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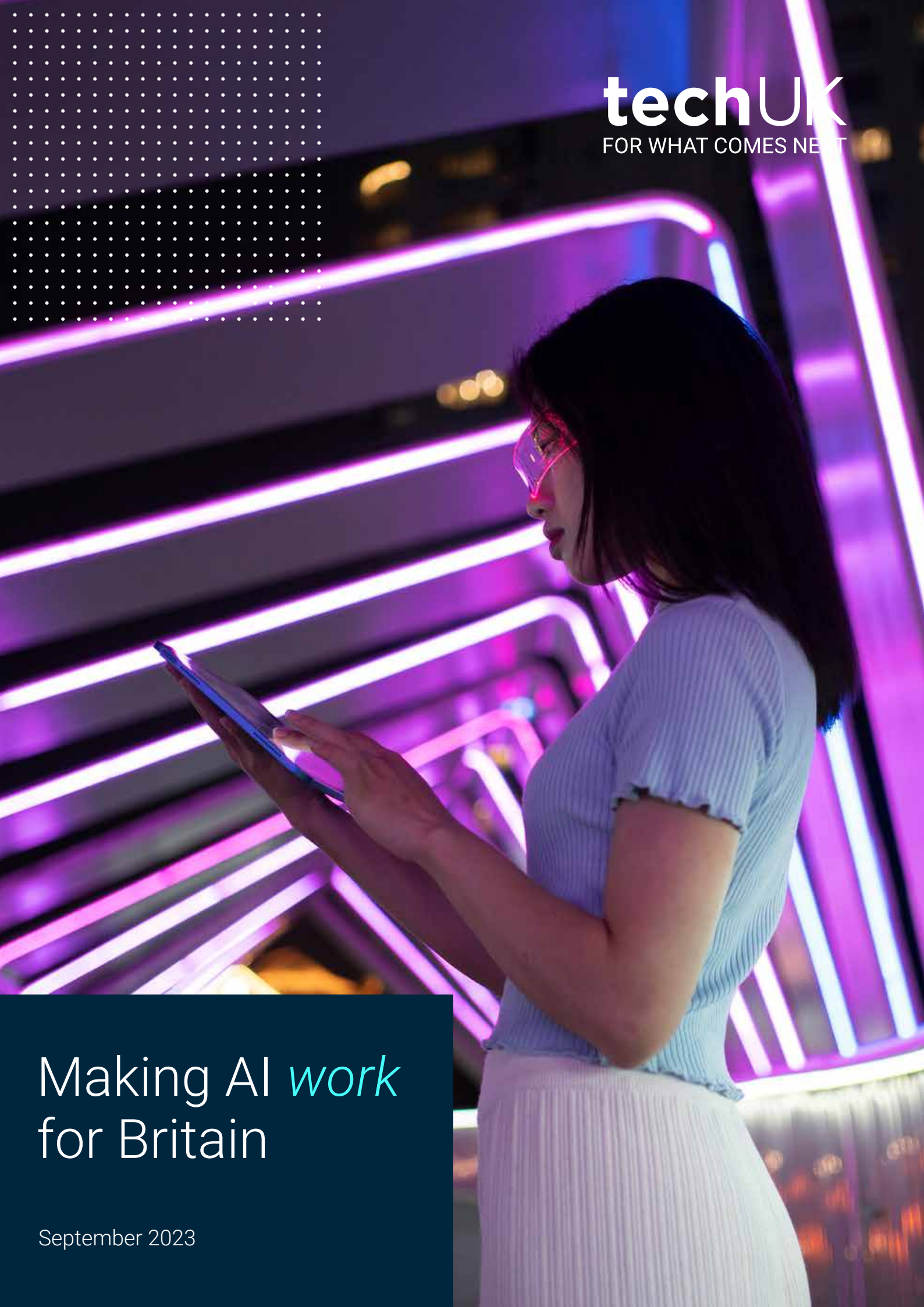

Making AI *work* for Britain

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Foreword

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We are at the dawn of a new era of digital technology in the workplace. A new generation of AI enabled digital tools is rapidly emerging, with the ability to undertake tasks that could previously only be done by people. These new tools will ultimately be applied across the economy, impacting all aspects of employment. However, the pace of deployment is likely to be uneven, impacted by many of the drag factors that have slowed the adoption of previous waves of digital technology. As a result, net employment effects may be slow to emerge despite the very rapid evolution of the underlying technology.

Organisations that deploy and use AI effectively are likely to achieve significant productivity gains, putting them at a competitive advantage against competitors that are slower or less effective in using AI. Many of the employment effects may therefore be quite traditional, as 'slow adopting' companies are put out of business by more technologically savvy competitors. The precise impact of this change on the labour market and the future of work is difficult to predict. However, there is no historical precedent to suggest that a new wave of technological advancement will reduce the overall number of jobs in the economy. Nevertheless, we should accept and prepare for the fact that some sectors and roles will be disrupted more significantly than others.

Overall, the most likely outcome is that AI tools will augment the work done by people rather than replace it. But the impact of this augmentation could be far more powerful in terms of increasing productive capability than previous waves of digital innovation. In thinking about the implications of AI for jobs and employment, governments should focus on maximising the potential of their economy to harness the benefits of AI to drive productivity growth.

To deliver on the promise of AI, governments must build on or expand existing efforts to improve digital skills and accelerate digital adoption by firms. This could be particularly beneficial for developed economies with aging populations that will need their working age populations to be more productive to support the additional health and welfare costs of an older population.

Moreover, the effective use of AI in areas like healthcare could drive down the cost and improve the quality of services – delivering huge benefits to people across the country.

Amidst rapid developments in AI, we must remember that none of the employment outcomes related to technology are pre-determined and all will be dependent on the decisions made by individuals, companies, and governments over the months and years ahead. However, we can and must take the opportunity to prepare for and shape the impact of AI on work and jobs. Policymakers should look at the impact of AI on the labour market as an opportunity rather than a threat and develop policy responses to harness its power in an increasingly AI-powered global economy.

Like all waves of technological innovation, AI will drive significant change to jobs and employment. The policy levers that government will need to use, however, are not new or novel. Improving skills and accelerating technology adoption are well established mechanisms for adapting to technological change. However the pace and scale of AI innovation suggests that governments will need to scale-up its action on skills and digital adoption to ensure that the growth and productivity benefits are shared as widely as possible across the UK.

Executive summary

The future of work will be AI-enabled. In the workplace, working with or alongside technology like AI will feel as normal as using email, and in some organisations it already is. Businesses and workers will need to adapt to an increasingly AI-powered economy and almost half of workers will need to retrain in the next decade.

Whilst discussions around the impact of AI on work often focus on machines replacing humans, the reality is that humans will increasingly work alongside machines and AI in the future workplace. New developments in generative AI and its integration into software tools is enabling people to interact with and use advanced AI in an intuitive, user-friendly way. The combined power of humans and AI will drive productivity and free up time for workers to exercise their human skills, creativity, and expertise to deliver more value as technology increasingly helps people do their work.

According to research from MIT, 60% of jobs done today didn't exist in 1940. Goldman Sachs economists say this implies that over 85% of employment growth in the last 80 years is explained by the technology-driven creation of new jobs.

Just as the invention of the printing press, the industrial revolution, and the birth of the internet before it, the AI-powered technological revolution will fundamentally change the way we work, and over time will bring with it a considerable shift in the types of jobs that comprise the labour market in the future.

As the technology proliferates, AI will displace some jobs, augment others, and create new ones. Many jobs may be improved as new AI Assistants undertake tedious tasks - such as filing expenses and scheduling meetings. The question is how far and how fast these changes take place, and rapid developments in generative AI have brought these issues into sharp relief over recent months.

The AI revolution is happening now, and those countries best able to leverage its power will be the ones that thrive in the AI-powered economy of the future. The government must therefore take steps to ensure the UK is positioned to reap the benefits of AI as it transforms work, and that the UK workforce is well-positioned to adjust to the impact of AI. Indeed, ensuring the workforce is well-placed to adapt is critical to positioning the UK to take advantage of the AI revolution.

The UK is a world leader in AI and is ranked highly in 'AI readiness'. The potential benefits in terms of productivity growth are huge. But we must ensure that all parts of society and all parts of the country are able to prosper in this new AI-enabled world.

Research commissioned by Google and undertaken by Public First on the potential impact of AI on the UK economy estimates that AI tools could create over £400 billion in value for the UK economy by 2030, the equivalent to an annual growth rate of 2.6%. The report notes that generative AI could save the average worker in the UK over 100 hours a year, which would be the single biggest improvement to worker productivity since the arrival of Google Search. Generative AI is moving us from the era of machine learning into the age of machine

intelligence. Through its ability to generate new content, complete tasks, and leverage data more efficiently, and enable workers to work hand-in-hand with powerful machines, AI will be a central component of the future economy.

In this report, we spotlight cases of how AI can and is supporting people at work, boosting the quality of products and services, and improving business processes across the economy. Despite a mixed adoption picture, there is a clear indication of how AI can transform work in every business, enabling and reducing the frictions of flexible work, and driving innovation in fields and functions as diverse as human resources, customer service, marketing and sales, finance, healthcare, and sustainability.

The UK desperately needs this productivity growth. As the UK population ages and the working age population declines, increasing the productivity of the working age population will be a critical challenge.

However, the speed and effectiveness of AI adoption is likely to be patchy. Late adopters will be at a competitive disadvantage if they are slow to harness the productivity benefits of AI. Government therefore needs to strengthen its actions to support digital adoption by firms across the economy.

Many businesses still need help and encouragement to make their organisations fit for the digital age. The use of AI is more prevalent in some sectors and regions than others. And larger businesses are more likely to be using the technology than smaller ones, some of which do not even use basic digital tools, which are an essential stepping stone to the adoption and productive use of AI.

Indeed, the case studies in this report illustrate how the integration of generative AI into everyday digital tools is set to accelerate the use of the technology across all parts of the digital economy.

To encourage AI adoption, government must put the right incentives in place to encourage digital transformation, such as providing investment support for digital adoption and maintaining a pro-innovation regulatory environment.

Fostering public trust in AI and getting the regulatory environment right will be crucial to support adoption and innovation.

Research by the Alan Turing Institute found that the UK public has broadly positive views of most AI use cases, but many are concerned about relying too heavily on technology over professional judgements, and 47% are concerned about the difficulty in knowing who is responsible for mistakes when using this technology. Similar research by Public First found public emotions around AI are mixed; the most commonly expressed emotion was curiosity, as well as nearly equal excitement and worry. And we know that both workers and businesses are keen to embrace the positive impacts AI can bring.

Delivering on the benefits of AI means ensuring that its design, development, and deployment is responsible and ultimately productive. Both businesses and governments have a duty to ensure that AI systems do not perpetuate bias, nor mitigate people's freedoms and protections at work. In the immediate term, businesses and workers need clarity on how existing law applies to workplace AI, including how existing legislation provides protections for workers, to ensure these protections are realised in practice and there is sufficient certainty to encourage responsible AI adoption across the economy. While in the longer term responding to developments

in AI at work will require a collaborative approach that brings together all stakeholders, including industry, government, trade unions, civil society, and regulators, to maintain a regulatory environment that encourages workplace innovation whilst protecting workers' rights.

Good management practices can help harness the innovative potential of AI in workplaces across the economy.

Transforming workplaces and work processes in different roles, functions, and sectors through the use of AI will be variable process. AI innovations to support people in their jobs and improve work will look different across different types of businesses. But it will be those businesses with good management practices in place that will be best positioned to deploy the technology in a way that benefits both them and their workers.

Not only is there a strong relationship between good management practices and productivity, but there is also research that shows that businesses get value when workers do. Moreover, evidence suggests that businesses who leverage the knowledge of workers on the ground and empower their voices are more likely to develop more effective and innovative solutions to common problems and barriers to productivity.

A renewed focus on skills is needed to drive AI uptake and minimise disruption.

As AI transforms the economy at pace, a lack of relevant skills across the economy risks creating a new digital divide between the AI-haves and AI-have-nots. Digital skills are no longer just necessary for the IT sector, as a joint Microsoft-LinkedIn Skills White Paper shows: professions traditionally not considered to be digital increasingly require digital skills. For instance, 78% of sales jobs and 66% of arts and design jobs require at least one digital or technical skill.

The UK has taken some steps to support people to acquire digital skills, but rapid developments in AI underpin an urgent need to turbocharge efforts to drive investment in digital skills, embrace flexible courses, and foster a culture of lifelong learning – leveraging training opportunities and solutions that already exist.

The mix of digital skills required by businesses may change over time. For example, in the last year we have seen a need for prompt engineers to utilise generative AI tools. But the fundamental need for more digital skills will remain.

In the future workplace, AI and tech competence will be essential, but there will be a renewed emphasis on soft skills – those less automatable human qualities. The significance of these soft skills lies in their transferability across sectors, offering promise for helping workers transition into AI-enabled jobs, if they can acquire new digital and AI skills.

Yet, despite AI and tech competence becoming increasingly essential skills for workers, business investment in training, including digital skills training, remains low. Although many larger businesses have comprehensive training offerings including some with open and free access, investment in training is especially low in smaller businesses, and supporting every organisation to invest in upskilling their workforce will be paramount.

Businesses will need to adapt their recruitment and training strategies to meet talent demand as the skills need of the economy develops in response to technology. A sustained demand for talent coupled with an overall decline in workers will make matching skills with jobs across the economy critical. Organisations will need to recruit from wider talent pools to support the transition of workers between sectors and provide the training opportunities that enable employees to upskill and transition to new AI-enabled roles within businesses.

This report showcases how AI can help meet this challenge. For businesses, AI can help recruit for skills from across the workforce, identify skills gaps, and target training. For workers, AI can support in identifying skills from experience, focusing training priorities, and finding jobs that fit their skillset.

However, the long-term impact of AI on jobs is hard to forecast, and it is not yet clear which job roles or tasks will be displaced. This report does not make explicit predictions about the impact on specific job roles.

What is clear is that as AI and rapid developments in technology transform work, they will transform the types of jobs comprising the labour market with it, meaning the skills need of the future is uncertain and evolving. Many of the jobs of the future are yet to be invented. To adapt to changing demands, supporting workers to access lifelong learning opportunities will be imperative. These opportunities will need to embrace flexible training and short modular courses that are best placed to aid worker transitions and encourage continuous learning in a changing market, drawing upon existing industry training and courses.

The government must act now to capitalise on AI and prepare for a dynamic future.

Businesses across the country need support to digitalise and adopt productivity-boosting technology like AI, underpinned by strong investment incentives for digital adoption and training, and a regulatory environment that drives public trust whilst supporting innovation.

Workers in every sector need access to high quality flexible learning opportunities that can enhance their digital skills to work with AI, and support for lifelong learning in a fast-changing labour market.

This is not a fundamental change in the debate, but an intensification of need.

The time is now to make AI work for Britain.

Nine actions to make AI *work* for Britain

The pace of developments in AI mean there is an urgent need to take action and make an immediate impact to support businesses and individuals as AI changes work.

1.	**Provide clarity for individuals and businesses on how the law applies to the use of AI at work:** by accelerating guidance on how existing legislation and regulation applies to AI; including obligations and rights across existing data protection, equality, and health and safety legislation, as well as the principles-based approach to AI regulation.
2.	**Help businesses across the economy invest in training their staff:** by reforming the Apprenticeship Levy into a broader Apprenticeships and Skills Levy; increasing the rate and ease of transferring funds, incentivising SME uptake, and ensuring that funds can be spent on a wider range of high quality, accredited courses that give employers the skills they need– including short modular courses, or more tailored upskilling programmes, including functional, management and digital skills.
3.	**Strengthen and spotlight pathways into digital and AI jobs:** by creating a Digital Skills Toolkit 2.0 to help people navigate digital skills and careers, designing an accreditation framework for short modular courses in collaboration with industry, and considering how AI could be deployed to enhance the government jobsite and skills toolkit. Government should also encourage collaboration between academia and industry by creating a Tech Industry Placement Scheme to connect students with UK tech businesses.

4. **Support SME adoption of productivity-boosting technologies:** by establishing a Digital Growth Fund, reallocating money unspent under Help to Grow: Digital, that provides an enhanced deduction of 140% against corporation tax. This would knock 10% off the cost of most software purchases help 600,000 SMEs adopt new digital technologies such as AI. However, this fund must also incentivise adoption of enabling digital connectivity infrastructure and hardware and allow for both CapEx and OpEx spending.

5. **Champion AI-enabled flexible work across the economy:** by legislating for a compulsory requirement for a right to request flexible and remote working from day one, where this is reasonable for the job on offer (and where it makes sense for the business and employee), creating a Single Enforcement Body to help employers comply with the law, and continuing to support the Flexible Working Taskforce to champion all forms of flexible work.

But we must also take steps now to ensure that we get the future right and that the UK can drive the benefits of AI-enabled work across the country.

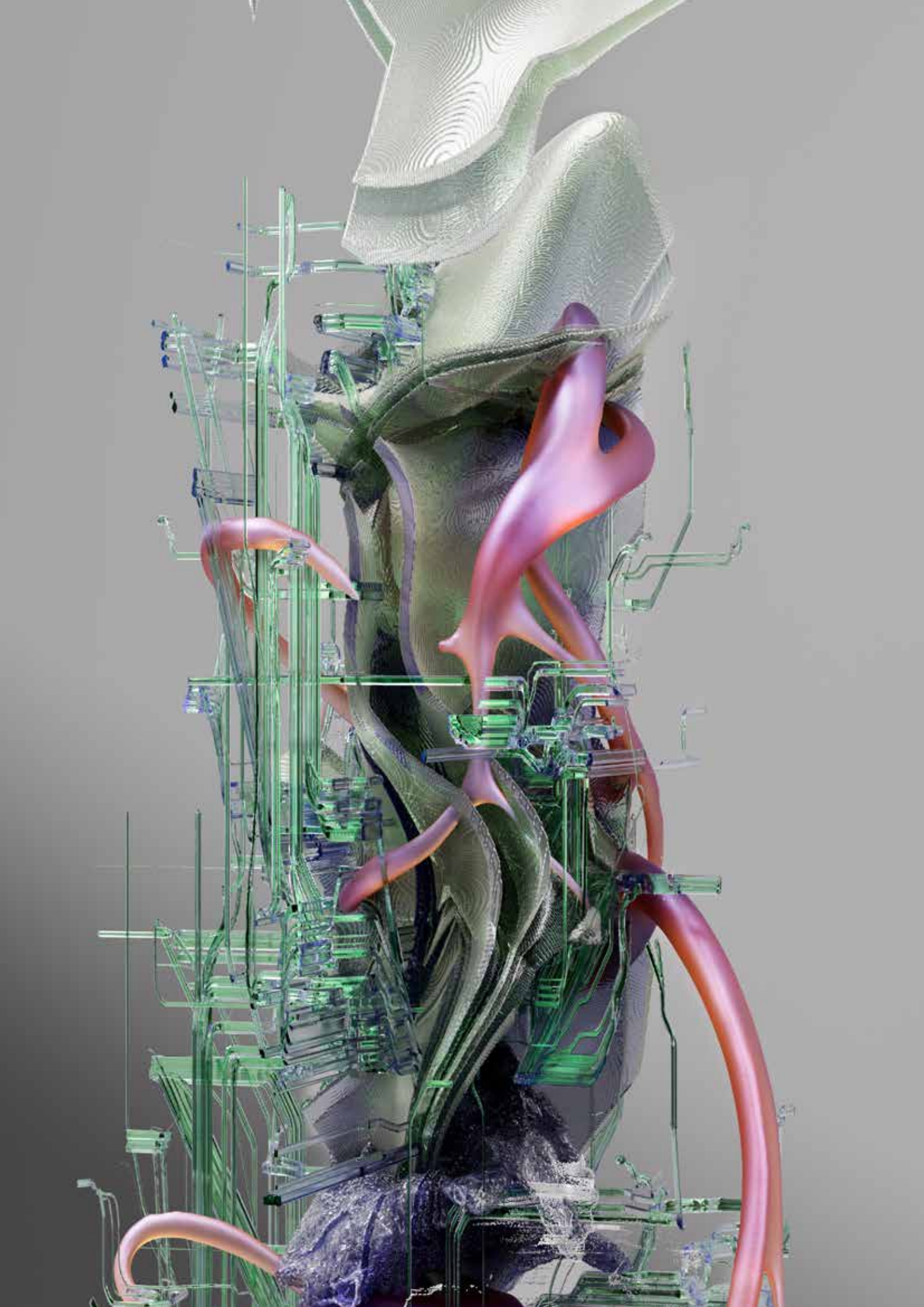
6. **Provide support for local and combined authorities to ensure the benefits of tech transformation are felt across the UK:** by reviewing the Local Digital Fund to include business and challenge-led innovation projects and reviewing how the British Business Bank and the National Infrastructure Bank work with local and combined authorities to ensure accessible investment. The government should work directly with local and combined authorities, and devolved governments, to deliver digital skills programmes that target underskilled and under-represented groups, and boost local educational and retraining services.

7. **Anticipate changes in the labour market to align skills, training and migration and remain responsive to tech-powered changes:** by effectively resourcing and staffing the new Central Function, put forward in the government's recent White Paper, to build up the UK's forecasting capabilities and respond to and plan for potential future developments in AI and work, working alongside the relevant government departments – including the DfE Future Skills Unit – and Cabinet Office. Government should also launch an independent commission on the impact of automation and emerging technologies on the UK's nations and regions harnessing national and international expertise and research.

8. **Create a culture of lifelong learning through a flexible and expansive Lifelong Learning Entitlement:** by ensuring an expansive range of courses, including shorter modular courses, are eligible when the scheme goes live by reducing the minimum credit requirement and creating an accreditation system– ultimately enabling flexible use of this fund across people's careers. Provision should be extended to level 7 taught postgraduate courses, and the upper age limit should be abolished. Providers should be supported build capacity to facilitate more modular and remote learning, and maintenance loans extended to distance learners who often require access to flexible learning.

9. **Adopt a collaborative approach to get the regulatory environment for AI right:** by creating a forum bringing together all stakeholders to enable a considered and sustained public debate on new and evolving issues related to AI. This forum would help to gain a better understanding of public attitudes to AI and address any emerging areas of concern. Government and regulators should also consider providing sandboxes and practice labs so that businesses can work with regulators to drive responsible workplace innovation, and expanding funding for schemes that support businesses to responsibly adopt AI across the economy.

Many of these recommendations can also be found in **techUK's UK Tech Plan**, which presents 18 examples of how technology can build a better future for people, society, the economy and our planet and recommendations on how to ensure our regulatory system can cope with the faster pace of technological change and the AI revolution.



Adoption: The degree to which AI has been adopted varies significantly depending on the industry and company size

AI is an exciting area of computer science that is rapidly evolving and centres upon different computer software and systems designed to act in an intelligent manner using data, algorithms, and tools like machine learning. In other words, AI is a technology that can mimic the way a human may perform a task and is capable of learning from mistakes.

The impact of AI across the entire economy will be substantial but, although there is evidence of adoption across a diversity of sectors, we are still in the early stages of a transformation that will be years in the making.

- According to a report from Public First and Amazon Web Services (AWS) only 30% of UK organisations are using some form of AI technology, 28% are using cloud, and 17% are using big data.
- This chimes with data from DIGIT that puts the percentage of organisations that have invested in AI over the past five years at 36%.
- The DIGIT report emphasises that SMEs are less likely to be digital adopters. Digital adopters are also more likely to be open to future investment in technology than non-adopters.
- A report for the government found that 68% of large companies had adopted at least one AI technology, compared to 34% of medium sized companies and only 15% of small companies. Most companies in the UK are small companies.
- According to the Federation of Small Businesses (FSB), only 2% of British small and medium-sized businesses are using machine learning tools.
- Currently, a quarter of UK SMEs still do not use basic digital tools such as customer relationship management (CRM) software, digital accounting software and e-commerce software.

In the economy today, organisations that are using AI and automation are deploying the technology as a tool to improve efficiency and support people at work, automating mundane or repetitive tasks and enabling workers to focus on more stimulating and innovative work. Some organisations have adopted Robotic Process Automation (RPA) technology that involves automating repetitive and rule-based tasks.

CASE: Cognizant deploys robotic automation to improve efficiency, consistency and quality

A life sciences company leveraged Cognizant to develop a robotic process automation solution and replace and automate repetitive manual activities with a zero-touch solution for the processing of ICSRs, submitted by consumers and monitored by pharmaceutical industry regulators.

The RPA solution was completed and went live in just seven months. The solution saw a 30% reduction in end-to-end cycle time, 99% first-time accuracy achieved, and 96% regulatory compliance attained, with a 92% reduction in turnaround time compliance reached.

New automation efforts are in development to incorporate areas where more complex processing is needed, along with certain cognitive elements, including artificial intelligence and machine learning.

However, automation will only grow more sophisticated as technology develops. AI technology – that differs from RPA in that it learns from experience – is being used across business functions too. According to a Capital Economics report from January 2022, AI solutions for data management and analysis are most prevalent, with 9% of UK firms having adopted them, followed by natural language processing and generation (8%), machine learning (7%), AI hardware (5%), computer vision and image processing and generation (5%).

techUK report:
[AI Adoption in the UK: Putting AI into Action]

Adoption is patchy but diverse

Studies suggest that AI adoption is uneven across businesses of different sizes and across sectors. Research [conducted by EY in 2021] found that AI adoption is most prevalent in finance, technology, media, and telecom industries, with parts of the healthcare sector notably lagging.

AI is being utilised across the economy, even if adoption is patchy. It is being deployed to enhance customer service through AI chatbots, and HR professionals are using AI tools to manage their workforces and support recruitment efforts. Indeed, organisations are using AI to harness the power of data and predictive analytics – in fields and functions as diverse as human resources, marketing, biomedicine, and sustainability – and to power autonomous robots in manufacturing. In finance and insurance, AI helps assess risks and detect fraud, and in healthcare with diagnostics and drug treatment. There are opportunities to innovate using AI in every sector, but action is required to support adoption and drive the benefits of innovation across UK businesses.

CASE: IBM deploys an AI-powered virtual assistant to drive efficiency and customer engagement

Camping World needed a human-centred solution to allow its operation to scale and handle the increase in the numbers of customers seeking rapid assistance. The retailer settled on a cognitive AI tool developed by IBM.

IBM Watson Assistant connects Camping World customers with a virtual agent, enabling live agents to take over more complex conversations. Named Arvee, the virtual agent ensures faster and more efficient response times with dynamic

routing and capacity management capabilities. Arvee's lead generation, especially after business hours, was a functionality that the team did not have before and allows live agents to easily keep track of and proactively follow up with customer inquiries. In addition to providing 30-plus FAQs, the virtual agent integrates with Oracle and Salesforce platforms to address customers' queries and find customer information quickly and efficiently. Agents are still very much involved in the sales process, and with the allotted time, they can deliver higher quality service to customers.

Customers are experiencing shorter wait times and faster responses, and agent efficiency has dramatically improved. Aided by the agent desktop integration and with Arvee proactively collecting customer data while fielding web and SMS messaging, live agents can handle multiple simultaneous chats, increasing their overall efficiency by 33%. As of March 2022, customer engagement increased by 40% and Camping World saw wait times drop down to 33 seconds.

CASE: Mind Foundry uses AI and ML for fraud detection and prediction in insurance

Aioi Nissay Dowa Europe (AND-E), an insurance company, previously used a rule-based model to automatically flag and triage a subset of claims for further human investigation. Though this saved many hours, the number of cases sent to triage remained high, the model performance deteriorated over time, and the lack of explainability made it nearly impossible for investigators to budget their time and know what to investigate first.

Mind Foundry built a unique AI fraud detection and prediction solution, empowering claims experts to identify, prioritise, and investigate fraudulent activity. The solution accelerates the investigator's ability to generate reports and close cases by integrating with external data sources. It automates the prioritisation of each case, using new and previously learnt features, including hand-written notes, phone numbers, registrations, and more. The most relevant claims get flagged and prioritised in an investigations dashboard, so AND-E can resolve them in order of the likelihood that they contain actual instances of fraud. Other search features uniquely relevant to the fraud case are available in the handler's view, accelerating the ability to close each investigation quicker. As new patterns emerge, using a Continuous Metalearning capability, the solution automatically and continuously integrates data back into the model to improve performance over time.

The solution has:

- *Increased referrals retained by the fraud department by 800%, so handlers spent less time on false positive cases.*
- *Increased the detection of fraudulent claims by 120% compared to the legacy system.*
- *Saved 2% on AND-E's capped indemnity spend in 2022 and tracking to double that in 2023 with a 4% saving.*

techUK's Local Digital Capital Index shows that digital adoption is not equal across the UK's nations and regions either, and some areas are better placed to take advantage of digital transformation than others. There is research to suggest that technologies like AI and automation only increase productivity when there are the necessary conditions in place to support its deployment such as good educational and skills provision, but also good enabling digital infrastructure such as access to fast broadband. Notably, techUK's Digital Economy Monitor reveals that access to good digital infrastructure is key priority for businesses, whilst some local authorities are already working with tech businesses to drive digital skills. One example is Brent Council's partnership leveraging the Infosys Springboard skills platform for SMEs, and closer collaboration between government, local authorities and industry could further improve digital skills of people across the country.

CASE: techUK Local Digital Capital Index

*techUK's **Local Digital Capital Index** maps the building blocks of strong place-based digital technology ecosystems through eight key components, looking across the UK's nations and regions to assess their strength and support policymakers to address the challenges faced by each nation and region in the UK. Bringing together government, policymakers, industry, and local authorities to act on this data and target investment will be critical to harness technology like AI and level up every part of the country.*

RECOMMENDATION

Provide support for local and combined authorities to ensure the benefits of tech transformation are felt across the UK: by reviewing the Local Digital Fund to include business and challenge-led innovation projects, and reviewing how the British Business Bank and the National Infrastructure Bank work with local and combined authorities to ensure accessible investment. The government should work directly with local and combined authorities and devolved governments, to deliver digital skills programmes that target under skilled and under-represented groups and boost local educational and retraining services.

Closing the adoption gap

Data from the OECD highlights that the gap between SMEs and larger firms increases when technologies become more sophisticated. Supporting businesses to realise the benefits of digital transformation and undertake those processes responsibly is a core issue of competitiveness. There is already a digital adoption gap between SMEs and larger firms, and those companies less able to adopt and effectively utilise AI technologies will soon be outcompeted by rivals who will be able to produce larger volumes of goods and services significantly more cheaply. As AI is increasingly integrated into digital tools, more must be done to drive tech adoption. Supporting SMEs to become digital businesses is key to their survival and success in an increasingly AI-enabled economy, and to minimise labour market disruption.

RECOMMENDATION

Support SME adoption of productivity-boosting technologies: by establishing a Digital Growth Fund, reallocating money unspent under Help to Grow: Digital, that provides an enhanced deduction of 140% against corporation tax. This would knock 10% off the cost of most software purchases help 600,000 SMEs adopt new digital technologies such as AI. However, this fund must also incentivise adoption of enabling digital connectivity infrastructure and hardware and allow for both CapEx and OpEx spending.

Integration: The integration of generative AI into everyday digital tools will accelerate the use of AI at work

Whilst there are great pockets of AI adoption, it is likely that any disruption to the labour market stemming from AI and automation will take time to be fully felt across the economy. The adoption of AI as a productivity-boosting workplace tool that augments and changes existing roles in every sector will be a process, and one that will need to be nurtured.

However, we have seen that recent developments in generative AI have begun to focus business interest and spur investment. Generative AI is a type of AI technology that can produce and recognise various types of content, including text, images, and audio, based on user prompts. These are powerful and adaptable AI tools trained on large amounts of data.

- According to a McKinsey report, banks and retail are the first sectors expected to see the biggest productivity boost from generative AI as large cloud and software providers roll out their AI offerings. The same report notes that 75% of the productivity gains from generative AI will be found across 4 business areas: customer operations, marketing and sales, software engineering and R&D.
- Research looking at the UK projects that productivity gains from AI automation and augmentation over the next 4 years will be focused mainly in wholesale and retail trade, as well as professional, scientific and technical services, administrative and support services, manufacturing, and health and social care.

The first experience many businesses and workers – especially those working in SMEs – will have with AI in the workplace will be through the integration of the technology into their everyday digital workplace tools and work processes. This could be the addition of generative AI technology to their customer relationship management or e-commerce system, their digital office suite, or digital collaboration tools. Through this integration, the adoption of AI is accelerating at pace across digital businesses.

Workers will increasingly draw upon AI-powered tools – in much the same way as we draw upon internet-powered tools – to complete their daily tasks and activities. AI will be a helpful assistant that supports people to do their work, from writing emails and copy to catching up on and preparing for meetings. This means that digital competence and the ability to work with technology will become more important than ever.

CASE: Salesforce integrates generative AI into its CRM system with Einstein GPT to harness the power of data

Salesforce is a global leader in CRM, supporting businesses across the economy to manage their customer data and build and maintain strong business relationships. Salesforce has now integrated generative AI across its CRM offering – including sales, service, marketing and development – in the form of Einstein GPT, using the power of AI to leverage customer data and provide personalised experiences. Salesforce's AI technology currently delivers more than 200 billion AI-powered predictions per day.

For sales, workers can auto-generate sales tasks like composing emails, scheduling meetings, and preparing for the next interaction. In service, employees can generate knowledge articles from past case notes and auto-generate personalised agent chat replies to increase customer satisfaction through personalised and expedited service interactions. Marketing professionals can dynamically generate personalised content to engage customers and prospects across email, mobile, web, and advertising. And developers can use an AI chat assistant to generate code and ask questions for languages like Apex.

*Salesforce Einstein GPT leverages an ecosystem of models from Salesforce's own AI research and from industry leading providers of generative AI. Salesforce has already helped some businesses leverage AI and demonstrated the potential of the technology. In one case, RBC Wealth Management **integrated AI in its Salesforce CRM** and provided employees with enhanced access to data. Workers were empowered to view employee and branch performance by portfolio value, revenue, and active campaign, and given easy access to the insights they need and, importantly, recommended actions to take. For example, they can see if they're overdue to contact a priority client and then set in motion an automated workflow to schedule a meeting immediately.*

This enhanced intelligence has delivered huge operational efficiencies. Advisors spend far less time dealing with internal processes and more time helping existing clients and growing the business.

CASE: Google integrates Duet AI into Workspace to improve productivity

Google Workspace was built to allow you to collaborate in real time with other people. Now, you can collaborate with AI. Google has embedded the power of generative AI across all the Workspace apps. These features help you write, help you organise, help you visualise, help you accelerate workflows, have richer meetings and much more.

Duet AI allows users to easily generate images with a few words in Slides, analyse and act on data in Sheets faster with automated data classification and the creation of custom plans, and generate high-grade professional writing faster in Gmail or Docs.

Google has expanded its free digital skills training to include AI - and is offering new AI training to everyone in the UK. The new AI-focused New Fundamentals training series offers people and businesses practical skills and knowledge to capture the benefits of AI, whether it's to save

time, get a new job or grow their business.

Google experts have designed 10 easy to follow modules that are packed with practical advice and tips focused on essential AI skills including Growing Productivity with AI and Understanding Machine Learning.

CASE: Oracle integrates generative AI to harness the power of business data, boost productivity and support workers

*Oracle has embedded generative AI capabilities into its **Fusion Cloud Human Capital Management (HCM)** to deliver faster business value, improve productivity, enhance the candidate and employee experience and streamline HR processes. Newly embedded generative AI capabilities include assisted authoring to enable content to be quickly and easily produced, provide suggestions to guide users to achieve better and faster results based on trained LLMs, and summarisation to surface key insights from one or more data sources. Oracle has already identified more than 100 high-value-added scenarios for generative AI in HR.*

***Oracle partners with Cohere** to provide generative AI services to enterprise and government customers alike to help them automate end-to-end business processes, improve decision-making and enhance customer experiences.*

Cohere has announced Coral which gives enterprises a toolkit for creating customized AI-powered workplace assistants and is designed to dramatically boost productivity for knowledge workers. Users engage their workplace assistant via a conversational user interface. When a user asks a question (e.g., why did we launch product X in 2021?) they receive a response informed by the organization's data and including a citation for easy verification. In addition, users can ask the workplace assistant to complete tasks, such as writing an email, summarizing a document, or drafting a memo. Organizations can develop a workplace assistant by building with Cohere's models, endpoints and quickstart connectors, which enable responses to be informed by the organization's internal documents. As Cohere is a leader in retrieval augmented generation, data privacy and flexible deployment options – Coral is not only exciting, but also adoptable for even the most data secure enterprises and governments. The goal for Coral is to provide a significant boost to knowledge worker efficiency: by always having a workplace assistant available, it will be easier, more enjoyable, and much faster to find relevant information and complete writing tasks.

AI-enabled jobs

An analysis of customer service jobs can illustrate how generative AI is likely to compliment and change jobs. Breaking down the work of customer service representatives into 13 tasks and analysing the impact of generative AI on each, research found that 4 tasks remained unchanged and could be performed entirely by humans and 4 repetitive tasks could be fully automated. 5 could be augmented to help humans work more effectively, such as those where workers draw upon AI tools to provide tailored and more effective customer service experiences. But perhaps most interestingly 5 new, high-value tasks were identified. These tasks resemble more fluid, ongoing responsibilities and could be performed by humans, focused on maintaining, monitoring, and improving the performance of AI tools. And by automating repetitive tasks, customer service workers can focus on these high value tasks and responding to more complex cases.

CASE: Octopus Energy adopts generative AI for customer service

Octopus Energy has integrated AI into its company systems and customer service operations. 44% of customer emails were answered, at least in part, by AI just seven weeks after it was rolled out and AI is now doing the work of 250 people at the company. Emails written by delivered 80% customer satisfaction — comfortably better than the 65% achieved by skilled, trained people. Human employees still manage and check all the AI's output and the development is not likely to see job losses.

The adoption of AI-enabled workflows that can automate time-consuming tasks will ultimately enable workers to focus on tasks where they can deploy their less automatable skills and knowledge – including soft skills and domain or business-specific knowledge – and make an impact at work. In education and healthcare, for example, this would mean less time spent on administrative tasks and more time focusing on student needs and patient care respectively. For knowledge workers, AI means less time focused on menial tasks and more time spent on creative tasks and undertaking more important work responsibilities that involve thinking and collaboration. AI can also generate content quickly to support idea generation for projects. With more time to focus on high value tasks and less time spent completing them, the performance of these workers on such tasks can be significantly enhanced.

AI will augment other types of jobs, too. In sectors like manufacturing, AI and automation technology will still require specialist skills and human labour. For example, collaborative robots powered by AI can assist workers with complex tasks, but they still need humans to teach and program them, and to work alongside them. Rather than replacing them, the adoption of such AI can enable workers to focus on the most valuable aspects of work and apply their skills in evolving roles.

AI-powered workforce accessibility

Complementing roles with AI technology offers a real opportunity to drive workforce inclusion, helping more people stay in, enter, or re-enter the workforce. An OECD study found that businesses are optimistic that AI could help disabled people at work. Through the development of AI-powered assistive devices and the integration of AI into existing systems and hardware, organisations can foster inclusion and drive accessibility in their workplaces. For example, AI can be used to transcribe speech to text or text to speech, generate alt text for images, and describe visual stimuli for people with impaired vision. This can open up opportunities for more people to access jobs and boost diversity; in turn improving business decisions and results. According to Public First estimates, AI technologies could help over a million unemployed or economically inactive people with disabilities to access work - if employment of this demographic was boosted by 50% this could grow the economy by over £30 billion a year.

CASE: ReShare, part of The Salvation Army, makes fashion retail more sustainable with Capgemini AI

Client Challenge: ReShare wanted to further improve its ability to reduce fashion waste by identifying used clothing that could be resold while making the process simpler. Solution: Working with Capgemini, ReShare introduced artificial intelligence to enable less experienced employees to process clothing more easily by just taking a picture and provide customers with affordable and high-quality used clothes.

Benefits included simplified clothing processing, standardised quality and pricing, faster product review, and reduced waste of resalable clothing. The use of AI also support ReShare's stated goal of providing employment to those who might otherwise have difficulty finding work, such as those with disabilities who no longer needed store manager support in order to review used clothing.

AI-powered workforce flexibility

Flexible jobs are a key tool in fostering workforce inclusion, and AI will increasingly augment these jobs too. The integration of AI into remote or hybrid working platforms and collaboration tools will help people work asynchronously and reduce the frictions of flexible work. And AI can make these tools and jobs more accessible as well.

CASE: Zoom AI reduces the frictions of flexible work

Zoom is an all-in-one intelligent collaboration platform that makes connecting easier, more immersive, and more dynamic for businesses and individuals in today's world of hybrid and asynchronous work.

Zoom users are able to leverage natural language processing (NLP) technology to summarise and automatically extract key information such as next steps and highlights from video meetings, and will soon be able to ask an in-meeting, AI-powered chatbot questions about discussion points they may have missed, even if they joined midway. AI powered speech recognition technologies also enable the live transcription and translation of meetings, improving accessibility and enabling meeting participants to communicate in real time across language barriers.

*In September 2023, Zoom **announced** Zoom AI Companion, its generative AI digital assistant, at no additional cost to paid users. Zoom AI Companion improves productivity by weaving generative AI features throughout the Zoom platform, making it simple for users to benefit from generative AI in their day to day work - for example by requesting summaries of chat or email threads and suggesting replies based on the content and context, reducing the time it takes to compose a response. Planned for spring 2024, users will also be able to get real-time feedback on how they performed in video meetings and coaching on their conversational and presentation skills, and ask AI Companion to summarise prior meetings, important chat threads, and find status of key projects to prepare for upcoming meetings.*

In 2023, the Hybrid Work Commission facilitated by Public First on behalf of a group of companies, including Zoom and Vodafone, trade unions, think tanks and academics reported that 44% of people with long term health conditions said they wished for more flexibility over their work schedule, and 47% reported improved wellbeing when working from home.

A study by the CEBR and LinkedIn found that flexible work could open up the workplace to 1.3 million people and integrating accessibility-focused AI into online working platforms could prove a powerful combination in opening up workplace opportunity to all. These workplace innovations can help level the playing field and create more opportunities for people from all backgrounds, regardless of their location.

The Hybrid Work Commission estimated that the average hybrid worker saves 178 hours a year from

reduced commuting as a result of hybrid working. In total, this equates to 661 million hours saved across all hybrid workers in the UK. What's more, remote workers are more likely to spend their money in their local area, in turn driving social mobility and boosting local economic growth. Due to an increase in hybrid working, people are carrying out day-to-day activities closer to home than before the pandemic, including buying groceries (78%), getting a haircut (74%) and dropping off or picking up a parcel (73%).

But flexible work is not just about hybrid work. Flexible work also means part-time work, condensed workweeks, job shares, flexitime, and shift work. Platforms for shift swapping, rostering and workforce management can integrate AI technology to support managers in workplaces across every sector to offer flexible work to their employees.

By embracing AI-enabled flexible work across the economy, businesses can find talent from wider talent pools and more effectively fill skills gaps, and the UK can encourage the creation of more digitally enabled businesses that can create accessible jobs across the country.

RECOMMENDATION

> **Champion AI-enabled flexible work across the economy:** by legislating for a compulsory requirement for a right to request flexible and remote working from day one, where this is reasonable for the job on offer (and where it makes sense for the business and employee), creating a Single Enforcement Body to help employers comply with the law, and continuing to support the Flexible Working Taskforce to champion all forms of flexible work.

Benefits: AI can benefit both employers and employees by improving work

Studies show that workers and businesses alike recognise the benefits of technological innovation in the workplace and are in favour of using new technologies like AI, as long as they are adopted responsibly. Employees want AI to be deployed to help them do better work, and there is data to suggest that employers are looking to do just that.

What do employees think?

- According to Microsoft research, 70% of employees would delegate as much work as possible to AI to lessen their workloads, compared to 49% who say they're worried AI will replace their jobs. The research found employees would be comfortable using AI for administrative tasks (76%), but also analytical (79%) and even creative work (73%).
- A study by Hays found that 49% of employees think AI should be embraced at work, and only 13% think AI at work is something to be feared.
- But evidence suggests there is a divide between the outlook of younger and older workers on the impact of AI, with older workers having a more negative outlook.

When it comes to specific applications of AI, a more nuanced picture is revealed. For example, whilst 88% of British workers are happy for AI to be used in recruitment, 72% think workers should be made aware of its use, 86% do not think it should conduct interviews, and 84% don't think AI should help with decision-making after interview. AI in recruitment, when designed and deployed responsibly by HR professionals can mitigate bias in decision-making, but when designed poorly or based on bad data risks perpetuating bias. It will be key to ensure these AI systems are fair and equitable, and humans are well-trained and equipped with the skills to understand and work with their outputs.

In terms of decision-making, 62% of workers would be uncomfortable with automated hiring or promotion decisions, whilst a majority would also be uncomfortable with AI-enabled employee monitoring.

This data suggests that the way AI is designed and deployed can influence worker opinion. Indeed, there is some evidence that emphasises the role of national attitudes towards technology in shaping how it is received by workers, and an MIT study found that employees are considerably more likely to embrace AI when they see its value. This indicates that it is important to communicate the benefits of AI to workers to gain their trust and support.

What do employers think?

- Deloitte's State of AI 5th Edition research report finds that 94% of global business leaders agree that AI is critical to success over the next five years.
- A large majority of UK CFOs expect to see significant growth in capital spending on AI over the next five years, according to Deloitte.
- According to Microsoft research, employers are looking to empower employees with AI, not replace them – reducing headcount was last on the list of what leaders would value from AI
- A study by Hays found that 56% of UK employers think AI should be embraced at work, and only 8% think it should be feared.

When it comes to specific applications of AI such as in recruitment, 62% of HR leaders believe AI can help them hire the best candidate, but over half think companies should disclose AI use to candidates, and 84% think there should be more education and training around AI tools.

As for automated decision-making, 86% of businesses say they would struggle to fully trust AI to make all business decisions without human intervention. According to a Global Counsel report, 92% of businesses support transparency for staff on fully or partially automated decisions. And just 28% believe it is appropriate to use AI to monitor employees.

Benefits for employees

Saving time

It is perhaps no surprise that employees are looking to AI tools to support them at work, considering 68% of people say they don't have enough uninterrupted focus time during the workday.

Research from Asana found that employees feel they spend too much time on menial tasks, such as sending emails, updating the status of tasks, or having unnecessary or inefficient meetings, with 61% of knowledge workers saying that they spend too long doing 'work about work'. Some workers report that there are too many different digital tools to use and that working across different tools disrupts their productive flow. Many AI solutions are focused on solving for these challenges by automating repetitive tasks with speed and accuracy, and quickly retrieving information and data, including Microsoft 365 Co-Pilot, Zoom's AI Companion or Google's Duet AI.

According to Microsoft research, the average employee spent 57% of their time using office software for communication—in meetings, email, chat. The other 43% of the time they used for creating things like spreadsheets or presentations.

Improving productivity

Employees want AI tools to be deployed to support productivity, helping them do their jobs more effectively and focus on important high value tasks. Asked to imagine work in 2030, people most valued changes that saved them time, like producing high-quality work and learning new skills faster.

CASE: AWS launches generative AI-based clinical documentation service to support doctors

Amazon Web Services have announced an AI-powered tool called HealthScribe, that allows providers to build clinical applications that use speech recognition and generative AI to create transcripts of patient visits, identify key details and create summaries that can be entered into an electronic health record.

The tool will help doctors to spend less time on administrative tasks and more time focusing on care.

The GP Worklife survey showed job satisfaction is falling among doctors, with only half saying they were happy being a GP in 2021. They cite insufficient time to do the job justice, paperwork, and long work hours as causing the most stress.

Clients that plan to integrate the service include techUK members 3M Health Information Systems, which manages software used by more than 300,000 clinicians and population health company Babylon, which serves roughly 1,000 providers globally.

The benefits of AI technology for productivity are expected to be accelerated by developments in generative AI, and there is already research to suggest that AI is helping employee's save time in different sectors and job functions.

- According to research by Public First, AI could save over 700,000 hours a year in administrative work for GPs and teachers.
- At Addenbroke's Hospital in Cambridge, the NHS is using AI to cut waiting times for cancer patients. Through the use of AI technology, NHS specialists can now plan radiotherapy treatments approximately two and half times faster than if they were working alone, ensuring more patients can get treatment sooner and improving the likelihood of better outcomes.
- A study by Visier suggests that workers in the UK already using AI are saving 1.55 hours per day, equivalent to around 390 hours a year.
- An MIT study found that generative AI reduced the time taken to complete mid-level professional writing tasks – increasing productivity by 37%, and decreasing the time spent on specific tasks by 80%.

- Research from GitHub reveals that generative AI increased the productivity of computer programmers by 55% and 60–75% of users reported improved job satisfaction.
- The NBER found that not only did generative AI help resolve customer support cases more quickly, increasing productivity by 14% on average, it also boosted customer satisfaction for cases handled by newer or less skilled staff.
- In experiments by the BCG, consultants using the GPT-4 AI finished 12.2% more tasks, completed tasks 25.1% more quickly & produced 40% higher quality results, boosting the work of lower skilled staff the most.

Harnessing creativity

As AI adoption and automation proliferate, it will be imperative to harness technology to free up employee time and enable them to focus on high-value tasks that use their creativity. These will be key differentiators and drivers of innovation in the future workplace. There has been some research to show that AI can help those with initial low creativity to be more creative in writing tasks, and such technology could prove a useful tool in supporting people in their creative processes and do better, faster work – such as through AI-assisted brainstorming or idea generation. People will need access to training in order to upskill, use these creativity enhancing AI tools, and meet changing demands.

Improving work

Employees can see the promise of AI for tackling key barriers to their productivity and reclaiming time at work, and the data suggests there are other benefits too. The OECD's Employment Outlook 2023 found that workers using AI in finance and manufacturing said the use of AI at work not only improved their own performance, but it also improved their physical and mental health, improved enjoyment in their job, and improved fairness in management.

Benefits for employers

Employers view AI as critical to the future of their businesses and to remain competitive as technology transforms the economy. Just as employees are keen for AI to be used to help them do their jobs, employers view the benefits of AI through a similar lens – enabling workers to do better work more quickly. A survey of business leaders by Microsoft on what they would value most about AI in the workplace found that leaders prioritised:

- Increasing employee productivity
- Helping employees with necessary but repetitive tasks
- Increasing employee wellbeing
- Eliminating employee time-spend on low-value activities
- Augmenting/enhancing human capabilities
- Accelerating employee pace of work

Improving job satisfaction

This alignment of purpose could prove promising for promoting job satisfaction, which has benefits for both employees and employers, if it is leveraged as AI is adopted across organisations. Research by Oxford University's Saïd Business School, in collaboration with techUK member BT, found that workers are 13% more productive when happy. Businesses that adopt AI in a way that aligns with employee priorities can create more productive and attractive workplaces, which can help them to attract and retain top talent.

Boosting profitability

AI can help make workers more productive, do better work and in turn boost profitability. A Chartered Institute of Personnel and Development (CIPD) survey found that over half of employers who adopted AI and automation found it improved the quality of their goods and services, and over a third saw increased revenues. A third of adopters also saw reduced costs.

This chimes with data from McKinsey that shows a majority of businesses reporting increased revenues and reduced costs in the business areas they have adopted AI, and AI technology can be an invaluable tool in driving efficiency and cost reductions across businesses as they look to make savings in a challenging economy. According to IBM, AI and automation can cut costs involved for data breach incidents by almost half, whilst Google has been applying DeepMind's machine learning to improve the energy efficiency of its data centres since 2016, reducing the amount of energy the company uses for cooling by up to 40%.

Leveraging the power of data

Many of these benefits are driven by a more effective and strategic use of business data. Data is the key foundation of AI, and businesses that leverage its power can make better decisions across all business functions. Data-driven decision-making, and predictive analytics, can help businesses make evidence-based decisions and reduce bias. One report found that U.S. companies are likely to be missing out on upwards of $4.26 trillion in revenue a year by failing to use AI in their decision-making process, with 96% of business leaders believing that they can improve their decision-making with AI.

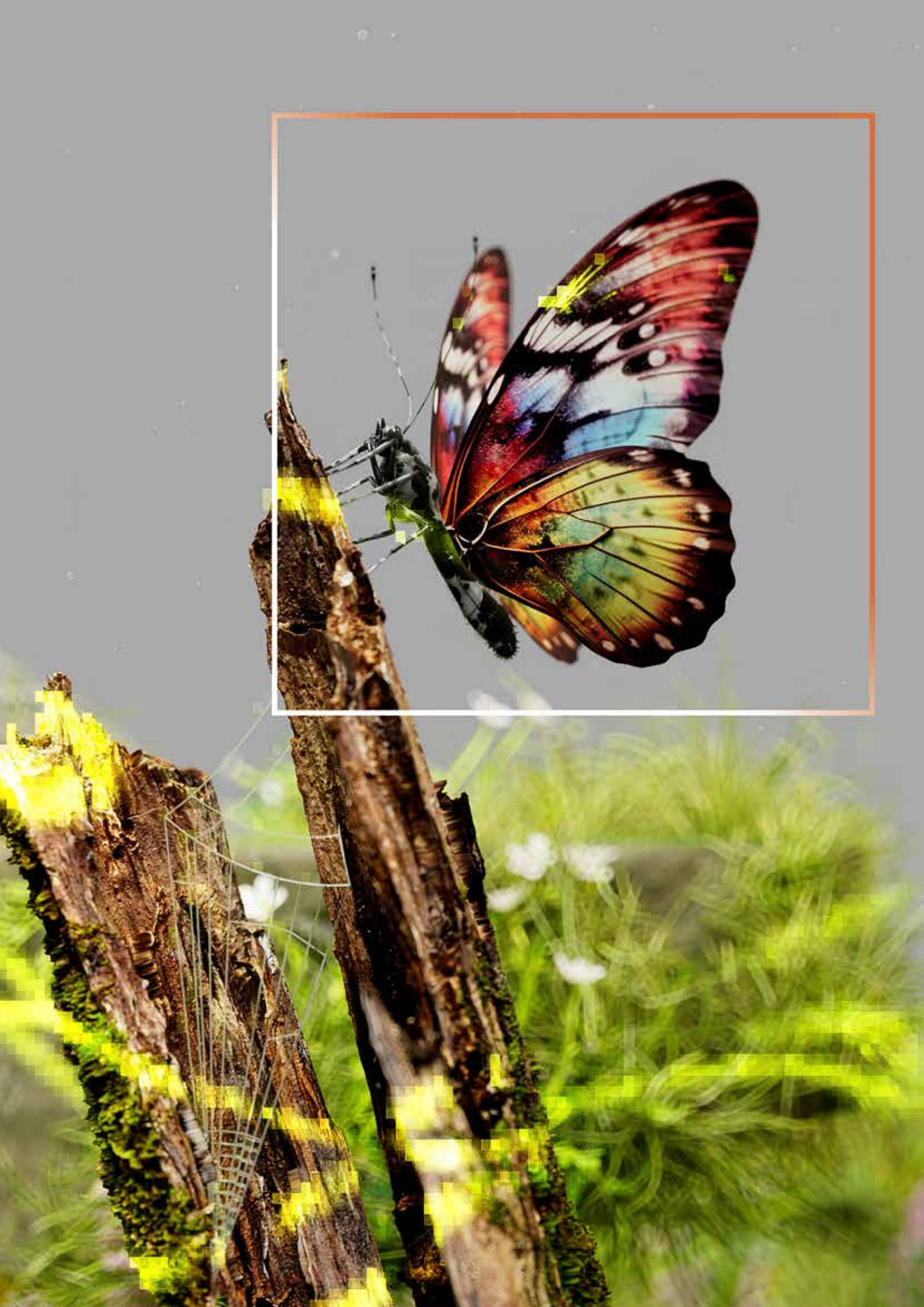
CASE: Twilio integrates generative AI to help businesses leverage customer data on its platform

Twilio customers will now be able to use OpenAI's GPT-4 model to power new generative capabilities in Twilio Engage, its multichannel marketing solution built atop the Segment Customer Data Platform. This is a part of ***Twilio CustomerAI,*** *a technology layer that couples the power of predictive and generative AI with the wealth of customer data flowing through Twilio's Customer Engagement Platform.*

Data pipelines break, data formats evolve rapidly, and data teams often don't have the bandwidth to fully leverage the potential of the customer data they have. Now, with AI rapidly unlocking new opportunities, the value of having organized, clean and actionable data that is AI-ready has never been more important. Twilio's Customer Engagement Platform enables companies to unlock their data, building an understanding of their customers with Twilio Segment, and then activate that understanding across their contact centre with Twilio Flex, their marketing campaigns with Twilio Engage, and their products. Twilio CustomerAI infuses greater customer understanding and personalization across every one of those customer touchpoints.

Not only can organisations more effectively use their customer data, the increasing prevalence of AI-enabled work means that organisations will have access to more workforce data than ever before, and they will be better equipped to deploy AI to effectively utilise it. Increased data collection provides workforce insights that can allow businesses to make more informed decisions on progression and terms and conditions, including identifying issues around diversity and equality metrics. Workforce data can also help businesses identify risks of burnout amongst employees and help balance workloads and work processes, reduce pitfalls such as proximity bias, and reduce health and safety and operation compliance risks.

When it comes to the use of workforce data, not all forms of data collection and use have the same implications, and a balanced discussion will be required. In its guidance on employment practices, the ICO recognises that monitoring tools can bring a number of benefits. It will be important to deploy AI technology and provide training to help workers adapt to increasingly data-driven workflows, and businesses must ensure they have the right policies and procedures in place to support people to use such data responsibly.



Challenges: The adoption of AI at work raises challenges around skills and responsible use

While there is a consensus that AI will transform work, the pattern of AI adoption – particularly amongst smaller businesses – points to challenges inhibiting the widespread uptake of these technologies across all sectors of the economy.

According to one Fisher Phillips survey, the main reason a majority of employers are not using AI is because they do not know where to start. For the least digitally intensive businesses, a lack of awareness and concerns around cost are raised as key reasons that they have not adopted digital technologies.

In order to understand what is holding back AI adoption and make recommendations to drive uptake, techUK's AI Adoption Working Group identified five key thematic issues that could limit greater AI adoption across the economy:

1. inconsistent data quality and accessibility
2. a lack of trust in AI
3. a limiting organisational culture and understanding of AI
4. insufficient compute infrastructure
5. gaps in AI skills

A study by Workday identified similar barriers to adoption including a poor data foundation, vague use cases, and a skills gap. As data is the driving force behind the technology, businesses will clearly need a strong data-readiness framework to maximise the benefits of AI and ensure its use is ethical and sustainable. In our recent AI adoption paper, techUK set out recommendations for businesses and government to tackle many of these barriers.

However, what is remarkable is that many of these issues point to a lack of knowledge across businesses – from top to bottom – on how to adopt and use technology in an effective and responsible way for their organisation.

There are a number of organisations and schemes that are working to remedy this issue, including InnovateUK's BridgeAI programme which offers funding and support to help innovators across five high growth sectors to assess and implement trusted AI solutions, connect with experts, and elevate their AI leadership skills. Such initiatives are invaluable in helping more businesses take advantage of AI, and supporting and expanding access to similar schemes across the economy will be key to deliver on the promise of AI in every sector.

Lack of digital knowledge or skills

The ability of businesses to adopt and effectively use AI is hindered by the lack of digital skills and understanding amongst the labour force. Whilst 82% of UK jobs already require digital skills, 69% of leaders feel their organisation suffers from a digital skills gap. Over a quarter of UK SMEs said the ongoing shortage of digitally skilled workers poses a high or very high risk for their business and 31% of said the lack of knowledge represents a major, or very major, barrier to digitalisation efforts.

This gap will be compounded by a growth in new tech jobs, with 60% of employers expecting their reliance on advanced digital skills to grow in the next five years. Many employees do not have the digital skills for their jobs now, let alone the digital skills they will need in the future.

Responsible use of AI in the workplace

Having the right skills in place to effectively adopt and use AI across businesses is essential to ensure that these tools are deployed responsibly by employees. The improper use of any technology at work poses risks to businesses and individuals and AI is no exception. Businesses will need to ensure the technology they adopt is appropriate, and have the skills, training and procedures in place to help workers manage risks.

Using AI at work raises a number of ethical and legal challenges for businesses. These include challenges related to bias, relevance, transparency and privacy, and issues related to governance, confidentiality, accuracy, and liability.

Businesses must be aware of the risks around the potential collection of and misuse of sensitive data, inadequate transparency in decision-making

processes, and the perpetuation of biases in AI algorithms. Equipping staff to respond to these challenges will be key. This means ensuring they know how to appropriately handle data and securely use AI tools, have an understanding of how those tools operate, their capabilities, and their accuracy, and have a good awareness of the existing rules and regulations in place, including what this means for them and their wider company.

Some employers are taking significant strides to support their workers to manage risk, in the form of creating and operationalising ethical principles, policies and frameworks, to ensure greater responsible use of AI.

CASE: Meta sets out 5 pillars of responsible AI

- *Privacy and security*
  Protecting the privacy and security of people's data is the responsibility of everyone at Meta AI.
- *Fairness and inclusion*
  Everyone should be treated fairly when using our products and they should work equally well for all people.
- *Robustness and safety*
  AI systems should meet high performance standards, and should be tested to ensure they behave safely and as intended.
- *Transparency and control*
  People who use our products should have more transparency and control about how data about them is collected and used.
- *Accountability and governance*
  We build reliable processes to ensure accountability for our AI systems and the decisions they make.

Security risks

AI systems are built on large amounts of data, making them prime targets for cyberattacks. Bad actors can take advantage of and manipulate data. This could be through stealing data from insecure systems, stealing AI models themselves, or manipulating AI inputs to produce negative or damaging outputs.

Ensuring that workers and businesses have the know how to defend from cyber-attacks will be key, considering that over 80% of cybersecurity incidents result from human error. However, businesses can also deploy AI to mitigate risks in human decision-making. Through deep learning algorithms and technology, AI can proactively respond to emerging threats and protect against a diverse set of cyber-attack methods. Being able to draw upon the dual power of AI technology and the digital competences of workers will be a crucial bulwark against cyber threats.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Changing nature of work: AI will displace some jobs and augment others, but also create new ones

As the automation of tasks becomes commonplace, organisations must also consider the impact of AI on current jobs. How businesses adopt automation is likely to shape employee attitudes to tech adoption, and they will need to think about how to strike a balance between AI-driven automation and human involvement in the AI-enabled workplace.

The long-term impact of AI on jobs is hard to forecast, and we must take all predictions with a pinch of salt. According to a Goldman Sachs study, although two thirds of occupations are exposed to automation and AI in the long term, most jobs and industries are only "partially exposed to automation and are thus more likely to be complemented rather than substituted by AI".

Whilst much the conversation around AI is dominated by discussions of potential job displacement and increasing use of AI to cut jobs, there is evidence to suggest that few businesses view reducing headcount through AI adoption as a core benefit of the technology. techUK's latest Digital Economy Monitor shows that although we have seen an uptick in businesses planning to reduce headcount (15%) over the next year, this is largely in response to economic pressures, and a majority (57%) still plan to increase their headcount.

However, in the longer term, some specific roles may be displaced by AI and automation technologies. This may not necessarily result in an overallreduced headcount for businesses, but a change in the types of jobs and roles comprising the labour market and businesses' workforce. We must therefore prepare people to adapt to changing demands.

Whilst AI will displace some jobs and augment many others across the economy, it will also create new jobs. According to data from Experis ManpowerGroup, over half of British companies say AI will boost their staff headcount over next two years. Although more companies are planning to reduce headcount in response to macroeconomic challenges, talent demand in the UK tech sector is expected to continue to outgrow supply, fuelled by a growth in roles centred around AI and enabling technology.

A growth in AI-related jobs

Emerging data is beginning to show positive signs for new positions and even new careers. Since 2013, demand for AI talent has increased by 450% and the proliferation of AI is already increasing the demand for jobs including data analysts and scientists who work with the technology to create best practices in the workplace. This is supported by research that highlights AI and machine learning specialists as the projected fastest growing jobs, followed closely by sustainability experts. In fact, a majority of the fastest growing jobs are technology related.

The AI revolution will not arrive by accident, it will be built by humans. Designing, developing, and deploying AI technology, as well as using, maintaining, and securing it over time, will require significant human input, driven by strong technical and engineering skills.

AI will require multi-skilled teams

The widespread adoption of AI will be driven by multi-skilled teams. That means not only AI and machine learning specialists, but talent well versed in complementary and enabling technologies such as data, cloud computing and cybersecurity, as well as change management and sustainability specialists that can drive transformation in organisational processes and products. It also means programmers and designers who are able to work with underlying AI technologies and build new innovative applications, and engineers that can work with and maintain autonomous robots. And as AI becomes a central component of work across businesses, it means new functional positions too, including specialist prompt engineers, linguistics experts, AI quality controllers and AI editors.

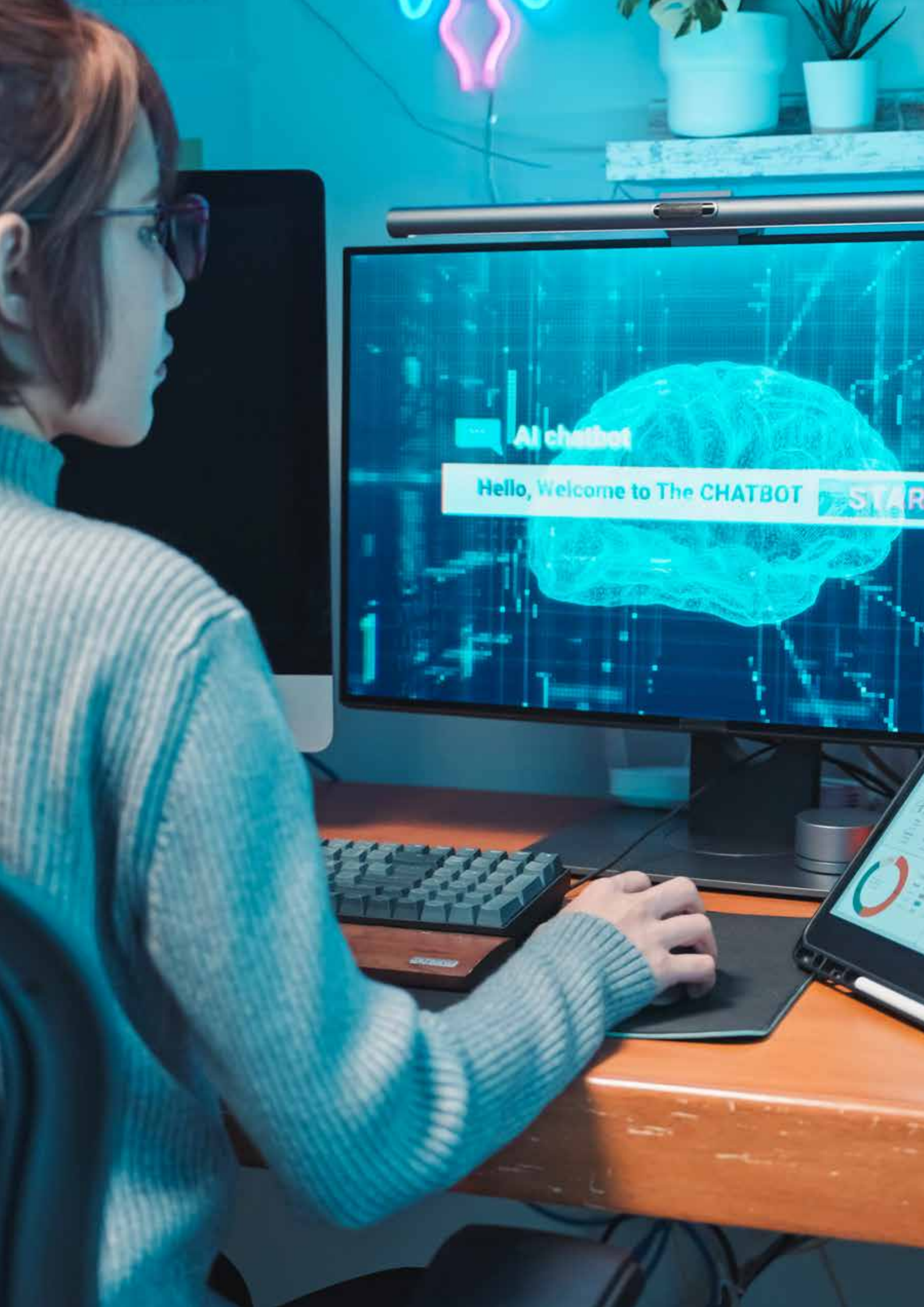
It is important to remember that it is not only strong technical skills that are needed to drive AI projects; to commercialise AI, organisations need teams that can combine technical expertise with other capabilities, such as strong soft skills, domain-specific knowledge, legal knowledge, and commercial business experience. As AI augments roles across organisations, employees will need to be upskilled to use AI tools alongside their domain understanding to exploit data responsibly.

AI will decrease demand for automatable tasks and related skills, and increase demand for human and digital skills

In the short, medium, and long term, it is clear that there will be a growth in roles working on, with or alongside AI technology. In order to benefit from an expanding tech sector, the UK will need to ensure that it is an attractive place to found new tech businesses, including AI startups and scale-ups, and create the conditions for growth that underpin job creation.

From a skills perspective, automation and AI will decrease demand for tasks and related skills that are most easily automated and increase demand for those that are not. It is important to remember that as more tasks are automated, these will rarely represent a full skillset, let alone a full job. Indeed, an increase in the use of AI and automation technology will put a premium on inimitable human qualities and soft skills, and boost demand for the digital competences and skills required to work on or alongside these technologies in sectors across the economy.

Despite this fact, less than 1 in 5 employees would rate their soft skill set as excellent, and research from Salesforce reveals that just one in 10 UK employees feel they have AI skills. Whilst 75% of workers report using digital skills day to day, few report skills beyond collaboration technology, digital administration, and digital project management.


AI chatbot
Hello, Welcome to The CHATBOT

Skills, skills, skills: The era of AI competence, soft skills, and human expertise

“AI won’t take your job, but someone who knows how to use AI might”.

As AI takes hold in the workplace, workers will have to adapt their skills to changing responsibilities. For AI-augmented tasks, workers will need both the technological competence to use AI tools, and an ability to judge when best to use AI over human expertise in their interactions at work. **Research has shown** that people who used AI for tasks it wasn’t good at were more likely to make mistakes, trusting AI when they shouldn’t. The same research notes how some consultants moved back and forth between AI and human work, combining the strengths of both, evidencing the interplay between human expertise and technology.

One example of a new emerging skill stemming from developments in AI is prompt engineering, the ability to prompt generative AI tools to get the desired outcomes. The number of job postings that mention generative AI has seen a 36x increase in 2023 compared to 2022, coupled with a growth in demand for prompt engineers across businesses. Notably, data from Udemy, the online learning platform, showed that generative AI skills were the most in-demand skills on the platform for the first quarter of 2023.

CASE: Microsoft launch AI Skills Initiative to train workers on generative AI

*Microsoft's **AI Skills Initiative** is helping people and communities around the world learn how to harness the power of AI. The Microsoft AI Skills Initiative includes new, free coursework developed with LinkedIn, including the first Professional Certificate on Generative AI in the online learning market; a new open global grant challenge in coordination with data.org to uncover new ways of training workers on generative AI; and greater access to free digital learning events and resources for everyone to improve their AI fluency.*

When it comes to AI skills, over half of companies report an AI skills gap and 45% of those companies note that both soft and technical skills are lacking. A study by IBM found just 33% of UK companies have accelerated their use of AI in the past two years compared with the European average of 49%, citing a skills shortage as the top barrier.

For many new tasks centred upon AI, workers will need to have the digital skills to supervise and improve the AI tools they use, including the ability to handle and detect bias. But they will need strong domain-specific and business knowledge – in addition to good soft skills such as creative evaluation, ethical reasoning, and analytical judgment – to do so most effectively.

As new tasks change the complexion of jobs across the economy, adaptability and the capacity to learn will be crucial to respond to tech-powered change to work processes and workflows.

There will be a need to be a focus on cross-skilling, the process of developing new skills that apply across different functions. Workers must be able to expand their knowledge sideways so that they can efficiently manage multiple responsibilities and collaborate better. Rather than being confined to one area, cross-skilling gives people the flexibility to learn outside their area of expertise to stay relevant in an ever-changing market.

A curiosity for learning means workers are also more likely to ask the right questions of AI and make the most of the technology in their roles. And good communication and collaboration skills will help people work with the outputs of AI tools in their interactions with customers and colleagues.

According to the World Economic Forum's Future of Jobs 2023 report, the top four skills judged by employers to grow in importance over the next four years are:

1. Creative thinking
2. Analytical thinking
3. Technological literacy
4. Curiosity and lifelong learning

The top four skills employers are prioritising in their workforce development and training are:

1. Creative thinking
2. Analytical thinking
3. AI and big data skills
4. Leadership and social influence

The same WEF report highlights that bigger companies – that are often more digitally mature – see AI as the top priority for training and development.

Experis' latest Tech Talent Outlook shows how technology has already began to shift the hiring priorities and focus of IT employers. The top five staffing priorities reported are:

1. Cybersecurity (34%)
2. Technical Support (32%)
3. Customer or User Experience (31%)
4. Database Management (27%)
5. Customer Relationship Management Systems (25%)

UK data from LinkedIn gathered between 2017 and 2021 corroborates the rising demand for jobs that require digital skills. The data suggests that the three job functions that heavily depend on digital skills – research, engineering and marketing - are increasing, with these sectors representing 7%, 6% and 3% of hiring growth over the period. Healthcare, legal services and customer support, which are likely to be significantly disrupted by technology in the coming years, have seen an even larger share of job growth over this period.

AI is likely to most impact roles wherein tasks are more easily automated

Recent advancements in generative AI have changed the landscape around the types of jobs most likely to be impacted by AI and automation, and it is possible that developments in the technology may further change the picture in the future. The ability to identify and respond to these changes will be paramount as the labour market evolves in response to AI.

Whilst AI-enabled jobs are expected to grow, the WEF data highlights that the majority of projected fastest declining roles over the next 4 years are clerical or secretarial roles such as data entry clerks or executive assistants; highlighting the impact on those roles wherein most tasks are more easily automated.

According to research by Accenture, 40% of working hours across various industries could be affected by generative AI, with banking as the industry most likely to be affected. In banking, 54% of tasks were found to have a high potential for automation, closely followed by insurance at 48% and energy at 43%. For software and high tech, tasks with high automation potential were identified as 36% and 26% of tasks respectively.

However, in a global survey by McKinsey on the impact of generative AI, service operations was the only function in which most respondents expected to see a decrease in workforce size at their organisations. Across other functions, responses are mixed, reflecting the fact that for most roles only a certain number of tasks and responsibilities can be effectively automated.

There is an inclusion element to this challenge. According to Goldman Sachs, over the coming years, lower paid workers are considerably more likely to need to change occupations, and women are more likely to need to retrain than men.

Recent analysis by Adzuna revealed a drop in the amount of jobs vacancies for a number of careers previously identified as being most exposed to AI – including some tech jobs around data management and software engineering, as well as creative roles like graphic designers. This may suggest that the early stages of the AI transition are already underway.

Yet, we must be cautious about attributing these trends to AI, and they must be considered in the context of significant macroeconomic pressures and a longstanding digital skills gap. According to CWJobs, 29% of businesses are looking to technology like AI or robotics to plug short-term talent gaps. Businesses need to be able to recruit individuals with relevant digital and workplace skills, or they will increasingly turn to technology to meet their needs.

An enduring role for human creativity

The emergence of tools that can generate visual and written content to a good standard has raised questions around the impact of AI on creative roles and industries, including advertising and marketing. A study by Goldman Sachs estimates that generative AI has the potential to automate 26% of tasks in the arts, design, entertainment, media and sports sectors. And AI tools can already produce a range of content including blogs, social media posts, copy, marketing emails, and ads.

There has been initial evidence to suggest that AI performs well across a range of creativity measures and tests. However, the idea that creativity tests built to assess humans can adequately assess AI must be interrogated, and Forrester research from the U.S. anticipates that the impact of AI on advertising, PR and marketing jobs will only reduce jobs in the creative industries by 7.5%. The impact of AI and automation is projected to focus primarily on clerical roles, finance and operations staff where tasks are repetitive and more easily automated, whilst creative and technology roles will flourish.

Indeed, according to the Forrester report, the skill that is least automatable is originality. AI can help humans focus on delivering original, high-quality and creative work by taking the load of repetitive tasks, but also help them do their work faster; this could be by helping writers generate ideas or plan and iterate their work. Skilled professionals, equipped with the creative skills, technical competence and soft skills to work with AI, are expected to be the ones that thrive in the future of these industries.

Sector in focus: software development

There has been research to suggest that software developers and engineers are particularly exposed to developments in AI and automation technology. The emergence of AI tools such as Github Co-Pilot and AWS Code Whisperer that can generate code suggestions based on user comments and existing code has brought these jobs into focus. Whilst the ability of new AI tools to generate code is a significant development, there remains a role for humans in software engineering.

CASE: AWS Code Whisperer helps programmers write code faster

AWS CodeWhisperer is trained on billions of lines of code and can generate code suggestions ranging from snippets to full functions in real time based on comments and existing code. This helps users bypass time-consuming coding tasks and accelerate building with unfamiliar APIs.

The tool can also highlight code that resembles open-source training data to enable easy attribution and scan for security vulnerabilities.

The Accenture Velocity team utilised CodeWhisperer to accelerate their AI and ML projects, finding a number of benefits for users:

- *The team is spending less time creating boilerplate and repetitive code patterns, and more time on what matters: building great software*
- *CodeWhisperer empowers developers to responsibly use AI to create syntactically correct and secure applications*
- *The team can generate entire functions and logical code blocks without having to search for and customize code snippets from the web*
- *They can accelerate onboarding for novice developers or developers working with an unfamiliar codebase*
- *They can detect security threats early in the development process by shifting the security scanning left to the developer's IDE*

Although current AI-powered code assistance tools can produce functionally correct code, their increasing use should be seen as a reflection of tech-enabled innovations to the practice of software developers. When compared to a human, they lack an understanding of the nuances of the business domain, user or client needs, and the wider context in which the software is being written and deployed. The ability to produce code does not mean this code is appropriate nor well written. And there are privacy concerns to consider – such as the access of these tools to information about the software being developed – as well as legal issues centred around who 'owns' generated code.

Thus, at present, creating high quality, maintainable, and reliable software is best accomplished by a combination of AI tools and human expertise. AI can prove useful for those tasks that are repetitive and well understood. This can save software developers time and enable them to focus on higher value work, such as overall architectural design and implementing critical features.

> *"Generative AI will have a huge impact on the way software development is written. To truly benefit from it, we need to view it not just as another tool but as an evolution of the practice of writing software. The organisations that understand this and embed Gen AI into their technology strategy are those that will reap the most reward."* – Matt Belcher, Principal Craftsperson at Codurance

Spotlight on the legal sector

The legal sector is not insulated from the impact of digital transformation and law professionals in the future will need to draw upon AI tools and software in order to effectively do their jobs. The use of AI in legal has a number of applications, such as helping to automate forms and contracts, and analysing large volumes of data and documents. According to Raconteur, 63% of legal work consists of repetitive, fact-based decisions and is primed for automation.

The ability to use AI to more quickly analyse documents and case law or draw up contracts can free up considerable time for law professionals, especially paralegals and junior lawyers. This time can be better spent on higher value tasks such as sourcing new business, working with the needs of individual clients, or developing their skills and training.

As in other sectors, the most effective use of AI in law is likely to be found when deployed in conjunction with strong human expertise. There has been some research to show that using AI significantly boosts the work quality of low performing law students. However, it is important to remember that when using AI for legal tasks, present tools are unable to give due consideration to legal principles like a human would. Equally, lawyers have an obligation to provide clear information and not mislead their clients, meaning astute legal acumen alongside strong AI and soft skills will remain critical to work with AI outputs and effectively use and improve AI tools over time.

> *"AI will clearly have profound implications for pretty much all occupations and lawyers will be no different. The future will surely be one where people and AI work together to augment one another. AI will enable us lawyers to work more quickly and more efficiently and, in all probability, to deliver legal services to a higher standard. Whether or not there will be more or fewer lawyers in the future, a lawyer's work will change. The transition will be disruptive and will involve the acquisition of new skills. For law firms, prioritising the training and development of their people is a business imperative."* - James Davies, Employment Law Partner, Lewis Silkin LLP

Building labour market forecasting capacity

Taking steps to build the government's forecasting capacity to keep on top of labour market trends will be essential to position the UK to respond to tech-powered change and target future intervention in an uncertain future.

Government will need to ensure there is the necessary funding for regulators and central functions to respond to developments in AI, and there will need to be coordination across government as technology transforms work.

Equally, government must be cognizant of the lag between training and the speed of the technological revolution, which transcends any previous revolution in history, and consider support mechanisms to enable and encourage those who may be reluctant to transition to new digital roles to do so.

When considering the current digital skills gap and the growth of new AI-enabled roles in this context, there is already a pressing need to support workers to retrain for an increasingly high skilled and AI-enabled economy and transition into the jobs of the future.

RECOMMENDATION

Anticipate changes in the labour market to align skills, training and migration and remain responsive to tech-powered changes: by effectively staffing and resourcing the new Central Function, put forward in the Government's recent White Paper to build up the UK's forecasting capabilities, and respond to and plan for potential future developments in AI and work, working alongside the relevant government departments – including the DfE Future Skills Unit – and Cabinet Office. Government should also launch an independent commission on the impact of automation and emerging technologies on the UK's nations and regions harnessing national and international expertise and research.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Supporting jobs and people: Taking a skills perspective can help manage job disruption and support job transitions

As technology changes work, it will be important that our understanding of the concept of work matches the dynamism of tech-powered transformation across the economy. **Research from Deloitte** provides evidence of a shift away from structured jobs and responsibilities to more fluid ways of working, finding that 63% of current work being performed falls outside of people's core job descriptions with 81% of organisations noting that work is increasingly performed across functional boundaries.

In response, many companies are adapting how they approach work in their organisations, viewing work as a combination of skills that employers and employees can draw upon as the world and workplace changes around them. The majority of UK workers (87%) consider skills-based experience more important than a degree when trying to find employment today, in line with the 82% of people leaders that say skills are the most important factor in evaluating candidates. Most interestingly, the data suggests that organisations that adopt skills-based practices outperform their peers who do not.

Leveraging transferable skills can help manage job disruption

Viewing work from a skills-based perspective holds great promise for identifying talent from wider candidate pools, whether inside or outside of organisations, and enables both businesses and workers to adapt to fast-changing demands in the labour market. It is important to recognise that many of the human and soft skills that employers value and that will be essential in the tech-enabled workplace – such as creative thinking, analytical thinking, and a curiosity and propensity for learning – are transferable skills. As we consider the impact of technology on job displacement, identifying and leveraging these transferable skills across businesses and the economy will be key to supporting workers to transition between jobs or sectors, or to new AI-enabled roles within organisations. The talent is out there, it can be found across the UK. The task is to help match this talent with jobs and provide people with the training opportunities to develop their skill set, learn digital skills, and thrive in the tech-enabled jobs of the future.

AI can support job transitions

There is a role for technology in solving this challenge. AI candidate and employee tools can empower individuals by supporting them to identify these skills from their experience, craft CVs, and target their development and learning. AI recruitment tools can help HR professionals recruit for skills from wider talent pools, improve diversity and inclusion, and identify skills gaps and target training. Deploying the power of technology to match skills with jobs across the economy can help manage disruption in the job market, aiding workers to transition into new tech-enabled jobs for which they have relevant skills, whilst helping businesses to find relevant skills in other sectors.

CASE: Workday Skills Cloud uses AI to help employees grow their skills and develop their career

Workday Skills Cloud *helps employees share skills and interests and receive relevant connections, curated learning content and recommended jobs to help them on their career journey.*

Using AI-powered machine learning, Skills Cloud provides workers with suggestions to grow their skills and capabilities and encourages them to build a plan as they explore opportunities for continued career development.

Skills Cloud delivers personalised recommendations that align with career goals, such as targeted development plans or opportunities to work on new projects, to empower and encourage employees to develop their skillset.

CASE: CWJobs Instant Candidate Recommendation Tool helps match skills with roles

AI software like CWJobs' Instant Candidate Recommendation tool can suggest highly relevant and active candidates based on their skills and match to the role. The technology, which has been designed by a global team of data scientists, uses real recruiter data to match candidate skills to roles. The tool has a very high conversation rate with 94% of monthly invites sent resulting in visits to job advertisements.

AI can bring some of these benefits to government services too. Through its Skills Toolkit and Jobsite, the government has taken some steps to help workers access training and find jobs, with limited success. According to CareerWallet research, over half of jobseekers do not believe the government offers any support in helping them find a new job, and the UK government website may only list 20% of relevant live vacancies.

CASE: X0PA AI harnesses AI for skills-based hiring

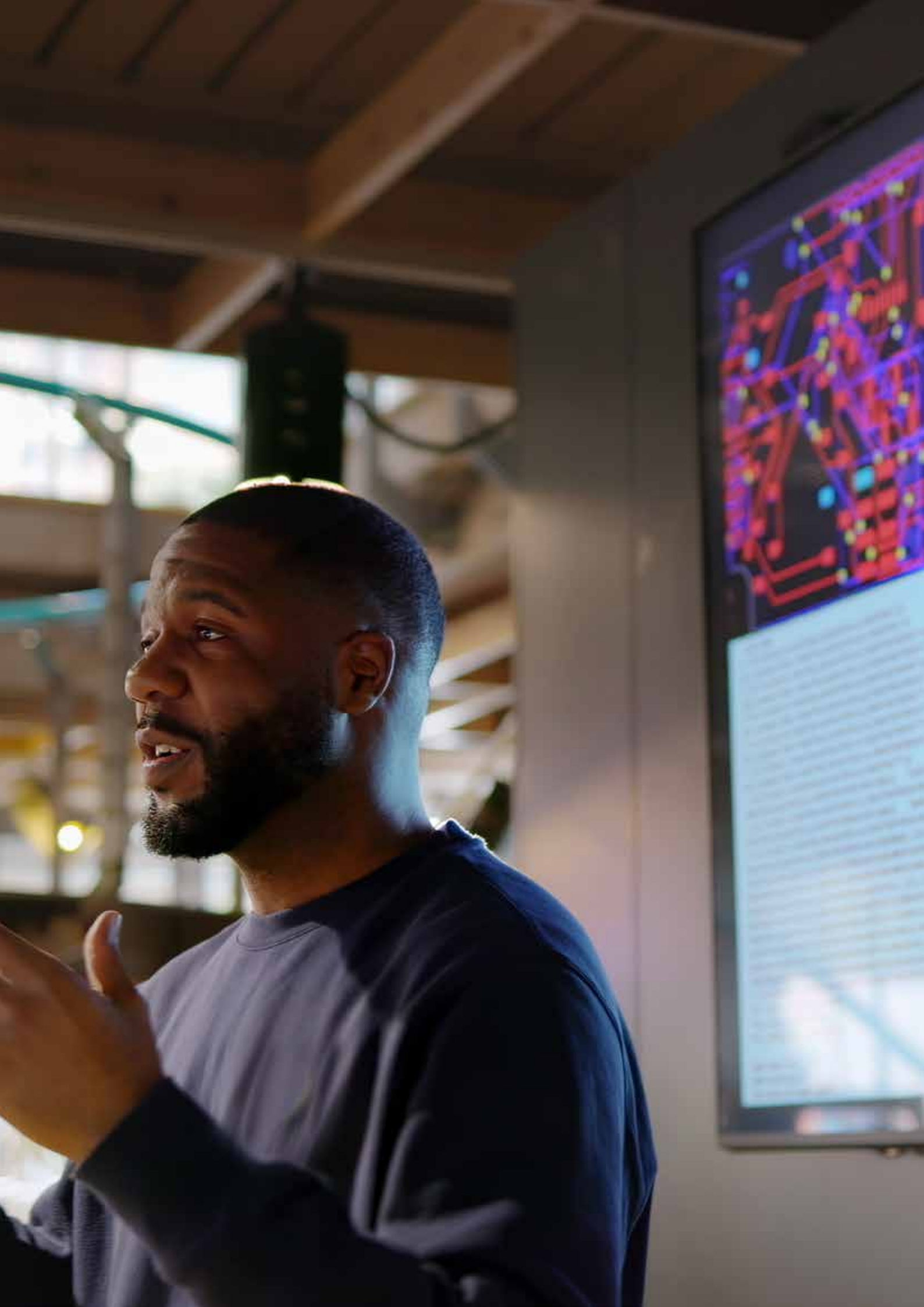
X0PA AI provides an end-to-end AI-powered recruitment platform from sourcing, screening, and interviewing to offer. Using recruitment software backed by patented AI algorithms, X0PA enables skills-based candidate sourcing, job matching and recommendations, as well as recruitment process automation for job postings and candidate emails – helping hiring managers evaluate applications based on their skillset and relevance to the job whilst alleviating them of repetitive tasks. X0PA technology facilitates diverse and inclusive hiring through its objectivity tool, underpinned by explainable and ethical AI built upon millions of profiles to remove bias from hiring processes.

In one case, Workforce Singapore deployed four of X0PA's APIs across Suggested Talent, Application Score, Skills Taxonomy and Resumé Parsing to facilitate extraction, processing and AI scoring of candidate profiles. The aim was to help solve the business challenge of heavy time expenditure on screening applicants from the MyCareerFutures government jobs service. Jobseekers were provided with relevant skills suggestions when creating a profile and provided job recommendations based on those skills, resulting in over 20% time saved for employers identifying the right talent for the role.

techUK has long maintained, as it mentioned in its Fast Forward for Digital Jobs report, that government should create a Digital Skills Toolkit 2.0 to support people to digitally upskill and help people navigate into tech-enabled jobs. This should be supported by an accreditation framework for courses, including modular courses, to ensure training is relevant and high quality. Many businesses across the economy have and continue to develop training to boost skills and provide pathways into digital jobs, and government must leverage solutions that already exist in the private sector. The skills challenge cannot be solved alone and government must take steps to facilitate effective public-private sector collaboration. Government should also consider how AI could transform its job and skills websites to better support workers, helping them to easily target, identify, and access relevant training opportunities, and identify their skills matches with jobs across the economy.

RECOMMENDATION

Strengthen and spotlight pathways into digital and AI jobs: by creating a Digital Skills Toolkit 2.0 to help people navigate digital skills and careers, designing an accreditation framework for short modular courses in collaboration with industry, and considering how AI could be deployed to enhance the government jobsite and skills toolkit. Government should also encourage collaboration between academia and industry by creating a Tech Industry Placement Scheme to connect students with UK tech businesses.



Drive business investment: Investment in digital skills training by companies is low

Despite **a considerable majority of employers now valuing digital skills as either important or essential**, and many viewing them as more desirable than formal qualifications such as university degrees, there is a lack of corresponding investment in the training and upskilling of the workforce. A DIGIT report noted that for nearly 60% of employers, none of their employees had received formal digital skills training in the past 12 months.

Spurring business investment in skills should be a priority for the UK, but studies show smaller companies are less likely to invest in training their staff. Open University research found only half of SMEs had plans to address digital skills gaps within 12 months, with time and cost the key barriers to investment in upskilling. SMEs also struggle with a lack of information about what training is available and accessing training that is flexible to their needs.

According to the Resolution Foundation, the proportion of workers reporting they'd received work-related training in the past three months fell from 29% in 2002 to 24% in 2020, with the most significant declines being reported by those aged under 25. Worryingly, only 23% of employees report having any digital skills training from employers and only 27% of employers are investing in worker training and development to support them with AI.

Leaders need training to digitalise

Research suggests that 88% of leaders who received digital training in the last year said their organisation experienced growth compared to 49% who did not. Similarly, 89% of leaders who received training in the past year see digital technology as an opportunity to make their business more profitable, compared to just 64% who did not receive any training. Small businesses, in particular, will need to digitalise to survive in the increasingly AI-powered economy, but this will not be possible without investing in digital skills training for workers.

Reform is needed to drive investment

In the UK, under the current use-it-or-lose-it Apprenticeship Levy system, £3.5 billion of Levy funds have expired because businesses were unable to meet the restrictive eligibility requirements. There is an obvious opportunity to unlock business investment at no extra cost by reforming the Levy and this should be a priority to prepare for the AI-enabled workplace.

RECOMMENDATION

> **Help businesses across the economy invest in training their staff:** by reforming the Apprenticeship Levy into a broader Apprenticeships and Skills Levy; increasing the rate and ease of transferring funds, incentivising SME uptake, and ensuring that funds can be spent on a wider range of high quality, accredited courses that give employers the skills they need– including short modular courses, or more tailored upskilling programmes, including functional, management and digital skills.

Digital skills and tech competence will become even more important as AI changes jobs. There will be a boom in tech-enabled jobs, but there is already a lack of the necessary digital skills in the UK, and the demand for advanced digital and technical skills around cybersecurity, data, AI and ML is expected to grow. Delivering these digital skills will be critical to capitalising on the potential of AI.

But in the long-term, the skills need of the AI-powered economy of the future is uncertain and evolving. Dell research estimates that 85% of the jobs in 2030 are yet to be invented. AI will develop alongside and combine with other emerging technologies like VR and AR, changing roles and creating jobs in other ways; with data from Experis ManPower Group finding that 58% of employers anticipate immersive technology will lead to them employing more staff. It is therefore important to consider how to manage the impact of this revolution on current jobs and prepare people for a future that is hard to predict.

Developing training: Access to flexible training and lifelong learning will be critical for a dynamic future

A curiosity and propensity to learn will be a fundamental skill for workers in a world that is transforming at pace. In **a survey of parents working in tech**, techUK found that 90% believe their children would need to retrain throughout their lives to keep up with the rate of technological change. Transitioning fluidly between roles and responsibilities and a need to continuously upskill will become a fact of life for workers throughout their careers. Our approach to learning must adapt to deliver a flexible and dynamic education ecosystem fit for a dynamic future. There will be a need to foster a culture of lifelong learning, underpinned by AI and digital technologies, that provides opportunities for all.

CASE: AI-powered digital assistants are promoting enhanced accessibility at the Open University

Taylor, the Open University's AI assistant, was created using a combination of Microsoft Azure services. When students access it, the system authenticates them using their university login, so it knows who they are. It then offers them the option of enabling speech, so if they want to they can use voice in the conversation, and listen to what Taylor has to say. Or they can just use text.

Taylor uses a conversation flow with a script that was iterated several times with input from students and advisors to provide essential information and ask questions in a succinct way. This takes the student through topics such as their disabilities, study materials, and access to tutorials. Taylor can use natural language processing to 'understand' what the student has said, for example when identifying which recognised categories their disabilities fit with. This can then lead to appropriate responses, allow the student to use their own terms and result in more useful data being captured from the conversation.

A trial in which new students disclosed disabilities using both Taylor and the existing form-based process for comparison found that 65% participants preferred using Taylor, and the feedback suggests most of the others could be convinced with some improvements to the design.

The aim wasn't to replace expert advisors with an AI-based system, but instead to work with staff and students to find and address challenges they faced. For example, advisors were having to repeat the same information to new students in lots of their phone calls, which took time away from applying their expertise and responding to complex issues. Taylor takes some of this burden away and gets information to the student earlier.

Embracing flexible and lifelong learning

Tackling existing AI and digital skills gaps whilst creating a system of lifelong learning fit for the future will require action from government to support both workers and employers and deliver the step change needed in terms of access to and uptake of training. Research for the Department for Education identified that 'time' was the most commonly cited barrier to engaging in learning and government must seize the opportunity to champion the uptake of short modular courses that can drive lifelong skill building around other commitments and offer easier avenues for people transitioning between sectors. Moreover, by increasing the provision of flexible learning opportunities such as remote learning courses, the UK can increase the accessibility of digital skills training and help build an inclusive AI-ready workforce.

CASE: Infosys Springboard provides modular learning opportunities for all

Infosys Springboard is a free online platform powered by Infosys Wingspan that democratises the fundamentals of digital skills with modular learning that is focused on digital literacy, competency and proficiency. It offers guided training in technology and curated content – leveraging quality content from Infosys partners and leading universities across the world, aligned with educational standards, and including soft skills and vocational skills –to address reskilling of unemployed in tech, non tech and support roles. It is a cloud-first and mobile-first solution that is designed to be accessible anytime, anywhere and on any device.

Infosys has partnered with some local authorities to drive the benefits of its platform across the UK, and Springboard is already helping local residents and businesses in Brent and Sandwell acquire new digital skills through the provision of free, accessible training.

A flexible and responsive education system that embraces modular courses, the skills provision of which can evolve in response to digital transformation over time, will be best placed to support workers in a changing world. Getting this right will mean getting the right incentives in place to encourage workers to invest in their learning and development, in addition to supporting businesses to train their existing workforce.

Creating an expansive Lifelong Learning Entitlement

We must create an education system that recognises the importance of adult education and encourages everyone to view learning and upskilling as something they will need to do throughout their life. To this end, techUK welcomed the announcement of a Lifelong Learning Entitlement to be rolled out in 2025. Given that the design of this scheme will ultimately determine its impact, the government should ensure that access is expansive by ensuring that eligibility criteria is broad and allowing a wide range of schemes – including short modular courses – to be eligible through an effective accreditation system. This will enable flexible 'dip in, dip out' use of this fund across people's careers.

RECOMMENDATION

Create a culture of lifelong learning through a flexible and expansive Lifelong Learning Entitlement: by ensuring an expansive range of courses, including shorter modular courses, are eligible when the scheme goes live by reducing the minimum credit requirement and creating an accreditation system– ultimately enabling flexible use of this fund across people's careers. Provision should be extended to level 7 taught postgraduate courses. Support providers to build capacity to facilitate more modular and remote learning and extend maintenance loans to distance learners who often require access to flexible learning.

Degrees must be high quality and worthwhile

Whilst short modular courses will be a key tool in upskilling the UK, formal qualifications such as university degrees will undoubtedly remain a key component of education in the future, especially for advanced digital skills. There is more that can be done to increase the value of these tech degrees and output workers that are 'employer-ready'. Figures from the Office for Students show that nearly 3 in 10 graduates do not progress into highly skilled jobs or further study 15 months after graduating, whilst the Institute for Fiscal Studies estimates that 25% of graduates would be better off financially if they had not gone to university.

CASE: Tech Industry Gold accredited degree apprenticeships help people into digital jobs

*Lucy Craddock studied for a Data Science degree apprenticeship accredited by TechSkills at the University of Exeter. Whilst studying, she worked as a Data Science apprentice at Airbus. Following a 4 year-degree apprenticeship, Lucy is now a full-time Data Scientist at Airbus with 4 years of work experience under her belt at just 22 years old. Find out more about why she recommends Tech Industry Gold **accredited degree apprenticeships here**.*

TechSkills, a techUK company, has been championing its Tech Industry Gold accreditation that brings together universities and industry to deliver high quality and worthwhile tech degrees, with positive results for employment and diversity. These degrees include placements with tech industry firms that give students invaluable experience and the opportunities to develop and apply employer-ready skills. An extensive accreditation approach, formed in conjunction with industry, for tech and computer science courses could spin these benefits out across education provision and ensure returns on government investments in training are realised.

High-quality & worthwhile should be the tenets of university degrees say TechSkills & techUK

Combining AI and digital skills with other expertise

However, we know that the future workforce will need to combine tech skills with other expertise and knowledge in the jobs of the future. Taking further steps to cross-fertilise ideas and knowledge between AI experts and other fields must therefore be a priority, building on the rollout of AI conversion courses.

The UK has had success in the creation of AI Masters conversion courses which enable graduates to do further study courses in the field even if their undergraduate course is not directly related. Supported by techUK members including Google DeepMind, QuantumBlack, Cisco, BAE Systems, Infosys, and Accenture, this programme has enabled 2,500 people to develop new digital skills or retrain to help find new employment in the UK's cutting-edge AI and data science sectors. Emerging findings show that the programme is driving increased diversity - 76% of the scholarships so far have been awarded to women, leading to a 32% increase of women on the courses against comparable benchmarks.

More opportunities must be made available to enable graduates and experts in other fields such as the humanities and social sciences to learn AI, and AI experts to expand their knowledge into other subject areas. Offering a tech placement scheme that provides opportunities for university students to gain tech industry experience, for example, could be open to applicants from a diversity of backgrounds and disciplines to encourage the cross-fertilisation of ideas.

Productivity and management: Good management practices can help realise the innovative potential of AI

As businesses consider how AI can transform their workflows and workplaces, Deloitte's latest **State of AI in the Enterprise report** notes that while 94% of leaders surveyed saw AI as being important to their organisation's success, only 27% think their organisations have policies and processes needed to fully harness AI. For example, **many employers** haven't conducted a bias audit, and most don't have an AI policy for their workers.

Management practices and productivity are connected

Studies have shown there is a strong relationship between good management practices and productivity. AI and automation adoption outcomes are improved for both businesses and individuals when there are good management practices in place to support it, including training, as well as transparency and information sharing on the use of technology at work.

Transparent management is effective

Management transparency is a top indicator of employee happiness, and positive and transparent business leaders are viewed as more trustworthy and effective by employees. However, research from Slack reveals that while 55% of leaders believe that their organisations are very transparent, just 18% of their employees agree.

Businesses get value from AI when workers do

Involving employees in conversations around technology can boost their confidence in using it, and those workers who can collaborate effectively with AI and automation tools are more likely to report high levels of job satisfaction and engagement, with positive implications for job performance and business outcomes. An MIT study showed not only that workers were much more likely to be satisfied in their job if they got value from AI, but also that organisations were considerably more likely to get value from AI when workers did.

Engaging workers can support effective innovation

Whilst digital adopters are more likely to have negotiated or consulted with their employees on key working practices, this tends to focus on skills and training, and workers are not typically consulted on investment in new technology. However, OECD data does highlight that the UK leads other countries on employers consulting workers or workers representatives on new technology.

Interestingly, a survey by PwC revealed that nearly three quarters of employees say they know of systems that would help them produce higher quality work. Empowering workers' voices can enable innovative solutions to common problems and barriers to productivity, and organisations that listen to employees and act on their feedback have been shown to innovate more effectively.

Regulation: Government must work with businesses and workers to get the regulatory landscape of AI right

In regards to the use of AI and its impact on the workplace, techUK welcomed **the pro-innovation approach to AI regulation** set out in the UK's recent white paper. The white paper proposes a system of 5 non-statutory principles to be overseen and applied by existing regulators to different uses of AI across their remits, complimented by a central function.

The five principles set out by government to guide and inform the responsible use and development of AI across the economy are:

1. **Safety, security and robustness**
2. **Appropriate transparency and explainability**
3. **Fairness**
4. **Accountability and governance**
5. **Contestability and redress**

techUK has called for government to set out how central functions will work in practice to ensure coordination and consistency between regulators. Existing regulators need adequate funding to support this coordination, and ensure they have the capability and capacity to act quickly in response to developments in AI. Some regard must also be given to the impact of supranational legislation, such as the European Union's AI Act, on UK organisations developing AI solutions that are used in or have an effect in an EU country.

For businesses and workers, clarity about how the law – including relevant data protection, equality, human rights, and employment rights legislation – applies to the use of AI at work will be essential to build public trust in the technology and encourage adoption in the immediate term.

Existing regulators such as the EHRC, ICO and the HSE must be empowered to work together to issue non-statutory guidance for businesses on the use of AI at work as a matter of priority. This should highlight best practices and proportionate measures to help organisations embrace the 5 principles in accordance with the law. Equally, steps should be taken to increase workers' awareness of how provisions in data protection law and the UK labour code protect them from the misuse of AI at work to help ensure that these rights are realised in practice.

RECOMMENDATION

> **Provide clarity for individuals and businesses on how the law applies to the use of AI at work:** by accelerating guidance for both individuals and businesses on how existing legislation and regulation applies to AI; including obligations and rights across existing data protection, equality and health and safety legislation, as well as the principles-based approach to AI regulation.

Moving forward, government, industry, trade unions, and regulators must work together to anticipate and address gaps or areas of concern around AI adoption. A collaborative approach that brings together all stakeholders will be needed to create a regulatory environment that is proportionate, pro-innovation and allows digital transformation to flourish whilst ensuring that both businesses and workers can see the benefits of workplace AI.

In this spirit, techUK will be taking up a role on the TUC's AI at Work advisory taskforce. The taskforce will bring together unions, civil society, academics, cross party MPs, as well as employer and tech representatives, to feed into a draft AI at Work Bill based on the TUC's AI Manifesto. Whilst techUK does not anticipate supporting new legislation in the first instance, a strong voice for the UK tech sector in these discussions will be essential and techUK looks forward to working with the taskforce to ensure there is an informed debate on the future of AI and work.

RECOMMENDATION

Adopt a collaborative approach to get the regulatory environment for AI right: by creating a forum bringing together all stakeholders to enable a considered and sustained public debate on new and evolving issues related to AI. This forum would help to gain a better understanding of public attitudes to AI and address any emerging areas of concern. Government and regulators should also consider providing sandboxes and practice labs so that businesses can work with regulators to drive responsible workplace innovation, and expanding funding for schemes that support businesses to responsibly adopt AI across the economy.

However, this is only the beginning. This is a conversation that must not stop, and one that must be alive to the pace of AI-powered change in work and society.

5 urgent actions needed on AI by UK government

AI will change work, but there is time to act

AI will fundamentally transform the economy and the world of work in the UK, but the shape of its impact is not inevitable and there is time to act. Whilst AI is likely to herald a growth in new jobs and a decline in others, this decline will not happen overnight, and some sectors or roles will be more affected than others.

Keeping on top of labour market trends can enable proactive support including redeployment and retraining strategies, and businesses can adopt good training and management practices to help manage the impact of tech adoption on their employees and innovate effectively.

However, government must be conscious of the lag between training and the speed of technological change and consider support mechanisms for both businesses and people. The public and private sector will need to work together more effectively to meet the scale of this challenge and only government has the convening power to make that happen.

The promise of AI is in its potential to drive growth and opportunity in every corner of the country. But getting the future right and making AI work for Britain will require a strong commitment from us all to digitally upskill the country, embrace lifelong learning, and ensure the responsible adoption of AI in the workplace. techUK and its members stand ready to do their part.

techUK
FOR WHAT COMES NEXT

About techUK

techUK is a membership organisation that brings together people, companies and organisations to realise the positive outcomes of what digital technology can achieve. We collaborate across business, government, and stakeholders to fulfil the potential of technology to deliver a stronger society and more sustainable future. By providing expertise and insight, we support our members, partners and stakeholders as they prepare the UK for what comes next in a constantly changing world.

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