

Promoting Trust and Confidence in Ontario's Data Economy

Discussion Paper



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DISCUSSION PAPER

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1 About This Paper: Starting the Conversation

The Government of Ontario is developing an Ontario Data Strategy to explore new opportunities for data use across the province while protecting people's data rights from growing risks. We are developing this Strategy in close consultation with you, because it is your trust and confidence that provides the foundation for Ontario's data economy.

This is the first of three Discussion Papers that the province will release as part of its consultations to develop the Data Strategy. This paper aims to start a conversation about how the province should promote public trust and confidence in Ontario's data economy, by posing questions for public discussion. We will release two additional Discussion Papers for public comment, as we work toward a final Data Strategy by the end of 2019.

We invite you to join the conversation by visiting engage.ontario.ca, our digital engagement platform. On the platform, you can choose how to participate in the way that is most comfortable for you. Options include:

- Taking part in an online dialogue about these discussion questions
- Sending us a formal, written submission by posting it on the platform or emailing us at digital.government@ontario.ca
- Joining us at in-person events in six communities across Ontario.

By participating in these consultations, you will help us develop a strategy which reflects your needs and concerns – whether you are a parent concerned about your child's well-being, a business owner trying to safely and responsibly implement a data-driven business model, or a resident concerned about how digital and data-driven changes are affecting your community.

**Message from the Hon. Lisa M. Thompson
Minister of Government and Consumer Services**

“The development of the Ontario Data Strategy is a great opportunity to leverage the potential of data in ways that benefit businesses and Ontarians. The Discussion Papers are a chance to begin a very important conversation with the people of Ontario, and represents an opportunity to be transparent about how this government thinks about data. We need all voices to address the issues and take advantage of opportunities in this data-driven world. We are excited to hear from you, as you help us develop a data strategy that promotes trust and confidence, creates economic benefit, and allows for a better, smarter government.”

**Message from Ms. Linda Mantia
Chair of the Minister's Digital and Data Task Force:**

“Data is a valuable resource helping to drive innovation with the potential to dramatically improve goods and services for Ontarians. How we collect it, effectively use it, and prevent abuses of it are among the key policy questions of our time. The Minister's Digital and Data Task Force will tackle these questions head-on, and we want you to join the discussion. In the end, it is our collective efforts as the people and businesses of Ontario, working with the rest of the country, to ensure a cohesive and comprehensive approach, allowing our province to thrive in a data-driven economy.”

2 Introduction

More data is now being created in a single year than throughout the entire course of human history. Digital sensors are being embedded everywhere: in our homes, public places, and workplaces. Billions of people are increasingly participating in social and economic life through globally networked and integrated digital platforms. We are in the midst of a data revolution that is being powered by the Internet, increased accessibility to digital devices, and technological breakthroughs that have impacted more aspects of everyday life. Whether using smartphones, social media, search engines or interacting with machines, virtually every Ontarian is now producing data every second of their digital lives.

Individuals and machines are generating data at an unprecedented rate. Data has been referred to as “the new oil” and, conversely, the “new plutonium”,¹ given its enormous potential value if tapped and refined but also its danger if misused. Globally, less than 5% of the data currently collected by sensors, devices and applications is analyzed.² According to a study by the McKinsey Global Institute, making better use of even a small subset of data across public and private sector domains could create \$3-5 trillion USD in global economic value.³

However, recent events have highlighted the downsides of the new data-rich world. Reports of data breaches, data-driven manipulation, excessive surveillance and other data-driven threats are increasingly commonplace. As a result, the public is becoming increasingly concerned about the possible negative effects of technology and data on themselves, their families, and on the broader society and economy.

This paper will describe these trends and why provincial action is needed – in the form of a made-in-Ontario Data Strategy. The three pillars of the strategy are mutually interdependent. They are:

- 1) **Promoting Trust and Confidence:** Introducing world-leading, best-in-class protections that benefits the public and ensures public trust and confidence in the data economy.
- 2) **Creating Economic Benefit:** Enabling Ontario firms to develop data-driven business models and leverage the commercial value of data.
- 3) **Enabling Better, Smarter Government:** Unlocking the value of government data by building the data skills and capabilities of public sector employees and promoting the use of data-driven technologies to ultimately serve Ontarians better.

¹ [Meeting 152 of the House of Commons Standing Committee on Access to Information, Privacy and Ethics](#). Remarks by Jim Balsillie. 28 May 2019.

² [Digital Universe of Opportunities: Rich Data and the Increasing Value of the Internet of Things](#). EMC Digital Universe and IDC. 2014.

³ [Open Data: Unlocking innovation and performance with liquid information](#). McKinsey Global Institute. 2013.

What is Data?



For the purposes of Ontario’s Data Strategy, we have defined data broadly as “all structured information” in formats that are both digital and non-digital. There are many conceptions and definitions of data, which can be described along many dimensions, including format, quality, or controllership. Five types of data relevant to the Data Strategy are described below:

Government & public sector data

Data collected, produced or shared by government, such as:

- Open data
- Transit data
- Administrative data
- Statistical data
- Research and survey data
- Other types of operational data

Business data

Data collected, produced or shared by businesses, such as:

- Operational and financial data
- Market research data
- Customer data
- Machine data

Personal data

Data collected from, produced or shared by individuals, such as:

- Personally identifiable data
- Behavioural data
- Expressive data
- Biometric data
- Financial data

Derivative data

Data that has been processed, derived or transformed, such as:

- Anonymized data
- Linked data
- Predictions or inferences derived from data

In the case of the first pillar, addressing the public’s concerns about data-driven practices is critical to upholding the social license for their use. Through this pillar of the strategy, we aim to

examine the negative impacts of data, institute best-in-class protections, and promote the ethical and responsible uses of data-driven technologies.

3 Key Issues & Context for This Pillar

As we become more reliant on the benefits of digital technologies and data, we encounter different challenges and new risks. This requires government, businesses, and individuals to find new and agile ways to ensure consumer protection, while as a society we reap the benefits. Without a whole-of-government data strategy, Ontarians remain vulnerable to the various applications of data-driven technologies. This is why the Government of Ontario has identified promoting trust and confidence in Ontario's data economy as the first pillar.

3.1 Threats and Risks of Data-Driven Practices

3.1.1 Examples of Data-Related Threats and Risks

Data breaches, theft and misuse

A data breach occurs when the loss of integrity of an information system leads to unauthorized access to or disclosure of data and information. The prevalence, frequency and impact of data breaches are on the rise. For example:

- 2017: [Security breach of Equifax](#), a credit reporting agency, exposes personal data of 143 million customers, including 19,000 Canadians.
- 2018: [Facebook reports](#) that in 2016 Cambridge Analytica and AggregateIQ used data harvested from 87 million Facebook users to influence election campaigns.
- 2019: [CBC News reports](#) that the data of 2.9 million members of Caisse Desjardins, including 173,000 businesses, was shared as a result of a breach caused by an employee.

Bias and discrimination

Data-driven technologies and practices can reinforce biases that exclude or single out certain groups of people or reinforce existing trends. The 'black box' of many automated decision-making systems can make it difficult to detect and combat these impacts.⁴ For example:

- An algorithm used to make an administrative decision assigns undue weight to a characteristic leading to discrimination against a certain group (e.g., an algorithm

⁴ [Governing the Future: Creating standards for artificial intelligence and algorithms](#). The Mowat Centre. 2019.

which flags tax filers at risk of non-compliance could unfairly target smaller businesses owing to their small size).

- A machine learning algorithm optimizes for numerically dominant groups in a training dataset, excluding data at the margins which represent a marginalized group (e.g., a speech recognition algorithm could fail to recognize individuals with speech impediments).

Behavioural manipulation

Data generated by digital products and services about users' characteristics, behaviour, interactions, can be used to affect users' behavior in ways that may ultimately be harmful. For example:

- Algorithms are often a 'blackbox', with neither users nor regulators having a sightline into how recommendations are made. It is possible that algorithms can manipulate user behaviour, directing them towards dangerous or harmful content or choices.
- So-called '[dark patterns](#)' use deceptive user interfaces and exploit information asymmetries to encourage users to [unknowingly share data and personal information](#), or buy products and services.

Surveillance and loss of privacy

Surveillance in public places, the home, and the workplaces can compromise individual's right to privacy and can infringe on people's ability to communicate, organize and associate freely. In part, this decrease in privacy is driven by a desire for convenience and added safety in our day-to-day life and commercial imperatives to monetize and exchange personal data. These trends have created a range of risks; for example:


- [Use of facial recognition technology](#), [cellular signal interception](#), or [automatic tracking by GPS-enabled devices](#) can significantly reduce or effectively eliminate privacy about individuals' whereabouts.
- Many smart home devices suffer from security vulnerabilities, and can capture and transmit sensitive personal information which may be vulnerable to monitoring and misuse (e.g., interception of audio and video feeds).⁵

As more pieces of Ontarians' lives shift online, determining the impact of these issues and implementing appropriate safeguards must be a priority for businesses and the government.


⁵ Consumer IoT security gaps have become such a concern that [Japan is performing national IoT 'war games'](#) to detect weaknesses in national cybersecurity. See also [IoT Security for Policymakers](#). The Internet Society. 2018.; and, [Risk or reward: What lurks within your IoT?](#) KPMG. 2018.

Virtually every sector is affected by digital and data-driven trends. These sector trends, examples of which are provided below, present opportunities to increase efficiency, improve decision-making, and better allocate resources. But these trends also present challenges to navigate and manage, while they put new pressures on existing laws, policies and programs.


3.1.2 Examples of Digital and Data Trends in Key Sectors




Health: Digital health tools – such as wearable devices and related services – are increasing the ability of individuals to monitor and manage their own health



Digital platforms and service providers: Growth of ‘platform monopolies’ where overwhelming power of dominant players – given data hoarding and network effects, for example – present barriers to entry for competitors



Public safety: New and growing digital threats to individuals, businesses and critical infrastructure including data theft, breaches, and cyber attacks



Public service delivery: Growing use of automated decision-making and decision-support systems to increase speed and efficiency of administrative decisions (e.g., determining social program eligibility)

3.2 Opportunities to Promote Ethical and Responsible use of Technology

It is in the public interest to instill trust and confidence in Ontario’s data economy. A loss of trust reduces people’s willingness to share data or give social license for its use. Likewise, diminishing confidence impedes the creative risk-taking at the heart of experimentation, innovation and investment. A loss of trust would, in turn limit the social and economic benefits arising from data. Just as in the economy at large, trust and confidence in the data economy are public goods which can be degraded if not actively upheld.



We heard through initial public consultations in March 2019 that the public want greater protections for how their data is collected, managed and used. In addition to hearing that most respondents (79%) felt that data about people and businesses need stronger protection, we heard that:



Canadians are very concerned about the potential for negative impacts from the use of data in the public sector.

They lack confidence in the accuracy and impartiality of algorithms used in:



Government and the public sector play a significant role in upholding public trust in the data economy: As a key user of technology and steward of the public's data, the public sector can set an example for other sectors. Moreover, the government funds, regulates and steers technological development and adoption in many areas, while providing many of the basic

programs and infrastructural systems which drive the digital economy (e.g., skilled workforce, broadband in remote areas, business supports, tax credits for digital media and content). But government is not the only actor with a role to play:

- **Businesses** drive technological innovation to create jobs, increase overall productivity, and provide valuable products and services to the public.
- **Civil society** brings together local communities, research and academia, public institutions and industry – to develop social consensus on norms, standards and practices which can guide the use of technology. Through collaborative cross-sector initiatives, civil society can create common cause and advance innovative solutions to emerging digital and data challenges.
- **Individuals**, whether citizens, educators, caregivers or patients, producers or consumers, can become more empowered to take the steps to protect themselves and their families through awareness, knowledge and the right tools.

By promoting the ethical and responsible use of data-driven technologies, we can address public concerns and bolster trust and confidence in their use. Leading organizations and governments have shown that there are many paths to accomplishing this task – but the understanding of underlying issues is still evolving, and there are still few mature models to emulate. A variety of promising tools are being developed – such as data trusts, and algorithmic impact assessments – which balance the need for new safeguards with the opportunities to leverage data for benefit. These can be implemented in a variety of contexts and sectors. Together, Ontarians can ensure that the benefits of the data revolution are widely shared, while limiting the negative impacts. The following sections highlight leading initiatives which are actively contributing to these shared goals. These sections also begin to describe the aims of Ontario's Data Strategy in greater detail.

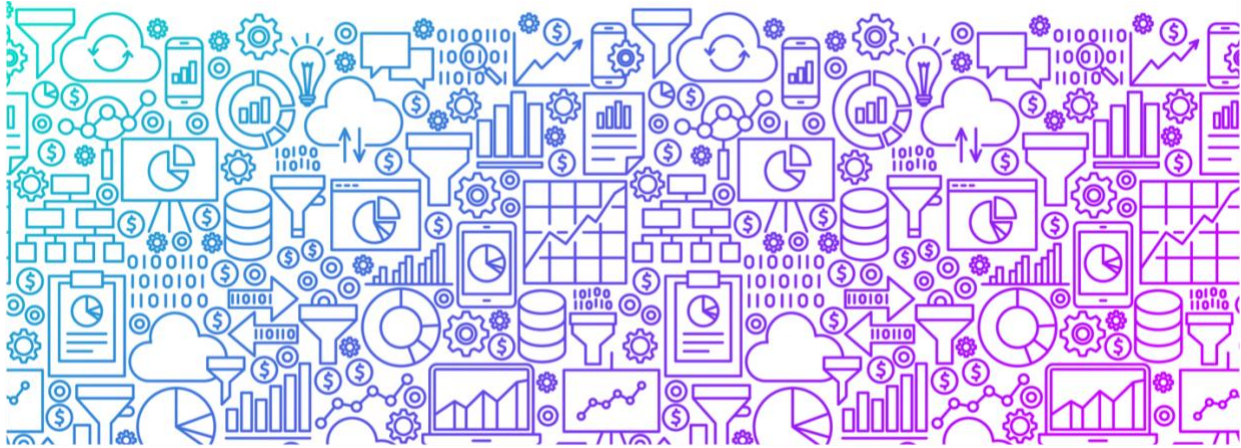


4 Current Ontario Government Initiatives

Alongside Ontario's Data Strategy, the provincial government is pursuing an array of initiatives to modernize public sector data governance, and more broadly to promote trust and confidence in the province's data economy. These include:

- **Minister's Digital and Data Task Force:** In June 2019, the Ministry of Government and Consumer Services established a short-term advisory body comprised of experts on data-driven innovation. The role of the Task Force is to make recommendations on Ontario's data regime, provide advice to the Minister, and review and provide advice on the government's implementation efforts. Importantly, the Task Force will participate in the development of Ontario's Data Strategy, from advising on our discussion papers to engaging in public consultations.
- **Privacy Protective Public Sector Data Sharing:** Ontario has substantially amended legislation that governs access to the information held by public institutions in Ontario (Freedom of Information and Protection of Privacy Act, or FIPPA). These amendments allow provincial ministries to collect, analyze and more efficiently share data within government to better inform decision-making and the evaluation of programs and services. The province will develop data standards that will set rigorous standards for collecting, linking, de-identifying, retaining and disposing of personal information.
- **Digital First:** Promoting a Digital First approach for government and the public sector, which includes enshrining digital and data standards in regulation under the *Simpler, Faster, Better, Services Act*. These standards will promote responsible data management, user-centered privacy and security practices, and the public release of non-sensitive data throughout Ontario's public sector.
- **Broadband Strategy:** Many Ontarians across the province still cannot participate in the digital and data-driven economy due to gaps in affordable and high-quality Internet access. Through [Ontario's Broadband and Cellular Action Plan](#), the province is investing \$315 million over five years to expand broadband access in underserved areas, to expand access to reliable, fast and affordable broadband internet connectivity across the provinces.
- **Strengthening Privacy Protections in Public Safety:** Through the Police Record Checks Reform Act, Ontario is the [first province in Canada to legislate](#) standard types of records which can be released through a police record check, supporting public safety while protecting the privacy of Ontarians.
- **Data-Driven Anti-Fraud Measures:** Working with the Financial Services Regulatory Authority (FRSA) and the Ontario Provincial Police's Serious Fraud Office (SFO), the

government will develop an anti-fraud strategy to combat fraud in auto insurance. This strategy will include using enhanced data analytics to detect fraud, so that taxpayers are not paying for the dishonest actions of fraudsters.



5 Discussion Questions

Through the first pillar of the Data Strategy, we have committed to promoting Ontarians' trust and confidence in the data economy. We will do this ensuring that the right safeguards are in place to promote their ethical and responsible use.

We know that the problems and opportunities arising from the digital and data-driven economy are complex. Addressing them will require collaboration across sectors and between all levels of government. To that end, the province is committed to working with the federal government as Canada implements the Digital Charter and we hope their actions can happen as soon as possible. The federal government's Digital Charter is a step in the right direction to address threats to people's privacy and the protection of private data across the country.

Time is of the essence, and the Government of Ontario will take action to protect Ontarians using the range of legislative and non-legislative tools at its disposal.

Furthermore, we have committed to making Ontario open for business and implementing a digital first approach to programs and services. In keeping with these commitments, we are particularly interested in exploring interventions enabled by digital and design methods which reduce burdens for businesses, recognizing the inherent tensions in doing so. Accordingly, the province will prioritize innovative and unconventional interventions in the Data Strategy.

As we work to bring forward these actions through Ontario's Data Strategy, we want to share some of our government's considerations in the four key areas below. We want your input and feedback on these commitments through the accompanying discussion questions. For details on how to participate, please visit engage.ontario.ca.

5.1 Privacy, Data Protection and Data Governance

It is important to:

- Ensure that Ontarians' privacy and data rights are respected and upheld
- Promote the continuous evolution of Ontario's privacy and security frameworks to keep pace with new technological developments and challenges
- Help public sector organizations implement user-friendly and modern data protection programs in light of emerging data collection and analysis techniques.
- Promote the development of reusable and people-centered information, tools and methods that help small organizations practice privacy and data protection by design.
- Clarify and strengthen Ontario's jurisdiction and the application of provincial and federal laws over data collected from Ontarians.

5.1.1 Discussion questions

- How can the province ensure that privacy and data protection practices throughout Ontario's public sector...
 - Put people and users first;
 - Enable digital transformation;
 - Promote effective, efficient program management; and,
 - Protect Ontarians from data-related harms?
- How can the province build capacity and promote culture change concerning privacy and data protection throughout the public sector (e.g., through training, myth-busting, new guidance and resources for public agencies)?
- How can Ontario promote privacy protective practices throughout the private sector, building on the principles underlying the federal government's private sector privacy legislation (the Personal Information Protection and Electronic Documents Act)?

5.2 Consumer Protection

It is important to:

- Help Ontario businesses protect and respect consumers' rights when collecting their data as a part of the provision of products and services, while ensuring businesses can participate in and benefit from the data economy.
- Prevent discriminatory market practices enabled by data-driven practices.
- Ensure that strong measures are in place to protect Ontarians, promote public trust and confidence and mitigate risks involved with consumer-facing Artificial Intelligence applications.

5.2.1 Discussion questions

- How can the province help businesses – particularly small and medium-sized businesses – better protect their consumers' data and use data-driven practices responsibly?
- How might the province help ensure that consumers are more meaningfully informed and protected when agreeing to internet-based contracts (including terms of service and privacy policies) involving transactions of their data?
- How might the province improve transparency and accountability concerning the consumer-facing use of automated decision-making applications, including those powered by Artificial Intelligence?



5.3 Human Rights and Civil Liberties

It is important to:

- Promote transparency, accountability and the ethical use of data-driven technologies by the public sector with an interest to upholding the fundamental rights of individuals.
- Engage with the Law Commission of Ontario and the Ontario Human Rights Commission to better understand the impacts of data-driven technologies on the human rights of Ontarians.

5.3.1 Discussion questions

- What digital and data-related threats to human rights and civil liberties pose the greatest risk for Ontarians? Where do these occur, and what is their impact?

- How can the province best advance and uphold the human rights and civil liberties of Ontarians, in the face of growing digital and data-related harms?
- Should the province institute new rights in relation to data and data-driven practices, such as the right to data ownership, the right to be informed, or the right to erasure?
- Should the province regulate the use of automated decision-making in the public or private sectors? If so, in what contexts? How might the province guide the responsible and ethical use of these tools?

5.4 Public Education and Awareness

It is important to:

- Promote public education and awareness through useful information, tools and resources to help Ontarians understand and protect themselves against data-related harms online.
- Increase transparency of uses by government and the public sector of algorithms and automated decision-making (including Artificial Intelligence).
- Encourage initiatives which promote local generation and access to data, digital rights information, and useful resources that promote cybersecurity, privacy and safety online.
- Consult Ontarians online and in person about the risks and benefits arising from data-driven technologies, including Artificial Intelligence.

5.4.1 Discussion questions

- How can the province best promote public knowledge and awareness about the risks of data-related threats and harms facing Ontario?
- How can public education initiatives empower Ontarians to stay safe and protect themselves from data-related threats and harms?
- How can the province best work with local agencies and organizations delivering public education efforts which are responding to the ground-level impacts of data-related harms?
- Should the province create a mandatory requirement that public institutions be transparent about when automated decision-making practices are occurring?

Comments on this discussion paper (*Promoting Trust & Confidence in Ontario's Data Economy*) will be collected until September 6, 2019. We will post a summary of what we heard on engage.ontario.ca. Other consultations on subsequent discussion papers will follow in August and September.

If you have questions or comments, please email us at digital.government@ontario.ca or send any other correspondence to the Ontario Digital Service, 595 Bay Street - Suite 1002, Toronto, Ontario, M7A 2C7.