



Harnessing the Power of AI for the Public Sector



Executive Summary

Rapid advances in artificial intelligence (AI) mark an inflection point for public sector organisations across the world. Generative AI and large language models (LLMs) wield transformative potential to reshape government operations and redefine the future of public service delivery. Governments cannot afford to remain frozen as AI transforms the world around us.

The UK has many of the building blocks for AI to revolutionise how governments interact with citizens and transform how we address major societal challenges but the UK must act assertively, or risk foregoing significant economic gain. Adding just five years for the time it takes for AI to be broadly adopted across the country would reduce the size of the economic impact from AI by over £150 billion by 2035.¹ However, if AI is rolled out effectively across public services, it could save the UK's public sector over £17 billion by 2035 – enough to fund the salaries for all vacancies currently in the NHS or to re-invest in driving better public health outcomes, a key contributor to productivity.²

By dramatically enhancing citizen services, turbocharging productivity, analysing vast troves of data, and accelerating creative problem-solving, AI promises to be a force multiplier for public sector workers and act as a catalyst for more responsive and impactful public services. The era of AI is no longer on the horizon – it is here, and it demands forward-thinking public sector leaders and policymakers act now to harness emerging technologies for the benefit of the citizens and communities they serve.

From [accelerating cancer screening and diagnosis](#) to [empowering local councils through our AI powered Microsoft](#)

[Copilot](#), AI is making a real difference in people's lives. AI is helping teachers break down barriers to opportunities for their pupils by boosting inclusivity and productivity, for instance by [helping create personalised reading passages](#) for pupils based on their capabilities.

AI systems that are safe, secure and built on a core set of principles can empower people in every part of public service. Governance of responsible use will be critical to deployment of AI – and an area where government and private sector must work closely together.

Used responsibly, AI offers tremendous opportunities to empower public servants to do more of what they do best. AI's ability to automate routine tasks and analyse vast amounts of data can free up valuable time for doctors, nurses, police officers, social care workers, and council staff, enabling them to dedicate more of their efforts to personalised interactions that truly enhance the lives of those they serve. AI can also enable significant efficiency gains that will enable public servants to clear backlogs, improve the use of resources and delivery across the public sector.

New research³ finds these gains are possible due to the scale of the administrative burden on the public sector and the time savings AI can deliver.

This latest analysis⁴ suggests AI could save more than **four hours per week** on administrative tasks - per staff

member across all public sectors. With an estimated 5.93 million public sector employees in the UK, as of December 2023, this equates to an overall saving of **23 million hours, every week.**

Drawing on our extensive experience as a partner to UK public service providers, these proposals outline how a future government can set a course to ensure AI and other emerging technologies can be harnessed responsibly to deliver resilient public services.

The paper sets out seven recommendations for the next government; and then provides examples of the opportunities presented by AI, and finally sets out more detail behind the seven recommendations.

- [Unlocking the UK's AI Potential: Harnessing AI for Economic Growth](#)
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- Research commissioned by Microsoft in partnership with Dr Chris Brauer, Goldsmiths, University of London, in May 2024
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A strong track record of UK investment

Microsoft has been investing in the UK for more than 40 years. We employ more than 5,000 people in the UK, have built a world-leading pure research facility in Cambridge developing cutting-edge AI technologies, and provide significant support for the public

An industry leading commitment to Responsible AI

Since 2016, we have been working on our responsible AI programme within Microsoft. With over 350 team members in countries around the world, from legal, scientific, and academic backgrounds, our responsible AI programme has put in place principle-based practices and standards around how AI can be used. In 2019, we founded a sensitive use review program to subject our most sensitive and novel AI use cases to rigorous, specialised review. Since that time, we have completed over 600 sensitive use case reviews and have announced that Microsoft is restricting some technologies as part of our responsible AI standard.

sector all over the country. Last year, we [announced](#) a £2.5 billion investment in UK data and AI infrastructure over the next three years and training for more than one million people to help them thrive in an AI-enabled economy.

Seven recommendations for the next Government

1

Establish a centre for AI delivery across the public sector

The next government should create a new delivery unit at the heart of Whitehall, laser-focused on harnessing AI to supercharge delivery across mission-areas. Building on potential outlined by the Tony Blair Institute for an AI Mission Control in Number 10, the Centre would serve as an engine room for driving AI adoption across government. It would identify and swiftly address the shared challenges faced by public sector organisations, developing scalable AI solutions that can be rapidly deployed. By pooling expertise, knowledge, and resources from government, academia and industry, the Centre would catalyse the adoption of cutting-edge AI tools that revolutionise public services for the benefit of all citizens.

2

Set out a clear 'AI for All' principles declaration for the public sector

In an AI era, the public sector workforce should be empowered with the necessary technologies, skills and support to innovate and thrive. Public servants will also understandably need to be reassured on the impact on them and their future work. An 'AI for All' declaration would mandate that all public sector employees benefit from the new opportunities created by AI and are protected from its potential risks.

3

Implement a holistic approach to upskilling across public services

To harness the full potential of AI, it is crucial to foster a culture of continuous learning at every level of the public sector. This requires a comprehensive upskilling strategy that targets three key groups: public sector leaders, who must drive change and empower their teams to embrace AI; the wider public sector workforce, who need role-specific training to effectively leverage AI tools; and the general public, whose trust and understanding of AI is essential for its successful adoption.

4

Unleash the power of public sector data

To lay the groundwork for widespread AI adoption, the next government should break down data silos and treat data as a strategic asset. This means investing in secure, interoperable data foundations that enable seamless information sharing across all levels of government. By prioritising 'data readiness for AI' as a key metric of success, public sector organisations can unlock new opportunities for growth and efficiency.

5

Reimagine procurement processes for the AI era

The next government has an opportunity to overhaul outdated procurement processes and make them fit for an AI powered-future.⁵ This will require a more radical approach than has been achieved previously. For example, an AI-First policy, which would prioritise the acquisition of cutting-edge technologies and services that can drive transformative change across the public sector. Equally, building responsible AI and 'AI for All' principles into procurement would drive responsible adoption.

6

Accelerate AI adoption across local government through change agent networks

To unlock the transformative potential of AI in local government, the next government should build on devolution efforts to encourage local authorities to scale successful public-private partnership models that empower a network of 'change agents' across local government. These change agents, equipped with the necessary skills and knowledge, and supported by communities of practice, can drive the successful adoption of AI technologies through collaborative learning and knowledge-sharing, creating a ripple effect of innovation that will spread equitable growth across the country.

7

Update the Treasury's approach in light of the AI technology stack, to maximise the opportunities for the UK

The Treasury should also apply rigour to where government investments are most strategically placed, and leveraging private sector investment where most appropriate, across the AI tech stack. The next government could also introduce an AI Transformation Mandate, requiring all departments to identify AI adoption opportunities and develop implementation plans (in turn working with the Centre for AI Delivery to support departments in this process).

⁵ The commencement of the Procurement Act 2023 will be key to taking this opportunity forward.

Opportunities for the UK public sector

The potential uses of AI in the public sector in the UK are remarkably broad, in reality more so than is currently conceivable.

One area of immediate promise, however, is reducing the administrative burden on workers.

Researchers find that managing information and data is the administrative task that takes the biggest proportion of time across the public sector, with each worker spending, on average, **more than eight hours⁶** doing so every week.

The same research reveals this is having a significant impact on staff performance and morale: When surveyed, **45%** of public sector respondents say they are 'drowning in unnecessary administrative tasks' and **45%** again say that this high administrative workload is negatively affecting their mental health and wellbeing.

45%

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55% say the amount of admin work is having a negative impact on their ability to get on with their day job, and **54%** feel this is reducing their job satisfaction and motivation. **Half** of respondents also say high admin workloads are compromising the quality of service they provide (**48%**) and limits the time they can spend with the public or patients (**49%**).

Perhaps unsurprisingly then, **57%** of all public sector staff say they would prefer to spend less time on administrative tasks, with **more than half (52%)** feeling like they are always playing catch up, due to the amount of admin.

The positive news is that Dr Brauer's analysis suggests AI could save each staff member more than **four hours every week** on administrative tasks - across all sectors. With an estimated 5.93 million public sector employees in the UK, as of December 2023, this equates to an overall potential saving of **23 million hours, every week.**

To illustrate this potential in action, we have selected five examples of the ways that AI could help reinvent the delivery of public services in the UK.

⁶ Research commissioned by Microsoft in partnership with Dr Chris Brauer, Goldsmiths, University of London, and researchers at Symmetry in May 2024



1

Supporting the workforce, boosting productivity and cutting waiting times in the NHS

The NHS faces growing pressures, from backlogs in patient care to demographic-related health pressures. These pressures are compounded by a workforce that has been stretched to capacity in recent years with a growing vacancy gap that aggravates burdens on staff.

There is a broad range of potential applications of generative AI in healthcare. Deploying AI to lessen administrative burdens on staff is a powerful example of how AI can help reduce staff burnout and tackle the NHS vacancy gap. There is a strong link between burnout and vacancies: around [30% of current vacancies](#) are directly attributable to burnout.

Harnessing AI to lessen administrative burdens on the NHS

Dr Brauer's research also evaluated the admin load on doctors & nurses, and the potential AI impact, and finds that **75%** of doctors and **62%** of nurses in the UK public sector would prefer to spend less time on admin.

The survey data shows NHS doctors are spending **five hours** a week just on managing information and data, 3.5 hours filling in forms, and 3.5 hours on email communications. Meanwhile, nurses are spending **eight hours** a week managing information and data, six hours writing reports, and **five hours** responding to communications.

Detailed analysis indicates AI could save doctors **four** hours in admin time each week, equating to **149,596** hours per week across the sector, representing a **9%** increase in their capacity, and time that could be used differently. Furthermore, it could save nurses **five** hours in admin time every week, adding up to **1.8 million** hours weekly across the sector - a **13%** increase in capacity.

For example, Ambient AI and AI-powered technologies such as [Nuance Dragon Ambient eXperience Copilot \(DAX Copilot\)](#) can be used to transcribe doctor-patient conversations accurately and in real-time, automatically generating comprehensive clinical notes and saving time spent on manual documentation.

These technologies can be seamlessly integrated with existing Electronic Health Record systems and mobile applications, empowering clinicians to access and edit the AI-generated clinical notes using intuitive voice commands and customised templates or shortcuts.

The time DAX Copilot saves could contribute to reducing the NHS backlog, with the automation of clinical documentation, especially if utilised fully, freeing up time that can be spent in face-to-face interactions between patients and healthcare staff – allowing for the more empathetic and human interactions that play a vital role in improving patient care and treatment. At the same time, ambient AI reduces documentation errors. The quality

of information is improved, contributing to better health outcomes for patients.

The implications for addressing staff burnout and NHS vacancies are immense: By targeting a reduction in burnout through taking away administrative burdens on staff through AI, the NHS could potentially see a **decrease in the number of vacancies by around 11,000,⁷ depending on achieving a 40% to 70% reduction in burnout levels among staff.⁸**

DAX is just one of dozens of technologies which could transform the day-to-day lives of staff, improving quality and reducing burnout while saving cost. AI technologies can help draft discharge summaries, improve patient communication, and dramatically improve productivity in operational and back-office teams. While many such opportunities are being developed and implemented across the NHS; few are being shared and scaled.

⁷ Calculations by Microsoft UK. Based on 170,000 members of the NHS staff [having left](#) the NHS in 2023 due to burnout and 28.3% of nurses having named burnout as the reason they left the NHS in 2022. Multiplied by [70% reduction in burnout through DAX Copilot](#).
⁸ Initial studies on DAX Copilot [report](#) a 70% reduction in feelings of burnout among staff.



2

Improving educational outcomes for the next generation

The educational attainment gap continues to persist in the UK. These gaps can have a lifelong impact on young people. Educational attainment gaps are impacted by several factors including economic disadvantage, ethnicity, geographical location, disability, and gender. Factors such as inadequate funding for schools, uneven access to quality teaching or teacher training, and access to tailored tuition can all contribute.

Deploying AI-powered teaching assistants to empower every student to achieve more

Dr Brauer's research also investigated the current admin load on UK public sector teachers, and how much AI tools could help, finding that **78%** of state school teachers would prefer to spend less time on admin. On top of their classroom time, teachers are spending **five** hours a week responding to emails and communications, **four** hours managing information and data, and **2.5** hours writing reports.

The analysis estimates that AI could save teachers **two** hours in admin time each week, equating to **936,742** hours per week across the sector, representing a **4%** increase in their capacity, and time that could be used differently.

AI-powered teaching assistants clearly have huge potential then, for relieving some of the resource and workload burdens for teaching staff, while also contributing to addressing educational attainment gaps. They are capable of automating routine tasks, such as grading assignments,

providing tailored feedback, and answering routine questions. In turn, this allows more of teachers' time to be spent on more valuable activities like lesson planning and one-on-one interactions with students.

Additionally, AI-powered assistants can adapt to individual learning styles and paces, offering tailored support and reinforcement, particularly beneficial for students who may struggle in traditional classroom settings and helping bridge achievement gaps and promote more equitable and inclusive learning opportunities for all students, regardless of their backgrounds or circumstances.

Generative AI tools are already being successfully used in classrooms around the world. Public schools in New York City **started embracing** generative AI tools in 2023 as a means to offer tailored real-time feedback and support to students.

Microsoft worked with New York City officials to create a bespoke and secure data hub to ensure the data lived in a secure Department for Education environment, ensuring security is baked into the design of the AI solutions from the outset.

Building on a secure foundation, Microsoft then collaborated with the New York City district to create a bespoke chatbot for the classroom, focused on answering student questions while ensuring teaching goals around promoting independent thinking and reasoning were

boosted by the chatbot. **In a two-week span, the AI assistant was able to answer more than 2,000 questions – significantly more than three teachers could have fielded.** Microsoft has found that AI can help facilitate more personalised learning experiences, helping to democratise access to quality education and boost student success.⁹

AI also helps reduce teachers' administrative burdens, with time that could be reallocated to directly support student learning.¹⁰ With greater time spent on interaction with students, and with reduced pressures on teachers'

workloads, AI would be well placed to help the next government reduce the education attainment gap.

⁹ <https://www.weforum.org/agenda/2024/02/with-generative-ai-we-can-reimagine-education-and-the-sky-is-the-limit/>
¹⁰ <https://www.mckinsey.com/industries/education/our-insights/how-artificial-intelligence-will-impact-k-12-teachers#/>



3

Deploying AI copilots to supercharge central and local government services

AI-powered tools are set to revolutionise how central and local governments serve their citizens. Intelligent assistants can dramatically increase productivity, by reducing time-consuming routine tasks, such as note taking, producing meeting minutes and summarising documents. This can free up public sector staff, from police officers to social workers, to focus on making a difference in people's lives.

When workers get to experiment with AI themselves, they quickly see the benefits. Public sector workers who use AI at least once per month already believe the technology could save between 25-50%¹¹ of the time they spend on administrative tasks.

These respondents see the following as key areas where AI has a positive impact.

1. Reducing manual notetaking or transcribing (39%)
2. Summarising meetings that I was unable to attend (34%)
3. Streamlining how tasks or actions are triaged (30%)
4. Enabling people to spend more time on the 'front line' (28%)
5. Decreasing time spent on compliance reporting (24%)

Public sector staff who use AI at least once a month for administrative work, also report they complete tasks more quickly (46%), finish more tasks (33%), and produce higher quality work (39%) than they do without AI assistance.

Copilots can also lift the capability of entire organisations by setting a new baseline, where every employee gains the skills to write, design, code, analyse data, and more.

Driving national innovation with AI partnerships

As the UK explores the transformative potential of AI in central government, we can look to the Australian government's six-month trial of Copilot for Microsoft 365 to gauge the broader opportunity of AI in central and local government. By partnering with Microsoft to upskill staff and embed AI tools into daily workflows, the Australian government developed more innovative, efficient, and responsive public services.¹²

Transforming social care with AI

Adult and children's social care services are under growing pressure, due to rising financial pressure, staffing shortages and increasing demand. Both the pressures and the solutions are complex. AI-powered tools can play a role in easing some of the strains, contributing to the solution to the challenges faced by the public sector. In children's services and social care, AI copilots are already demonstrating their immense potential to drastically improve delivery. Barnsley Council has equipped its social care professionals with Copilot for Microsoft 365, which acts as their 'personal secretary'¹³ by quickly reorganising visit notes into accurate, categorised records.

This saves social workers hours of analysis, allowing them to prioritise urgent interventions and better support vulnerable residents, as [Wendy Popplewell](#), Executive Director of Core Services at [Barnsley Council](#), explains:



"Our employees spend a lot of time reading emails, reports, spreadsheets and compiling various documents for things like funding bids. That first draft where you spend time getting started and think: 'What do I need to write here?' Copilot just creates that for you, which is a total game changer.

We also have people within social care who spend a huge amount of time writing up case notes, meeting minutes and actions - taking them away from face-to-face interaction with our residents. If Copilot saves them a few hours every week, the impact on community and employee wellbeing is massive. People don't become a social worker to do admin, they want to be spending time with families to help solve their problems.

Of course, we want people to look at the job they do and figure out where there are potential efficiencies, but we've got to give them the space to think in the first place.

This is what this Copilot is creating - time to think."



¹¹ Research commissioned by Microsoft in partnership with Dr Chris Brauer, Goldsmiths, University of London, and researchers at Symmetry in May 2024
¹² <https://www.pm.gov.au/media/australian-government-collaboration-microsoft-artificial-intelligence>
¹³ <https://news.microsoft.com/en-gb/2024/04/30/how-barnsley-council-is-transforming-local-social-care-with-ai/>

3

CONTINUED

Deploying AI copilots to supercharge central and local government services

Intelligent assistants redefining customer experience

In 2023, Derby City Council became one of the first UK councils to deploy phone-based AI, replacing traditional interactive voice response systems. It also introduced chatbots, Darcie and Ali that have so far managed more than 500,000 telephone and web queries. While Derby initially hoped to handle 20% of traditional phone conversations automatically, it actually achieved 43%, and this figure continues to rise. This success inspired the Council to step up its AI integration and in 2024, it commissioned a major 'art of the possible' operation to identify where AI could make further savings, as part of wider technological overhaul of its operations forecast to save it £12.5m a year.

The council found 261 opportunities to make improvements, and in the first phase of a projected three-stage transformation, it is focusing on 54 applications in fields where AI can be implemented most quickly – with adult social care, customer services and debt recovery as the main priorities. Derby is now expecting to save nearly £4m during the 2024/25 financial year, and has signed up for a 12-month 'provisioned deployment' deal with Azure Open AI, becoming one of the first public sector organisations to do so. This will give the council guaranteed access to AI capacity at a stable price, allowing it to scale up and evolve without worrying about service glitches and price changes.

Buckinghamshire Council has also seen first-hand how AI can transform customer service. By deploying Copilot to assist call handlers, the council has reduced call wrap-up times by two minutes, slashing post-call admin and boosting performance.¹⁴

Meanwhile, Aberdeen City Council's AI-powered chatbot, AB-1, has taken customer service to new heights. With enhanced natural language capabilities powered by generative AI, AB-1 can now understand and respond to twice as many complex queries, delivering instant, personalised support to residents 24/7.¹⁵

Harnessing AI to reduce translation costs

For local authorities serving diverse communities, AI-powered translation can be transformative. Haringey Council has leveraged AI to quickly and accurately translate documents, reducing the cost of a 10-page translation from £120 to just 21p. This dramatic cost saving enables the council to provide fast, accessible services to all residents, regardless of language barriers.¹⁶

To encourage greater widespread adoption of productivity-boosting tools to deliver faster, smarter and more responsive government services, government

departments should champion the use of AI copilots and actively support officials in integrating these tools into their daily workflows. By celebrating early wins, sharing best practices across teams, and ensuring easy access to training resources, departments can foster a working environment where AI is embraced as a partner to improving public service delivery.

¹⁴ [Building skills for an AI-enabled public sector](#), Microsoft 2024
¹⁵ <https://news.microsoft.com/en-gb/2024/05/02/how-aberdeen-city-councils-helpful-chatbot-can-now-answer-twice-as-many-queries/>
¹⁶ [Building skills for an AI-enabled public sector](#), Microsoft 2024
¹⁷ Research commissioned by Microsoft in partnership with Dr Chris Brauer, Goldsmiths, University of London, and researchers at Symmetry in May 2024

Evaluating the admin load on police officers, and potential AI impact

74% of police officers would prefer to spend less time on admin. Police are spending **12 hours** a week managing information and data, **9 hours** on report writing, and **8.5 hours** responding to communications.

Dr Brauer's analysis¹⁷ indicates AI could save police officers **6.5 hours** in admin time each week, equating to **1.1 million hours** per week across the sector, representing a **16%** increase in their capacity, and time that could be used differently.



4

Strengthening the UK's defence for a digital age



The UK faces a volatile and rapidly changing threat landscape. According to our latest annual [Digital Defence report](#), the UK is the fourth most targeted country for cyber-attacks globally. Senior defence officials state that we are in a pre-war period.¹⁸ Effective deterrence relies on an ability to convince a potential opponent that your capabilities can outmatch theirs. Future governments will face critical moments in the race to secure digital defence. When it comes to digital in the defence context, speed of acquisition is critical. To succeed in this mission, the UK must focus on delivering defence solutions at unprecedented speeds. Although the government has committed to moving from outline business case to in-service capability within five years,¹⁹ the lessons from Ukraine, the first hybrid war, suggest that even these timeframes may be too slow. In Ukraine, innovation cycles have accelerated to as little as three months for some technologies.²⁰

The UK's adversaries are already exploiting technological advancements to gain an advantage. The government has the opportunity to scale up existing capabilities to build out its digital backbone to meet the changing global threat landscape.

Harnessing AI to improve effectiveness

Stormcloud started as a Royal Navy demonstrator project to prove the feasibility and develop the technology in 2022. Microsoft worked in collaboration with Anduril and BAE Systems, illustrating the potential of taking Cloud computing and services to remote locations. Microsoft built the capability for Stormcloud using hyperscale cloud and deployed this at different classification levels. This shows the potential available if new and emerging technologies can be incorporated into frontline services, improving safety for service personnel, boosting capabilities and streamlining operations.

Version 2 of Stormcloud was built in collaboration with the Royal Navy and Skyril. Through a software-defined node, rather than a traditional piece of hardware that requires production and procurement, it enables the sharing of data between what were hitherto closed systems, for example allowing the sharing of data between Combat Management Systems from different manufacturers. In doing so, it delivers a functioning platform for interoperability and multi-domain integration.

Stormcloud 2.0 promotes interoperability of different combat and battle management systems. It has been tried and tested in the Royal Navy – providing an effective return on a significant investment in the UK's digital defence backbone. In addition to being able to operate across different types of hardware, it can be easily implemented – most laptops are capable of downloading the node required for Stormcloud to run.

By scaling up Stormcloud 2.0, with the roll-out of this interoperable and tested software, the UK could set the digital standard for interoperability across its allies within NATO, AUKUS and the EU – enabling the UK to become a leader in navigating the new threat landscape.

¹⁸ <https://www.theguardian.com/uk-news/2024/jan/24/army-chief-says-people-of-uk-are-prewar-generation-who-must-be-ready-to-fight-russia>
¹⁹ <https://www.gov.uk/government/speeches/andy-start-des-ceo-keynote-speech-at-dsei-2023>
²⁰ <https://cset.georgetown.edu/article/the-future-of-drones-in-ukraine-a-report-from-the-dju-brave1-warsaw-conference/>

5

Using AI-augmented cloud computing to boost UK research

The research community faces growing challenges in leveraging advanced technologies to accelerate innovation and drive scientific progress. These challenges are compounded by a lack of recognition and endorsement of cloud computing as a valid research tool from public sector funders, complex processes for accessing and utilising cloud services, and limitations of existing on-premise infrastructure. Whether through enhanced collaboration, increased productivity, or improved data storage and management, cloud computing and AI technologies have the potential to address these challenges and unlock new opportunities for researchers. Within the broad range of potential applications of cloud computing and AI in research, the most immediate impact is their ability to provide researchers with the flexibility, scalability, and advanced capabilities needed to tackle complex problems and drive scientific breakthroughs and discovery.

Harnessing cloud computing and AI to empower researchers

Advanced cloud computing platforms, including high-performance computing and pre-built AI and machine learning models, offer researchers access to virtually unlimited computing resources, storage capacity, and a wide range of AI and machine learning services. By leveraging these capabilities, researchers can process and analyse massive datasets, run complex simulations and models, and collaborate seamlessly with colleagues around the world. This not only accelerates the pace of discovery

but also enables researchers to tackle problems constrained by computational limitations.

By embracing a hybrid approach that combines the strengths of cloud computing with existing on-premises infrastructure, researchers can ensure that all their needs are met and no projects are held back by facility limitations. This would enable them to focus on their core research activities, while leaving the management and maintenance of the underlying technology to the cloud provider.

Cloud computing and AI have the potential to transform the research landscape. Through increased productivity, enhanced collaboration, and improved data management, researchers can achieve breakthrough discoveries faster and more efficiently than ever before.

For instance, researchers at the University of Bath have harnessed Microsoft Azure's high-performance computing capabilities to test theories and release findings faster than ever before. With access to thousands of compute nodes in the cloud, compared to just 250 on-premises, Bath's researchers can now spin up powerful virtual machines tailored to their specific needs, from chemistry and physics to engineering and beyond. This has enabled the university's academic community to tackle more complex problems, generate insights rapidly, and collaborate more effectively, accelerating the pace of discovery across multiple domains.²¹ Microsoft researchers are already using AI models to boost the search for answers to some of the world's most pressing

questions. Microsoft used novel AI models to digitally screen over 32 million potential materials and found over 500,000 stable candidates for better batteries.²²

By enabling researchers to tackle more complex problems and explore new avenues of inquiry, cloud computing and AI could drive significant advances across all scientific domains, from healthcare and environmental science to materials science and beyond. A **1% increase in the computational capital used for AI-augmented R&D is associated with a 0.111-0.140% increase in the rate of technological change**, highlighting the substantial impact that investing in cloud computing resources can have on the pace of innovation. The financial benefits of this shift towards cloud computing and AI in research are also significant. Compute-intensive AI augmented R&D has the potential to **increase the rate of productivity growth significantly – by a factor of 2 compared to average rates in the last 75 years or a factor of 3 since 2000.**²³

By increasing productivity, reducing costs, and enabling new discoveries, these technologies could generate significant added economic value and support the creation of new industries and jobs. The long-term benefits for the research community and society as a whole are likely to be even greater as these technologies continue to evolve and mature.

²¹ [Microsoft Customer Story-University of Bath researchers test theories and release findings faster than before with Azure HPC](#)
²² <https://cloudblogs.microsoft.com/quantum/2024/01/09/unlocking-a-new-era-for-scientific-discovery-with-ai-how-microsofts-ai-screened-over-32-million-candidates-to-find-a-better-battery/>
²³ Economic impacts of AI-augmented R&D, [2212.08198] [Economic impacts of AI-augmented R&D \(arxiv.org\)](#)



Barriers for UK public sector

Exciting as these five examples are, of how AI can help reinvent UK public services in the UK, there are still obstacles to overcome for public sector organisations to drive adoption. Dr Brauer's research finds there are multiple challenges²⁴ around usage and momentum, organisational preparedness – and skills.

Low levels of current usage: While the majority²⁵ of knowledge workers generally are using AI at work, 73% of public sector workers have *not* yet used AI in the workplace at all, with only 22% saying they have used AI at work at least once. Similarly, only 11% are using AI at least once a month, and a meagre 6% are using AI multiple times per week.

Encouraging and enabling experimentation will help generate momentum, as while 28% of public sector workers say they are excited about the potential benefits AI could bring to their work, this figure rises to 59% for those respondents that use AI at least once a month.

Lack of organisational readiness: The majority (61%) of public sector respondents say their organisation is unprepared to implement AI, with 54% being unsure about whether AI use is restricted or not, within their organisations – rising to 66% for doctors and 73% for nurses.

When asked to consider previous times digital tools have been implemented in their public sector organisation, the top three barriers to successful implementation or staff adoption were cited as:

- 1 Lack of training on the tool itself (42%)
- 2 Technical issues with the tool (35%)
- 3 Lack of integration into existing systems (33%)

Early stages of learning & development: Just 8% of public sector workers surveyed have completed training around current AI capabilities they can use in their daily work, although 52% would like further training on how to do so. Even for those public sector staff currently using AI at least once a month, only 28% have received any formal AI training to do so, and 76% would like further training to develop their AI skills.

²⁴ Research commissioned by Microsoft in partnership with Dr Chris Brauer, Goldsmiths, University of London, and researchers at Symmetry in May 2024

²⁵ [2024 Work Trend Index Annual Report from Microsoft and LinkedIn](#)



Recommendations

In order to broaden and strengthen the adoption of AI throughout the public sector, and overcome the barriers mentioned, we have set out a series of clear recommendations which would enable a new government to accelerate from day one.



RECOMMENDATION 1

Establish a centre for AI delivery across the public sector

Rapid advancements in generative AI can revolutionise public service delivery, drive efficiencies, and help address major societal challenges. However, the adoption of AI in the public sector has been hindered by a lack of resources, expertise, and a fragmented approach to implementation. To address these challenges and unlock the potential of generative AI, we recommend the establishment of a National Centre for Generative AI.

The National Centre for Generative AI would serve as a collaborative hub, bringing together experts from government, industry, and academia to identify common challenges faced by public sector organisations and develop scalable AI solutions that can be adapted to meet the specific needs of individual organisations. It would enable public sector organisations to see what works in AI. By pooling resources, knowledge, and best practices, the Centre would accelerate the adoption of AI-powered solutions, reduce duplication of efforts, and ensure that the benefits of AI are realised across the entire public sector, regardless of an organisation's size or budget.

The Centre would focus on three key areas:

1. Research and development: The Centre would conduct research into the safe and responsible development and deployment of generative AI, with a focus on addressing the unique challenges faced by the public sector. This research would inform the development of best practices, standards, and guidelines for the use of AI in the public sector.

2. Incubation and acceleration: The Centre would identify and nurture promising AI applications in the public sector, providing the necessary resources, expertise, and support to bring these solutions to scale. Through targeted incubation and acceleration programs, the Centre would help to bridge the gap between research and real-world impact.

3. Training and capacity building: To ensure that the public sector has the necessary skills and knowledge to effectively leverage generative AI, the Centre would develop and deliver comprehensive training programs for government employees at all levels. These programs would cover a range of topics, from basic AI literacy to advanced technical skills, empowering the public sector workforce to drive AI adoption and innovation.

Importantly, the Centre would need the level of focus and leadership at the centre of government to drive radical progress. The establishment of a National Centre for Generative AI would enable the public sector to navigate the challenges and opportunities presented by this transformative technology. By identifying 'what works' and sharing best practices, the Centre would help government

organisations to mitigate risks, ensure responsible use of AI, and maximise the benefits for citizens. The Centre would accelerate the adoption of AI-powered solutions, drive efficiency, and enhance the quality of public services. This, in turn, would help to build public trust in AI and demonstrate the potential of this technology to transform the way government serves its citizens.



RECOMMENDATION 2

Establish an “AI for All” Principles Declaration for the public sector

The rapid advancement of AI technologies has the potential to revolutionise the way public sector organisations operate and deliver services to citizens. However, to harness the full potential of AI, public sector users of the technology must themselves be reassured about its use and how it will impact them. To ensure responsible and ethical use of AI it is therefore, important to establish a clear set of principles that guide the adoption and implementation of AI across all levels of the public sector. By setting out an 'AI for All' Principles Declaration, the next government can provide a framework that empowers public sector employees to benefit from the new opportunities created by AI while protecting them from any potential harms and unintended consequences.

The 'AI for All' Principles Declaration should be built upon five key pillars:

1. Empowerment and Access: At the core of the 'AI for All' Principles Declaration should be a commitment to empower the public sector workforce with the technologies and skills necessary to thrive in the AI-driven future of work. This commitment should include providing access to AI tools and platforms that enable public sector employees to innovate, streamline processes, and deliver better services. This would help build AI fluency throughout the public sector, helping workers understand capabilities of generative AI and how it can be deployed.

2. Rights to Education and Training: The Declaration should enshrine the right of public sector employees to receive ongoing training and skill development opportunities, so that in addition to broad AI fluency, workers can develop their technical skillset. This would also ensure that their knowledge and abilities remain relevant in the age of AI.

3. AI Governance and Human Oversight: As AI systems become increasingly integrated into the public sector, it is crucial to establish robust governance frameworks and maintain human oversight. The Declaration should mandate that all uses of AI adhere to sound governance systems, procedures, and evaluation processes. This includes implementing clear guidelines for the development, deployment, and monitoring of AI systems, as well as ensuring that human oversight is maintained throughout the decision-making process.

4. Fairness and Accountability: Ensuring fairness and accountability in the use of AI is paramount to building public trust and confidence in these technologies. The Declaration should outline clear guidelines for the ethical use of AI, establish lines of accountability for AI-driven decisions, ensuring that there is transparency and redress mechanisms in place.

5. Duty to Consider AI: The Declaration should include a duty for public sector organisations to consider the procurement of generative AI technologies where they can improve the efficiency, effectiveness, and accessibility of public services.

The establishment of an 'AI for All' Principles Declaration for the public sector represents a critical step in ensuring the responsible and ethical adoption of AI technologies across government. By embracing the principles of empowerment and access, rights to education and training, AI governance and human oversight, fairness and accountability, and a duty to consider AI procurement, the public sector can unlock the immense potential of AI to improve service delivery, drive innovation, and deliver better outcomes for citizens.



RECOMMENDATION 3

Implement a holistic approach to upskilling across the public sector

The need to do more with less has rarely been more pressing than today in light of the high demand for public services, budget constraints, and stretched resources. To achieve the potential of AI, public sector organisations must take advantage of available skilling opportunities and focus on developing a culture of continuous learning. As innovative AI applications emerge and develop, those organisations that equip their people with the skills to be the best competitive asset they have, will lead the way. This holds true for both the public and the private sector.

To promote the necessary AI upskilling that will enable harnessing AI for a more efficient public service delivery, it makes sense to break down AI skilling into three distinct groups – the general public; the wider public sector workforce; and public sector leaders – and to formulate distinct strategies to enable AI upskilling. By addressing the diverse skills requirements of these three groups, the next government can foster a cohesive and collaborative ecosystem where all stakeholders are equipped to contribute to the responsible and effective deployment of AI solutions.

Raising awareness among the general public

To successfully and responsibly harness AI for the public sector, it is vital to build trust among the public in AI. Trust is the cornerstone upon which the effective and sustainable

adoption of AI in the public sector rests. Without public trust, the implementation of AI solutions may face significant resistance, hampering the ability of the public sector to leverage these technologies successfully. A vital part of building awareness of AI and its applications to enable public service delivery must be a step-change in lifelong learning more widely, recognising that continually developing new skills is now essential.

Accelerating AI upskilling across the wider public sector workforce

Skilling for AI is an organisation-wide exercise – so it is important to consider the range of competencies needed to succeed across public sector organisations. These range from prompting skills for more casual users, through the engineering skills required for technical AI users, up to the senior managers, who are looking at AI from a strategic standpoint and can support wholesale organisational change for an AI era. Leadership is crucial in driving sustainable change, to embed a wider culture of learning within the public sector, senior leaders should actively partner in the training program. As part of this engagement, leadership teams should consider how internal tools and feedback processes encourage cultures of learning and open feedback.

Learning needs will vary between individuals. Skills assessments therefore play an important role in identifying

skills gaps and can be used to create personalised learning paths, guiding employees through the relevant resources for their needs. To support public sector organisations in this endeavour, Microsoft has developed a free to access [AI Learning Companion](#). It allows learners to develop their AI skills in ways that suit their role, their goals, and their preferred learning methods.

Our work with the public sector in this area has already proven the benefits of AI deployment, but the question is how quickly organisations can use the tools available while avoiding technical debt.

Supporting leaders to drive AI innovation within their organisations

Leadership is crucial in driving sustainable change. In order to embed a wider culture of learning within the public sector, senior leaders within public sector organisations should actively partner in the training program. As part of this engagement, leadership teams should consider how internal tools and feedback processes encourage cultures of learning and open feedback. AI will not be a simple fix to the challenges public sector organisations are faced with – leaders will need to help employees learn to use it effectively and responsibly to reap the benefits. Therefore, comprehensive skilling in AI should be a primary area of focus. We are working with the public sector to identify current skills gaps, as well as predict the skill requirements



that will help make the most of future AI systems. Making the most of AI does require investment in learning. This means allowing people the time to become familiar with the technology and to experiment with it as it develops. This empowerment must come from the top, meaning leaders must be the initial drivers of change. But it can then become a virtuous circle. Microsoft research indicates that over three-quarters of employees would be more inclined to remain at a job if they were given more opportunities for learning and development.²⁶

²⁶ <https://www.microsoft.com/en-us/worklab/work-trend-index/hybrid-work-is-just-work/>

RECOMMENDATION 4

Unleash the power of public sector data

To unleash the transformative power of AI, it is crucial for central and local government to recognise that the value of AI is intrinsically linked to the quality and accessibility of the organisational data that underpins it. An organisation's 'data readiness for AI' should be considered a key aspect of their valuation and future growth potential. The next government must treat public sector data as a strategic asset, enabling them to identify and capitalise on opportunities for growth and efficiency.

However, one of the most significant challenges to unlocking this potential is the prevalence of data silos across various teams, departments, and agencies. These silos hinder the ability of government entities to gain a 360-degree view of the needs and challenges faced by the communities they serve, leading to fragmented, inefficient, and often ineffective service delivery.

Addressing this requires a new strategic focus on breaking down data silos and promoting data integration and interoperability across all levels of government. To lay the groundwork for widespread AI adoption, the next government must prioritise breaking down data silos and treating data as a strategic asset. This requires a two-pronged approach: launching a Public Sector Data Transformation Initiative and promoting cross-sector data sharing across all levels of government.

Launching a Public Sector Data Transformation Initiative

The **Public Sector Data Transformation Initiative** should focus on modernising data infrastructure, improving data quality, and fostering a culture of data-driven innovation. By conducting a thorough assessment of the current state of data infrastructure, adopting cloud-based solutions, and implementing data quality improvement programs, the government can create an environment that enables public sector organisations to harness the full potential of AI.

To drive innovation and showcase the value of AI in the public sector, the initiative should also include a series of data-driven pilots in key domains such as healthcare, education, and transport. These pilots, supported by partnerships between government, academia, and industry, will serve as proof points for the transformative potential of AI and help to scale successful solutions across the public sector.

Expand existing data sharing powers in the Digital Economy Act 2017 to support data sharing

To further break down data silos and promote integration, the next government should expand the data sharing provisions within the Digital Economy Act 2017, building on its existing data sharing powers. [Previous pilots](#) enabled by the Digital Economy Act and resulting statutory reviews of the legislation

highlight how this can provide beneficial outcomes for government and enhance the return on taxpayers' money.

We recommend expanding the data provisions within the Act to:

- **Widen the range of public authorities able to share data and information** for the purposes of improving service delivery, enabling better collaboration and data integration across different sectors, such as health, social care, and education.
- **Expand the existing code of practice to include specific guidance on using shared data for cross-government data analytics and AI projects.** This would ensure greater alignment in the way data is used across different government entities.
- **Require public authorities to conduct regular reviews of their data sharing practices and identify opportunities for data integration.** This would encourage a more proactive approach to data sharing and help identify areas where data silos need to be broken down.
- **Strengthen provisions around data standards and technical specifications,** empowering the appropriate national authorities to establish clear frameworks for data sharing. This would help to create a consistent, secure, and interoperable data sharing environment across government services.

Treating public sector data as a strategic asset involves recognising its immense value and investing in the necessary infrastructure, processes, and governance frameworks to ensure its quality, security, and accessibility. By doing so, the

next government can create an environment that fosters data-driven innovation and services while enabling public sector organisations to harness the full potential of AI.

Resolving data ownership at the local level

For the combined efforts of Public Sector to drive meaningful outcomes to citizens at a local level, a significant shift in policy needs to occur, to enable the secure transfer of information relating to a person between different parts of public sector. For example, there are too many barriers put in place around sharing key health and care data between Local Authorities and health providers, which significantly inhibits progress on health outcomes. Similar challenges lie ahead in early intervention for children, because of the limitations in policy of sharing information between Schools, Councils, Police and the NHS. For the system to deliver to the people of the UK, data sharing needs to be frictionless, with the outcome put first.

To support this agenda, there will also need to be an update in procurement practices in which the UK government across the system require vendors to make APIs for the free movement of this data, and to prevent paywalls being put in place through additional charging for access to a citizen's data which resides in their system.

RECOMMENDATION 5

Reimagine procurement processes for the era of AI

The recent advances in AI are arguably the most significant ones we have witnessed since the arrival of internet browsers in the 1990s or the adoption of smartphones. As with any disruptive innovation before, there are legitimate concerns around the risks associated with AI, as well as concerns of citizens, for instance around data protection and privacy and the deployment of AI-enabled algorithms in the decision-making of public sector organisations.

Public procurement mechanisms must therefore be updated to keep pace with these innovative technologies, to ensure AI solutions are procured and deployed responsibly, with the best outcomes for citizens at the heart of procurement mechanisms fit for the 21st century. There are four key steps the next UK Government can take to update the UK's procurement policy and processes to enable the responsible procurement and deployment of AI across public sector organisations.

1. Understand the drivers and challenges for effective use of AI technology. Adopting an outcomes-based approach to AI procurement is paramount. Following this approach will require the next government to consider the potential use case of an AI application and to comprehend how the technology can be deployed in a compliant manner to achieve the desired outcome. Part of this process must be an assessment of how the AI solution will inform decision-making.

2. Develop suitable procurement policy, processes and skills. The assessment process described in step 1 requires the necessary AI skills to understand the risks and benefits associated with AI technology and its use cases. As a trusted partner to governments and public sector organisations worldwide, Microsoft has identified several factors blocking the effective procurement of innovative new technologies such as AI. These include outdated procurement practices, a lack of appropriate costing models and of the necessary skillset assess procurement decisions. The next government will be able to build on the procurement policy work undertaken to enable the use of cloud computing across the public sector.

3. Collaborate with trusted providers. To build the necessary public trust in AI, particularly AI that is used across public services, public sector organisations must collaborate with technology providers that responsibly design, develop and deploy AI. This particularly vital in light of public service providers regularly processing sensitive private or classified data.

4. Implement appropriate AI regulation and governance. An outcomes-based regulatory framework for AI that encourages innovation will enable councils, trusts, agencies and departments to harness AI to drive more efficient public services. People should be at the heart of this framework, through core principles such as fairness,

reliability and safety, privacy and security, inclusiveness, transparency, and accountability.

Building on our work to design, develop and deploy AI responsibly since 2017, we stand ready to be a trusted partner to the government in this endeavour.



RECOMMENDATION 6

Accelerate AI adoption across local government through change agent networks

Just as devolution deals empower local governments by offering greater autonomy, technological advancements also provide government departments and local authorities with new tools to serve the public and their needs more effectively. As local authorities face rising demands on their services, in parallel with increasing costs of service delivery and available budgets falling in real terms, AI has the potential to reduce some of these pressures. However, to fully realise these opportunities, it is crucial to support and upskill the workforce to effectively implement available technologies that can enhance their work in local communities.

The next government has an opportunity to accelerate AI adoption in the public sector by fostering collaboration

and knowledge-sharing through communities of practice. These participant-driven networks bring together local government representatives from across the country to share experiences, best practices, and responses to common challenges.

One successful example of this approach is Microsoft's Innovate Together programme, which empowers 'change agents' to drive AI and digital innovation. The next government should embrace a similar approach and scale these programmes at a national level so that at least one person in every local authority can be a catalyst for change. Microsoft's Innovation and Collaboration Forum, part of the Innovate Together programme aimed at local government, has representatives from almost 200

councils. By equipping these individuals with the necessary experience, skills and knowledge, they can trickle down the benefits throughout their organisations, sector and beyond – to AI-power up Britain across the local council network so that no area of the UK is left behind.

A survey involving around 1,100 'change agents' from approximately 20 local councils across the UK demonstrated the significant impact of this training model:

- £2.9 million in direct social impact in terms of time savings and productivity gains due to improved tech knowledge and innovation.
- Cascading effects on additional local government employees trained by the change agents amounting to £2.2 million.
- Substantial cost savings of £1.7 million in training expenses across participating councils.
- Increased collaboration, time savings, skill improvement, and innovation among change agents.

If public-private partnership working models like Innovate Together are scaled across the country, the benefits to public services could be immense. By investing in the development of communities of practice and empowering change agents in local authorities nationwide, the government can unlock significant time and cost savings, drive innovation, and ultimately improve service delivery for citizens as part of its mission for power and partnership with continued devolution.



Fostering a culture of collaborative learning through these initiatives will be critical to upskilling local government employees to harness the power of AI and digital technologies to streamline processes, enhance decision-making, and deliver more personalised services to their communities. After all, it is local authorities which have the local knowledge, capacity and flexibility to take advantage of the opportunities available in each community in the UK.



RECOMMENDATION 7

Update the government’s approach to maximise the economic opportunities of technology

A key question for policy makers is how to harness the opportunity of AI and what is the most effective way of securing both benefits to public services,²⁷ and also economic growth across the whole UK. To achieve this, the next government should bear two factors in mind: available resources – public sector capacity, funding, and time – and delivering at scale.

The government should consider the trade-offs inherent to policy design and government investments, and at what level of the tech stack the most effective interventions could be made. As a recent report produced by Frontier Economics sets out, the government should think in a strategic way about long- and short-term goals and commensurate investments at the infrastructure, foundation model and application layers. It is also necessary to consider where there are dependencies between these layers – most notably, AI models and applications depend on significant compute capacity, and while the UK is unlikely to become a significant exporter of compute capacity in the medium term, it is essential to leverage private sector investment in these resources into the UK. All of this should ideally be considered in a strategic way from the Treasury in order to maximise the growth opportunity and strategic advantage for the UK.

To fully harness the potential of AI across the public sector, the next government should also introduce an AI Transformation Mandate. This would require all departments and public sector organisations to identify opportunities for

AI adoption and develop detailed AI implementation plans, outlining specific use cases, expected benefits, and resource requirements.

Central government would be responsible for providing a framework for evaluating these plans, prioritising initiatives that demonstrate the greatest potential for gains, cost savings, and improved citizen outcomes. To support departments in this process, central government could issue an AI Transformation Toolkit, offering practical guidance on how to assess AI readiness, identify suitable use cases, and navigate procurement and implementation challenges.

At the same time, HM Treasury should prioritise funding for departments that demonstrate a clear commitment to AI adoption and present well-articulated plans for leveraging AI to drive value. By linking budget allocations to AI readiness and implementation success, HM Treasury can create a powerful incentive for departments to embrace AI-driven innovation and improve their AI capabilities.

All of this should be considered in the context of significant private investments being made by Microsoft and other companies. There are systemic issues in the UK – most notably planning and clean energy and the National Grid – which are critical path dependencies to these investments. We encourage the next government to work together with the private sector to make the UK a global leader in AI innovation.

²⁷ <https://www.frontier-economics.com/media/jy2db5l3/economic-analysis-of-ai-policy-in-the-uk-report.pdf>



Research Methodology

The new public sector research featured in this report was developed by Dr Chris Brauer, Director of Innovation, Goldsmiths, University of London, in collaboration with Microsoft and conducted by YouGov between the 3rd and 10th May 2024. The survey was carried out online. Dr Chris Brauer's research team at Symmetry Ltd supported the development of the survey and helped to interpret the results, including preparing the extrapolations related to AI-enabled time saving across the public sector and within specific frontline roles.

Initial insights derived from a Literature Review were verified quantitatively, with the survey achieving 1,036

completions from adults working in the UK public sector. 67% of respondents are deemed to work in a "front line" delivery role in the public sector, such as a teacher, social worker, or police officer.

The survey also targeted specific roles within the public sector: 100 doctors, 101 nurses, 100 teachers, 101 police officers, 52 local government workers and 53 central government workers.

An additional 529 responses were collected from workers in broader public sector roles across all subsectors.