from the perspective of both people and organizations.



Social inequities matter

Inequities related to race, ethnicity, gender, sexual orientation, age, and income, among other aspects, are a key part of the conversation around digital equity.

- Digital technology can exacerbate social inequities, which in turn often drive digital inequity. We'll never achieve a fully equitable digital society unless we also address other forms of social inequity.
- If we improve people's access to the digital world, such as through reskilling or broadband access, it could help empower those who are most affected by social inequities.
- While this report focuses on digital equity, we recognize this is only a subset of the greater social inequities that we must tackle as a country. By framing our report around digital equity rather than digital equality, we hope to draw attention to the fact that certain groups face unique barriers and challenges, and consequently require tailored solutions rather than an all-purpose one.
- **Equality-based solutions** provide individuals with the same level of opportunity and assistance to participate in society; in other words, everyone has the same starting line. **Equity-based solutions** provide individuals with the opportunities and assistance they require to succeed, tailored to their specific needs and barriers; in short, everyone reaches the same finish line.²

Figure 1: Key milestones in Canada's digital equity trajectory

1982

┆ Boston Computer Exchange launches as the world's first e-commerce marketplace

1995

┆ Amazon launches as an e-commerce platform for books

1999

┆ 42% of Canadian households, 53% of businesses, and 95% of government institutions regularly use the internet

1990s

┆ The "digital divide" emerges as a research topic

1997

┆ Statistics Canada conducts first Household Internet Use Survey

2000s

┆ Research shifts to focus on "digital equality" and "digital inclusion"

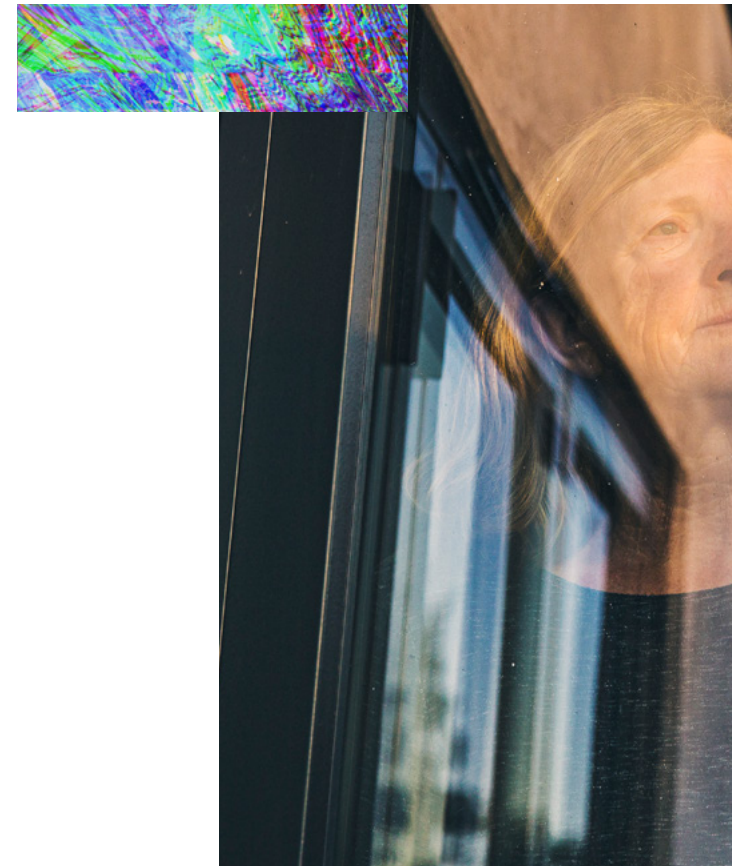
Figure 1: Key milestones in Canada's digital equity trajectory



People

In the 1990s, the **digital divide** emerged as a research and policy topic. It referred to the gap between people who had access to information technology and those who did not. One of the earliest references came when the National Telecommunications and Information Administration in the United States released a series of studies, “Falling Through the Net,” between 1995 and 2000 that sought to address unequal access to phones and computers based on race, income, and other demographic characteristics.⁵ In 1997, Statistics Canada conducted its first Household Internet Use Survey, finding that only 19% of all Canadian households had a cell phone for personal use and 10% of rural households had access to a computer at home.⁴

By the turn of the century, internet usage in Canada was quickly increasing, with 4.9 million households (42%) reporting their members regularly used the internet from their home, work, school, or other locations.⁵ By the mid-2000s, researchers were seeking to understand the uneven impacts of the digital economy beyond just internet access. This paved the way for early research on **digital equality**, which considers the additional need for skills, devices, and social networks to effectively use digital technology, and **digital inclusion**, which refers to policies and other efforts to improve digital equality.⁶



Organizations

Meanwhile, the history of the digital economy reaches back to 1982, when the Boston Computer Exchange became the world's first e-commerce marketplace. In 1995, Amazon launched as an e-commerce platform for books and, the following year, the Government of Canada launched its first website.⁷ In the years since then, Canadian organizations' adoption of digital technology took off. By 1999, 98% of federal and provincial government institutions were using the internet.⁸ By 2006, 85% of Canadian private companies were using high-speed internet, and a year later online sales (B2B and B2C) reached \$62.7 billion.⁹

In the early 2010s, business strategies for **digital transformation** emerged as a major thought leadership issue, exploring how businesses needed to prepare for the new economy. In 2013, 46% of Canadian businesses had a website and 13% were selling online.¹⁰ The digital economy accelerated worldwide, with global e-commerce reaching US\$25.6 trillion in 2018 and more than 1.4 billion people shopping online that same year.¹¹ Today, the concept of the **corporate digital divide** has taken on greater urgency, as businesses at different levels of technological maturity have had very uneven experiences of the COVID-19 pandemic.



Digital equity today

In the past several years, the term **digital equity** has become more commonplace, especially as the pandemic fast-tracked the digitalization of our everyday activities—and highlighted the fact that not everyone is able to keep up. The City of Seattle was one of the first to formally define digital equity, describing it in 2015 as a state in which all residents and neighbourhoods have the information-technology capacity needed for civic and cultural participation, employment, lifelong learning, and access to essential services.¹² Since then, the public discourse has continued to shift from equality to equity, recognizing that different groups face unique barriers and thus require unique solutions.

The scope of digital equity has remained mostly limited to the broadband access and the skills required to interact with digital technology at the level of the individual. **We believe this scope needs to expand.**

We need to improve digital equity for organizations, and we need to build a digital ecosystem—including policies, business practices, and norms—that enables all people and organizations to succeed in the digital world.



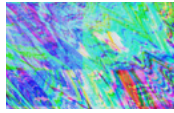
Governments and digital equity

Municipal, provincial and territorial, and federal governments are all critical to guiding Canada toward greater digital equity. They have two distinct roles: as organizations that set policy and legislation, certainly, but also as employers and service providers—and often the largest employer in their jurisdiction. Subsequent reports in this series will focus on this dual role and how governments can lead us to become digitally equitable by 2030.

A NEW LOOK

We define digital equity as **“a state where all people and organizations can fully benefit from the digital technology necessary to succeed in the digital economy.”** We believe digital equity is a product of three components—access, participation, and ecosystem—that are interlinked and interdependent.





The three components that determine digital equity outcomes



1. Access

The digital infrastructure, devices, and content needed to interact with the digital world.



2. Participation

The ability to engage with, learn from, and develop new digital technology.



3. Ecosystem

The broader digital ecosystem that enables people and organizations to succeed in the digital world.

1. Access

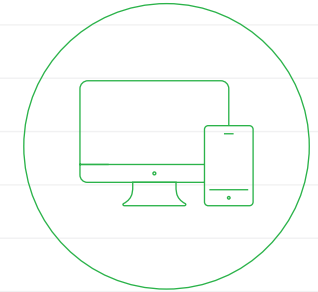
What *access* is needed to succeed in the 2022 digital world?

For people

Access to quality, affordable broadband and mobile data, internet-enabled devices, and digital applications and content that are accessible and meet the user's needs.

For organizations

Access to quality, affordable broadband, internet-enabled devices, and digital systems and tools that enable effective business operations.



2. Participation

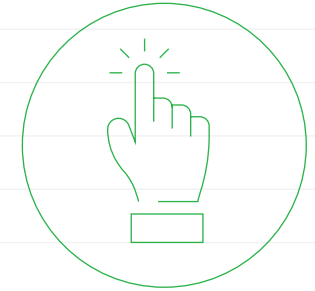
What *participation* is needed to succeed in the 2022 digital world?

For people

A range of skills, from foundational (such as the ability to safely use devices, search for information, and communicate online) to advanced (such as the ability to identify skill gaps and create digital technologies).

For organizations

A range of skills, from foundational (such as the ability to build a website and protect against cyberthreats) to advanced (such as the ability to upskill talent and develop new digital services).



3. Ecosystem

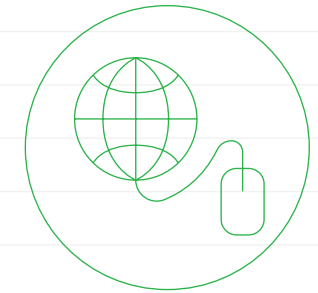
What *ecosystem* is needed to succeed in the 2022 digital world?

For people

An ecosystem that protects individuals and removes barriers to their participation, fosters a secure online environment free from bias or unfair practices, and provides accessible and human-centred digital services.

For organizations

An ecosystem that incentivizes and removes barriers to digitalization, levels the playing field for small and medium-sized businesses, and enables effective, secure data-sharing between organizations.



We believe that simply giving people and organizations access to the digital world, such as through broadband, isn't enough to bring about digital equity. They each need support in access, participation, and ecosystem.

Just as the definition of digital equity has shifted over the years, we expect it to continue evolving along with the digital world around us. As technology becomes increasingly intertwined with our day-to-day lives, we'll find new ways of interacting with and benefiting from it. Our definition accounts for the types of infrastructure, skills, and policies that are currently required for success in the digital world—but by 2030, we expect these will have changed considerably.



We made the case in [*A vision for a thriving Canada in 2030*](#) that our country must improve its resilience in three areas: its people, industries, and societal systems. However, we'll only be able to achieve many of the goals laid out in that report if our people and organizations have access to the digital world, the skills needed to navigate that world effectively, and an ecosystem that enables a stronger digital economy.

If Canadian policymakers and business leaders act now to develop and implement an ambitious plan to improve digital equity, it will position the nation to achieve that vision. It will allow us to not only keep pace with digital advances over the next decade, but also to lead the world in building a more inclusive digital future.

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Benefits for people

- ◆ High-paying jobs
- ◆ Resilient jobs
- ◆ Educational achievement
- ◆ Equitable digital services
- ◆ Higher quality of life



Benefits for organizations

- ◆ Greater productivity
- ◆ Financial benefit
- ◆ Organizational resilience
- ◆ Broader consumer base
- ◆ Enabling ecosystem



Benefits for Canada

- ◆ World-class talent
- ◆ Greater economic growth
- ◆ Reduced health care costs



BENEFITS FOR PEOPLE

Digital technology is transforming all corners of life. The ability to access and effectively use it is now fundamental for employment, education, essential services, and social and cultural activities. With greater digital equity, all people living in Canada will be able to take full advantage of the digital world and enjoy the rewards, such as:





BENEFITS FOR PEOPLE

High-paying jobs

Universal access to high-quality, affordable broadband can translate to increased income and wages as well as reduced unemployment rates. The United Nations' International Telecommunication Union found that increased broadband adoption in rural areas in the United States positively (and potentially causally) affected income growth between 2001 and 2010, and reduced unemployment.¹³

Resilient jobs

Canadians will be able to get—and keep—jobs that require digital skills, building resilience against workforce shifts. Statistics Canada research from 2011 to 2018 shows that the nature of work is changing as organizations incorporate automation technology into their workplaces.¹⁴ Digital upskilling will be vital as workers adapt to these shifts in the job market. Boston University research shows that the impacts of automation and technology on unemployment disproportionately hurt lower-skilled workers and older workers, who find their skills don't match the demands of today's job market.¹⁵ If we can teach digital skills from a younger age and make lifelong learning the norm, Canadian workers will be more adaptable to work that's constantly evolving.

BENEFITS FOR PEOPLE

Educational achievement

Research also shows that widespread access to broadband and internet-enabled devices can improve academic outcomes for students. For instance, a 2018 OECD study found a strong positive link between the number of school computers available to 15-year-old students and mean reading performance scores in all participating countries, even after accounting for GDP per capita.¹⁶ Differences in internet connectivity also accounted for 57% of the differences in mean reading performance across all countries.

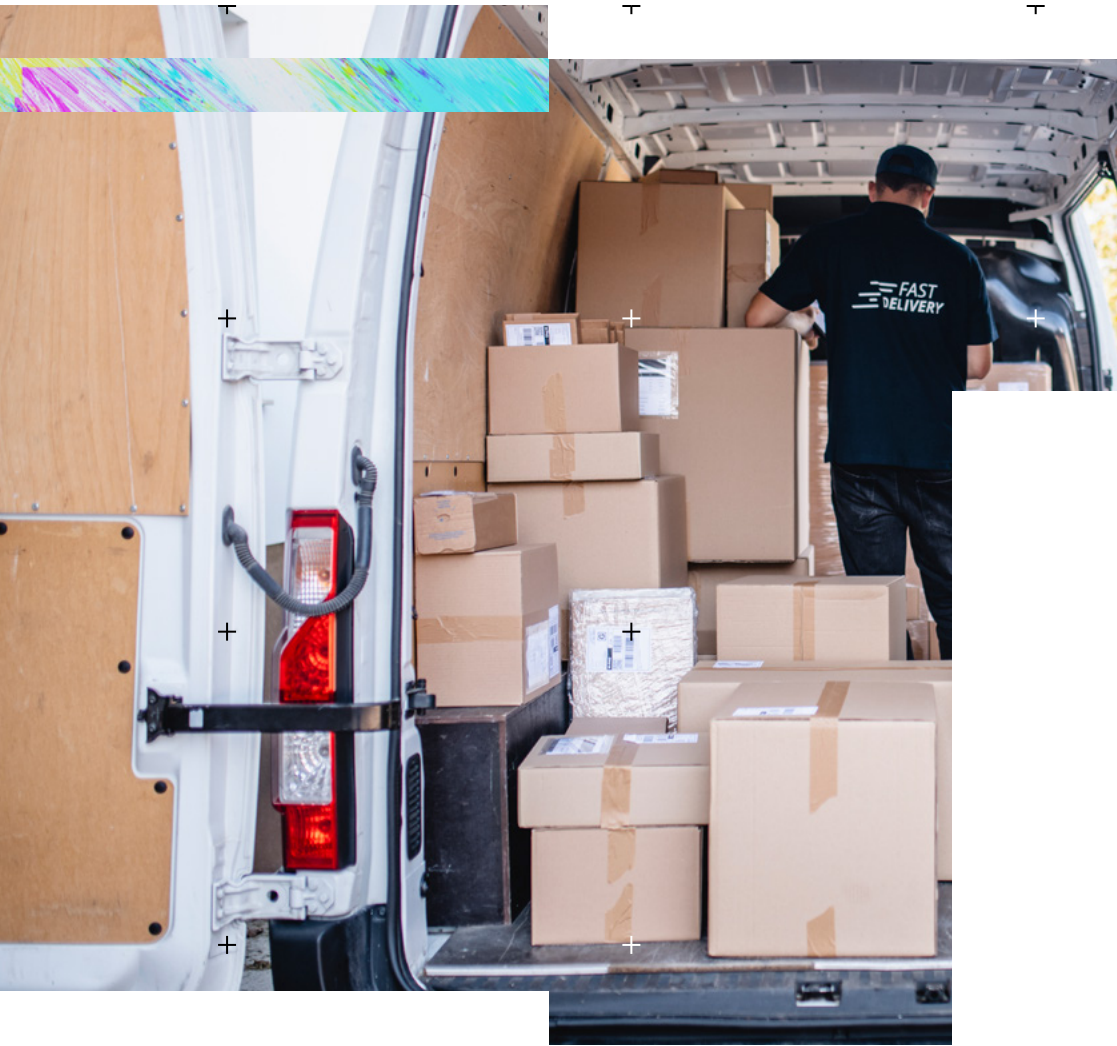
Equitable digital services

The importance of digital skills and competencies for accessing everyday services also cannot be overstated. In conjunction with more widespread digital access, increased digital skills should allow all people in Canada to access virtual health services, benefit from the convenience of e-commerce, participate in digital civic engagement, and use online government services. A more digitally equitable ecosystem will also ensure that people can access these services safely, through better protection of their personal data and privacy, an online environment that is trusted and secure, and a system that ensures algorithms are ethical and human-centred.

Higher quality of life

Empowering people to participate in a safer, more inclusive digital ecosystem will lead to a higher quality of life and greater well-being for countless Canadians. For example, a study of Canadians aged 60 and over found that internet use was correlated with improved measures of well-being, including higher levels of life satisfaction, self-efficacy, and social support, and lower levels of loneliness and depression.¹⁷

The digital world can also enable greater community connections and cultural preservation. For instance, videoconferencing has provided an opportunity for Indigenous elders in the Atlantic provinces, Ontario, and Saskatchewan to communicate with each other in their own languages. For some elders in the Atlantic region, this is the only time they can speak Mi'kmaq because there are no other native speakers in their physical communities.¹⁸ Elders are also using video to record their stories and wisdom for future generations, which can then be shared through Indigenous websites or social media.



BENEFITS FOR ORGANIZATIONS

The ability to participate and succeed in the digital world has become essential for organizations across all sectors. This has been reinforced by pandemic-related restrictions, when many organizations were forced to either quickly adapt to virtual or contactless business models or, in many provinces, brace for a lengthy shutdown. With greater digital equity, they can be more competitive, productive, and resilient in future crises.

BENEFITS FOR ORGANIZATIONS



Greater productivity

Improving digital equity for organizations of all sizes will boost overall industrial productivity. One OECD study, for example, found that a 10 percentage-point increase in the use of high-speed broadband internet at the industry level was linked to a 1.4% increase in multi-factor productivity for the average company in that industry after one year and 3.9% after three years.¹⁹ Statistics Canada also found that, from 2002 to 2019, labour productivity grew 22.1% in digitally intensive sectors—more than three times that of non-digitally intensive sectors.²⁰

Financial benefit

Numerous studies have revealed a link between business investment in digital technology and financial benefit. Deloitte US research found that half of organizations with a high digital maturity reported net profit margins and revenues that were significantly above their industry's average.²¹ A 2018 Brookfield Institute study similarly found that digitally mature Canadian businesses were 62% more likely than their peers to have high sales growth and 52% more likely to have high profits, though the study notes that more research is needed to determine causality.²² For governments, digital transformation offers a similarly compelling financial benefit. Deloitte research in Australia, for example, found that if the national government digitized just 20% more of its transactions over 10 years, it would gain about AU\$17.9 billion (in real terms) from productivity and efficiency increases.²⁵

BENEFITS FOR ORGANIZATIONS

Organizational resilience

As the pandemic has shown us, digitalization can help organizations adapt to changing conditions and maintain operations in difficult or unusual circumstances.²⁴ Small and medium-sized businesses (SMEs) that were able to pivot to digital commerce both performed better than their peers and were more optimistic about their future success.²⁵ An MIT Technology Review report found that digital leaders (businesses that have fully implemented digital transformation projects) in North America all reported their pandemic recovery plans were effective—and 40% said they were very effective.²⁶ These businesses had invested in technologies that boosted their resilience before the pandemic, allowing them to adapt to the crisis.

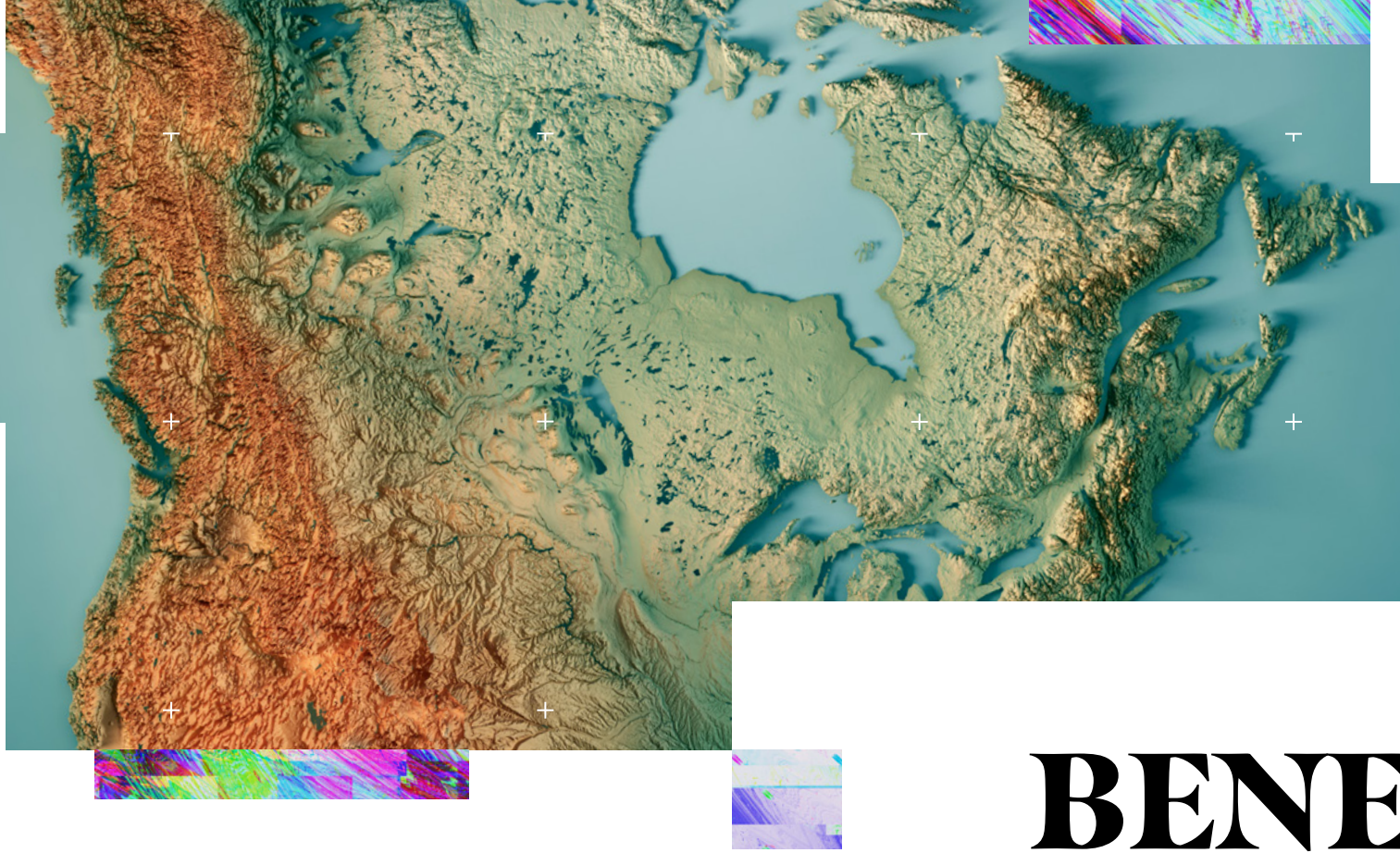
Broader consumer base

If more people have the digital skills and comfort needed to participate in the digital economy, there will likely be a larger and more connected consumer base for many offerings, including e-commerce, virtual health, and digital entertainment. We've seen the financial benefit to e-commerce businesses during the pandemic, as Canada's retail e-commerce sales reached a record \$3.9 billion in May 2020 alone—more than double May 2019 levels.²⁷ As more consumers move online, businesses that are able to adapt to digital business models will grow.

Non-profit organizations can similarly reach more people through digital transformation. In a recent Canadian survey, non-profit leaders indicated that digital tools allow them to reach new donors and volunteers, improve communications among current supporters, and reach more beneficiaries.²⁸

Enabling ecosystem

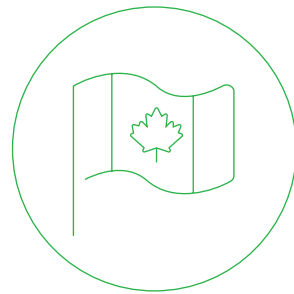
Benefits can also accrue through competition policy that levels the playing field for SMEs, data policies that enable more effective data-sharing between businesses, and policies that incentivize and remove barriers to digitalization. Deloitte research found that 83% of Canadian business leaders supported government policies that ensure the security of digital data, while 70% supported policies that increase the availability and usage of public data.²⁹



BENEFITS FOR CANADA

Greater digital equity for its people and organizations will have profound positive impacts for Canada. It will make economic growth fairer and more equitable, boost resilience for future crises, and increase international competitiveness. Crucially, it will also strengthen the country's voice in shaping the global digital world. With an economy that rewards inclusive innovation, digital investment and upskilling, and data protection, Canada will be able to lead the world in equitable growth.

BENEFITS FOR CANADA



World-class talent

Progress on digital skills and participation will mean an even greater competitive advantage in talent. While Canada has a highly skilled workforce, a 2018 survey found that 41% of employers here face a skills shortage.⁵⁰ In 2016, the Conference Board of Canada estimated that Ontario lost \$24 billion due to skills deficits, which implies a \$65 billion loss in the total national economy.⁵¹ If Canadian workers can close this gap by developing both digital and non-digital skills, it will future-proof the workforce and strengthen the economy.

Greater economic growth

A 2020 survey also found that greater digitalization of small businesses in Canada could add \$70 billion to the country's GDP by 2024.⁵² Our past research backs this up: if companies increased their investment in digital technology and software by \$6.4 billion, as part of a general increase in business investment to the OECD average, GDP growth could increase by up to 0.4%.⁵³ Improving access to broadband for people will also economically benefit Canada, with multiple studies showing that an increase in broadband yields an increase in GDP growth across economies of all sizes.⁵⁴

Reduced health care costs

A vision for a thriving Canada in 2030 found that, unless we take action now, health care costs will grow by 1.7% per year by 2030, forcing governments to increase taxes or reduce spending.⁵⁵ With greater digital literacy and access to broadband internet, however, more people can take advantage of virtual health care, which studies show can save costs and reduce hospitalizations by monitoring patients remotely.⁵⁶



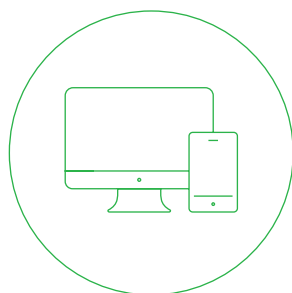
*Canada's
state of digital
equity: the data*



Now that we've laid out the benefits Canada will gain if it can improve digital equity, we need to take stock of where we stand today.

To do this, we drew from numerous international data sources (see [Research approach](#)) to identify data indicators that help us understand how Canada is performing compared to other countries across **access, participation, and ecosystem.**

Using our definition as a starting point, our data indicators paint a picture of Canada's current strengths and challenges related to digital equity to answer the following questions:



Access

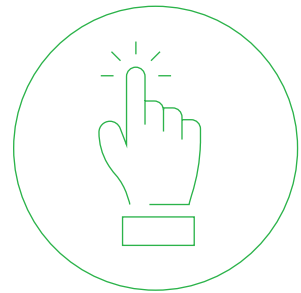
Do Canadians have access to

- **quality, affordable broadband and mobile data,**
- **internet-enabled devices,** and
- **digital applications and content** that meet their needs?

Do organizations have access to

- **quality, affordable broadband,**
- **internet-enabled devices,** and
- **digital systems and tools** that enable effective business operations?





Participation

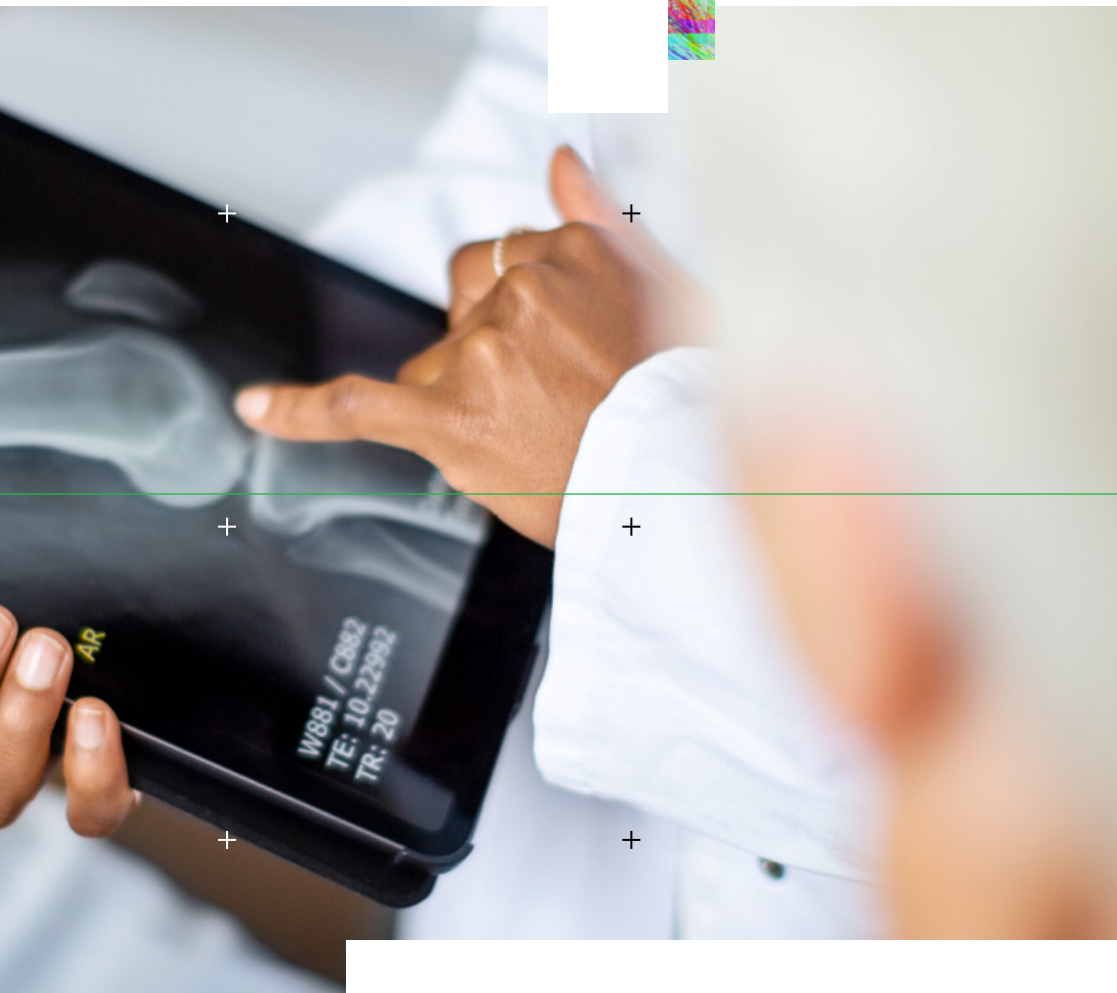
Do Canadians have a range of digital skills

- from foundational (such as the ability to **safely use devices, search for information, and communicate online**)
- to advanced (such as the ability to **identify skill gaps and create digital technologies**)?

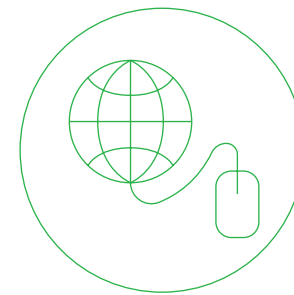
Do organizations have a range of digital skills

- from foundational (such as the ability to **build a website and protect against cyberthreats**)
- to advanced (such as the ability to **upskill talent and develop new digital services**)?





Ecosystem



Do Canadians have an ecosystem that

- **protects their personal data,**
- **fosters a secure online environment** free from bias or unfair practices, and
- **ensures accessible and human-centred digital services?**

Do organizations have an ecosystem that

- **incentivizes and removes barriers** to digitalization,
- **levels the playing field** for SMEs, and
- **ensures effective, secure data-sharing** between organizations?

The data painted a mixed picture of Canada's performance in relation to a wide variety of nations. At a country-wide level, Canada performs at the front or middle of the pack on many indicators spanning access, participation, and ecosystem—a reflection of our nation's wealth and advanced technological development.



*Highlights of Canada's
country-wide dashboard*

- 1. Access**
- 2. Participation**
- 3. Ecosystem**

1. Access

Canada shows mixed performance on digital equity indicators in comparison to peer countries

QUALITY

8th

among OECD peers for number of **fixed broadband subscriptions** (per 100 inhabitants)

COST

2nd

highest for **broadband speeds** >16 Mbps among G7 countries

INDIVIDUALS

94%

of Canadians had access to the **internet at home** (2020)

SPEED

6th

among OECD peers for number of **fixed broadband subscriptions with ≥ 100 Mbps speed**

BUSINESS

27th

among OECD peers for **businesses with a broadband connection** (2019)

2. Participation

DIGITAL SKILLS

20th

among peer countries (ranked by businesses) in **digital skills**, e.g., computer skills, basic coding, digital reading (2019)

37%

of Canadian individuals (6% above OECD avg.) are **proficient in using digital technology**, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks (2012)

SKILLS TRAINING

24th

among OECD peers for businesses that **provided training to develop ICT** skills for persons not employed in ICT (2019)

ONLINE SERVICES

8th

among OECD peers for individuals (76%) that **used the internet for banking** (2019)

3. Ecosystem

CURRENT STATE OF DIGITALIZATION

16th

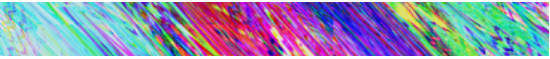
among peers based on the current
state of the country's **digitalization**

PACE OF DIGITALIZATION

81st

among peers based on **pace of
digitalization over time** (growth
rate of the digitalization score over
12 years)

Source: Organisation for Economic Co operation and Development, Statistics Canada, Tufts University, World Economic Forum



However, digital equity isn't about how a nation is doing as a whole—it's about ensuring all its people and organizations are able to benefit equitably from the digital world.

And time and again, when we zeroed in on specific demographic groups and business types within Canada, we found deep divisions between them and the broader national numbers.

Specifically, we looked at secondary data points from surveys, census data, and research studies to understand how various demographic groups perform on:

- ♦ Measures of **access**, such as broadband subscriptions, high-speed internet prices, and usage of basic services (e.g., online banking)
- ♦ Measures of **participation**, such as individuals' basic digital skills and ability to solve problems in a digital environment,³⁷ and organizations' ability to create a website or invest in digital technology
- ♦ Measures of **ecosystem**, such as global rankings on barriers to digital trade, and policies that protect privacy, intellectual property, and accessibility rights

Across all these measures, we consistently saw a gap between the national average and specific sub-groups in Canada. In particular, people above the age of 45, rural residents, low-income households, and Indigenous peoples experience below-average rates of digital access and participation, while SMEs and Indigenous-led businesses experience below-average rates of business access and participation. In other words, as Canada becomes more digital, we're leaving groups behind.





*Highlights of Canada's dashboard
for specific sub-groups*

1. Access

2. Participation

1. Access

The data reveals a stark divide in specific demographics that are falling behind within Canada

LOW INCOME

18.7%

fewer households in the lowest income quartile have **access to internet at home** in comparison to the top quartile

FIRST NATIONS

52%

fewer households that reside on First Nations reserves have **basic broadband services available**

RURAL

\$7

more on average (per month) in rural Canada for **basic broadband services**

LOW-INCOME SENIORS

34.5%

fewer people in the 65+ age group from the lowest income quartile had **access to internet at home** in comparison to the top quartile

SMALL AND MEDIUM-SIZED BUSINESSES

15.4%

fewer small businesses (10-49 employees) reported that they **have a website or homepage** than large businesses (250+ employees)

2. Participation

LOW INCOME

~4x

more likely to be in a job that is at **high-risk of automation** for people in the 10th income percentile, compared to 50th+ percentile

OLDER CANADIANS

23%

fewer people aged 55-74 used the **internet for banking** in comparison to 25 to 54-year-olds

20%

fewer 45 to 55-year-olds were found to be proficient at **problem solving in technology-rich environments**, compared to 25 to 35-year-olds

INDIGENOUS

8%

fewer businesses with First Nations, Métis, or Inuit majority ownership are **somewhat/very likely to invest in building online capabilities**

SMALL AND MEDIUM-SIZED BUSINESSES

31%

fewer small businesses (10-49 employees) provided training to **develop ICT related skills for non-ICT specialists**

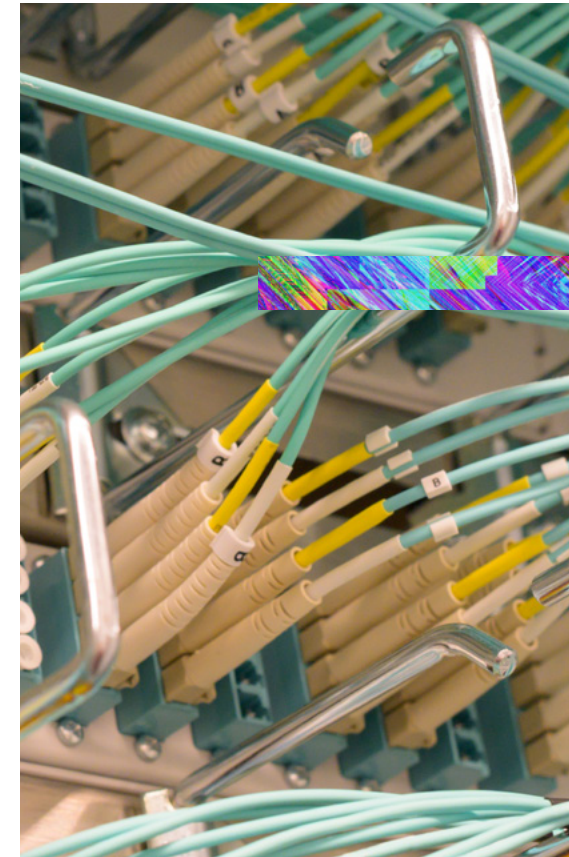
Visit the [data supplement](#) to learn more



The story told by the data is clear: the digital transformation of Canada's economy and society has not been equitable. And that puts us at real risk of not just deepening social and economic disparities, but also holding back Canada's competitiveness on the global stage. If the country's performance across these indicators remains constant or worsens by 2030, we'll see exacerbated inequality across society, SMEs that are unable to grow in the digital world, and businesses of all sizes that are unable to compete internationally.

Our analysis also revealed that Canada suffers from a troubling lack of data. While data collection has improved during the pandemic—and Statistics Canada has committed \$172 million over five years to improve data on race, gender, and sexual orientation—we still lack visibility into how specific demographic groups are performing on digital equity.⁵⁸

We also lack a clear view of how Canada compares to other countries in terms of fostering a digitally equitable ecosystem. We know from past Deloitte research that what gets measured gets done.⁵⁹ And without better data, be it quantitative or qualitative, we cannot begin to accurately measure and address the digital equity gaps that Canada is facing.



**For the full
digital equity
data supplement
[click here](#)**

*Buckle up:
dramatic
changes ahead*



+



+



+



+

Our data analysis shows that Canada is far from the digitally equitable society that we need to be. If we are to thrive as a country, we must start building now. Over the next decade, we expect to see a deepening of the disparities between those who can succeed in the digital world and those who can't, spurred on by the rapid advancement of digital technology.

+

To ensure that all people and organizations can keep pace with those changes, we need to first understand what the 2030 digital world will entail. Through driver mapping—a technique that analyzes secondary research sources for megatrends and drivers that will impact our subject area—we identified the following driving forces that will shape Canada’s digital economy and society over the next decade,⁴⁰ and that policymakers and business leaders must keep in mind:

→ **Big tech**

We expect the technology sector will become increasingly consolidated over the next decade, with big tech companies occupying an ever-larger market share and expanding into other sectors, such as health care, financial services, and education. Not only will this have enormous implications for how personal data is used and how people access critical services, it will also mean that smaller companies will face growing barriers to success in these technology-dominated sectors.

Data ownership and protection

Big tech consolidation, along with the growing monetization of personal data, means that data ownership and protection will be a key digital battleground by 2030. It will be increasingly critical that all Canadians understand their rights when it comes to data, while businesses will have to adapt to more stringent regulations around how data can be collected, used, and shared.

Telecommunications

The telecommunications sector will continue to consolidate in the coming decade, leading to tightened oversight from regulators and increased pressure from the public for more affordable broadband options. These companies will be at the forefront of efforts to expand internet access to hard-to-reach areas, with this complex policy area playing a crucial role in securing digital access for all people in Canada.





Digital economy

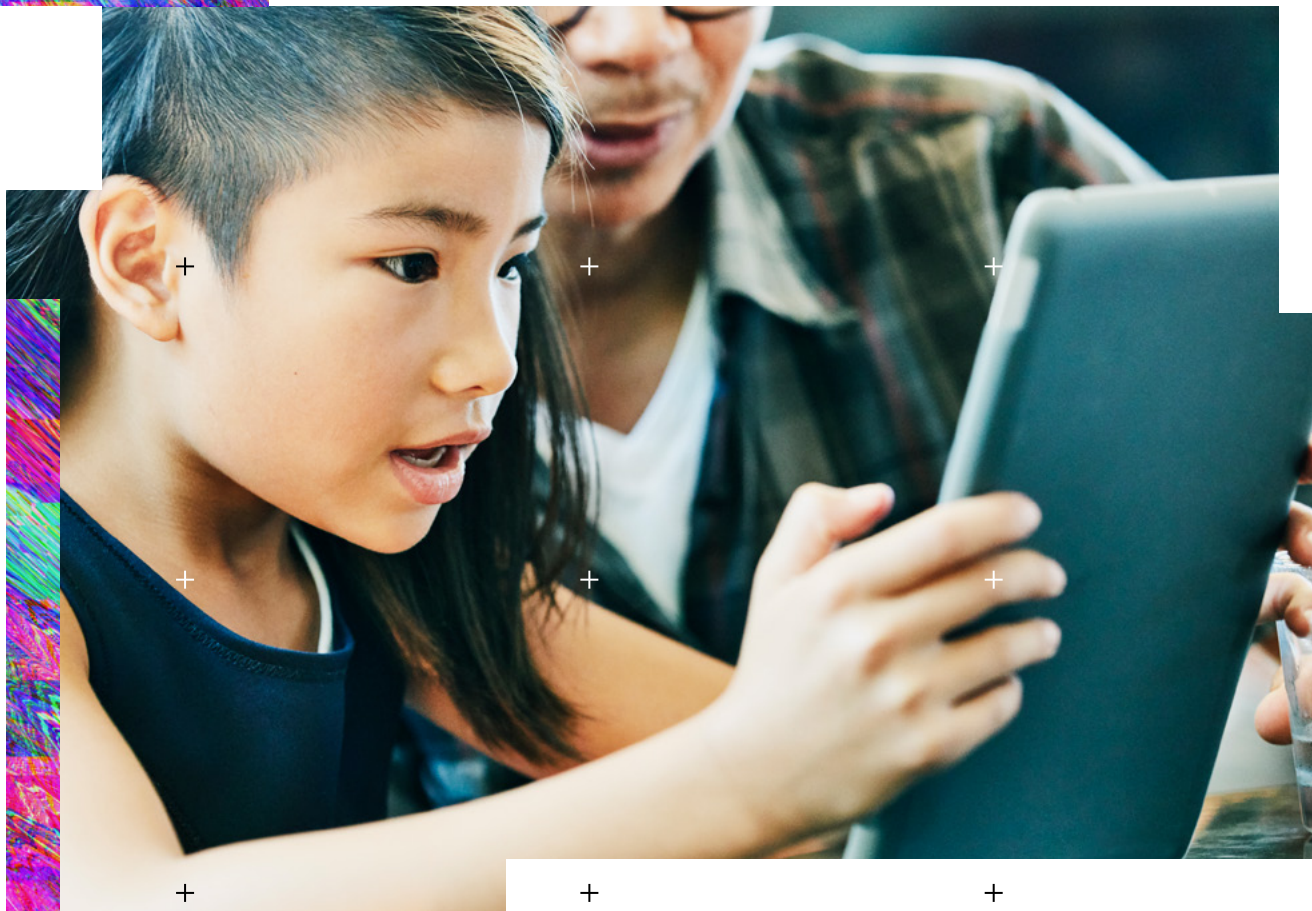
E-commerce, digital service delivery, the digitization of money, and the introduction of digital identity will continue to expand through to 2030. From retail to health care to education to government services, digital advancement will become a must-have rather than a nice-to-have, to guarantee the success of organizations.

Digital skills gap

The growth of the digital economy means that employers across sectors will demand a higher minimum of digital knowledge from their workers in 2030. The widening digital skills gap in many sectors shows that Canadians' education will have to incorporate such skills earlier on, while lifelong learning will have to become the norm to address a continual need to upskill.

Technological risks and biases

Growing technological risks—such as those related to algorithmic bias, surveillance, cyberattacks, and online hate and cyberviolence—will require people to learn digital safety skills earlier in life. Similarly, more businesses in more sectors will have to protect against increasingly sophisticated cyberattacks which will require them to invest in new types of expertise, such as ethical artificial intelligence practices.



These drivers and others—many of which are longstanding, such as the consolidation of the technology and telecommunications sectors—will shape how Canada’s digital world unfolds over the next decade. Given the changes the country’s digital landscape will undergo, we know that the access, participation, and ecosystem requirements needed to succeed in 2030 will be dramatically different than they are today—and meeting them will require bold action today to prepare for that future.

As a country, we need to start asking what all the people and organizations in Canada will need in order to thrive in the digital world of 2030.

Access

For people

At a minimum, what will people need to thrive in 2030 in terms of access to the digital world? As new forms of connectivity are rolled out across the country, who is still being left behind? What digital services and content will be considered essential, and how will we ensure that people don't fall through the cracks as we seek to ensure equitable digital access for all?

For organizations

What minimum access to the digital world will be necessary for organizations to thrive over the coming decade? What digital systems, tools, and software applications will be needed by all the sectors to adapt to the increasingly digital world?

Participation

For people

What threshold of information literacy and digital skills will be needed across the workforce? What digital skills will be needed for people to feel safe, secure, and confident navigating an increasingly digital economy and society? And how will we ensure that all people in Canada have access to a robust digital literacy education that supports the development of these skills?

For organizations

What organizational abilities will be critical in 2030 to participate in the digital economy? How will business models, organizational cultures, operational resources, and training need to change to compete in the digital world? And what barriers will prevent businesses of all sizes from participating in the digital economy?

Ecosystem

For people

Other than access and participation, what remaining barriers do Canadians face? What systemic processes and regulations have the effect of excluding certain groups and thus will have to be dismantled to ensure all Canadians can succeed? And how can governments and businesses ensure that people's rights are balanced with the need to digitalize?

For organizations

What broader policy and regulatory changes will have to occur to ensure more organizations can thrive in the digital economy—not just the largest and most technologically advanced among them? How must regulations evolve to allow organizations to protect people's privacy while using their data? How will governments themselves have to transform to reflect the digitalization of society in 2030?

Canada will have to confront these questions and more. The subsequent reports in this series on digital equity will seek to do just that. We'll look at the specific requirements of access, participation, and ecosystem that may transpire over the coming decade, and we'll provide recommendations on how Canada can adapt to meet those requirements so that we can thrive digitally in 2030.





Conclusion

Canada has the building blocks to secure our vision for a thriving future in 2030. But we must ensure everyone is able to benefit from it equitably. That means asking ourselves the hard question: who is being left behind in the digital world and why? While some people have benefited from high-speed internet and the increased convenience of virtual services during the pandemic, others have had to choose between buying internet services for online learning or groceries for their families.⁴¹ And while some organizations have successfully transitioned to fully remote workforces, others have had to shutter their doors permanently.⁴² The pandemic may have exacerbated and raised awareness of these divides, but they're far from new.

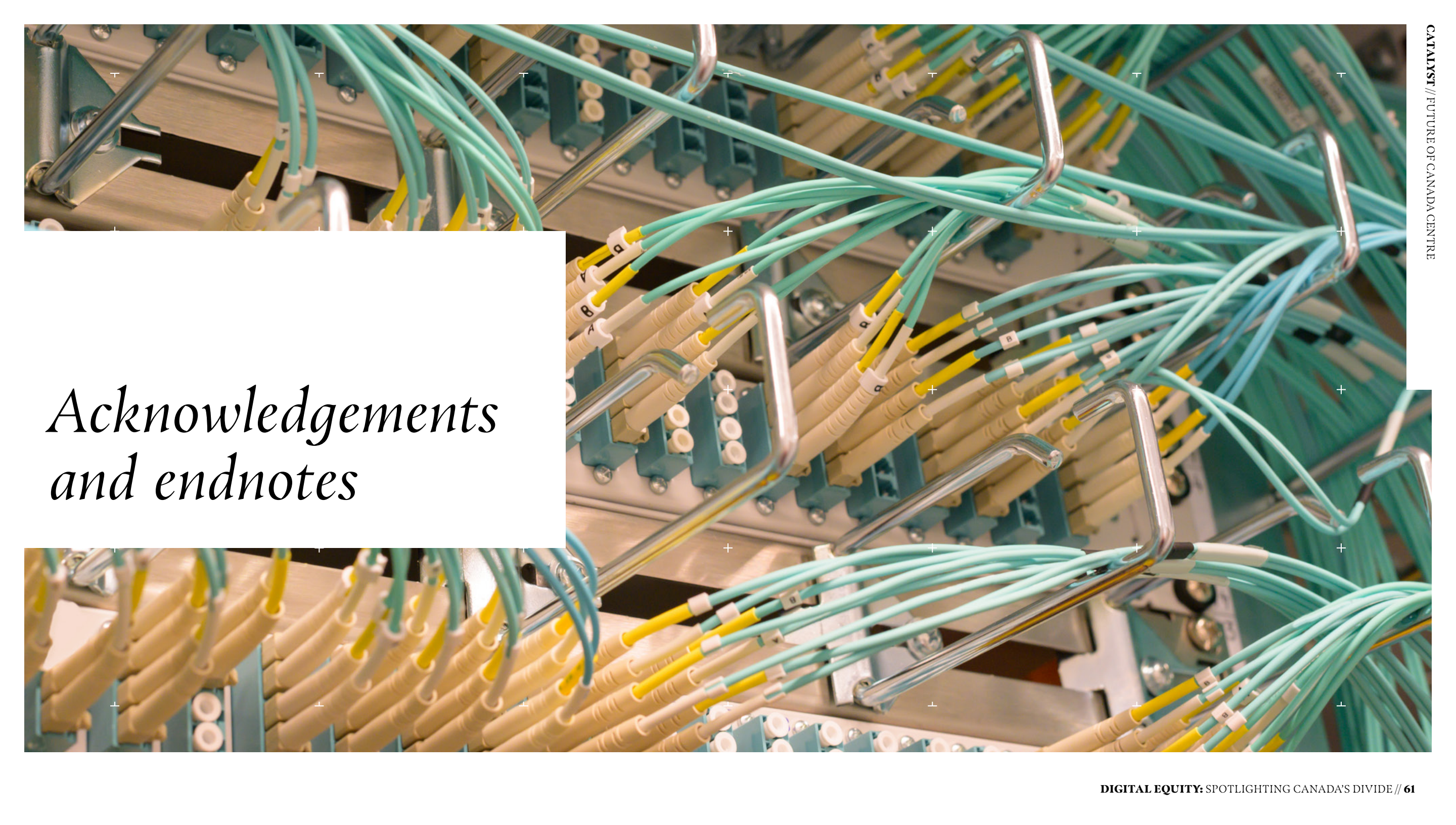
Canadian policymakers and business leaders will have to confront these challenges and more in order to build a digitally equitable nation by 2030. Throughout the reports in this series, we'll take a closer look at what's needed in terms of access, participation, and ecosystem, and we'll provide recommendations about the policy and business levers that must be pulled to meet those needs.





If we can meet these needs, Canada can become a world leader in inclusive digital growth, setting the rules and standards for the global digital economy. And it will allow us to bridge other equity gaps—economic, health, and education, to name just a few—that stand in the way of a future where all Canadians are given the resources they require to succeed.





*Acknowledgements
and endnotes*

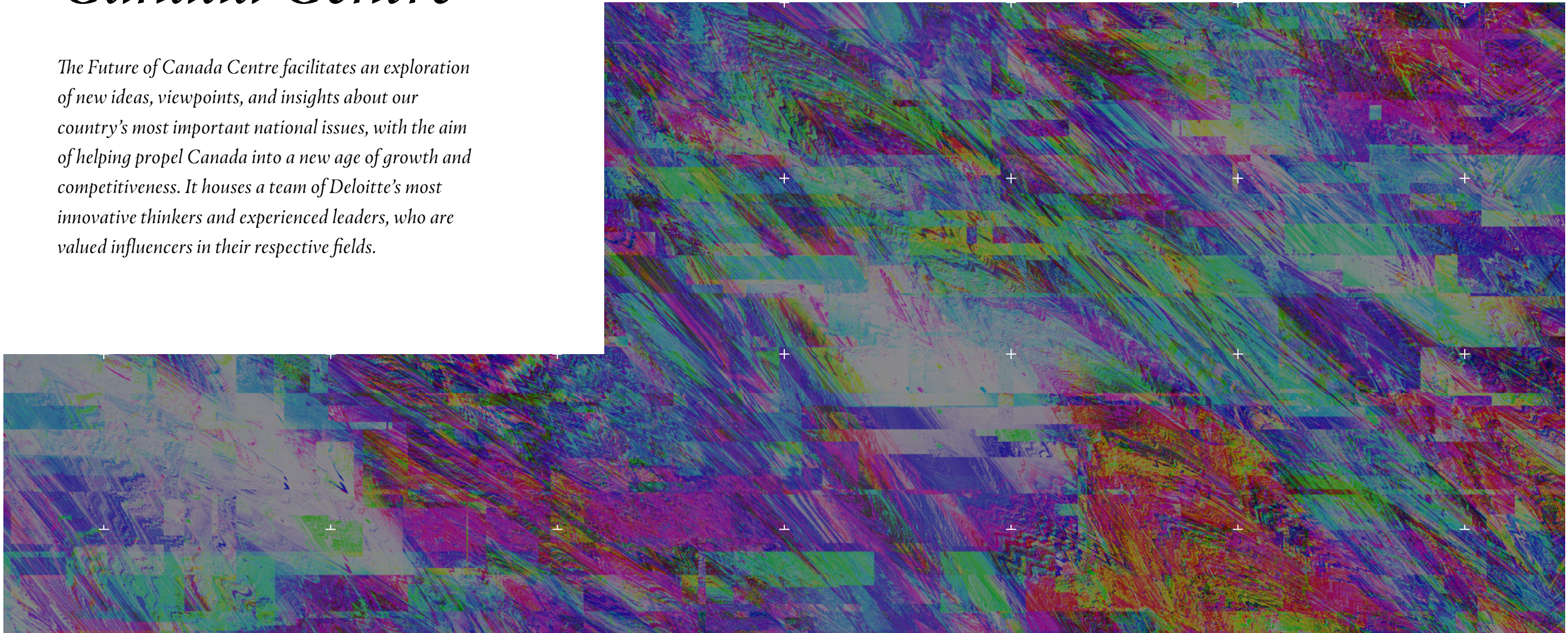
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- Stephanie Cram, "After challenges brought on by pandemic, Garden Hill First Nation students will repeat grade next school year," CBC News, May 22, 2021, <https://www.cbc.ca/news/canada/manitoba/garden-hill-first-nation-repeat-grade-pandemic-1.6057285>.
- Khanyi Mlaba, "Equity vs equality: What's the difference?," Global Citizen, March 19, 2021, <https://www.globalcitizen.org/en/content/equity-equality-whats-the-difference-global-goals/>.
- National Telecommunications and Information Administration and United States National Telecommunications and Information Administration, "Falling Through the Net II: New Data on the Digital Divide," July 28, 1998, <https://www.ntia.doc.gov/report/1998/falling-through-net-ii-new-data-digital-divide>.
- "A Tri-Annual Report from Statistics Canada," Innovation Analysis Bulletin 2, no. 1 (January 2000), <https://www150.statcan.gc.ca/n1/en/pub/88-003-x/88-003-x1999002-eng.pdf?st=rnd4J8-J>; Margaret Thompson-James, "Computer Use and Internet Use by Members of Rural Households," Rural and Small Town Canada Analysis Bulletin 1, no. 7 (May 1999), <http://publications.gc.ca/Collection/Statcan/21-006-X/21-006-XIE1998007.pdf>.
- Jonathan Ellison and Warren Clark, "Net Shopping," Canadian Social Trends (Statistics Canada, Spring 2001), <https://www150.statcan.gc.ca/n1/en/pub/11-008-x/2000004/article/5557-eng.pdf?st=TbWj-Q4P>.
- Eszter Hargittai, "Second-Level Digital Divide: Differences in People's Online Skills," First Monday, April 1, 2002, <https://doi.org/10.5210/fmv7i4.942>; Colin Rhinesmith, "Digital Inclusion and Meaningful Broadband Adoption Initiatives," Benton Foundation, January 2016, 53.
- Jason Kirby, "What 25 Canadian Websites Looked like When They Launched," Maclean's (blog), March 12, 2019, <https://www.macleans.ca/economy/business/how-25-canadian-websites-looked-in-the-internets-early-days/>.
- Cathy Bakker, "Information and Communications Technologies and Electronic Commerce in Canadian Industry," Statistics Canada, Survey of Information and Communications Technologies and Electronic Commerce, 1999, no. 88 (November 2000): 41.
- Lawrence McKeown and Josie Brocca, Internet Shopping in Canada: An Examination of Data, Trends and Patterns (Statistics Canada, 2009), <https://www150.statcan.gc.ca/n1/en/pub/88f0006x/88f0006x2009005-eng.pdf?st=2mO5rjY2>.
- "2015 Survey of Digital Technology and Internet Use" (Statistics Canada), accessed July 9, 2021, <https://www150.statcan.gc.ca/n1/en/pub/11-627-m/11-627-m2014001-eng.pdf?st=5VI-ysOI>.
- "UNCTAD Estimates of global e-commerce 2018," UNCTAD Technical Notes on ICT for Development (United Nations Conference on Trade and Development, 2018), https://unctad.org/system/files/official-document/tn_unctad_ict4d15_en.pdf.
- City of Seattle, "Digital Equity Initiative Action Plan: Phase One – Building the Foundation," Progress Report, July 2015, http://www.seattle.gov/Documents/Departments/Tech/SeaDigEq_Report_073015_FINAL.pdf.
- Brian Whitacre, Roberto Gallardo, and Sharon Strover, "Broadband's Contribution to Economic Growth in Rural Areas: Moving towards a Causal Relationship," Telecommunications Policy 38, no. 11 (December 1, 2014): 1011–23, <https://doi.org/10.1016/j.telpol.2014.05.005>.
- Statistics Canada Government of Canada, "The Changing Nature of Work in Canada amid Recent Advances in Automation Technology," January 27, 2021, <https://www150.statcan.gc.ca/n1/pub/36-28-0001/2021001/article/00004-eng.htm>.
- James E. Bessen et al., "Automatic Reaction - What Happens to Workers at Firms That Automate?," Boston University School of Law, Law and Economics Research Paper, January 1, 2019, <https://ssrn.com/abstract=3328877>.
- OECD, PISA 2018 Results (Volume V): Effective Policies, Successful Schools, PISA (OECD Publishing, 2020), <https://doi.org/10.1787/ca768d40-en>.
- Julie Erickson and Genevieve M. Johnson, "Internet Use and Psychological Wellness during Late Adulthood," Cambridge University Press, Canadian Journal on Aging, 30, no. 2 (June 2011): 197–209, <https://doi.org/10.1017/S0714980811000109>.
- Dr. Heather E. Hudson, "The Impact of Internet Access in Indigenous Communities in Canada and the United States," Internet Society, February 2020, 21.
- Stephane Sorbe et al., "Digital Dividend: Policies to Harness the Productivity Potential of Digital Technologies," vol. 26, OECD Economic Policy Papers (OECD, February 12, 2019), <https://doi.org/10.1787/275176bc-en>.
- Huju Liu, "Economic Performance Associated with Digitalization in Canada over the Past Two Decades," Statistics Canada, February 24, 2021, <https://www150.statcan.gc.ca/n1/pub/36-28-0001/2021002/article/00001-eng.htm>.
- Ragu Gurumurthy and David Schatsky, "Pivoting to Digital Maturity: Pivoting to Digital Maturity," Deloitte Insights, March 15, 2019, <https://www2.deloitte.com/us/en/insights/focus/digital-maturity/digital-maturity-pivot-model.html>.
- Thomas Goldsmith, "Picking up Speed: Digital Maturity in Canadian SMEs—and Why Increasing It Matters" (Brookfield Institute for Innovation + Entrepreneurship, June 2021), <https://brookfieldinstitute.ca/wp-content/uploads/BII-EWTC-Digital-Maturity-report-FINAL-1-1.pdf>.
- "Digital government transformation" (Deloitte Access Economics, 2015), <https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-digital-government-transformation-230715.pdf>.
- Creig Lamb, Sarah Villeneuve, and Darren Elias, "Canada's Digital Trajectory: Are We Doing Enough to Support Business Tech Adoption amidst COVID-19?," Brookfield Institute for Innovation + Entrepreneurship (blog), June 25, 2020, <https://brookfieldinstitute.ca/canadas-digital-trajectory-are-we-doing-enough-to-support-business-tech-adoption-amidst-covid-19>.
- "Small Business in the Digital Age: Recommendations for Recovery and Resilience," Visa Economic Empowerment Institute, 2021, <https://usa.visa.com/dam/VCOM/global/ms/veei-small-business-in-the-digital-age.pdf>.
- "Digital Acceleration in the Time of Coronavirus," MIT Technology Review Insights, 2020, https://wp.technologyreview.com/wp-content/uploads/2020/12/Digital-acceleration-in-the-time-of-coronavirus-North-America_112020.pdf.
- Jason Aston et al., "Retail E-Commerce and COVID-19: How Online Shopping Opened Doors While Many Were Closing," Statistics Canada, July 24, 2020, <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00064-eng.htm>.
- "Are Canada's Charities Ready for Digital Transformation?," Digital Skills Survey Results 2021 (CanadaHelps), accessed September 2, 2021, https://www.canadahelps.org/media/Digital_Skills_Survey_Results_2021.pdf.
- Deloitte Canada, Canada's most undervalued resource: The importance of capitalizing on the data economy, February 2020, 36.
- "Preparing for the future of work in Canada," OECD Reviews on Local Job Creation (OECD, 2020), <https://www.oecd.org/publications/preparing-for-the-future-of-work-in-canada-05c1b185-en.htm>.
- Ersin Asliturk, Alicia Cameron, and Sharif Faisal, "Skills in the Digital Economy: Where Canada Stands and the Way Forward" (The Information and Communications Technology Council, March 2016), <https://www.ictc-ctic.ca/wp-content/uploads/2016/05/Skills-in-the-Digital-Economy-Where-Canada-Stands-and-the-Way-Forward-.pdf>.
- Pragya Sehgal, "Cisco Survey: Accelerated Digitization of Canadian SMBs Could Add \$70B to Country's GDP by 2024," IT Business (blog), October 21, 2020, <https://www.itbusiness.ca/news/cisco-survey-accelerated-digitization-of-canadian-smbs-could-add-70b-to-countrys-gdp-by-2024/116379>, <https://www.itbusiness.ca/news/cisco-survey-accelerated-digitization-of-canadian-smbs-could-add-70b-to-countrys-gdp-by-2024/116379>.
- Future of Canada Centre (Deloitte Canada), A vision for a thriving Canada in 2050, <https://www2.deloitte.com/ca/en/pages/future-of-canada-center/articles/catalyst.html?cid=catalyst-latest>.
- Dr. Raul Katz, "The Impact of Broadband on the Economy: Research to Date and Policy Issues," International Telecommunication Union, April 2012, 156.
- Future of Canada Centre, A vision for a thriving Canada in 2050.
- David C. Grabowski and A. James O'Malley, "Use Of Telemedicine Can Reduce Hospitalizations Of Nursing Home Residents And Generate Savings For Medicare," Health Affairs 33, no. 2 (February 1, 2014): 244–50, <https://doi.org/10.1377/hlthaff.2013.0922>.
- "PIAAC Proficiency Levels for Problem Solving in Technology-Rich Environments," National Centre for Educational Statistics, accessed September 8, 2021, from <https://nces.ed.gov/surveys/piaac/pstpreproficiencylevel.asp>
- "Statscan to Spend \$172-Million over Five Years to Improve How It Captures Data on Race, Gender, Sexual Orientation," The Globe and Mail, accessed July 9, 2021, <https://www.theglobeandmail.com/canada/article-statscan-to-spend-172-million-over-five-years-to-improve-how-it/>.
- Future of Canada Centre, A vision for a thriving Canada in 2050.
- "The Futures Toolkit: Tools for Futures Thinking and Foresight across UK Government," The Government Office for Science, November 2017, 116.
- Jordan Press, "Commons Committee Calls for Optional Surcharge to Subsidize Internet for Low-Income," Toronto Star, June 22, 2021, <https://www.thestar.com/business/2021/06/22/commons-committee-calls-for-optional-surcharge-to-subsidize-internet-for-low-income.html>.
- Brett Bundale, "One in Six Independent Businesses in Danger of Closing amid Pandemic: Report," CTV News, January 21, 2021, <https://www.ctvnews.ca/business/one-in-six-independent-businesses-in-danger-of-closing-amid-pandemic-report-1.5276643>.

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