

Better, Smarter Government

DISCUSSION PAPER



Better, Smarter Government

Unlocking the value of government data by building better data management, data skills, and data sharing across the Government of Ontario.

DISCUSSION PAPER

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1 About This Paper: Starting the Conversation

The Government of Ontario is developing Ontario’s Data Strategy to explore new data-driven opportunities across the province, while protecting people’s data rights from growing risks. We are developing the Strategy in close consultation with you, because your feedback will enable us to deliver better and smarter services for the people of Ontario.

This document is the third of three Discussion Papers that our government will release as part of its consultations to develop the Strategy. The first paper was released in July 2019 and focused on promoting public trust and confidence in the data economy. The second paper was released in September 2019 and examined how we can enable companies to develop data-driven business models and unlock the commercial value of data. This final paper explores how the Government of Ontario itself can better serve the people of the province by strengthening our data management, building the data skills of government employees, introducing next-generation delivery approaches like “Government as a Platform”, and promoting the use of better data sharing to design better services.

We invite you to visit our digital engagement platform at engage.ontario.ca and join the conversation about this paper, and Ontario’s Data Strategy in general, in the format that is most comfortable for you. Options include:

- Engaging online about the discussion questions posed at the end of this paper;
- Sending us a written submission, posted to the platform or emailed to us at digital.government@ontario.ca; or
- Registering for upcoming in-person events across Ontario.

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

“The world around us is changing rapidly. That’s why our government needs to rethink the outdated laws that prevent us from managing and sharing data effectively. We also need to find better ways to build the data skills of government employees, while respecting the taxpayer. The insights gathered through this discussion paper, and our related public consultations, will help us to fundamentally transform the way government operates—enabling us to be better, smarter, and more efficient.”

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

“We live in an age of big data, artificial intelligence and interconnected societies. Leveraging these developments is crucial, particularly for government. The Minister’s Digital and Data Task Force aims to advise the Government of Ontario on new ways to use data and build data skills—so that the public service is empowered and equipped to make better decisions. The outcomes of your feedback on this discussion paper will be instrumental in helping us develop our recommendations—and in helping the government adapt to the digital and data era.”



2 Where We Are Now

“Citizen-Centered and Digital First speaks to the requirement to share data and information across ministries and delivery organizations to the maximum extent possible and as the default position; the inverse is true today and must be overcome through a modernized legislative framework that defines data and information sharing as a public interest, while still reflecting the absolute protection of individual privacy.”

– Managing Transformation – A Modernization Action Plan for Ontario, Ernst & Young 2018.¹

Ontario, like much of the world, is experiencing rapid growth in the use of data and digital services in daily life. As a result, Ontarians have also come to expect quick and easy online access to essential government services—from applying for OSAP to renewing a health card. Our government collects data through multiple channels to deliver services and inform decision making; the full value of that data can be better harnessed to improve outcomes for the people, businesses and communities of Ontario.²

Protecting the privacy of personal information is vital: Numerous legal, regulatory and policy-based practices help ensure that Ontarians can trust the security of government-held information that relates to them. Under Ontario’s current privacy laws, the Government of Ontario can only collect, use and share personal information for legitimate, limited and specific purposes—and must inform individuals about how it intends to use their personal information.³ However, these same rules also create certain barriers to data sharing: The government is only able to share personal information across ministries in limited circumstances, restricting our

¹ [Managing Transformation: A Modernization Action Plan for Ontario](#), p. 27. Ernst & Young. 2018.

² [Public sector lagging behind private sector in data analysis](#). Pan Intelligence – Industry Insights. (n.d.).

³ [Data Sharing Among Public Institutions Balancing Privacy and Service Delivery](#). 2018. Information and Privacy Commissioner of Ontario

ability to develop modern policies and deliver services that Ontarians expect from a government in 2019.

As a result, creating an efficient, data-driven government is more important than ever. Ernst & Young's 2018 *Managing Transformation* report, which summarized a line-by-line review of Ontario Government expenditures, noted that "poor access to data and analysis on how every dollar of public funding is allocated and spent...impedes [the Government of Ontario's] overall fiscal management."⁴ To become a 21st-century government, we must recognize that better data use--and focused and effective data sharing--are key priorities that must go hand in hand with safeguarding the privacy and security of sensitive information. Achieving these goals is crucial for the Government of Ontario to make informed, responsible choices that address the needs of Ontarians.

We see three areas where change can make a tangible difference: Better data management practices, stronger data talent and skills development among government employees, and better data sharing for government service design and delivery.

Data Management Within Government

The Government of Ontario holds a vast amount of data within many different systems. More efficient management of this data can help deliver better services to Ontarians--yet despite the existence of many standards, guidelines, and protocols to manage information and technology solutions in government, there is a lack of common, cross-government standards for data itself. Because the large numbers of data sets across government were developed independently from each other, it is extremely difficult to collect and manage data uniformly. This lack of cross-government alignment has also made it difficult to combine data from different ministries to create simple, "plug-and-play" solutions that can solve cross-sectoral problems and deliver better services.

As part of its commitment to delivering better services, our government is developing a Digital and Data Action Plan that aims to make Ontario the first "digital first" government in Canada. A key component of that plan is the introduction of the *Simpler, Faster, Better Services Act* as part of the 2019 Budget. This Act—the first of its kind in Canada and only the fourth of its kind in the world—focuses on improving digital and data services in the province and enshrines into law the role of a Chief Digital and Data Officer. Through the creation of that role, our government is making crucial progress to modernize public sector data management and governance: The Chief Digital and Data Officer is tasked with setting and promoting open data standards for the government and broader public sector--a key driver of "Government as a Platform".

⁴ *Managing Transformation: A Modernization Action Plan for Ontario*, p. 22. Ernst & Young. 2018.

Data Talent and Skills Within Government

Across the Government of Ontario, there are many teams of skilled staff involved in data-related work—which ranges from data analytics, data management, and data science to data modeling and quantitative and statistical analysis. These teams include Ministry of Finance staff who are leading the establishment of a network of statistics hubs across the Ontario Public Service to improve collaboration and collection, use, and dissemination of data for statistical purposes. There are also ministry-level and enterprise-wide teams that manage and provide leadership on statistics, information access, recordkeeping, privacy, cybersecurity and information technology.

However, more can be done to grow data knowledge, leverage technical expertise, and promote best practices across the public service to deliver better services for Ontarians. In the past five years, public sector organizations globally have experienced a 67% increase in demand for data skills.⁵ Ontario's 60,000-plus public servants have varying degrees of data literacy and privacy knowledge. These skills are becoming increasingly important—yet there are few comprehensive training or skill building initiatives in place to build government staff capacity.

Government Data-Sharing

Across the Government of Ontario's 23 ministries and numerous agencies, vast amounts of data are collected, produced and managed daily to deliver programs and services. Data is shared across government for a variety of reasons—from policy development to program delivery and performance measurement—in both “linked” and “unlinked” formats: Data linking, also known as data integration, involves connecting multiple databases to generate new, more detailed insights.⁶ However, regardless of format, most data sharing in government takes place within individual ministries or teams, and not between ministries. Data exists in “silos”—isolated pockets that are not readily accessible.

Recent amendments to the *Freedom of Information and Protection of Privacy Act* (FIPPA) will help remove the “silos” that currently impede data exchange, allowing for more data sharing between government ministries. The amendments allow for the establishment of data integration units that will have the ability to collect, compile, and analyze government data for purposes such as the planning and evaluation of programs and services. The changes also include rules for the collection, disclosure, and de-identification of information. Further, the *Simpler, Faster, Better Services Act*, promotes responsible data sharing across ministries.

To drive better service design and delivery, our government has also committed to proactively sharing more of its data, following the principle that all government data should be made open unless it needs to be protected for privacy or legal reasons. To date, at least 750 government

⁵ [Data Science in the New Economy: A new race for talent in the Fourth Industrial Revolution](#), p. 7. 2019. World Economic Forum. World Economic Forum.

⁶ [Data Integration and Big Data In Ontario](#). 2016. Information and Privacy Commissioner of Ontario.

datasets have been made open on Ontario’s Data Catalogue at Ontario.ca/data. In 2018, there were approximately 20,000 downloads of open datasets every month from the catalogue.



3 Where We Want to Be

The Government of Ontario aims to provide simpler, faster and better government services for people and businesses. Improving how we manage data, equipping public servants with the right data skills, and ensuring that data is shared more effectively will help us achieve this goal.

Leading governments, including those of the United States, the United Kingdom and Australia, are identifying data-driven transformation as a top priority, creating executive positions (such as Chief Data Officer or Chief Data Steward) and advisory groups to develop and lead cross-government data strategies. Having strong data leadership can also help break down institutional barriers, set priorities and encourage innovation through data-related pilot projects.

The benefits of creating a data-driven government can include:

- Smarter decision-making, governance and control;
- Optimized fraud and error detection and prevention;
- Improved services for individuals, powered by timely, accurate data; and
- Enhanced operational efficiency, responsiveness, and public trust

It is also important for governments to be open and transparent about how data flows within their walls after it is gathered—and specifically, how personally identifiable data is being managed. Ontarians must feel confident that their personal information is being managed by government in ethical and lawful ways. As governments work to harness the transformative power of data, they have a responsibility to set an example about how to best inform, engage and consult with people about the protection of their personal information.



3.1 Promoting better data management

The Government of Canada has highlighted the lack of adequate digital infrastructure, and the complex requirements for acquiring, governing and managing large volumes of data as key issues in its Federal Data Strategy.⁷ Many governments face these same challenges: Technology assets are sometimes outdated, inhibiting the ability to effectively collect, manage, and leverage data.

To be used effectively for planning, budgeting and forecasting purposes, data needs to be secure, of high quality, easily accessible, and standardized.⁸ Investing in better data management is fundamental for shaping a modern and effective public service.⁹ Other jurisdictions show us what may be possible here.

Government as a Platform

The term “Government as a Platform”¹⁰ refers to a comprehensive approach to both data management and government services. It sees technology and services as a series of interchangeable building blocks that can be assembled quickly to deliver user-centered government services. It is an ecosystem of shared components, open standards and authoritative datasets, as well as the culture, processes and governance that support them.

The key principles of Government as a Platform include designing with users and building reusable, interoperable technologies that can be connected across different components.

⁷ A Data Strategy Roadmap for the Federal Public Service. Government of Canada. 2018.

⁸ Managing Transformation: A Modernization Action Plan for Ontario, p. 20. Ernst & Young. 2018.

⁹ *Ibid.*, p. 28.

¹⁰ Government as a Platform. Tim O’Reilly. Innovations 6(1). 2010.

Government as a Platform is a fundamental change in how data is managed, and how services are designed and developed, to create seamless, less burdensome services for people.

Estonia's X-Road is one example of Government as a Platform in action. The "backbone" of that country's digital services, the X-Road is a centrally managed--but distributed--system that allows organizations and citizens to securely exchange data. In this system, each user can determine what information is made available and who has access to it, allowing for greater privacy and security in digital interactions with government.¹¹

The UK government has also been actively working to develop a Government as a Platform model. In the UK Department for International Trade, having a series of "plug and play" software components available has enabled staff to create unique data-driven solutions that would previously have been too time consuming and resource intensive to produce. Having these solutions available has allowed the government to develop tools more quickly to extend the reach of UK businesses overseas.¹²

Achieving a platform approach to government requires a capable and highly skilled public sector, data management and sharing approaches to support it, and open source components and programs and services designed with data in mind--all implemented in a way that prioritizes privacy and safety. When government is truly designed "as a platform," anyone can build upon it.

Open Data

"Open data" refers to government data that is publicly available, easy to manage, machine readable, and without extensive restrictions on how it can be used or reused.

As the global movement around open data has matured, evidence suggests that getting the most value from open data will require a shift from an "open by default" approach to "publishing with purpose".¹³ "Open by default" makes all data open unless a reason is provided for why it should not be shared--for example, if it contains personal or highly sensitive information. "Publishing with purpose" focuses on releasing high-value data that prioritizes improving government, or is data that the public is actively seeking. While "open by default" continues to be an important principle, shifting to "publishing with purpose" can allow governments to get the most value from their data and more effectively manage their internal resources.

Recognizing the critical value of open data, the government of Ireland has developed a comprehensive system to prioritize its open data planning, management and implementation. This includes a governance board, a working group of impacted public bodies, a dedicated open

¹¹ [e-estonia Interoperability Services](#). (n.d.).

¹² [How government as a platform is helping to transform the Department for International Trade](#). 2017.

¹³ [Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact](#). OECD. 2018.

data unit to oversee the government’s open data portal, and open data liaison officers in each public organization.¹⁴



3.2 Building the data skills of Ontario government employees

Managing and using data effectively can create substantial benefits across the public sector, but not without a public service that knows how to use it. Government employees who develop and evaluate policies and programs must be skilled at collecting and analyzing data effectively, and at adequately protecting it. The Open Data Institute stresses that government employees must be able to comprehend data in order to effectively solve problems and develop informed policies.¹⁵ In line with the Ernst & Young *Managing Transformation* report, and our goal to become a digital-first government, we affirm that data needs to “be at the heart of every decision” that government employees make “about design, administration and execution of public services”.¹⁶ Ontario must make concerted efforts to ensure that our 60,000-plus government employees have the skills and tools they need.

Training and Skills Development

Many leading jurisdictions have launched comprehensive training and upskilling programs to help increase data literacy in their public services. The Australian government has given all public sector employees access to a free suite of e-learning modules to help increase their data literacy. It also provides competitive fellowship programs with private sector partners to address public sector data concerns, funds university courses in data science and analytics, and has developed a data literacy guide for self-guided study. Data and Capabilities Report Cards

¹⁴ Data Strategy. Government of Ireland, Government Reform Unit, Department of Public Expenditures and Reform. 2017.

¹⁵ *Assessing data literacy needs in government*. Emily Vacher - The Open Data Institute. 2017.

¹⁶ *Managing Transformation: A Modernization Action Plan for Ontario*, p. 27. Ernst & Young. 2018.

are issued to assess and monitor whether government departments are well-equipped to support policy decisions, program design and delivery, and organizational management.¹⁷

The UK's Government Data Science Partnership initiative focuses on building data science capabilities among civil servants--working directly with government departments to help develop projects, and delivering training to build new data skills. The UK government also runs a Data Science Accelerator program to equip public sector analysts with data science skills and offers government apprenticeships for data analysts. A Master's level degree in "Data Analytics for Government" has also been launched, jointly run by the Data Science Campus, the Learning Academy, and academic partners across the UK.¹⁸

Culture Change

Beyond training and skills development, we also need to shift our organizational culture to embrace data-driven solutions and consider how data can fit into every aspect of our work. The Organization for Economic Cooperation and Development stresses the need for governments to develop a *culture* of data use and analysis, to fully realize the potential of public sector data.¹⁹ This highlights the importance of evaluating internal processes and dynamics: Are staff encouraged to share data? Do staff feel empowered and supported to share the data under their control, within the government of Ontario?

Integral to the success of any transformation initiative is support for culture change. Creating a data-driven culture happens through ongoing, informed discussions with senior leaders and the stimulation of demand for data at the grassroots.²⁰ The Government of Australia has been a leader in this sphere, promoting culture-building initiatives to champion data excellence within government, such as spotlighting government "data heroes".²¹

Working With External Partners

To help build the supply of data talent within government, we can also look to external partners in the non-profit, academic and private sectors for creative approaches. Code for Canada, a national non-profit organization, has a fellowship program that embeds digital professionals inside government to work on projects that tackle civic challenges—using methods such as user research, software development and design thinking.²² Selected fellows spend 10 months collaborating with their government partners to design and deliver digital services that are

¹⁷ [Data Strategy 2018-2020: Valuing and issuing trusted data analytics in our decisions](#). Australian Government Department of Industry, Innovation and Science. 2018.

¹⁸ [Building capability and community through the Government Data Science Partnership](#). Dawn Duhaney, UK Government Digital Service Blog. July 2017.

¹⁹ [Creation of a data-driven culture in the public sector](#). OECD Digital Government Toolkit. (n.d.).

²⁰ [Data Culture: Opening the flow of analytic insight](#). McKinsey Quarterly. 2018 (3).

²¹ [Data Strategy 2018-2020: Valuing and issuing trusted data analytics in our decisions](#). Australian Government Department of Industry, Innovation and Science. 2018.

²² [Fellowship](#). Code for Canada. 2019.

more efficient and driven by user insights. These collaborations also help to build data and digital capacity and kickstart culture change within government.²³ In 2020, Code for Canada will partner with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). Code for Canada fellows will work with OMAFRA to support Ontario farmers by making data about pests and other crop threats more integrated, accessible and actionable.²⁴

A related initiative currently being explored by the federal government is the concept of “civic leave”. Initially piloted by the U.S. federal government, civic leave provides opportunities for private sector employees to share their expertise through short-term assignments in the public sector.²⁵ The short duration of the leave encourages more companies to partner with government, as the risk of losing talent is reduced. At the end of these assignments, corporate staff return to their employer with new skills and a better understanding of how to engage with the public sector, while the government accesses talent that would otherwise be unavailable to it.²⁶

Also in the U.S., members of Harvard University’s Civic Analytics Network (CAN) collaborate with local governments on projects that advance new uses of data visualization, predictive analytics, and data stewardship. These partnerships help governments develop solutions to important urban problems, while promoting the sharing of knowledge and experience.²⁷ CAN has worked with data offices of the New York City, Los Angeles, and Chicago governments to update and build new analytics tools, and to embed Data Fellows in these data offices through its fellowship program.²⁸

3.3 Leveraging data-sharing to design better services

When governments prioritize enhanced data management and a data-literate workforce, they can leverage these factors to share more data more effectively—and design better, more efficient services for citizens as a result. Enhanced data linking, analytics, data-driven red tape reduction, and data-powered procurement are key areas where better data sharing can drive change.

²³ Fellowship. Code for Canada. 2019.

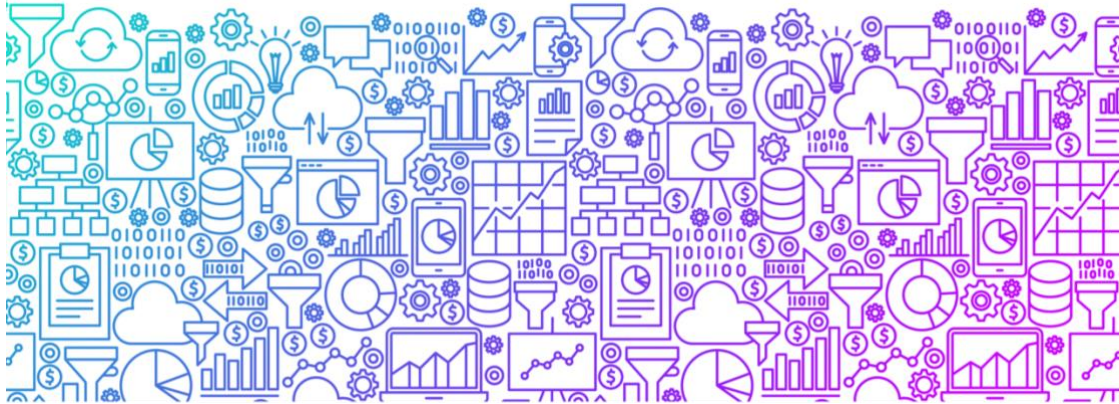
²⁴ [Introducing the first Code for Canada fellowship projects for 2020](#). Medium. 2019.

²⁵ [The White House wants to make civic leave for technologists normal and accessible. Will it take off?](#) FedScoop. 2018.

²⁶ [Civic Leave: Embedding private-sector talent in government tech](#). Canadian Digital Service. 2019.

²⁷ [Civic Analytics Network: Helping Cities Unlock the Power of Data](#). Ash Center for Democratic Governance and Innovation, Harvard Kennedy School. 2017.

²⁸ [Civic Analytics Network: Helping Cities Unlock the Power of Data](#). Ash Center for Democratic Governance and Innovation, Harvard Kennedy School. 2017.



Data-Linking Across Government

The linking of datasets between government teams can provide a deeper understanding of how programs work together. It can also provide insights into changes that may drive better service delivery for communities.²⁹

In Australia, national Primary Health Networks link data across a shared information platform, analyzing that data to give health care professionals insights from all parts of the health care sector. This enables more timely and well-informed health care decisions for patients, and provides a more complete picture of population outcomes, patient experiences, service utilization and system performance.³⁰

Not only does linking data help government provide better services, but it can make interacting with government easier and less burdensome for citizens. The European Union is adopting a “Once Only Principle,”³¹ by linking data collection across government to ensure that citizens and businesses only need to share certain information at a single point—saving time and reducing administrative burdens. Implementing this policy across the EU may result in an estimated annual net savings of €6.5 billion per year for participating governments.³²

Advanced data-driven technologies like Artificial Intelligence (AI) applications can catalyze faster and larger-scale data linking, by performing tasks that would usually require human intelligence. Yet while “connecting the dots” between datasets can help government provide better services, there are privacy and cybersecurity risks to be managed. As the Information and Privacy Commissioner of Ontario suggests, data linking raises concerns around transparency, profiling of individuals, and potential discrimination based on inaccurate data or

²⁹ [Linking social care, housing & health data: Data linkage literature review 2010](#). Scottish Government. 2010.

³⁰ [Actions Across Australia Case Study – Interoperability and Data Quality](#). Australian Digital Health Agency. (n.d.).

³¹ [EU-wide digital Only-Once Principle for citizens and businesses – policy options and their impacts](#). European Commission. February 2017.

³² [Final Report: Study on eGovernment and the Reduction of Administrative Burden \(SMART 2012/0061\)](#). Digital Single Market Report/Study. European Commission. April 2014.

algorithms.³³ These concerns have been raised by citizens in multiple jurisdictions, from North America to Europe. In a 2018 report commissioned by University College London, members of the British public expressed concerns about their government’s data-linking practices—and in particular, the role of consent, data de-identification and secure data transfer.³⁴ In order to mitigate these risks, government must ensure that any new data-linking initiatives have corresponding and appropriate safeguards. Our government is in the early stages of developing an AI strategy that focuses on opportunities for ethical data-driven AI decision-making, through an approach that ensures transparency and accountability.

Data Analytics for Better Service Design

When built on a foundation of shared data, robust data analytics frameworks can provide important insights to drive government policy-making, helping decision-makers to better assess what’s needed, and design programs more effectively.³⁵

At the regional and municipal level, governments are increasing their use of data analytics to improve service delivery: In the U.S., hundreds of municipalities are leveraging data analytics through crowdsourced, shared data platforms like SeeClickFix to better respond to citizens' requests about municipal issues like streetlight outages and potholes. By collecting and analyzing the data about these requests, service managers have more complete, timely and geographically relevant information. Governments have gained a more thorough understanding of what issues citizens care about most, and access to on-demand data has been credited with driving greater accountability and efficiency.³⁶

Data-driven Red Tape Reduction

Ensuring that government programs are delivering sustainable and measurable outcomes is the key to an effective public sector. Program evaluation data, if effectively collected and shared, can provide valuable insights into how programs work—and how they can be optimized to reduce red tape within government and ensure better outcomes for Ontarians: Governments and the public should be able to clearly understand whether public dollars are achieving results.

In the U.S., the State of Virginia’s Department of Social Services has used data analytics to review its application and claims system. The data revealed how social service application documents moved between offices—and where they encountered barriers—allowing the Department to reallocate resources and introduce special training where needed to reduce

³³ [Key Developments in Access and Privacy](#). Information and Privacy Commissioner of Ontario. 2019.

³⁴ [Public Attitudes to Data Linkage – A report prepared for University College London by NatCen Social Research](#). 2018.

³⁵ [Key Developments in Access and Privacy](#). Information and Privacy Commissioner of Ontario. 2019.

³⁶ [Smarter Request Management with the On-Demand and Automated Data Reporting Tools in SeeClickFix](#). SeeClickFix Case Studies – Enfield, CT. (n.d.).

bottlenecks. Using this data allowed Virginia to reduce its average application processing time by 25%.³⁷

Optimized Procurement Spending

“Public procurement” refers to the acquisition of goods and services by government. Analyzing public procurement data allows government to better manage spending,³⁸ by identifying duplication or overlap in services procured. With good procurement data and analysis, we can drive efficiencies and create cost savings. New procurement tenders can be designed with data-sharing in mind, setting the stage for better performance measurement and information sharing across government.

Ukraine has adopted an innovative e-procurement system to deliver government services in a stakeholder-focused, transparent, fair and low-cost way.³⁹ The main principle of the system is that “everyone can see everything” about submitted proposals, decisions, and data analysis. In two years of operation, the service has saved \$1.9 billion in budget funds, through reduction of red tape and unnecessary duplication.⁴⁰



4 How We Get There

Data has the potential to revolutionize government service delivery--but new approaches are needed to address the unique barriers that the public sector faces. Creating a better, smarter, data-driven government for the people of Ontario will require leadership, skill building, culture change, and a technology infrastructure to support it. If we can achieve these goals--and balance better harnessing of data with robust approaches to privacy and security—we can build trust, reduce red tape and deliver better services to Ontarians.

³⁷ [Mission analytics – Data-driven decision making in government](#). Mahesh Kelkar, Peter Viechnicki and Sean Conlin, Deloitte Insights. 2016.

³⁸ [Managing Transformation: A Modernization Action Plan for Ontario](#). Ernst & Young. September 2018.

³⁹ [eProcurement system ProZorro](#). Observatory of Public Sector Information. (n.d.).

⁴⁰ Ibid.

4.1 Better Data Management

To better manage and use data, we need to significantly change the way in which we collect it. The new *Simpler, Faster, Better Services Act* is an important first step in this direction: It mandates that all new Government of Ontario digital services be designed with data collection and management as a priority from the start. This change can help ensure that government data collection is standardized, open-source, and easier to share as a result—key ingredients for a “Government as a Platform” approach.

4.2 Building Data Skills

Building data literacy requires a whole-of-government commitment to embracing new technologies and ways of thinking. The Government of Ontario has taken initial steps here:

The Employment and Training Division of the Ontario Ministry of Training, Colleges and Universities has developed a data and analytics learning framework that teaches staff how to accurately interpret program data, apply appropriate data analysis techniques and use best practices for documenting and sharing insights. The overarching goal of the framework is to build capacity to effectively use data for evidence-based decision making.

The Ontario Digital Service, a division of the provincial government, delivers training on web analytics to staff across all ministries. Through regular drop-in sessions, personnel from any ministry can learn how to use tools like Google Analytics to build custom reports and dashboards, and gain clearer insights into program delivery status as a result. The training sessions also provide a forum for staff to share data skills and acquire new knowledge that they can then put into practice in their own ministry.



4.3 Better Data Sharing for Government Service Design and Delivery

To promote seamless data sharing across government, we need systems that talk to each other and use the same standards. The *Simpler, Faster, Better Services Act* starts us on that path, by

giving the Chief Digital and Data Officer the authority to set standards for the collection and sharing of government data. Here, priority will be given to developing standards for datasets that support better service design and delivery.

Promising examples of data-sharing can already be found across government: The Ontario Ministry of Finance has been working with partner ministries to pilot “risk profiles” for truck repair businesses. These risk profiles draw on multiple ministries’ data—such as a repair shop’s history of labour code compliance or tax payments—building a more robust and accurate record than profiles developed from a single Ministry’s data sources. The ministries can then partner to inspect businesses that are more likely to be non-compliant—reducing burden by combining multiple inspections into one. Once this proof-of-concept project is complete, the Ministry of Finance will work with partners to expand this approach to reduce red tape in other sectors.

We are also making progress in the area of APIs (“application programming interfaces” which allow software applications to communicate with each other). APIs can enable the government to share real-time data directly and more efficiently among ministries, or with third parties, to develop better services for people and businesses. The Ontario Ministry of Transportation’s traveler information website, Ontario 511 (Ontario.ca/511), for example, offers real-time and static transportation data APIs through a Developer Resource Area, so that developers can access the data to enhance their products. The Government of Ontario is currently developing an enterprise-level approach and standards for the development of APIs, to empower ministries to share data more easily in the future.



4.4 Public Engagement

We are committed to representing the voices of all Ontarians: We invite you to consider the discussion questions below and to share your input and feedback on these ideas. For details on how to participate, please visit engage.ontario.ca.

4.4.1 Improving data management

Keeping in mind that:

- A data-driven, digital first government requires modern and effective digital infrastructure
- Investment in user-friendly, modern information systems and technologies that support data sharing and data linking across large organizations can help deliver better outcomes for the people they serve

Discussion questions:

- As an Ontarian, what concerns you the most about how the government manages data?
- How can government make its open data most useful and helpful for Ontarians?
- How can the government best inform citizens about our new investments and developments to support data sharing and data linking?
- What barriers exist in the government that you're aware of that limit the sharing of data?

4.4.2 Building the data skills of Government of Ontario employees

Keeping in mind that:

- Data literacy is a critical job skill for the 21st century
- It is important that public servants across the Ontario government are data-literate
- Fiscal responsibility to the Ontario taxpayer must be prioritized

Discussion Questions:

- What are essential skills that public servants need for working with data in the 21st century?
- Looking ahead, how can the government effectively promote culture change to encourage broader adoption of data skills by government employees?
- What models should the government adopt to rapidly retrain and upskill our staff?

4.4.3 Leveraging data-sharing to design better services

Keeping in mind that:

- Better data-sharing across government helps ensure that government programs and services are grounded in evidence and insights
- Government programs and services can reduce red tape by consistently collecting, analyzing, and sharing program data

- Ensuring the protection and privacy of sensitive information is of paramount importance

Discussion Questions:

- Looking to the future, how can government best use data to improve services for the people of Ontario?
- How can government best ensure that feedback from citizens is collected and used to continually improve services?

Comments on this discussion paper will be collected until November 29, 2019. We will post a summary of what we heard on engage.ontario.ca.

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.



5 Appendix

5.1 What is Data?

What is Data?



For the purposes of Ontario’s Data Strategy, we have defined data broadly as information collected with varying degrees of structure in both digital and non-digital formats. The Strategy will focus on digital data and the impacts of its collection and use. Our broad definition of data is meant to be enduring and adaptable to its varying forms, substance and governance. The definition will be supplemented with the following key attributes:

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

Personal data

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

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

Business data

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

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

Derivative data

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

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

5.2 Related Ontario Initiatives

- **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 key digital and data issues, 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.
- **Digital First:** As mentioned in this discussion paper, the new Simpler, Faster, Better Services Act establishes the authority to create new standards to promote responsible data management, user-centered privacy and security practices, and the public release of data throughout Ontario’s public sector. The Act is just the first step to a broader, whole-of-government approach to digital transformation under Ontario’s Digital First strategy.
- **Privacy Protective Public 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.