# Institute for Citizen-Centred Service
## Pursuing excellence in public-sector delivery

## Joint Councils Executive Report on Trends this Month

**This month's trends include articles on Artificial Intelligence, Identity Management and Service Delivery.**

## Key Insights - Artificial Intelligence

**CANADA** - Employment and Social Development Canada is experimenting with ways to simplify navigating one of the largest service organizations in the country. The department's responsibilities include handling public pensions, employment insurance, family benefits and disability supports. It has a mix of offices, call centres and correspondence centres and is hoping to have people directly interact with bots instead of humans, including in online chats for people seeking information about government programs. Read more here.

**USA** - The Trump administration launched the AI.gov website, a collection of federal policies and strategies that are helping accelerate the development of artificial intelligence. The site also links to the R&D-relevant sections of the administration's proposed fiscal year 2020 budget, a list of key committees and agencies involved with AI and sector-specific examples of AI-based applications, such as fraud detection in the financial services market and improved weather forecasting. Read more here.

**USA** - The AI Agenda, a one-day event hosted by The Economist in Washington, DC, brought together public and private sector leaders for discussion on the future of AI and how it will impact public policy and education. At this event, experts called on technology companies to fight bias and for a greater emphasis on lifelong learning for all adults.

**UK** - In this article, Open Access Government examines how Hybrid IT and cloud computing will be AI's biggest asset as the government embraces digital transformation.

## Key Insights – Identity Management
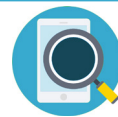
**USA** - Behavioral Analytics (BA) are the extra step beyond derived credentials, including biometrics, necessary to secure access to public sector systems for a mobile workforce. Because BA is based on verification using an individual's traits, habits and even location, it's harder for an inside or outside threat to breach any mobile environment. The author recommends implementing security down to the level of the user's device, along with multi-factor authentication to protect against breaches through stolen devices. Read more about why behavioural analytics is critical for multi-factor authentication in the USA's public services here.

**USA** - Read about how the USA's National Institute of Standards and Technology's digital identification standards, along with document verification and biometric technologies, can eliminate most friction from government agency interactions, including the need for an in-person visit. Experian's 2019 Global Identity and Fraud Report shows that security is the most important feature of the online environment, followed by customer experience.

## Key Insights – Service Delivery

**CANADA** - Municipal Affairs and Housing Minister Steve Clark announced that 405 rural and small municipalities in Ontario will receive one-time investments to improve service delivery and reduce the costs of those services. "This funding will help small and rural municipalities in my riding and across Ontario improve how they deliver services and reduce the ongoing costs of providing those services."

**AUSTRALIA** - The Digital Transformation Agency has invited government agencies to participate in a private beta of its new Notify.gov.au platform. The whole-of-government notifications platform allows messages to be pushed out to users of government services. Read more here.

*Other Noteworthy Articles:*

The Next Long Wave of Reform — Where Will the Ideas Come From? The Mandarin

**Other Noteworthy Articles this Month:**

Three Things You Should Know About the 2019 Top 25. Government Technology

Getting it Right This Time: Why the Strategy is Not About Delivery for NHSX. Computer Weekly

NIST Moving Forward in Post Quantum Cryptography Standardization. Executive Gov

An Innovative Step Toward Truly Empowered Citizen Governance. The Mandarin

The Essentials for Canada's Digital Economy. The Globe and Mail

Australia to Develop National Blockchain Strategy. IT News

Helping Government Bring IT Back In-House. Open Access Government

**Research Repository**

Access the ICCS Research Repository here.

## This Month's Feature: Artificial Intelligence in the Public Sector – Opportunities for Policy Development

This month's feature explores artificial intelligence (AI) and its implications for the public sector. This broad topic is challenging to cover as there are a myriad of ways that public servants need to think about it. The implications of AI are far-reaching, in terms of how it could be used in public sector operations, how it is transforming the way the private sector operates and how people live in Canada. As AI continues to grow, it will also have potential consequences as far reaching as the distribution of wealth and the role of government.

While some of the implications of AI are known, many are still part of an ongoing conversation. The focus for this feature will be on policy for use of AI in the public sector, starting with a primer on artificial intelligence and machine learning.

## A Primer on Artificial Intelligence (AI) and Machine Learning (ML)

According to Hila Mehr, from Harvard's Ash Center for Democratic Governance and Innovation, artificial intelligence is, "the programming of computers to do tasks that would normally require human intelligence. This includes the ability to understand and monitor visual/spatial and auditory information, reason and make predictions, interact with humans and machines, and continuously learn and improve."

Machine learning is a fundamental part of artificial intelligence.

Dr. Yoshua Bengio, from the Université de Montréal, is one of the world's foremost machine learning experts. He elaborates further, explaining that "Machine learning research is part of research on artificial intelligence, seeking to provide knowledge to computers through data, observations and interacting with the world. That acquired knowledge allows computers to correctly generalize to new settings."

To understand more about how machine learning works, here is a great set of popular questions and answers related to machine learning.

Beyond artificial intelligence focused on specific tasks or objectives, there is artificial general intelligence (AGI). According to the Artificial General Intelligence Society, "AGI is an emerging field aiming at the building of 'thinking machines'; that is, general-purpose systems with intelligence comparable to that of the human mind (and perhaps ultimately well beyond human general intelligence)."

## Where is AI Going?

The AI Index, now hosted at Stanford's Human-Centered AI Institute (HAI), called artificial intelligence the 'new electricity' in its 2017 report. It then goes on to say that, "Since AI changes the foundation of many technology systems – everything ranging from web search, to autonomous driving, to customer service chatbots – it also gives many countries an opportunity to 'leapfrog' the incumbents in some application areas. Countries with more sensible AI policies will advance more rapidly, and those with poorly thought out policies will risk being left behind."

The report identifies the opportunity for forward thinking jurisdictions to focus on a range of policy opportunities. These opportunities cover a full spectrum: from the need to ensure that diversity and ethics is present in the use of AI products; opportunities for further research contributions; the economics of all aspects related to the implementation and use of AI; examining the role of governments, with respect to the implications of widespread use of AI, for both individuals and businesses (economic growth, impact to employment, etc.), efficiencies and service improvement opportunities within government.

AI and machine learning are playing a large role in accelerating change. Although there is a debate around the exact timing, most experts would agree that we are entering into a new era where AI will transform life as we know it when AGI is achieved. In Stanford's [New Report on Artificial Intelligence: How Fast is AI Progressing?](#), a key concern that all the experts bring up is the ethics of AI. Max Tegmark, a professor at the Massachusetts Institute of Technology and the scientific director of the Foundational Questions Institute, provides insight into his views as to why this is important in a Ted Talk [here](#).

Max Tegmark has gone further, founding an organization known as The Future of Life Institute, together with leadership from other great minds including Jaan Tallinn, Elon Musk, and the late Stephen Hawking. Its mission is: "To catalyze and support research and initiatives for safeguarding life and developing optimistic visions of the future, including positive ways for humanity to steer its own course considering new technologies and challenges." But before the world reaches the point of achieving artificial general intelligence, there are already opportunities for Government to look at policy-making related to artificial intelligence and machine learning.

## How Policy Can be Used to Support Better Use of AI

Last year, Business Today published an article on [Why Countries Need Proper Regulations for Automated Decision Making](#). The article details that while countries are expected to increasingly use artificial intelligence to support decision-making, the dangers associated with using artificial intelligence tools without proper safeguards is being flagged as a potential issue. The 2017 Artificial Intelligence Index supports this view, saying, "One of the areas where AI is still weak relates to diversity and inclusion. Diversity and inclusion are paramount. We are missing the humanity due to bias, discriminatory cultural patterns, and learned behavior of systemic exclusion."

The Government of Canada has been proactive and has developed foundational public policy to guide the use and adoption of automated decision making. On April 1, 2019, the [Directive on Automated Decision-Making](#) came into force, outlining the responsibilities and obligations of federal departments when using AI to make critical decisions about people. This Directive along with the [Algorithmic Impact Assessment](#) framework, currently under development, will help institutions better understand and mitigate the risks associated with AI, by providing the appropriate governance, oversight and reporting/auditing requirements.

Some other countries that have started looking into automated decision-making include, but are not limited to:

UK: [Right Not to be Subject to Automated Decision-Making](#)

Australia: [Automated Assistance in Administrative Decision-Making](#)

These countries are developing policies - an incredibly important step - as the world implements

more and more powerful AI solutions. As decision-makers within governments continue to explore this expansive topic in further breadth and depth, conversations regarding both the benefits and the need to strengthen many aspects of policy will become more and more important.

## Additional Information About Artificial Intelligence, Policy and the Role of Government

An Overview of National AI Strategies - OECD

The Role of US Policy in Artificial Intelligence Technology - USA, Homeland Security Digital Library

Artificial Intelligence – Emerging Opportunities, Challenges, and Implications for Policy and Research - USA Report

Developing AI for Government: What Role and Limits for the Private Sector? - University of Cambridge

Artificial Intelligence is on the March. But is Government Ready?, Forbes

## We Would Love to Hear From You!

Send your questions to Info@iccs-isac.org.