

Transforming Public Service with AI

A GovTech Ecosystem Approach

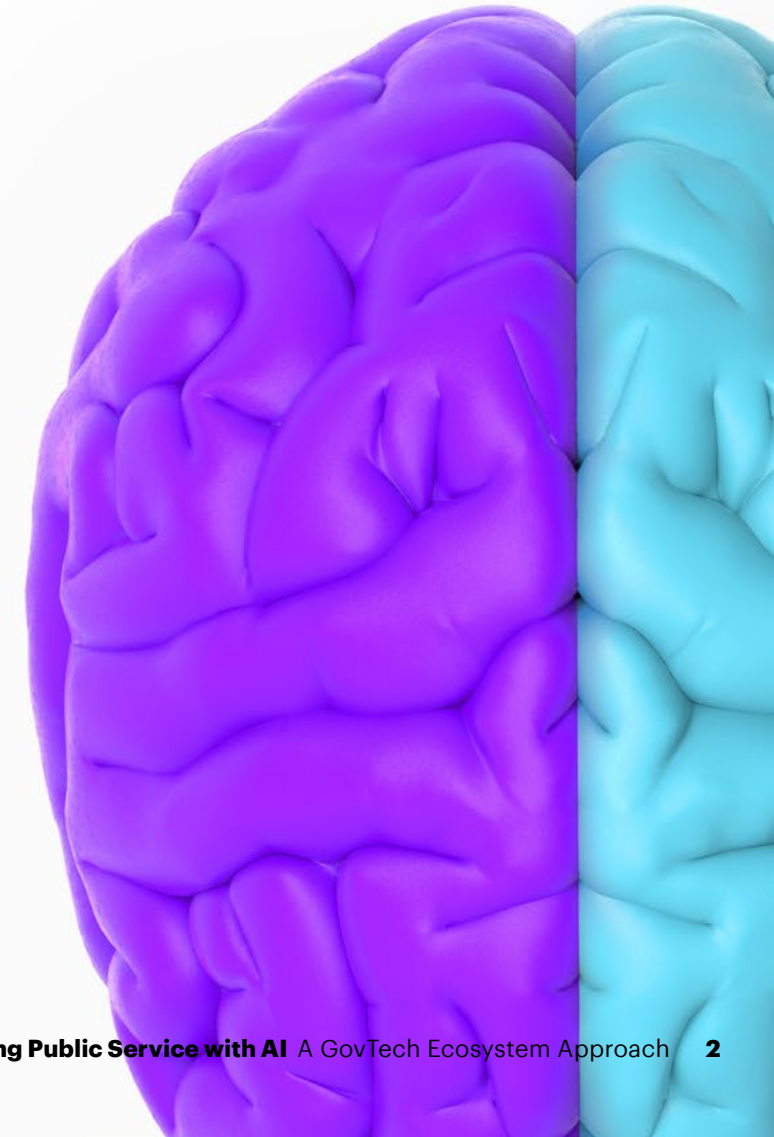
The potential to leverage Artificial Intelligence (AI) for positive change is great

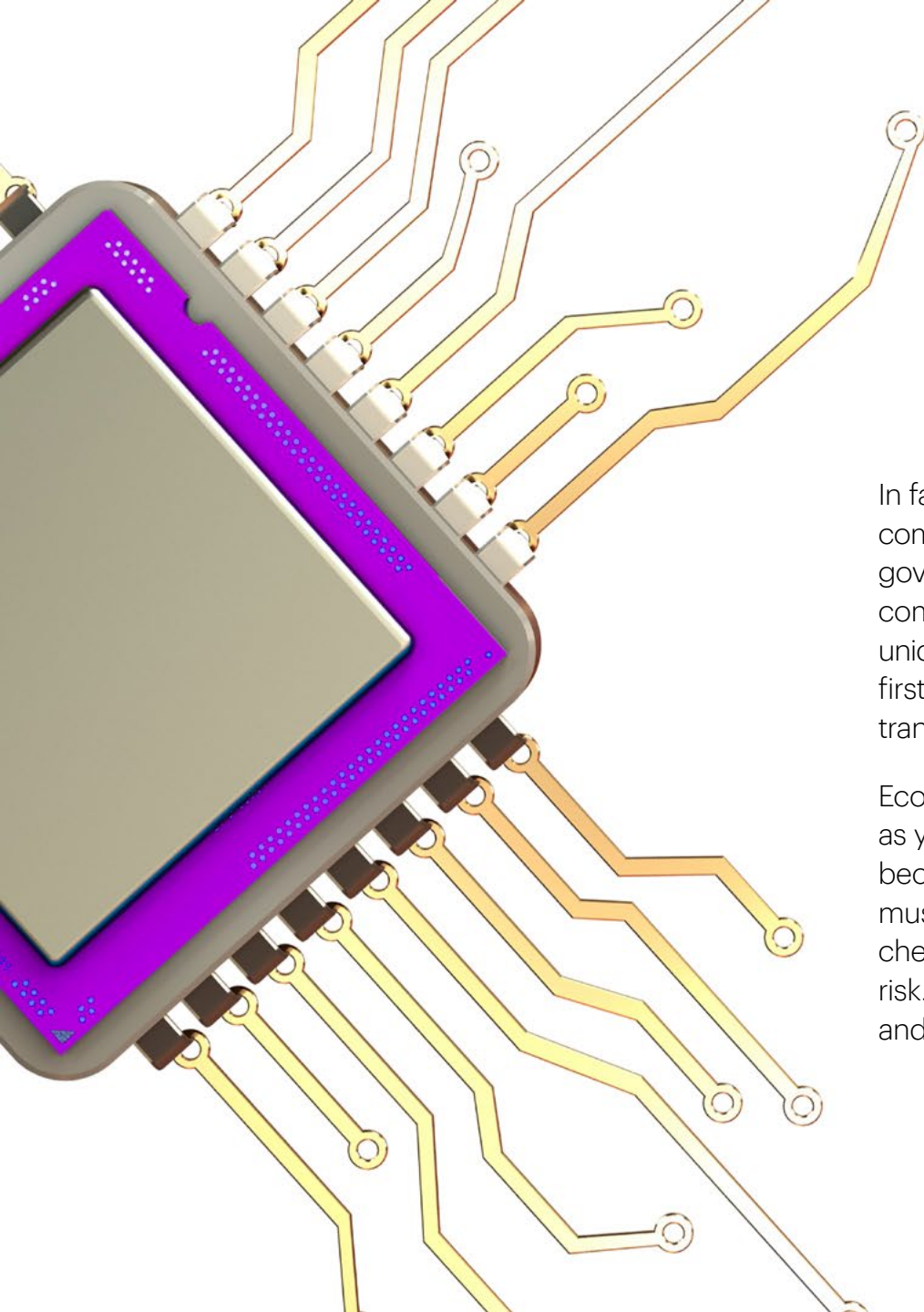
However, government leaders cannot manage it alone. A task of this magnitude requires startups, medium and large companies, and civil society—an entire GovTech ecosystem—working together to develop innovative solutions and improve outcomes.

AI is advancing the way the public sector serves its constituents. In Singapore, AI-powered technologies are scanning the dark web to identify patterns that can help law enforcement officials to understand the illegal drug market, and are giving rise to “digital twin” models (virtual replicas of physical spaces) that simulate emergency situations.² In other cities and regions around the world, similar stories are emerging: AI activities range from alerting refuse collectors when bins are full and predicting the need for infrastructure repair, to improving energy efficiency through smart thermometers and

powering advanced military security systems with drones. And AI is still in its early days.

Governments ready to seize this growing opportunity are ramping up their spending on AI. According to Accenture’s 2019 survey of 300 public sector leaders in Europe, 86 percent said they intend to increase or significantly increase AI spending in the coming year.³ They’re also significantly optimistic, with 90 percent expecting a “medium to high” return on their investments.⁴ Market researcher IDC predicts that central/federal governments will see the second largest AI spend of any industry by 2023 (33.6 percent).⁵ By 2035, AI could create as much as US\$939 billion in economic value in the sector across 16 major developed economies.⁶ (See box for the worldwide economic potential of AI.) But fully maximising AI’s potential in the public sector will require a concerted effort.





In fact, it will take the engagement of a comprehensive GovTech ecosystem, including government, startups, medium and large companies, and civil society as each has a unique contribution to make. And all are needed first to build and then to serve the market for transformative AI innovation.

Ecosystem members will “build” because, as yet, the market is nascent. They will “serve”, because as the market matures, the ecosystem must mature along with it, ensuring that effective checks and balances are in place to minimise risk. (See the box overleaf “Ethical, Safety and Security Considerations”.)

A global gamechanger

Globally, AI is poised to double annual economic growth rates and increase labour productivity up to 40 per cent by 2035. And at the national level, with economic health and competitive advantage in mind, some 26 countries have unveiled AI strategies. China has a multi-billion-dollar plan to become the AI world leader by 2030.

Sources:

[Artificial Intelligence, Genuine Impact](#)
(Accenture, 2018)

[“Beijing Wants A.I. to Be Made in China by 2030”](#)
(The New York Times, July 2017)

Ethical, safety, and security considerations

Today's technologies, and AI in particular, raise numerous ethical considerations. Examples of a new technology's deployment causing unintended, negative results outside the GovTech sector offer cautionary lessons. Witness Amazon's struggles to remove gender bias from its AI hiring tool, or 23andMe's efforts to reduce racial bias in its ancestry algorithm.

There are ethical considerations when it comes to data ownership and storage. As data is collected, questions emerge around who really "owns" it and what are the permissions? The EU's General Data Protection Regulation, implemented in 2018, is beginning to deal with these questions and may provide lessons for other countries that are formulating policies.

Sources:

["Amazon scraps secret AI recruiting tool that showed bias against women"](#)
(Reuters, October 2018)

["Not white? Ancestry services don't work so well. Companies are looking for fixes."](#) (Marketplace, May 2018)

As governments adopt AI technologies for defence and policing, safety and security considerations will grow as well. The use of AI-powered drones and facial-recognition technologies, for example, has given rise to far-ranging discussions about transparency and collateral damage.

GovTech stakeholders can ensure that AI is used as a force for good by thinking through how they will respond if their activities do inadvertently trigger an unintended outcome—and by adopting safeguards up front to minimise such risks to the best extent possible.





The Ecosystem Approach

Consider the current GovTech market. Startup activity—an important driver of innovation—is still relatively low. Moreover, GovTech startups globally capture a small proportion of global funding.⁷ And its pace of growth is slower than other comparable markets, such as Fintech.⁸ GovTech also currently lacks segment diversity, with almost half of GovTech AI startups focusing on innovation to improve public safety and security.⁹

Those signals may spell opportunity, if each participant in the GovTech ecosystem—government, startups, medium and large companies and civil society—ramps up its efforts to support the whole.

01 Governments

Public sector organisations can use AI to foster innovation in services—and in turn drive further demand for AI—by making the GovTech market more attractive to startups. For example, they can streamline the contracting process by simplifying procurement rules and reducing the lead time on awards.¹⁰ They can also encourage open dialogue and improvements around procurement and innovation. The University Procurement Hub in Australia has dramatically improved procurement practices in the public sector (see box).

The sector also has much to gain by ramping up government-to-government collaborative efforts. They can, for example, continue to build on the momentum generated by the International Panel on AI, launched by Canada and France in May 2019, and focused on fostering collaboration and coordination on responsible AI.¹¹ They can also actively engage with and evolve the European Commission’s Ethics Guidelines (developed in December 2018¹²) to ensure they’re relevant and appropriately consequential. And finally, they can heed the OECD Principles on AI that call for government action on AI from the perspective of protecting human rights and democratic values.¹³

Smarter procurement in Australia

The University Procurement Hub (UPH) provides a platform that revolutionises how universities across Australia can source goods and services to meet their particular requirements—delivering direct savings to support the continuing excellence that’s the trademark of Australian higher education. The UPH is an innovative way of delivering core procurement services by aggregating purchasing power across participating universities. Critically, more aggregated spend drives higher savings for all participating universities, which benefit from improved process efficiency, spend visibility, effective spend analysis from richer data and marketing intelligence to drive continuous improvement.

Source: [AUSFOG, University Procurement Hub](#)

01 Governments

An “AI revolution” is likely to create jobs, in aggregate.¹⁴ But as many of these jobs will call for humans and machines to work together in new ways to glean the best of both (what we call “Human + Machine”), governments will need to keep pace with training and reskilling and strengthen paths to employment as well as employee safety nets in other ways (see box).¹⁵

AI decision-makers should ask: How will we provide employees whose jobs will change with opportunities to preserve their standard of living?¹⁶ Answers may range widely, possibly including wage insurance (for those who may be compelled to move to lower-paying jobs) or income tax credits (as incentives to work in certain areas).¹⁷

Finally, a developing GovTech ecosystem will look to government to develop a formal AI governance structure to protect public welfare and mitigate unintended consequences. Ideally, this structure would reflect input from all stakeholders and ultimately include both state-led mechanisms to monitor and enforce compliance, and private sector and civil society-led mechanisms, such as ethics committees,

to encourage self-regulation. This type of structure would bring clarity to complex issues, such as the degree to which AI should be “explainable”.¹⁸ Freedom of information laws, which aim to make governments more accountable to citizens, could serve as a general model.

Reskilling Singapore

The Singapore government has implemented innovative reskilling schemes, including its SkillsFuture system. This initiative grants citizens \$1,000 each to spend on training. It also offers a platform to connect people with training opportunities for skills in new areas. The goal: arm citizens for the future workforce.

Source: [SkillsFuture](#)

02 Startups

More than most, startup firms have a high tolerance for risk and a thirst for new ideas. These qualities will serve AI startups well, as they're going to need to move aggressively to capture the anticipated government AI spend. They will need to carve out a niche for themselves as indispensable sources of innovation and new ideas for all ecosystem partners, similar to the role Fintech startups play in the market (and where Europe, specifically, saw significant gains in the first half of 2019).¹⁹ Startups may already have a foothold in the public safety/security space in GovTech, but they will have to broaden their scope.

Where should startups set their GovTech sights? Globally, the US has been home to the majority of GovTech deals over the past five years at 67 per cent. However, Europe has the opportunity to keep pace with China (Europe represented approximately 5 per cent of global GovTech deals, and China 7 per cent, over the same timeframe). Within Europe, the UK, France and Sweden appear to be promising markets (commanding 42 per cent, 11 per cent and 8 per cent of European GovTech deals, respectively).²⁰

In terms of use cases, Accenture's survey of European public sector leaders indicates that there's potential to capture latent demand for AI-related GovTech products that can enhance customer experience, reduce fraud and improve risk management.²¹ (See the box on page 16, Responsible AI in Action: Spotlight on Europe).

As those closest to the technology, AI startups can also act as "canaries in the coal mine" and offer early warnings to the rest of the AI ecosystem on issues such as potential bias. This kind of collaboration—working with governments and civil society in sandbox environments or living labs to identify and address problems in their infancy before they morph into full-blown crises—is smart business. Startup communities that are popping up globally—such as STATION F in Paris (see box overleaf)—offer physical spaces ripe for this kind of collaboration.

Finally, less shackled by entrenched cultures, startups can adapt their activities quickly (for example, by reconfiguring layers in deep learning models as needed) to make AI-propelled technologies more inclusive and able to avoid bias.



02 Startups

Next step, innovation: STATION F

The world's largest startup incubator, launched in June 2017 and located in Paris, France, is home to more than 1,000 startups, 30+ startup programmes, 35 public administrations, 40 venture capital funds, four mentorship offices and 600 events per year, all focused on business innovation.

STATION F offers a wealth of resources and knowledge to entrepreneurs through its vast resources and networks. One example is ShareIT, a Tech4Good initiative which fosters leading social innovators and top tech talents in building solutions that aim to address pressing social and environmental issues.

With an emerging focus on responsibility, STATION F can reach a large swath of startups and significantly advance discussion and efforts on responsible innovation.

Source: [STATION F website](#)



Credit: Patrick Tourneboeuf – STATION F

03

Medium and large companies

Bringing generous R&D budgets and powerful organisations to innovate for GovTech is just one way that medium and large companies can stimulate the market. Medium and large companies also have a significant role to play as the leaders and integrators of responsible innovation.

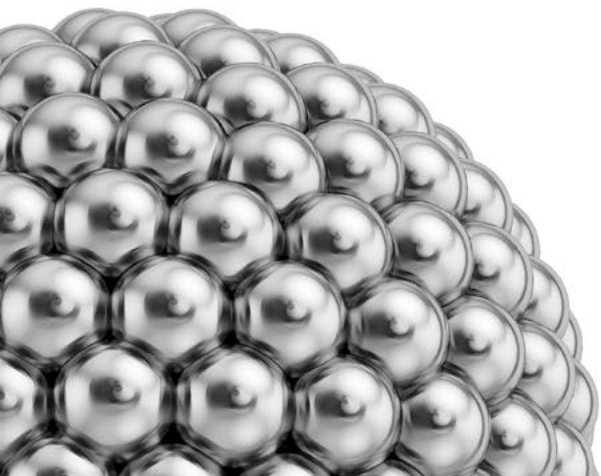
They can, for example, complement government efforts to set standards by leading the way on self-regulation. Microsoft and OpenAI, an AI research group, did this in February 2019 when they unveiled software that could quickly teach itself to write sentences. They decided to not release it, citing concerns that it would be misapplied to spread fake news and undermine elections.²²



The partnership on AI

Founded in 2016 by Amazon, Facebook, Google, Microsoft and IBM, and with Accenture as a partner, this initiative seeks to “shape best practices, research and public dialogue about AI’s benefits for people and society”. Focusing the discussion on the gritty issues around enforcement and measurement of success will be crucial to the partnership’s continued relevance.

Source: [Partnership on AI website](#)



03

Medium and large companies

Just as governments must reassure (and demonstrate) to ecosystem stakeholders that AI is being scaled responsibly, medium and large companies can do the same. One way to do this: embracing sensible regulation, both formal and informal. Doing so may impose short-term pain on companies in the form of slower, more costly innovation. But the gains to firms, as well as to society, from responsible AI innovation will be large and sustained.

Large and medium-sized companies have a wide-lens view across industries and business functions. They can use this perspective to great effect to support the GovTech arena by bringing next-level oversight and safety insights to large-scale solutions. Responsible innovation goes beyond proactive anticipation and identification of risks, to understanding and planning for when these risks are magnified.

Scaling AI with a US State

Accenture is currently working at scale with a US state on an AI-powered contact centre that will use virtual agents to improve customer experience. This work builds on previous efforts to use virtual agents internally within public sector organisations and is an early example of AI for public service at scale.

04

Civil society

History suggests that governments and companies can be well served by the individuals, charities, universities and other nonprofit institutions that seek to advance public-spirited goals, such as assisting the disadvantaged.

In that spirit, academics can broaden their efforts to decode companies' algorithms, detecting harmful biases and making AI explainable. Journalists can commit to studying the market deeply as it grows, with an eye towards exposing misuse and raising awareness of unintended negative effects of AI in the sector. Community organisations can commit to increasing their knowledge of the technology, lobbying politicians, as needed, for better regulation and protesting against companies that commit abuses.



Raising the AI bar at Harvard

The Berkman Klein Center for Internet & Society at Harvard University supports a range of stakeholders and projects that address “big questions related to the ethics and governance of AI”. Their projects range from looking at algorithms in the judiciary, to the impact of autonomous vehicles on labour, to media and information quality. Connecting the best practices learned from such projects to the broader GovTech ecosystem will help all stakeholders raise the bar on responsible innovation.

Source: [Berkman Klein Center website](#)

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Civil society

Engaging citizens at the Royal Society

Accenture is working with the Royal Society Action and Research Centre in the UK through its Forum for Ethical AI. The Forum has three streams, all focused on encouraging citizen engagement on some of the toughest questions when it comes to AI: a citizens' jury; outreach workshop with specific demographic groups whose voice is often missing in tech debates or those that are more exposed to the effects of AI; and a final deliberation to decide on principles for how society can reap the most benefits from AI.

Civil society will need to keep up as AI proliferates. One way is by facilitating interactions among ecosystem stakeholders. Like large companies, civil society is already adept at encouraging public debate and engagement, but it must capitalise on this strength. One example is City.AI, a nonprofit founded in 2016 that aims to “enable everyone to apply AI by democratising its design, development and use”.²³ To achieve this, the organisation relies on more than 250 volunteers around the world to hold open-door meetups, currently offering the public a chance to listen to, and engage with, AI experts in 70 cities.

Civil society is also far more than a watchdog. For example, citizens have an enormous opportunity to raise awareness of the many ways that AI-powered technologies can make life better through example. Quill.org, responding to a 2011 U.S. Department of Education statistic that 76 percent of Year 8 students in America are not proficient at writing, provides a suite of online apps using AI-powered natural language processing that teach writing, grammar and vocabulary.²⁴



05

Towards responsible AI

Signalling an early focus on AI regulation, the incoming European Commission is continuing its tradition of digging into complex policy issues, this time regarding ethical AI (previous efforts have focused on setting standards on cybersecurity and privacy).²⁵ These efforts to “set a world standard for AI regulation” matter enormously. And the Commission has a clear opportunity to use this new platform to establish a global standard for responsible AI. The extent to which all AI ecosystem stakeholders step up—on their own and collaboratively—however, is likely to prove decisive.

Governments will strengthen and expand the market by:

- Streamlining contract processes to become more attractive to startups;
- Encouraging open dialogue and improvements around procurement and innovation;
- Ramping up government-to-government collaborative efforts;
- Keeping pace with training and reskilling and strengthening employee safety nets;
- Developing a formal AI governance structure to protect public welfare and minimise risk.

Startups will gain traction by:

- Carving out a niche as consistent sources of new ideas for ecosystem partners;
- Capturing latent demand for products that enhance customer experience, reduce fraud and improve risk management;
- Alerting the rest of the GovTech AI ecosystem to potential and emerging problems;
- Adapting quickly to make AI-propelled technologies more inclusive and able to avoid bias.

05

Towards responsible AI

Large and medium-sized companies will benefit themselves and the ecosystem at large (beyond bringing their size and clout to bear to innovate for the market) by:

- Leading the way on self-regulation, setting the standard for other entities;
- Embracing sensible regulation;
- Bringing oversight and safety insights, borne of experience, to large-scale solutions;
- Bringing their experience to bear on innovative solutions.

AI will transform the future of government. Each stakeholder in the GovTech ecosystem has a part to play, and Europe can take a lead role thanks to the efforts already underway by the European Commission in addressing the complexities of AI.

By taking action in these ways, GovTech ecosystem stakeholders can work together to make the technology-enabled future responsible and prosperous.

Civil society (individuals, charities, universities and other nonprofit institutions) will shape progress by:

- Facilitating interactions among ecosystem stakeholders;
- Engaging with GovTech as watchdogs, alerting the ecosystem to potential dangers, instances of misuse and unintended negative consequences;
- Raising ecosystem awareness of the many ways that AI can make life better, through example.

Responsible AI in action: spotlight on Europe

Solving crimes (Netherlands).

The Dutch police are deploying AI to solve cold cases, in numerous ways. An app is used to help detectives standardise the questioning of witnesses at crime scenes. A “cold-case calendar” allows prison inmates to come forward as witnesses. And AI-fuelled forensic screening ranks cold cases by the likelihood of solving them, allowing Dutch police to focus limited resources more efficiently.²⁶

Serving taxpayers (Ireland).

The Office of the Revenue Commissioners in Ireland, working with Accenture, developed an AI-powered, conversational virtual agent that can take a call, understand the caller and answer questions to the customer’s satisfaction. Specifically, the voicebot technology offers a 24/7 automated service that provides answers to general questions and simple requests. Launched in 2018, it now fields 55 percent of calls from start to finish, providing an efficient, effective experience for Irish taxpayers.²⁷





Preserving history (Hungary).

The country's National Archives is home to a rich collection of documents, photos and audio files that date to 1756. Until recently, efforts to digitise the collection—thereby preserving it for posterity—proved painstakingly slow. As the result of a partnership with Microsoft to adopt AI technology, however, the National Archives can now digitise its collection 80 percent faster than before.²⁸

Paying pensions (United Kingdom).

The UK's Department for Work and Pensions makes pension and welfare payments to 20 million people each year. Faced with a recent surge in new pension applications, the department amassed a gigantic backlog of 30,000 unprocessed claims. Sorting it out the conventional way (with human labour) would have taken many months. Instead, the department partnered with AI firm UiPath to rent 12 robots. The result: the backlog was processed—and pensioners received their pensions—in two weeks.²⁹

Further Reading

- For additional reading on making it easier for AI suppliers to work with government, see [GovTech: Europe's next opportunity](#), co-authored by Accenture and PUBLIC.
- For additional reading on how AI is transforming services across public sector industries, visit Accenture's [Public Service AI Hub](#).
- For additional reading on readying the workforce to maximise the value of AI, see Accenture's [Reworking the Revolution and It's Learning. Just not as we know it.](#)
- Follow the ongoing blog series on Applied Intelligence at [Voices from Accenture's Public Service](#).

Appendix

1. Accenture views AI as a constellation of different technologies—from machine learning to natural language processing—that can be brought together to enable computers to “think, learn and act”.
2. [Singapore government website; Virtual Singapore.](#)
3. Accenture Survey of AI Adoption in European Public Services.
4. Ibid. Return is defined by “the amount of monetary benefit or quality improvements”.
5. [Worldwide Spending on Artificial Intelligence Systems Will Be Nearly \\$98 Billion in 2023, According to New IDC Spending Guide \(IDC, September 2019\).](#)
6. [Artificial Intelligence, Genuine Impact \(Accenture 2018\).](#)
7. Accenture Research analysis based on CB Insights data.
8. [The Fintech Future Looks Bright: Funding and Deals on Pace for a Record Year \(CB Insights, August 2017\); Govtech Startup Funding: Growing But Still Small \(CB Insights, February 2017\).](#)
9. Accenture analysis based on CB Insights data; public safety and security cluster is defined by AI companies tagged by CB Insights as Public Safety, Computer Vision/Facial Recognition, Monitoring & Security, and Crime & Safety.
10. [GovTech: Europe’s Next Opportunity \(Accenture & PUBLIC 2018\).](#)
11. [Government of Canada news release: Canada and France work with international community to support responsible use of artificial intelligence; May 2019.](#)
12. [“Questions and Answers: coordinated plan for Artificial Intelligence ‘made in Europe’” \(European Commission, December 2018\).](#)
13. [OECD Principles on AI.](#)
14. [Reworking the Revolution \(Accenture 2018\).](#)
15. [Accenture Applied Intelligence: Realising the Economic and Societal Potential of Responsible AI In Europe.](#)
16. [Will a robot really take your job? \(The Economist, June 2019\).](#)
17. Ibid.
18. [Explainable AI: The next stage of human-machine collaboration \(Accenture, August 2018\).](#)
19. [Accenture news release; August 2019.](#)
20. Accenture analysis based on CB Insights data.
21. Accenture Survey of AI Adoption in European Public Services.
22. [Microsoft Invests \\$1 Billion in Partnership With Elon Musk’s OpenAI \(Fortune, July 2019\).](#)
23. [City.AI website.](#)
24. [Quill.org website.](#)
25. [Next European Commission takes aim at AI \(Politico, July 2019\).](#)
26. [How the Dutch police are using AI to unravel cold cases \(The Next Web, May 2018\).](#)
27. [\(Accenture news release, September 2018\).](#)
28. [\(Microsoft, March 2019\).](#)
29. [The UK’s Largest Government Department Transforms Business Processes with RPA \(UiPath\).](#)

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