ARTIFICIAL INTELLIGENCE, GENUINE IMPACT

PUBLIC SERVICES IN THE ERA OF ARTIFICIAL INTELLIGENCE

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Public services in the era of artificial intelligence

Artificial Intelligence (AI) is arguably the most impactful technology disruption we may see in our lifetimes. We are only in the first stages of change, but AI is already transforming many areas.

Many AI researchers believe we will develop an Artificial General Intelligence (AGI) – i.e. AI that can match an average human – within the next 30 years, and an Artificial Super Intelligence (ASI) – i.e. AI that is significantly smarter than all humans – less than 20 years thereafter.[1]

The societal and economic impacts are expected to be significant. Accenture analysts calculate that AI has the potential to double annual economic growth rates, and boost labor productivity by up to 40%, in developed countries by 2035.[2]

A great deal can be gained in the public sector over the same timeframe, with AI expected to deliver an additional US $939bn in value – an increase of around 25 percent in the productivity and impact returned from taxpayer dollars – across the public sectors of 16 major developed economies.[3]

AI can also transform services to citizens. Regular surveys of trust and confidence in government are rarely comfortable reading, but this can be vastly improved. AI could make government agencies more efficient for less money by taking over the tedious and time-consuming work that machines are already beginning to complete better than humans. Benefits would also include higher citizen satisfaction and increased quality of services on offer.[4]

THE
AI AGE
HAS BEGUN

While most of this transformative story lies ahead of us, many AI-driven improvements and innovations have already been made. This decade has seen the private sector take great strides forward, with the likes of Google, Amazon, Facebook and Microsoft investing heavily in AI capabilities. This has been both in demonstrations, such as beating grandmasters at complex board games,[5] and in practical applications, such as identifying and filtering spam emails.[6] These companies, along with dozens of niche digital businesses – such as Uber and Netflix – have used AI (in concert with other emerging technologies) to raise the bar on customer service, personalization and automation.

At the same time, companies are making AI technologies easier to use. AT&T, for instance is aiming to build a platform that allows a quarter of their employees to build their own AI applications.[7] Similarly, smaller and/or less technology proficient organizations can now access off-the-shelf – and often, from-the-cloud – AI packages that can be customized to suit their needs.
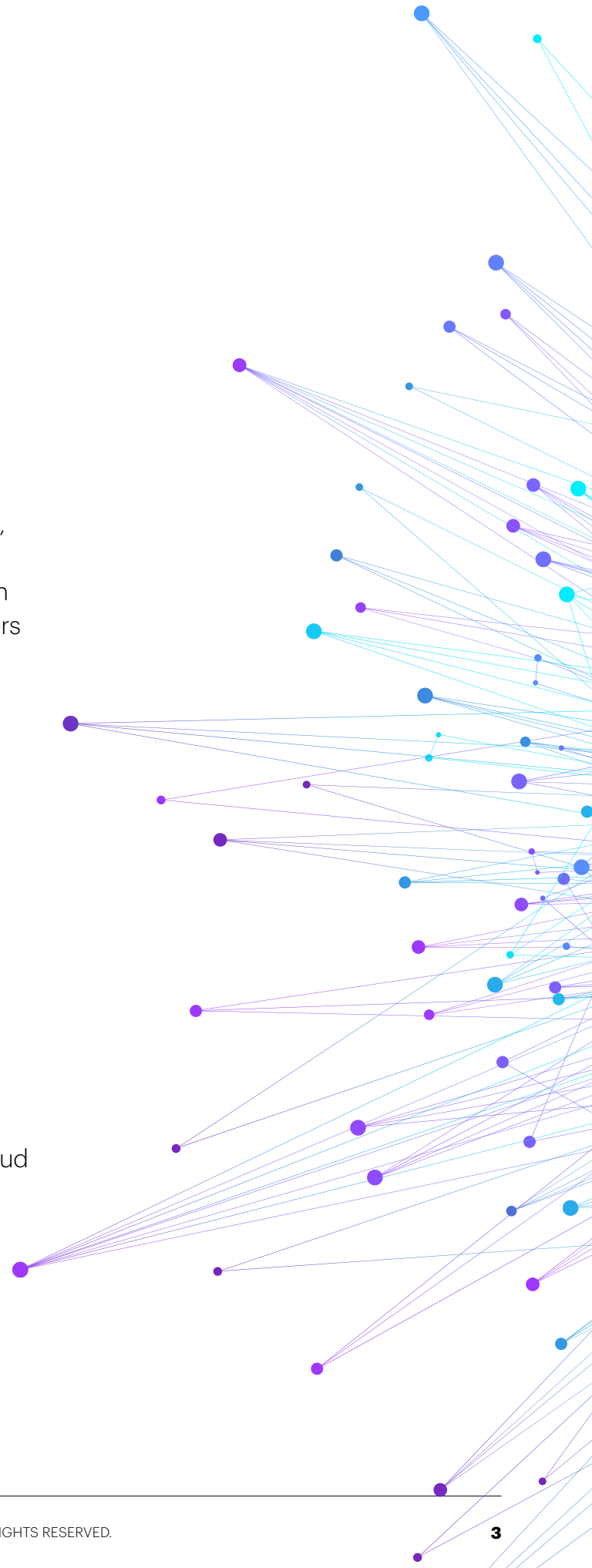
A VAST OPPORTUNITY FOR PUBLIC SERVICES

Like computers in the 1980's, AI is still in an era of exploration, where new potentials, technologies and ideas are emerging rapidly, and there is far more to uncover than we have seen so far. Yet, at the same time, early discoveries are already advanced enough to deliver major increases in efficiency, speed, accuracy and effectiveness.

For example, the Italian Ministry of Economy and Finance (MEF) has implemented an AI-driven helpdesk to handle citizen calls. The system can deal with greater volume than human operators, meaning citizens get faster services and the MEF is more productive. Since the AI helpdesk was deployed, customer satisfaction has risen by 85 percent.

Not surprising then, that in an Accenture survey of consumers in six countries[8], half are already happy to use public services delivered by AI.[9] This is likely to rise quickly as citizens encounter the service improvements supported by AI, and as the private sector makes AI ever-more commonplace.

**Many government agencies** are now prioritizing AI capabilities.
In a survey of public sector leaders, Accenture found that 83 percent of senior public sector leadership are both able and willing to adopt intelligent technologies,[10] and examples of AI adoption are emerging across the globe.

The Singaporean government, for example, is using AI to answer queries from the public.[11]

The UK's Department for Work and Pensions has deployed AI to process incoming correspondence.[12]
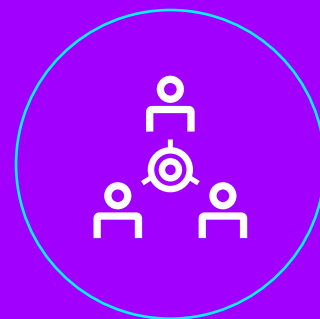
The US Department of Health and Human Services has run a successful pilot using AI to process thousands of public comments on regulatory proposals.[13]

FROM
AUTOMATION
TO AUGMENTATION

In many of these applications AI is helping by automating repetitive and mundane tasks, enabling staff to take on higher value work. By tackling labor intensive tasks, AI can positively transform the public service workforce and the desirability of government jobs. Indeed, our research found that 80 percent of public service leaders believe that implementing intelligent technologies would improve the job satisfaction of current employees.[14]

But AI can also serve as an enabler of more fundamental change, giving public service providers a chance to re-examine their remit and the value they provide for government and society.
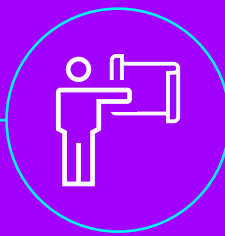
For example, the Urban Forestry Administration in Washington DC, has used AI to transform the way it manages trees across the city. They used an AI filtering and processing system to:

Rapidly, and accurately, count the number of trees, their height and crown width.

Organize and filter the collected data points to create a detailed citywide map.

The citywide map could then help drive decision-making and resource allocation.

Like many innovations in AI, there were unanticipated benefits too. In this case, as well as rapidly providing the city with new, rich information, the administration also found a way to pinpoint illegal felling activity, amounting to $100,000 worth of unissued fines.[15]

As in this example, AI often does so much more than automation, allowing for new strategies, services or processes that would have been impossible before AI. These applications often involve new models of human-machine collaboration, where AI augments human abilities and allows us to work in new and better ways.

In the UK, for instance, an ageing population combined with a growing shortage of human carers and misallocated resources, is placing strain on the aged-care and healthcare systems.[16]

The solution could be AI. Accenture has developed an AI-powered platform to support the physical and mental health of elderly people, while allowing caregivers the opportunity to supplement in-home visits with remote contact. Feedback from the pilot phase has been encouraging. For example, an 87-year-old woman from Merseyside said:

"IT'S LIKE HAVING A FRIEND IN THE OTHER ROOM. I'D BE LOST WITHOUT IT NOW."

This promising advanced in-home care initiative is set to expand to more elderly people across Britain and around the world.[17]

When it comes to the public sector workforce, there is good reason to think that AI will do more to change jobs, than replace jobs, particularly in the next two decades. Part of this is via this augmentation of existing jobs, rather than substitution. Another way jobs can change is via redeployment, where freeing the workforce from mundane, 'robotic' tasks allows people to pursue other more valuable roles (many of which have yet to be created).

Some of these may involve more human-to-human interaction, others may involve more problem-solving or more creativity. Then there are the many new workers needed to ensure the effective and responsible use of AI. Research has already identified three broad categories – "trainers, explainers and sustainers" – which are already emerging.[18] These are likely just the first of hundreds of job-types that don't exist yet, much like those created since the internet emerged in the 1990s.

GOVERNMENT
IN AI DEVELOPMENT

Alongside AI's huge potential there are also significant challenges in implementation, particularly in the public sector. Above all, AI needs to be implemented with care and consideration, particularly to avoid misuse and unintended consequences.

Government has a unique role in this era of AI disruption. Not only should government adopt AI to improve operations and public services, it also needs to manage the economic and societal impacts of AI on other industries, and set the ethical and legislative frameworks for AI to be used safely in our communities.

In a sign of AI's increasing maturity and importance, the UK Prime Minister, Theresa May, used her World Economic Forum address to highlight just this point. She said, for instance, that we need to ensure:

"THAT ALGORITHMS DON'T PERPETUATE THE HUMAN BIASES OF THEIR DEVELOPERS."[19]

This is a strong point, but how do Government agencies go about proving their AI system is unbiased? Can we make this assessment based on external outcomes alone, or do we need to know exactly what kind of logic is used on the inside? The latter is a major challenge on its own, particularly in large-scale, deep learning networks – the kind of systems that currently accomplish the most human-like tasks.[20]

NOVEL BUT SURMOUNTABLE
CHALLENGES

Like many AI challenges, the issue of AI "black boxes" is novel but surmountable. Part of the solution will be technological. For instance, we can train AI systems to produce reports that allow for greater transparency. Indeed, this is already the specific goal of a U.S. Defense Advanced Research Projects Agency (DARPA) project named "Explainable Artificial Intelligence".[21]

Then we need to set sensible policies. For instance, we have to determine, in practical terms, how much understanding is really needed (which could vary by application and context). And, for more advanced systems, we also need policy to account for how much understanding is actually possible for human minds within reasonable timeframes.

At some point, just as with human decision makers, we will reach a level of oversight and transparency that works for each situation.[22]

This is only one of the novel challenges public services need to grapple with to implement AI. Others concern the quality and use of data, securing funding, accessing the right skills, integrating with other agencies, building trust (internally and externally), managing organizational change or simply getting the right digital infrastructure in place to even begin advancing AI.

Like our example above, these are all surmountable with the right strategy. And they are worth tackling because, with the scope of change it can bring,

AI IS UNLIKE ANY TECHNOLOGY THAT HAS GONE BEFORE IT.

It offers benefits that would be negligent to ignore, creates completely new opportunities and is powerful enough to drive dramatic transformations of organizations, industries and even countries.

FOR MORE INFORMATION, PLEASE CONTACT:

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