



## Developing a Commercial First Approach

A proposal to help the Canadian Federal Government to modernize, digitally transform and migrate to the Cloud

**ITAC**

INFORMATION TECHNOLOGY  
ASSOCIATION OF CANADA

**ACTI**

ASSOCIATION CANADIENNE  
DE LA TECHNOLOGIE DE L'INFORMATION



# Table of Contents

Executive Summary.....	3
Introduction.....	4
Outline of the Proposed Bill.....	6
Why we Need to Develop a Commercial First Approach?.....	7
Talent, Skills and the ICT Sector.....	9
Canada’s Aging Federal IT Workforce.....	10
Transformation Example.....	11
The Need for Appropriate IT Funding.....	12
The Benefits of Government Procurement.....	13
Why the Marketplace Approach is Necessary.....	13
How the Marketplace Approach Benefits the Government.....	14
How the Marketplace Approach Benefits the Digital Sector.....	15
SMEs, Economic Development and Job Creation.....	16
Conclusion.....	16
About the Information Technology Association of Canada (ITAC).....	17
References.....	17

## Executive Summary

We live and work in a world that is increasingly digital in nature. All industries – including Canada’s federal, regional and municipal governments – are directly impacted by a digitally-focused approach to doing business. Innovative competitors, disruptive technologies, shifting regulatory frameworks and cyber security threats all have a direct and serious impact.

Progress on federal transformation has been slow; it’s a massive undertaking, with fragmented custom-built systems spread out over numerous departments and agencies. Historically, the Government of Canada has viewed digital as an opportunity to create a new platform for government-built products and services for its businesses and citizens. This approach is in direct competition with private sector market participants.

The Information Technology Association of Canada (ITAC), on behalf of its members, offers the Government of Canada a solution: The Commercial First Act. The Commercial First Act is a concept that is based on legislation currently before Congress in the US, developed to address the “build in-house” tendency of the Government of Canada. It would enable the Government to adopt new technologies to increase efficiencies and competition; leverage data and analytics; increase cyber security measures; support technology-based small and medium sized enterprises (SMEs); support the socio-economic goals of the Government; and enables the use of federal procurements to support economic growth.

The approach would require the federal government to procure all products, goods, services and solutions from the private sector whenever possible, unless the agency determines and certifies that federal production, manufacture, or provision is necessary for the national security or defense of Canada. This will allow the government to focus not on the constructs of technology, but on the application of technology to support the delivery of digital services to Canadians.

It would also allow Industry and Government to operate as collaborators and business partners, instead of competitors. Further, public servants for the Government of Canada deserve access to cutting-edge technology to enable the provision of digital services and to better serve Canada and its citizens.

The following proposal outlines the benefits of such an approach and is being submitted on behalf of ITAC’s membership, which is made up of information, communications and technology (ICT) leaders from across the country, representative of all sectors, of all sizes.

## Introduction

Digital technologies are transforming the way we live and work, offering new ways for businesses to interact with customers and employees. In our increasingly digital, mobile and automated world, technology has become a core element of virtually every industry, in all sectors. Investments in ICT contributes to innovation by enabling and facilitating the broader exchange and implementation of ideas and data.

Businesses and governments adopt new technologies to increase efficiencies by improving processes and optimizing the use of existing resources, by reducing costs, enhancing customer and user experiences, and by exploring new methods. They do this by migrating to the Cloud, investing in the Internet of Things (IoT), through Artificial Intelligence (AI), data analytics, drones and sensors, as well as through mobile technologies and robotics, and soon, autonomous vehicles.

Today, any business, in any sector, leveraging just about any business model, is under threat from technology disruption (e.g. taxis, vacation rentals and hotels). To remain competitive, businesses will need to leverage new technologies to innovate, improve efficiencies, integrate with supply-chain partners and explore new markets.

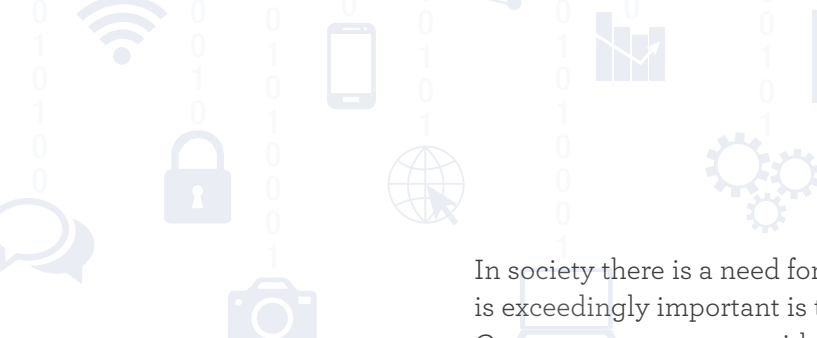
Canadian firms are competing in an increasingly global market, and are at risk from more innovative competitors, disruptive technology, the fluctuating interests of customers, economic factors, shifting regulatory frameworks, cyber security threats and so much more. Canada's Government needs to move quickly to create a business environment that encourages investments in technologies, which increases firms' innovative capacity so Canadian companies can compete on a global scale.

Historically, federal and provincial governments have struggled with modernization, digital transformation and migration to the Cloud. Governments sometimes view digital as a new platform for government-built products and services for citizens; often in direct competition with private sector market solutions.

As such, ITAC views the Government's efforts to launch competitive digital initiatives with great trepidation. Industry, from large multi-nationals to small business, believe Government should not act as a competitor. This problem arises when governments reach beyond the scope of their defined purposes and attempt to replicate products that are readily available in the marketplace.

Private enterprise, on the other hand, is more discerning about the projects for which their funds are being invested. Private enterprise will not invest in projects unless the research indicates a likelihood of a return of profit. Private enterprise hires individuals with the knowledge and expertise to research, design, and manage the operation, thus increasing the chances of success.

More federal agencies are duplicating services that are readily available in the private sector, creating unnecessary competition that prevents the government from focusing on other functions, like applying these technologies to drive digitally-enabled services. *(continued on next page)*



In society there is a need for both government and private enterprise. What is exceedingly important is to know the purpose of each, However, when Government competes with industry, everyone loses.

A government-built solution for government comes at the expense being wholly borne by the taxpayer, and there is no opportunity for downstream economic benefit and growth of SMEs. Government isn't going to export this product and grow an enterprise. In contrast, a solution developed for government by a private sector firm, may be taken and re-sold to other governments (federal, state, provincial and municipal), often at far less of a cost to the taxpayers in all jurisdictions, by growing a market and achieving economies of scale.

The private sector has seen a massive migration to Cloud, which incentivizes cost-cutting measures for private organizations. Significant public sector demand could be used to provide incentives for investment and innovation, especially in burgeoning new technology sub-sectors like 5th Generation (5G) and AI. With procurement from the private sector, the government has an excellent opportunity to partner with and elevate competition in the market.

### **ITAC makes the following assertions:**

1. Private sector businesses, which are free to respond to the private or public demands of the marketplace, constitute the strength of the Canadian economic system;
2. Competitive private enterprises are the most productive, efficient, and effective sources of products, goods, solutions and services;
3. Government competing with the private sector is detrimental to the Canadian economy;
4. Government competition with the private sector is at an unacceptably high level, both in terms of scope and in dollar volume;
5. Current legislation and policy fail to address the magnitude of Public Sector competing with the private sector and the resulting impact on gross domestic product (GDP);
6. Government is currently unable to adopt the latest cutting-edge technology; and
7. It is in the public interest that the Federal Government establish a consistent “buy versus build” policy that looks to the private sector to provide products, goods, services and solutions to improve the operation and management of Federal departments and agencies, thereby alleviating Government competition with the private sector.

## Outline of the Proposed Bill

The proposed Commercial First Act would require the federal government to procure all products, goods, services and solutions from the private sector whenever possible.

### This Bill would require:

- ▶ Each executive or military department or independent establishment to obtain all products, goods, solutions and services necessary for, or beneficial to, the accomplishment of its authorized functions by procurement from private sources, unless such goods or services are required by law to be produced or performed by such agency; or
- ▶ The agency determines and certifies that federal production, manufacture, or provision of a good or service is necessary for the national security or defence; or
- ▶ That a good or service is so critical to the agency's mission or so inherently governmental in nature that it is in the public interest to require production or performance by government employees, or that there is no private source capable of providing the good or service.

### This Bill would require such private sector provision of goods and services to be performed through:

- A.** The divestiture of federal involvement;
- B.** The award of a contract using competitive procedures; or
- C.** Conducting a public-private competitive sourcing analysis and determining that using the private sector is in the best interest of the Canada and provides the best value to the taxpayer.



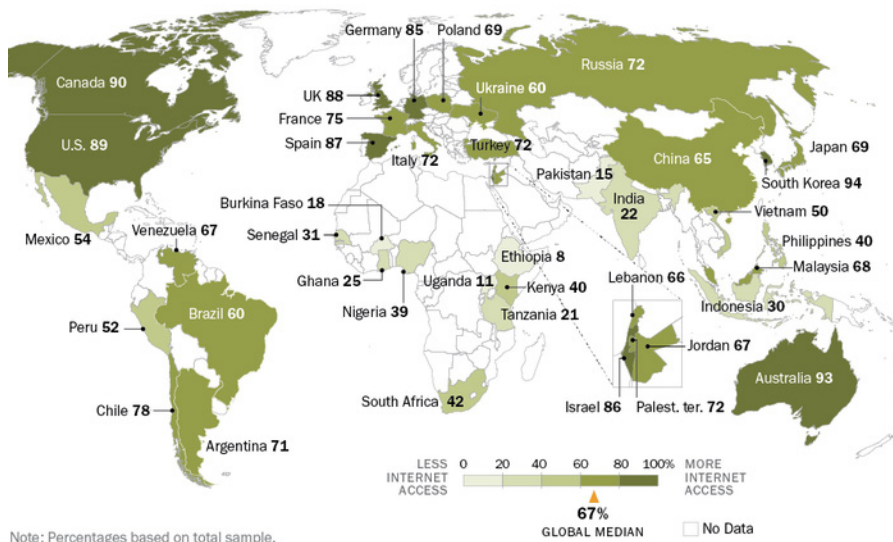
## Why Develop a Commercial First Approach?

### Prescribing to industry leaves little room to access innovation.

A Government that relies on legacy IT simply can't obtain the agility it needs to serve Canada's hyper-connected society. Embracing newer technology is also important to the citizens and businesses the Government serves. The global map shows that Canadians are the third most connected populous in the World, behind South Korea and Australia.

Combined with the disparateness of the population across a significant geographic expanse, Canadians are arguably the most connected population on earth.

Percent of adults who use the internet at least occasionally or report owning a smartphone



Note: Percentages based on total sample.

Source: Spring 2015 Global Attitudes survey, Q70 & Q72.

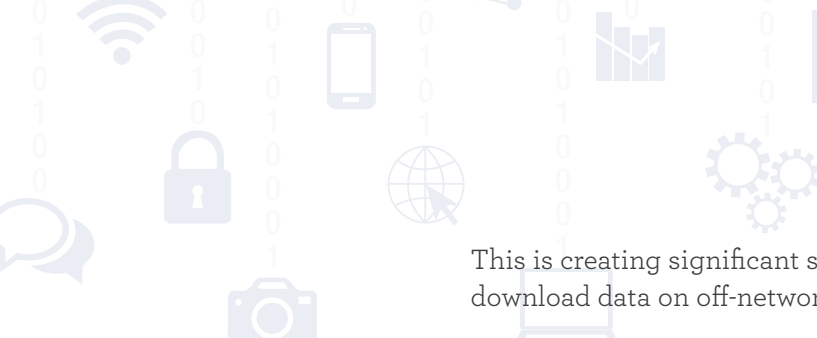
PEW RESEARCH CENTER

Older technology currently in use can prevent professionals from reaping the benefits of powerful, new enabling technologies like AI and data analytics. Stories about cutting-edge technology failures or security breaches seem to pop up nearly every day. With so much doom and gloom dominating the headlines, it's easy to see why federal Chief Investment Officers (CIOs) and Deputies may want to be as conservative as possible, sticking to the older technologies they know and understand to keep their departments running.

But under-investing in new IT can be a mistake. Standing still in today's dynamic environment can not only impede growth, but it can also put departments that rely on outdated and sometimes unstable technology in a precarious position.

Beyond the obvious shortcomings of federal legacy infrastructure, cyber security is another major threat of using older technology. Outdated software was not designed to be resilient against the types of attacks that are commonplace today. The older the technology, the longer hackers have had to examine it and exploit its weaknesses. If CIOs are using technology the manufacturer no longer supports, those vulnerabilities can be even worse.

Employing older technology can also damage the Government's bottom line. Beyond the IT capital aspect is the human capital impact. Employees may not be able to perform their jobs effectively, and citizens and business quickly become irritated by inferior service. If federal employees can't access the information they need quickly and easily, they often turn to their own personal devices and public systems. (continued on next page)



This is creating significant security risks for the Government, as employees download data on off-network platforms that can be lost, stolen or hacked.

Industry has noted that when federal departments procure technology, they tend to design the solution in-house and then prescribe the solution to the industry. By doing this, they stifle innovation and limit access to the latest products, solutions and services. IT related problems, and the outcomes sought, can often have alternative or new solutions as new applications are being launched daily. However, when the product has been pre-defined and designed, industry is not afforded the opportunity to provide an innovative solution; rather they become constructors of builds to Government specifications. This limits industry's capacity to offer new technologies as an innovative solution to the technology-related problems faced by departments and agencies.

### **Grants and Contributions Modernization Project (GCMP) example**

In 2016, the Treasury Board provided approximately \$29M to Heritage Canada and other partner departments to find a new solution to replace the ageing Grants and Contributions software GCIMS (Grants and Contributions Information Management System) and to modernize business processes.

GCIMS was originally implemented in 1997 and the service/ maintenance contract expired in 2017. An office was established to manage the project and to work with the other departments who use the software to make certain the new system would meet their needs and manage the project to completion.

One of the goals for the project was to create 25 per cent efficiencies in labour required to manage Grants and Contributions on the new platform. As such, it was assumed that a new software would deliver efficiencies that would permit the reduction in 25 per cent of the workforce. Some branches and sectors cut full time employees in anticipation of the efficiencies, however, over the years since receiving the funding, the Government has been unable to deliver a new software.

Another impediment to the successful development of the software is that most of the GCMP staff has turned over since the office was created in December 2016. It has now been determined that GCMP will NOT move forward with a new software solution because a custom solution would be too costly to source.

ITAC contends that had the private sector (the sector that specializes in software solutions) had been approached at the outset, to review what may have been possible and potentially seeking five or six proof of concepts from industry players, a different outcome may have been possible.





## Talent, Skills and the ICT Sector

Another issue facing federal digital transformation is the gradual exit of IT baby boomers from the federal labour force over the last 10 years; a trend that will accelerate in the coming years. Many career IT professionals, consultants and contractors also have outdated skills sets, built in a pre-Cloud, pre-AI and pre-data analytics era and this cohort that is often responsible for the development of IT systems for the Government. A dated understanding of what technology can offer results in the Government adopting and purchasing outdated/obsolete technologies.

Employing older technology can also take a toll on IT staff. As technology ages, staff may need to perform an increasing number of workarounds to ensure everything continues to perform correctly. The older the tech, the more effort is needed to ensure that. These workarounds have slowly risen in number and have become increasingly complex. The result is that an IT staffer (contract or employee) is spending an inordinate amount of time just “keeping the lights on” (KTLO). Even worse, this practice can mask the underlying issue and give a false sense that new investments in technology are not needed.

Finally, using older technology can result in data loss. If one application is outdated and another is updated, they simply can’t effectively communicate with one another. This is a real security concern and can lead to crashes and the potential for data to be lost.

# Canada's Aging Federal IT Workforce

ITAC estimates that some 80,000 indeterminate, term, contractor and consultants are completing IT-related functions for the federal government. This IT workforce is mired mostly in operations that are keeping some 15,000+ mostly bespoke applications, a plethora of workloads and solutions functioning on some 386+ aged data centres.

ITAC estimates that at \$600/day (which is a conservative estimate that includes salary, employee benefits for indeterminate and term employees and real property, i.e. office space) over 261 business days (80,000 x \$600/day x 261 days annually), our federal government is spending approximately \$12.5 billion per annum. That is mostly going towards keeping aged and outdated IT hardware and software functioning.

**It is also worth noting that in the private sector, the ratio of IT support worker to employee is:**

1. In banking and insurance sectors about 1 to 15;
2. In SMEs with 500 or fewer employees it is typically approximately 1 to 18;
3. In larger corporations with 10,000 or more employees the ratio is about 1 to 40; and
4. For some of the more efficient global corporations' ratios of 1 to 64 have been achieved.

According to the recent 2016 census, there are 262,696 Full Time Employees across the federal portfolio.

Year	Departments	Agencies	Total
2017	199,691	63,005	262,696

If we gauge against an estimate of 80,000 IT support workers, the Government ratio is 1 to 3.

Successful digital transformation could offer some significant cost savings related to KTLO and would improve the ratio of IT support staff as much of the operational support required can be transitioned to more value-added architectural, development and cyber security work.

This conundrum further propagates the issue as there is little budget remaining for new development. Finally, using older technology can result in data loss. If one application is outdated and another is updated, they simply can't effectively communicate with one another. This can lead to potentially lost data, time consuming activities (e.g. work-arounds). *(continued on next page)*



Of course, deciding to invest in new technology isn't up to the CIO. Therefore, it's up to CIOs and their teams to convince the rest of the federal executives that the cost of investing in new technology is often less than the risk of not investing in new technology.

Progress on federal transformation has been slow, and it's nobody's fault, it's a massive undertaking, with custom built pieces spread out over 43 departments and agencies. Shared Services Canada (SSC) and CIOs are currently attempting this transformation on limited resources.

### Transformation Example

Shared Services Canada (SSC) is embarking on the development of on-premises Cloud solution that will enable them to have increased security, sovereignty and residency of sensitive federal data. Within industry, private clouds permit some flexibility and redundancy and allows for some private on-premises capacity and can support a hybrid of private and public clouds, with some information being stored on public Cloud and some on private. Currently, when a CIO from a line department wishes to develop a new solution and have this hosted on the Cloud (e.g. a Cloud-based application), SSC isn't quite ready yet for that to happen. Moreover, SSC's network is dated and too slow to handle the massive amounts of data required to migrate massive workloads from the current dated data centres to the Cloud.

However, delays in availability of Cloud resources and slow networks have caused CIOs to find workarounds to deliver on the mandate for their Deputy Minister (DM) or Minister, and the Government ends up with rogue IT projects that aren't being approved by SSC or the central agencies. Essentially, CIOs pressured to deliver solutions to business units throughout the department on limited budgets, are trying to deliver on the mandate of the Minister, the DM and by extension the department, have begun to seek access to the transformation offered by the cloud but have limited access to this resource.



## The Need for Appropriate IT Funding

Spending too little on IT in the digital age is ineffective, even borderline irresponsible. A company that relies on legacy IT systems simply can't obtain the agility it needs in today's cyber business environment. For government, it has led to creating a digital service delivery gap with its citizens and businesses.

Older technology can prevent professionals from reaping the benefits of powerful new functions like data analysis or collaboration that can help Government run more smoothly and develop new digital services. Relying on older technology and infrastructure can also hold an organization back in several strategic areas. Right now, industry, including the banking and insurance industries, are investigating and investing in new technology that allows them to respond to customers more quickly, and to build and strengthen relationships with new and potential clients. This newer technology is also important to those clients as well.

Of course, security is the primary danger of using older technology. Outdated software was not designed to be resilient against the types of attacks that are commonplace today. The older the technology, the longer hackers have had to examine it and explore its weaknesses. If CIOs are using technology the manufacturer no longer supports, those vulnerabilities can be even worse.

Employing older technology can also damage the Government's fiscal bottom line. Employees may not be able to perform their jobs effectively, and citizens are becoming irritated by inferior service. If federal employees can't access the information they need quickly and easily, they may turn to their own personal devices. An employee's personal device might offer higher functionality but using it could create significant security risks for a company as employees download proprietary company data on portable, personal devices that can be lost, stolen or hacked.

## The Benefits of Government Procurement

Procurement impacts competition through different effects. More bidders on RFPs make for more intense competition, resulting in lower prices and better quality. As outlined above, improved procurement processes directly influence the efficiency of the outcome. Thus, procurement activity should achieve three main objectives:

- i. Reducing barriers to entry and increasing bidder's participation;
- ii. Reducing the flows of competitively sensitive private sector information; and
- iii. Reducing the frequency and costs associated with procurement opportunities.

Issues such as incumbency advantages can be avoided by awarding multiple contracts, and by allowing for multiple bidders for each of those procurements, even if bidders do not offer the lowest price. This will allow more firms to compete effectively while helping multiple firms grow. This would drive a *marketplace approach*, one like the app stores offered on mobile devices, providing access to multiple applications and solutions at low costs, as users would only pay for use, not for license.

## Why the Marketplace Approach is Necessary

A gap in knowledge continues to exist between the DMs and the IT related issues in completing the requirements of the duties they set out to their CIO's. To address this issue, a Digital Academy has been established to help better educate senior government officials about what and how IT can help achieve the goals of government.

ITAC suggests a simpler approach would be to provide an open marketplace for CIOs (i.e. like the Apple App store or Google Play Store) to access the thousands of pre-existing Cloud-based solutions that exist already in the marketplaces of the Cloud-based vending community. They can also have access to all the solution-based platforms and to the software layer, assuming they can agree to standard commercial terms. This proprietary federal marketplace would have some governance by SCC, with some guardrails, but mostly open, with a shift towards access to apps and other cloud-based solutions.

The Government can screen every solution to ensure that it is safe and determine that all screened solutions are open for all to access. In this type of environment, CIO's could be able to download solutions and pay a fee, as opposed to build in-house and support in-house approaches. If a product is bought from the private sector, they will analyze, patch, and update for the whole community to achieve economies of scale.



## How the Marketplace Approach Benefits the Government

Technology allows for the real-time collection of data, advanced analytics, and expert analysis to predict, identify, and react to citizen needs. The right tools will help leverage data and analytics to inform policy, law and regulation and the development of new applications to engage and deliver services to Canadians.

The Government has long called for the promotion of SMEs. The downstream effects of a marketplace approach will be significant and could bolster SMEs across Canada. In the UK, the G-Cloud provides an environment for SMEs to develop applications, when G-Cloud first launched, it did so with a little over 700 companies, 80 per cent of which were SMEs. Today, the G-Cloud includes 3,505 suppliers, across three categories: Cloud hosting, Cloud software and Cloud support. Just under 300 firms are accredited across all three, and there are 658 new suppliers for this iteration. The Government Digital Service says that 90 per cent of G-Cloud suppliers are SMEs.

Moving to more modern digital platform also increases security. It offers the best in terms of data protection, with the added benefit of backup and restoring data if the worse case scenario occurs. Digital technology allows for better collaboration with colleagues, so users are less likely to use unapproved online tools (shadow IT) that could put sensitive data at risk. Digital technology helps the government cut costs and allows for substantial data centre consolidation. It will allow departments and agencies to cut many of their physical datacenters and all the related support costs. It further improves productivity, as workers in any field can access the data or service whenever and wherever they need it.





## How the Marketplace Approach Benefits the Digital Sector

Despite salaries in excess of \$90,000, and a technology sector unemployment rate of less than three per cent, the demand for skilled technology workers continues to outstrip the supply. The 80,000 indeterminate, term, contractor, and consultants who are completing for IT related functions for the federal government, could be re-tooled and upskilled in Cloud, 5G, Cyber security or AI-based application development. These employees could be trained to become developers of new solutions, rather than operators of aged applications and solutions.

Some of these individuals could also help fill in the gap of the Canadian ICT industry, and others could fill new development roles within the departments and agencies in the federal portfolio. Making government data open and available for public consumption can help fuel entrepreneurship, accelerate scientific discovery, and create efficiencies across industries.

Vendors spend significant time, money and efforts in their responses to federal procurements. These opportunity costs must be accounted for and are often included in the costs related to the fulfilment of the contract. Long processes and short response windows discourage innovative companies from taking part in federal procurements.

To solve this issue, ITAC believes a limit of 10 pages should be placed on all stages of procurements (RFI, ITQ, RRR and RFP). The government could identify problems, expected outcomes, socio-economic goals and develop a brief list of mandatory and rated criteria, allowing the market to openly respond and compete for federal IT business. This approach will stem the flow of overly-prescribed solutions which are limiting access to innovative solutions available in the market.

## SMEs, Economic Development and Job Creation

SMEs often choose to forgo engaging the governments directly due to the excessively high transactional costs. Many technology procurements require 2-to-5-year cycles to pass through all the stages; few SMEs can afford to pass through these cycles and hence this limits their engagement. If the government hopes to continue the success of domestic SMEs, then we should be encouraging them to actively play a part in the bidding process. Shorter, less prescribed procurements, where governments are highlighting the problems they are trying to resolve, the outcomes they are seeking, and by challenging the private sector to solution for these smaller organizations, will create a level playing field between large and small vendors and will encourage collaboration between these parties.

Digital technology infrastructure and platform providers have SMEs solutioning on their platforms for clients all over the world and facilitate access to those markets. The solutions developed for governments at all levels could enable access to foreign markets for SMEs, whereby the solutions they develop in Canada can be brought to the world on pre-existing global platforms, like how Apple and Android have provided a global market for mobile application development. Taking solutions developed in the private sector for Government can give our companies, both multinationals and SMEs access to opportunities provided by a \$3.5 trillion global public-sector solutions market.

SMEs want contracts and real opportunities, but they need a platform where they can gain access to these federal contracts as easily as they do in the private sector. An open marketplace where CIOs can access innovative applications built by SMEs could help achieve that, like G-Cloud in the UK.

### Conclusion

This transition for large governments is not simple. Digital transformation is difficult for even the most nimble and agile organizations. The impediments in Government, be it outdated IT networks and applications, rigid process and policy restrictions or a federal culture that resists change, needs to be addressed.

There have been significant steps taken towards digital transformation across the federal portfolio, be it the establishment of a Digital Academy, a Cloud-first policy or the development of new challenge-based procurements; nonetheless, the capacity of the Government to deliver digital solutions to Canadians is challenged by outdated IT.

ITAC believes that a Commercial First approach, which includes a flexible and available digital marketplace would support the Government's digital transformation and allow departments and CIOs to access the latest technologies.

This new system requires funding to deliver new higher speed networks, investments in new applications supported by the cloud and training on new systems for federal IT workers.

# ITAC

INFORMATION TECHNOLOGY  
ASSOCIATION OF CANADA

# ACTI

ASSOCIATION CANADIENNE  
DE LA TECHNOLOGIE DE L'INFORMATION

## About the Information Technology Association of Canada (ITAC)

For more than 60 years, ITAC has served as the leading voice for Canada's information, communications and technology (ICT) industry, championing the development of a robust, competitive and sustainable digital economy in Canada.

As a prominent advocate for the expansion of Canada's innovation capacity, ITAC provides a vital connection between business, academia and government. ITAC also offers its members advocacy, networking and professional development services that help them to thrive nationally and compete globally.

Our role as a trusted and authoritative voice has expanded significantly over the years, as technology plays a more significant and important role in all sectors of our economy. That's why ITAC prides itself on its efforts around shaping public policy that supports the growth of talent and access to ICT professionals with diverse experience and backgrounds, better reflecting Canada's population.

This Commercial First Proposal was prepared on behalf of ITAC's membership.

### References

<https://www.bankofcanada.ca/2018/09/canada-seizing-opportunities-from-new-digital-technology/>

[https://webarchive.nationalarchives.gov.uk/20140402182823/http://www.oft.gov.uk/shared\\_oftr/reports/comp\\_policy/oft742a.pdf](https://webarchive.nationalarchives.gov.uk/20140402182823/http://www.oft.gov.uk/shared_oftr/reports/comp_policy/oft742a.pdf)

<http://www.oecd.org/daf/competition/sectors/48315205.pdf>

<https://www.ciodive.com/news/risk-and-repeat-how-outdated-technology-can-devastate-a-business/402876/>

<https://www.mckinsey.com/industries/public-sector/our-insights/the-opportunity-in-government-productivity>