Beginning the Conversation…

A Made-in-Canada Approach to Digital Government

ENGAGEMENT   ORGANIZING   TALENT   DESIGN   FOUNDATIONS   YOUR THOUGHTS

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The Case for Digital Government

Technological advances, coupled with the private sector's responsiveness to client demands have resulted in rising citizen expectations for digital service delivery. Financial institutions allow clients to quickly check balances, transfer funds or pay bills through mobile applications. Online retailers offer more selection, delivery on demand, and easy returns. Uber, Airbnb and other organizations active in the "sharing economy" are disrupting and overhauling established industries. In a digital era where citizens expect

responsive and seamless service, governments must rise to the challenge. While private sector firms have shifted to a delivery model where "there's an app for that," too often the response from government remains "there's a paper form for that".

The Organisation for Economic Cooperation and Development (OECD) defines digital government as:

> "…the rethinking of government policy, program and service delivery through digital enablers, as an integrated part of governments' modernization strategies, to create public value. [Digital government] relies on and enables an ecosystem that connects government, non-governmental organizations, businesses, citizens' associations and individuals to support the production of and access to data, services and content through interactions with the government."

Digital government extends beyond electronic service delivery and self-service. It touches every facet of how governments manage service delivery, and engage citizens and stakeholders – and leverages digital advances to allow citizens to access services anywhere, anytime. In the long run, digital government can help build stronger engagement and trust between citizens and government, and make public institutions more inclusive, effective, accountable and transparent.

When Government of Canada services began to be migrated online in the late 1990s and early 2000s, Canada was seen as a world leader. In the 2016 United Nations (UN) e-government index, Canada slipped three positions to a ranking of 14th overall – just behind other jurisdictions who have made significant efforts to reform digital service delivery (i.e. the United States who ranked 12th, and Estonia who ranked 13th). The United Kingdom and Australia ranked first and second overall, both having established distinct digital service organizations.

Despite the Government of Canada's early successes, there is room for improvement. The 2013 Fall Report of the Office of the Auditor General on Access to Online Services painted a picture of a disjointed and inefficient approach to digital service delivery in Canada, a point emphasized again in the

> [2016 Fall Report of the OAG](#) which pointed out how few online services were focused on citizen needs. While the 2014 [Policy on Service](#) and a number of departmental initiatives to improve service delivery have helped address some of these issues, efforts need to be accelerated at a whole-of-government level for Canada to be a world leader again.

Organizational size, scope of change and complexity of delivery have been identified as factors that can slow government efforts to modernize service delivery, adapt to changing priorities and expectations, and take full advantage of the opportunities afforded by improved digital technologies and tools. Limited capacity to recruit, retain and harness top digital talent in public sector organizations exacerbates this lack of responsiveness. To remain relevant and responsive in a digital world, governments must accelerate their drive towards modernization and better exploit the potential of digital in its service design and delivery. This digital government transformation is not just about procuring the latest technology or redesigning websites or online services – it is about harnessing new technologies, skills, and approaches to modernize government, and by doing so, improve the lives of citizens.

What Other Governments are Doing

Governments worldwide and at every level are facing similar issues around digital transformation. Many countries have developed targeted strategies, to better leverage digital opportunities that can meet client needs and expectations. Many jurisdictions such as the United States, the United Kingdom and Australia have also responded by creating dedicated digital service organizations that focus on:

- User-centric service innovation

- Rapid prototyping of digital solutions

- Procurement reform to deploy technological advances more effectively

- Better use of data to improve services and measure results

The mandates of these digital service organizations vary in terms of both

scope and maturity. A scan of the experiences of other jurisdictions reveals:

- The United Kingdom launched the Government Digital Service (GDS) in 2011 to make services simpler, faster, clearer and digital by default. It made waves by working in full view of the public, and by using open source software and enlisting award-winning design expertise. GDS has also played a central role in managing IT spending across the UK government, reforming procurement systems for IT, and establishing digital standards to assess the quality of online services.

- New Zealand established the Digital Transformation Team in 2013 to work with agencies to adopt a user-centric approach and to deliver simpler, seamless, end-to-end services around important life events.

- The United States established 18F in 2014, along with the US Digital Service, to help transform the federal government's IT efforts and improve public-facing digital services. While the US Digital Service sits within the Executive Office of the President, the more project-based 18F operates in a cost-recovery model as part of the Technology Transformation Service of the Government Services Agency. Both teams use open source software extensively and recruit talent from both established technology companies and start-ups in places like Silicon Valley. Both US digital offices have also done significant work on procurement processes to allow for open source approaches and participation of smaller companies.

- The Australian government established the Digital Transformation Agency (DTA, previously the Digital Transformation Office) in 2015 to work with agencies to invest in technology that underpins digital services, to lead the transformation of government services to deliver a better experience for Australians, and to provide guidance and oversight on government IT spending. The DTA jump-started its work by adopting design standards and tools directly from GDS in the UK.

- Other governments have accomplished some significant, and in some cases ground breaking, progress, such as Estonia's e-Estonia Digital Society initiative. Estonia's digital infrastructure – including a citizen e-ID system, digital signatures, and X-road, a secure data exchange layer used by banks, other businesses, and public services alike – has a level of security and reliability that is unmatched around the world.

In Canada, Ontario has created the [Ontario Digital Service](#) within the Cabinet Office to lead the strategic implementation of the government's digital agenda and drive government-wide transformation. The Government of Ontario appointed a Minister responsible for Digital Government, and established a Deputy Minister-level position of Chief Digital Officer. There have also been examples at the municipal level in Canada of focused digital strategies and organizational reform, such as in Vancouver with the creation of a Chief Digital Officer to drive digital transformation across the municipal government or the City of Calgary's launch of its digital strategy in 2014.

Within the Government of Canada, the activities being conducted by central digital service offices in other countries are dispersed throughout the system and generally at lower levels of maturity. While the Treasury Board of Canada Secretariat (TBS) plays an oversight role on large IT investments and sets overall direction on service standards and the use of IT, ultimately it has been up to individual departments to determine how they use and incorporate technology or adopt digital approaches to support service delivery – as departments remain directly accountable for service delivery to their clients. While there are pockets of innovation across the digital service delivery landscape in the federal government, this has led to a patchwork of disconnected approaches and a lack of strategic direction. This makes it difficult for departments to apply user-centric approaches to service delivery, or to introduce agile methodologies that prototype and incorporate user feedback into the service development process in a consistent way. With recent commitments by the government to improve service delivery for Canadians, the time was right to start exploring what a Made-in-Canada approach to digital government should look like.

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Starting a Conversation on a Made-in-Canada Approach

In September 2016, TBS began designing and undertaking a series of engagement sessions on digital government. The objective was to solicit input from stakeholders with a variety of backgrounds to inform a made-in-Canada approach to digital government. While not designed as a broad citizen consultation in the traditional sense, the exercise was intended to learn from the experience of other jurisdictions and gather input from stakeholders from coast to coast to coast.

In total, 20 cities and 10 provinces and territories were visited between September 2016 and February 2017. During this time, discussions took place with over 1,000 individuals, representing more than 200 organizations. These discussions largely took place with representatives from the following sectors:

- Provincial and municipal governments
- Technology sector vendors, start-ups, entrepreneurs, business incubators, and accelerators
- Civic Tech organizations, communities, and non-profit organizations
- Academic institutions, faculty and students

Map of Canada indicating cities visited

Feedback and input was also collected through a number of other channels, including email, bilateral meetings, tweets using the #GCdigital hashtag, and networking events. Discussions were also held with international peers from a number of countries who have undertaken digital transformation initiatives, including the United Kingdom, the United States, Estonia, New Zealand and Australia.

Four major themes were used to frame the discussions:

- Organizing to Deliver Digital

- Digital Talent

- Digital Service Design and Delivery

- Putting in Place the Right Foundations

In all cases, the results of these discussions were captured and categorized

by theme to inform the key takeaways featured in this report. While each session focused on various topics depending on the participants, the four themes listed above capture the essence of the discussions. The remainder of this report is structured along these main themes, and identifies issues that were highlighted by stakeholders in these discussions as key considerations as the Government of Canada works towards a made-in-Canada approach to digital government.

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Organizing to Deliver Digital
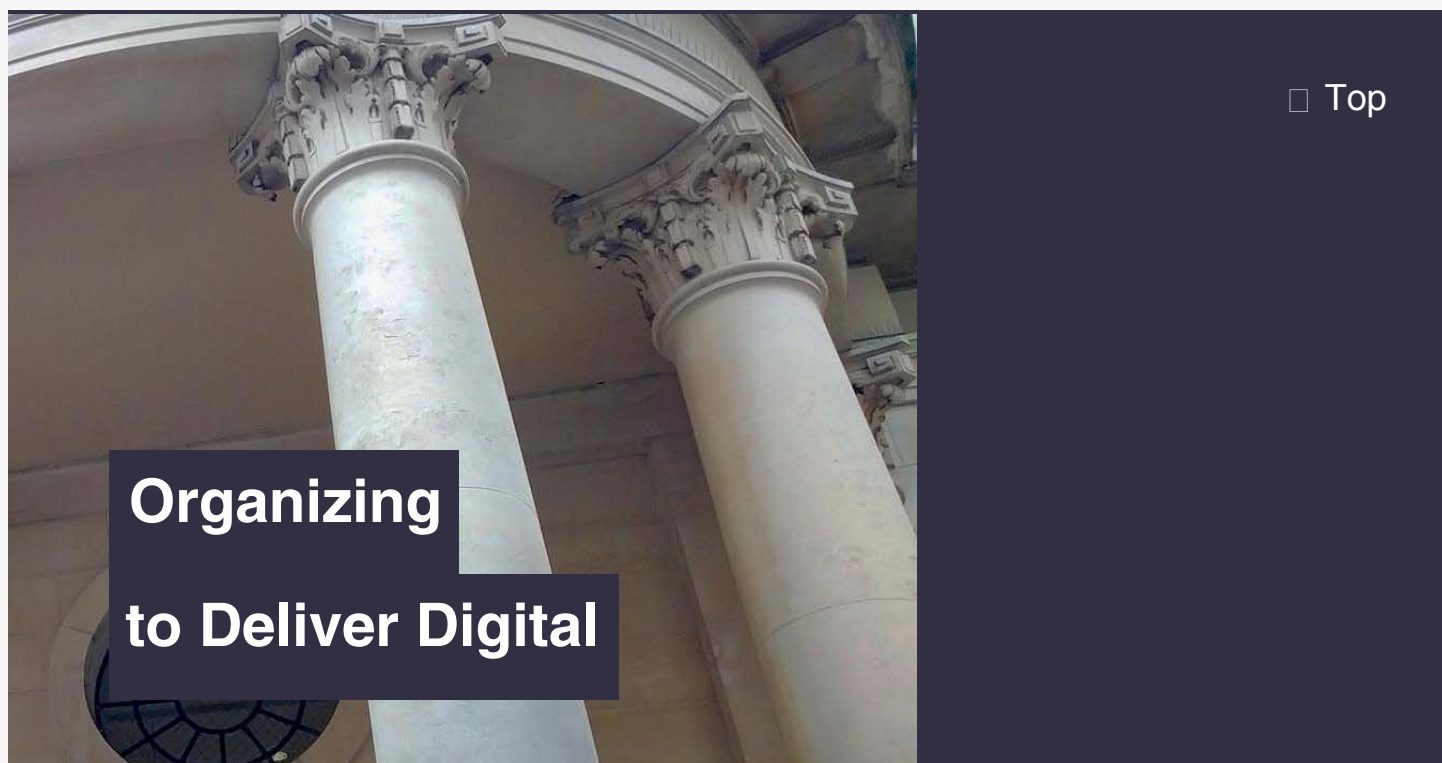
Looking at the experience of other public sector organisations, it has become clear that incorporating new digital tools, techniques, and approaches into traditional government organizations requires a fundamental reassessment of the traditional vertical accountability structures which characterize the public sector. As demonstrated by jurisdictions across the globe, there has been a move in recent years to organize digital transformation teams differently – to ensure that modernization efforts transcend departmental silos and have an impact at an enterprise level. In

these cases, existing departmental mandates needed to evolve, along with leadership roles within the public sector, to enable efforts to establish dedicated capacity for digital transformation. These processes can be disruptive, making it important to ensure the pace of change is manageable within organizations.

The following five items surfaced through discussions with stakeholders across Canada related to organizing to deliver digital:

Focused Leadership

International best practices have illustrated the need for strong, horizontal leadership to drive digital transformation:

- Digital transformation agencies in other jurisdictions tend to be organized from central agencies (e.g. Cabinet Office, Treasury).

- Horizontal leadership was identified as being important to ensure that digital transformation can move beyond departmental silos, and that services reflect the needs of citizens who do not distinguish between departments or levels of government.

- In many cases, a dedicated champion was mentioned as being critical to help address barriers, create partnership opportunities and garner support across the enterprise.

Evolving Leadership Roles

A number of stakeholders shared that in recent years their organizations have seen an evolving role of the Chief Information Officer (CIO) and the emergence of Chief Digital Officers (CDO):

- Traditionally, the CIO function has been the *de facto* leader for all IT-related functions within an organization. Over time, the responsibilities of CIOs have broadened to include any technology-related function. This mandate expansion is more and more untenable, as digital becomes a critical underpinning of every government program and service.

- A recent trend is the emergence of the CDO position, which is seen in

a number of jurisdictions across Canada: the City of Vancouver, the Province of Ontario, and several federal institutions including Innovation, Science and Economic Development Canada (ISED) and the National Film Board of Canada. While CIOs are focused on technology functions that relate to the back-office and cyber security, the CDO plays a larger role in business transformation and the use of technology to achieve citizen-facing service objectives. The reporting relationship between these roles varies from organization to organization.

Revolution versus Evolution

Striking the optimal balance between revolution and evolution was highlighted by a number of stakeholders as being an important consideration:

- The experience of some stakeholders was that the size and scope of the federal government makes it difficult to achieve large-scale transformation initiatives in short time frames, particularly in comparison to the fast-moving pace of the private technology sector.

- A number of participants raised that legitimate reasons exist as to why a revolutionary approach cannot be applied systematically. Some parts of government are meant to evolve slowly by design, and this is often reflected in their legislative and policy frameworks. In addition, mission-critical services that assure the safety and security of Canadians and their personal information must be maintained throughout any transformation process.

- Since some parts of government are able to move more nimbly than others, it was raised that incremental progress should be nourished and encouraged. The size and complexity of government as a whole should not prevent a willingness to undertake small steps towards improved digital service delivery where the right environment for success exists.

"Working in the Open"

A number of digital transformation teams have created blogs that share their

strategic thinking, design and technical approaches, and results. The UK Government Digital Service blog began this trend in 2011, followed by the 18F blog and USDS blog in the United States, the DTA blog in Australia, and the Ontario Digital blog here in Canada. These resources allow digital teams within government to connect and share with the public, the technology community, and counterparts around the world.

The UK's digital transformation agency, the Government Digital Service has championed 'working in the open' since its inception, as a way to accelerate change across government. It was noted that other jurisdictions have since followed their approach:

- Digital transformation agencies in other jurisdictions have been working in the open through the use of blogs, social media, and the open sharing of code through open source platforms. This allows other departments and jurisdictions to re-use and adapt code and ideas, quickly and at no cost.

- As most departments, governments, and jurisdictions face similar issues, it was noted that 'working in the open' allows best practices to be replicated and scaled, along with solutions to challenges and failures. Reusing digital strategies, standards, and open source code also reduces costs and helps different parts of government coordinate, accelerate change, and support each other.

- Working in the open was also highlighted as being symbolically important, as it demonstrates a different approach to government where employees are trusted and empowered, rather than anonymized in favour of an institutional voice. This symbolic change was felt to be critical not just for earning the credibility and social licence needed to drive change, but also to attract and retain new and dynamic types of talent.

- This approach also demonstrates transparency and fosters greater citizen collaboration with government, both among the technology sector and the broader public. Similar to open government initiatives, efforts to work in the open can help strengthen trust and engagement between citizens and governments.

Better Services through Data

Data plays a critical role in informing and improving service delivery, despite complex policy and public perception issues surrounding data use and privacy:

- At their core, all services run on data, and the ability to use and share data is one of the defining characteristics of service delivery in the digital age. Data sharing enables the integrated, highly-personalized user experiences across digital platforms that citizens are increasingly accustomed to in the private sector.

- It was raised by many stakeholders that in some cases, specific legislative and policy barriers prohibit the sharing of data between government organizations and other levels of government. As much of the legislative and policy framework related to the protection of personal information dates its origins back to a pre-internet era, it was noted that the possibilities for personalized service delivery that could exist in the digital age were not anticipated in the existing 'web of rules' around data usage.

- The impact of perceived public opinion was also raised as a hindrance to rapid change in this area. While there is a widespread sense that the public holds government to a higher standard for data protection and usage than the private sector, little work has been done to explore these assumptions in a quantitative way. Without transforming the conversation about government use of data, it will be difficult to envision a significant leap in the integration and personalization of government services. Many stakeholders suggested that a broader conversation with Canadians around privacy and the use of personal information would be valuable.

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Digital Talent

People are at the core of everything that government does, and technology is no exception. Within the Government of Canada, a significant number of people work on issues related to IT, including the more than 17,200 federal employees who are part of the Computer Systems (CS) classification. Stakeholders explained, however, that governments have struggled to keep pace with advances in digital technologies, both through maintaining and further developing the skills of its existing workforce, as well as recruiting and retaining the next generation of top talent. Amongst the more than 17,200 IT workers in the federal government, only 15% are millennials (compared to 24% of the overall public service workforce). The average age of CS employees has increased from 40 in the year 2000, to 46 in 2016. The Government has also struggled to maintain a diverse IT workforce: the percentage of women in the CS category has decreased from 30% in 2000, to 27% in 2016 – a trend that is even more significant among millennials – compared to the Public Service as a whole, which has a workforce of 55% women. These trends present a significant challenge, particularly in such a rapidly evolving field. Participants raised concerns that, without a concerted effort to renew its workforce, the Government of Canada will continue to fall behind in its ability to leverage new digital tools and technologies to meet rising citizen expectations.

Through engagement sessions held across the country, the following six items surfaced through discussions with stakeholders on digital talent:

Connecting with External Talent

The federal government needs to find better ways to connect external talent with internal opportunities:

- For many digital professionals outside of government, the overwhelming consensus was that they do not know how to navigate public service employment opportunities, or where to find competitive opportunities that meet their expectations within the public sector.

- While mechanisms like Interchange and newer flexible staffing regimes make it relatively easy and fast for hiring managers to bring outside professionals into government for short-term assignments or indeterminate employment, it was felt that these mechanisms alone are not sufficient to attract talent without a larger external branding and recruitment initiative.

- Even with the right hiring mechanisms in place, most public service managers would not know where to find new digital talent or vice-versa. There is a systematic need for a "talent matching service" role that can connect top-flight external digital talent – both new graduates and mid-career professionals – with opportunities within the Public Service of Canada.

Flexible "Tours of Duty"

> Code for America was founded in 2009, and connects technology and design professionals with opportunities to improve digital public services in the United States. Code for America runs a program where small teams of developers and designers work within municipal and state governments for year-long fellowships, building innovative digital services and sharing best practices from the technology and design community with government counterparts. Since Code for America was launched, similar programs have been created in Australia, Germany, and a number of other countries around the world.

Stakeholders expressed that while many people within the technology sector are mission-driven and are looking for ways to have a tangible impact, they are in many instances looking for flexibility rather than permanent career

options:

- A sense of mission was identified as being important for many individuals working in the tech sector. While generally not interested in long-term careers within large organizations like the federal government, these individuals are interested in solving problems – particularly ones through which they can see tangible improvements to public-facing services. The creation of programs like Code for America in the United States are very much driven by this concept. Much like military or volunteer service, many professionals are interested in serving their country, even for a short period of time.

- The often-expressed idea that government cannot offer competitive wages to compete for top tech talent would appear, at least in part, to be a myth based on feedback from participants. While a certain percentage of digital professionals are driven primarily by financial benefits that government would not be able to realistically meet, many more are looking for professional fulfillment and meaning that the public service can offer. At the entry level, it was also noted that within the flexibility available to hiring managers in the existing salary bands, these are relatively competitive with entry level positions in large tech companies.

- It was also identified from some participants that public sector work can provide an attractive intellectual challenge for those working in digital, data, and design fields, given the fact that the problems that governments tackle – at municipal, provincial, and federal levels alike – are in many cases large in scale and complex.

> The United States' Presidential Innovation Fellows (PIF) program is designed to attract innovators in the technology sector into 12-month terms within the federal government. The fellowship program is highly competitive, and attracts leading technology experts from across the United States. PIF fellows were instrumental in the creation of both 18F and USDS in 2014.

Engagement with Students and Universities

Participants expressed a concern that the federal government needs to

engage with design and digital talent in universities and colleges differently and earlier, as traditional recruitment approaches lag behind private sector competitors vying for the same talent pool:

- While government has a competitive advantage in talent recruitment with regard to the sense of mission that it can offer, there was a consistently-expressed theme that there is fierce competition for the next generation of technology workers.

- The private sector was identified as engaging with the next generation of digital talent earlier and earlier, even putting in place programs to reach students at high-school or younger levels to build brand awareness for future career choices. Too often, post-secondary recruitment by government departments was seen to only take place as students are approaching graduation, by which point many will have attractive offers on the table from leading private sector firms and start-ups.

- While the federal government does take in student placements, these programs have largely been drawing from universities and colleges in and around the National Capital Region, given the geographical proximity to most departmental headquarters. Moreover, it was identified that there is a lack of engagement with computer science, data science, and design thinking programs, skills that are increasingly important for government and which have not been targeted in the same way as programs in public policy and administration.

New Models for Co-Creation

NETFILE provides an application programming interface (API), a software system that allows other companies to build tax filing software that can send information directly to the Canada Revenue Agency. NETFILE has created an ecosystem where a variety of vendors are providing digital tax filing solutions, competing on the ease of their user interface and the features provided, and simplifying the tax filing experience for Canadians as a result.

Through the engagement sessions it was suggested that there is an emerging "third-way" between developing solutions in-house or buying

commercially, which leverages models for co-creation with civic tech communities using open source code:

- Traditionally, the federal government has either developed technological solutions in-house or procured services from the private sector. It was identified that relying too much on either approach has risks: building in-house can result in a failure to leverage state-of-the-art private sector solutions, while an over-reliance on outsourcing can lead to vendor lock-in and the atrophy of in-house technical capacity.

- The advent of open source platforms and distributed models of collaboration were pointed out as having opened up new possibilities for a hybrid model that enables co-creation between government, civic technology communities and/or start-ups and entrepreneurs.

- It was noted by stakeholders that these approaches are not mutually exclusive. Given the sheer size of the Government of Canada's technology requirements – with more than $5 billion in annual IT spending – a mix of building, buying, and co-creating will be required to deliver on the government's digital needs.

- It was also encouraged by some for consideration to be given to the "Government as a Platform" notion coined by Tim O'Reilly and explored further by GDS in the UK. The Government of Canada has taken some early steps in this direction, most notably through the Canada Revenue Agency's NETFILE program.

Talent Beyond the National Capital Region

Digital professionals expressed that if they are interested in working for the federal government, they shouldn't need to be physically located in Ottawa:

- It was pointed out that requiring digital talent to live in the National Capital Region reduces the government's opportunities to work with Canada's best and brightest. New models that were identified to explore include establishing "innovation outposts" that bring together different jurisdictions and external talent in a collaborative manner.

- It was noted that a number of organizations – including financial institutions and large retailers – are moving towards a model where their digital innovation teams are located outside of corporate

headquarters. This creates an opportunity to build a different culture, and also allows these organizations to tap into talent in different regions of Canada.

- Many individuals expressed that moving to the National Capital Region to work for government – even for a year or two – would be a significant disincentive. Digital talent in Canada is dispersed across the country, with significant technology hubs in many cities and regions. Participants encouraged the federal government to find ways to tap into talent wherever it is based, not just where the government's existing offices are located. Modern technologies enable employees to work virtually and the Government of Canada should have a national footprint to help sustain the economic viability of local communities.

Fostering Leading-Edge Talent within Government

The public service needs to better leverage the talent already in government, by enabling innovation from within and fostering next-generation communities of practice to improve digital skills:

- Given the large IT workforce within the Government of Canada, opportunities to better harness the existing talent base were identified as an important need. Programs like the GCconnex Jobs Marketplace, NRCan's Free Agent pilot, and micro-missions are a start, but there is a need to go further.

- Continuous learning was an important takeaway from these discussions. Particularly for the existing CS workforce within the federal government, finding ways to build digital capacity and promote professional development is increasingly important. Many of the areas of expertise now emphasized within the private sector – particularly user-centric design, cloud computing, and agile development skills – were identified as still being rare within government. It was offered by a number of participants that building up the skills and expertise of the CS workforce could take place through strategies that include mentorship, coaching, workshops, exchange or rotational programs with other jurisdictions, and job shadowing.

- Beyond the CS workforce, it was identified that there is a need to improve digital literacy across the public service. Given that technology

increasingly underpins nearly all policy issues, programs and services, public servants at all levels require basic knowledge of how technology works to provide sound advice and make informed decisions.

Digital Service Design and Delivery

Developing the next generation of services to Canadians in the digital world means, above all, taking a user-centric approach to design and delivery. While this would appear to be common sense on the surface, it was often pointed out that this approach runs contrary to how governments often tend to operate. Based on the experience of other jurisdictions, focused effort is required to institutionalize new ways of working, by changing the incentives, processes, and the culture of departments. Without these reforms, adopting modern online tools for service delivery amounts to only superficial enhancements to the existing system. More profound changes are required to be able to improve how government delivers services in the digital age, from the user-interface to departmental processes and the data and infrastructure that underpin government programs and operations.

Through engagement across the country, the following five key items surfaced through discussions with stakeholders.

User Needs First

Putting user needs at the centre of all service design was broadly identified as essential, and requiring an understanding of the implications for the culture, incentives, and structures currently in place in government:

- Participants underlined that service design traditionally conducted within government tends to put the needs of departments ahead of the needs of users. Reversing these processes will require a significant culture change.

- A number of jurisdictions around the world have developed expertise in institutionalizing user-centric design approaches, and the Government of Canada can learn from and build on these experiences. The key to many of these successes has been sustained leadership and a willingness to challenge assumptions and change existing processes.

Iterative Approaches

The UK's Government Digital Service (GDS) team put in place four standard Key Performance Indicators (KPIs) to assess all of the UK government's online services: cost per transaction, user satisfaction, completion rate, and percentage completed online. This allows GDS to evaluate improvements and changes to these services. In the spirit of working in the open, GDS makes these KPIs publicly available online on a real-time performance dashboard. The Australian Digital Transformation Agency adopted the same four KPIs, creating a consistent approach that could be used to assess digital services in many jurisdictions around the world.

The importance of iterative approaches that build on user feedback at all stages was identified as a key success factor:

- The waterfall development methodology – a non-iterative design process used in software development in which progress is seen as

flowing steadily downwards from concept, to implementation and maintenance – and the drive for "big release and announcement" approaches for many government IT and service delivery initiatives were identified as a major barrier to user-centric service design and delivery.

- Respondents noted how the private sector has taken much more of an "alpha-beta" testing approach – to start small and iterate in software and service design. By definition, this means releasing products that are not fully finished, and improving them as they are tested by end-users. This, in turn, requires government to take on a different type of risk tolerance.

- It was also noted that iterating successfully requires access to user feedback and data on a continuous basis. A number of stakeholders identified the benefits of not only having consistent baseline data across online service offerings, but also the beneficial competitive pressures that can be introduced by making that data available publicly, in real-time whenever possible. It was noted that, in order to accomplish these types of public digital service dashboards, common standards and methodologies for data across services are required, which can be built into software designs to automate data collection and publishing.

Building User-Centric Design Skills

A number of stakeholders identified a skills gap that needs to be addressed in the public sector at the intersection of user-centric design and agile prototyping and development:

- Respondents noted how user-centric design approaches – such as client journey mapping – can be non-digital in nature, even as they play a key role in transforming how governments deliver online services to citizens.

- Others underlined how user-centric design is generally not a skill that the federal government hires for, or formally incorporates into organizational structures. Embedding user-centric design thinking into the organization, and incentivizing and measuring its use, was identified as a potential priority to help drive digital transformation.

Digital Design Standards

Digital design standards have become a key tool as governments improve the quality of their online services. The UK Government Digital Service published a Digital Service Standard with 18 criteria, which emphasize a focus on user needs, the use of agile methods, open source, and open standards, and performance measurement and testing. Other countries have taken similar approaches: the US Digital Service created a Digital Services Playbook, aimed at increasing how often digital projects are successful, and Australia's Digital Transformation Agency established a Digital Service Standard inspired by the UK model.

Digital design standards can drive change across the whole-of-government, but need to be tailored to the Canadian context. This includes a focus on issues such as accessibility, low-bandwidth access, and official languages requirements:

- Feedback included how many jurisdictions around the world have put in place digital design standards to drive digital adoption and improve the quality of online services. These standards, particularly when mandatory, can play a key role in changing strategies and behaviour across large organizations.

- In the Canadian context, specific issues were identified as needing to be taken into account in the creation of such standards. Federal government requirements related to web accessibility are some of the most robust in in the world and need to be adhered to. Given the geographical reach of Canada, there are also significant regions of the country with low-bandwidth or limited internet access, which needs to be taken into account in the development of design standards. Official Languages requirements also apply to any digital services created by the federal government.

Scaling and Sharing Innovations

Central leadership was often mentioned as being important to help scale innovation by connecting ideas, best practices, and opportunities across the

whole-of-government and other jurisdictions:

- While there are pockets of innovation in the Government of Canada, many participants with experience working with the federal public service noted the lack of dedicated resources mandated to scale innovation across the system.

- The cross-Canada engagement sessions revealed that outside of the federal government, there are significant innovations happening at the provincial and municipal levels. At the same time, international governments offer a deep source of experiences and best practices that can be adapted to the Canadian context. There was a need identified to collaborate in real-time across jurisdictions to share ideas and solutions.

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Putting in Place the
Right Foundations
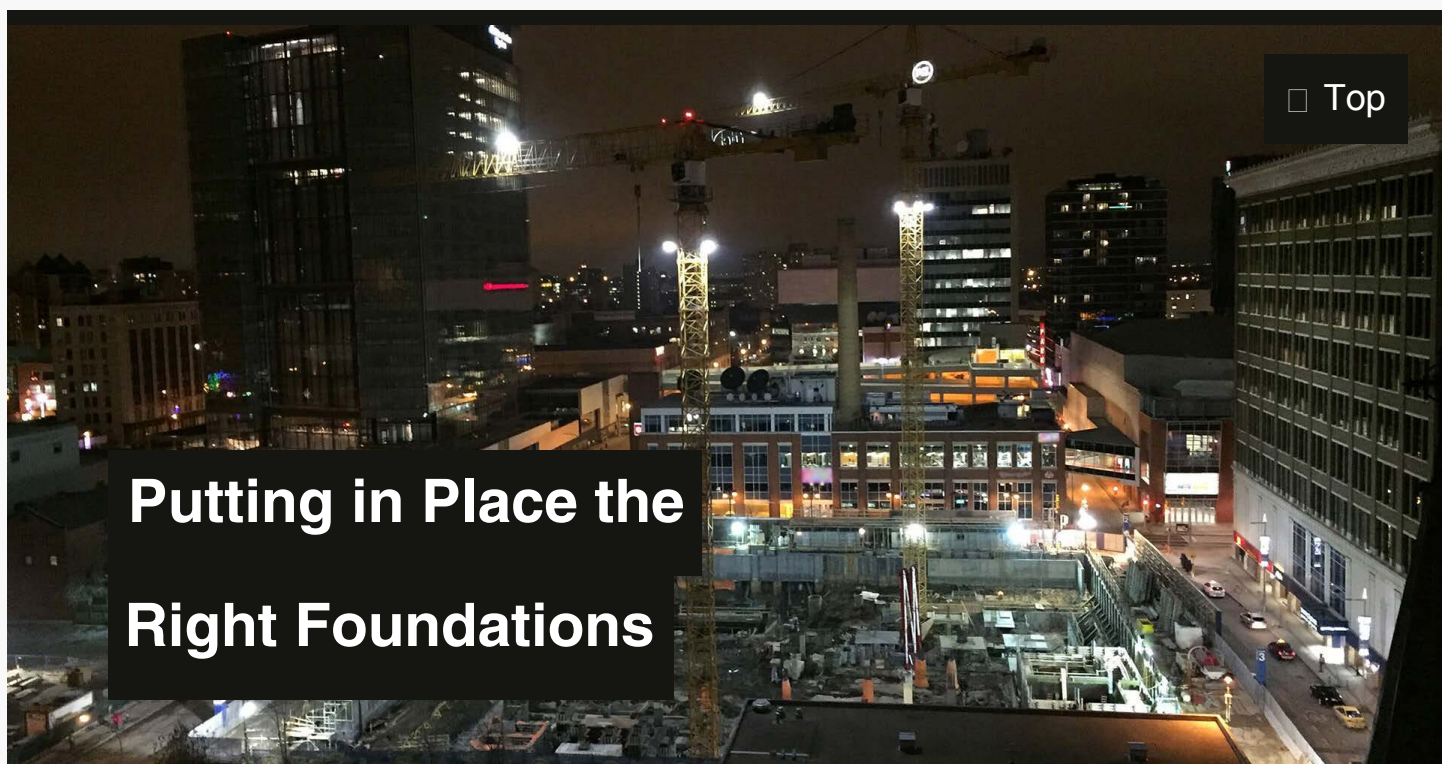
As the Government of Canada improves its use of digital technologies, it must ensure that the foundational technological elements needed to

succeed are in place. In 2016, TBS released a new [IT Strategic Plan](#) and [Cloud Adoption Strategy](#), which provide direction on some of these foundational elements. However, it was noted that not all parts of the Government of Canada IT ecosystem are evolving at the same pace, making it difficult for the Government as a whole to harness the full potential of digital transformation. Feedback from participants and the experience of other jurisdictions underlines that the right horizontal enablers need to be in place to build a truly digital government.

The following five key issues surfaced through discussions with stakeholders:

Challenging Procurement Practices

In 2016, the City of Guelph launched a new [Civic Accelerator program](#), that connects innovative start-up companies with municipal departments to solve city challenges. The program allows selected start-ups to collaborate with, learn from, and test their new technology solutions with city staff in real-world applications. City staff, in turn, can experiment with and assess creative potential solutions outside of the traditional procurement process. The two initially-selected start-ups [have now completed the year-long program](#), and are bringing their solutions into the market.

Existing procurement practices were identified as preventing small scale, iterative development with the private sector, and as making it difficult for start-ups and non-traditional players to work with government:

- Feedback received indicated that existing IT procurement practices present a number of roadblocks to smaller players. Generally, large-scale Requests for Proposals (RFPs) are issued to minimize how frequently a department needs to go to market. These large RFPs prevent smaller organizations from applying, given the scale, complexity, and associated resource requirements. Providing guidance on how to do iterative and smaller-scale procurement, including for open source software solutions, similar to [18F's micro-purchase framework](#) or [GDS' Digital Marketplace](#), was raised by many of the stakeholders.

- Many start-ups demonstrated interest in working with governments in non-traditional ways, to help solve problems while proving their business models. The federal government remains one of the largest potential markets in Canada for businesses, and many start-ups expressed that while they would welcome the opportunity to work with government, they don't believe they have an opportunity or mechanism to do so. Participants proposed solutions such as government releasing "problems" or "challenges" for which start-ups can pitch solutions – similar to the Civic Accelerator models that the cities of Guelph and Montreal have been piloting.

Montreal's start-up community launched InnoCité MTL in 2015, an incubator program that accelerates start-ups specializing in urban innovation and smart cities. InnoCité MTL partners start-ups with the City of Montreal and other institutions and companies in the city, helping them develop and improve their products with real-world data and guidance from experts. Several of InnoCité MTL's start-ups have now become internationally-competitive technology companies.

Cloud and Open Source Technologies

The use of cloud and open source technologies were identified as foundational elements for digital innovation:

- Many industry representatives expressed that while the publishing of TBS's Cloud Adoption Strategy in 2016 was an important first step, there remain significant barriers to government use of cloud computing. At the provincial and municipal level, uncertainty about data residency requirements for use of cloud computing was identified as having slowed the adoption of innovative cloud services.

- Participants underlined that open source platforms have become an increasingly important foundational element for digital transformation in public sector organizations across the world. Digital transformation teams in the US and the UK have emphasized the critical role of open source in their successes to date, with the UK's Government Digital Service appointing an Open Source Lead who spearheads efforts to collaborate and share with open source communities around the world.

- While the Government of Canada has taken initial steps towards the use of open source, there remains a lack of familiarity and comfort with the use of open source across the organization as a whole. Key open source projects include the Web Experience Toolkit and the internal GCconnex collaboration platform, which have since been adopted and built upon by other jurisdictions. At the 2016 Open Government Partnership Summit, the Government of Canada committed to share its experiences with open source collaboration platforms, and to convene a virtual conference on open source in government.

> The City of Saskatoon developed its new city website based on the Web Experience Toolkit, a set of visual templates and tools designed to create websites that are accessible, interoperable, mobile-friendly and multilingual. The Web Experience Toolkit was developed by the Government of Canada and is published on GitHub as an open-source project, allowing other organizations to easily re-use and adapt the toolkit for their own websites.

Digital Identity

Digital identity was identified as a key building block to enable better digital services across the Government of Canada and between jurisdictions:

- One of the foundational elements for digital service delivery is digital identity: unless a citizen can easily confirm who they are online, they cannot access services that require identity validation. While any department providing online services currently uses an authentication method of some kind, a lack of consistency across federal government departments was identified. Similarly, a lack of consistent approaches was noted as preventing the use of a shared digital identity that could enable citizens to access services across levels of government.

- There has been some progress on digital identity in recent years that was noted, including Cyber Authentication Renewal and standardized authentication services of SecureKey Concierge and GCKey. These services allow users to use their credential of choice from selected financial institutions or from the Government of Canada to access online government services. The Canada Revenue Agency and

Service Canada also recently launched a program that allows users to easily switch from one department's secure website to the other, without signing in again. Other progress includes the development of the Pan-Canadian Trust Framework, which standardizes processes for trusting digital identities across jurisdictions.

- Despite these foundational elements, many participants expressed a desire for the federal government to play a stronger leadership role, and to pilot digital identity solutions across jurisdictional boundaries.

Legacy Systems

One of the issues raised by many public sector stakeholders was the struggle that governments have with the need to maintain mission-critical legacy systems while at the same time experimenting and prototyping new solutions in an agile way:

- The Government of Canada – like many other jurisdictions – continues to maintain thousands of legacy IT systems that underpin mission-critical services. While some departments have programs in place to modernize these systems, legacy infrastructure must be maintained until services can be fully migrated to modern platforms.

- Participants underlined that while integrating state-of-the-art digital services with older platforms presents a variety of challenges, work can still be undertaken to build client-facing, user-centric services that are connected to legacy systems.

- Governments are not alone in facing these challenges. It was noted that financial institutions provide a useful point of comparison, as they face similar issues related to organizational size, culture, and dependency on legacy systems. Despite these challenges, many financial institutions have successfully modernized client-facing services dramatically over the past decade, despite maintaining a variety of legacy IT systems behind the scenes.

Digital Literacy

Ladies Learning Code is a Canadian non-profit organization dedicated to

promoting collaborative, technological learning among women and youth. The organization runs workshops that teach coding and technical skills, and plays a significant role in improving digital literacy in Canada. Ladies Learning Code runs workshops in more than 30 cities across Canada, and more than 25,000 people have participated since the program's launch in 2011. In 2016, the organization announced a new initiative – Canada Learning Code – that aims to teach digital skills to 10 million Canadians within the next decade.

Broader digital literacy was identified as being needed across government, at all levels and functions, to support smart decision-making in a world where increasingly all policy issues, programs and services have a digital component:

- Many stakeholders emphasized that digital literacy needs to become a core skill for every public servant. Public servants at all levels need to understand how technology works to provide sound advice and make good decisions. By extension, digital literacy is critical to understanding the viability, level of effort and cost associated with migrating to new solutions and effective oversight of IT-enabled projects in government.

- It was also raised that the issue of digital literacy should be considered as part of the intake of new public servants. The basics of technology management and coding were identified as something that should be incorporated into the curriculum of public policy schools, in the same way that statistics and economics are now emphasized as part of the basic toolkit of public servants who advise on policy and manage programs in governments.

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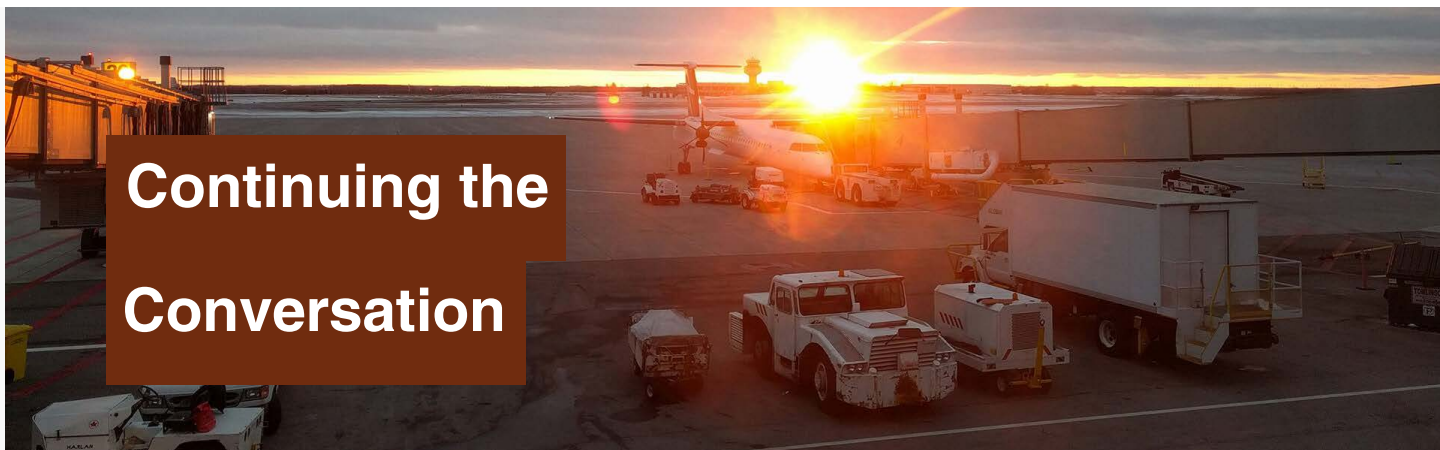
Continuing the Conversation

This report is only the beginning of an ongoing conversation on digital government. As work to develop a made-in-Canada approach to digital government continues to evolve, your feedback and ideas will play an essential role in keeping efforts focused on the needs of citizens. In many ways, this work aims to contribute to a broader sharing of experiences and learnings on digital initiatives, in the spirit of working in the open – from all levels of government and from private sector, academic, and community partners.

If you have ideas on digital transformation, digital service delivery, or any of the topics above, please keep in touch. Share your thoughts via the comment function at the bottom of this report, or by sending an email to: cds-snc@tbs-sct.gc.ca

You can also reach out to us on Twitter at @CDS_GC or by using the #GCdigital hashtag.

The thoughtfulness, time, and ideas that were contributed to the discussion by all stakeholders are greatly appreciated. The contributions of provincial and community partners who helped facilitate and host meetings across Canada were also very much appreciated. This process is the beginning of an ongoing dialogue and collaboration that will allow us to continually learn from each other's efforts to build better digital services for all Canadians across the country.

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