AI adoption – Unlocking growth potential for Small Businesses

Report by Digital Catapult and the National Innovation Centre for Data (NICD)

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Introduction

Through the delivery of flagship national programmes, such as Innovate UK (IUK) BridgeAI and the Hartree Centre North East Hub, NICD and Digital Catapult have acquired unique insights into the benefits and challenges to AI adoption. This report shares those insights, and outlines our ambition to deepen our collaboration with existing and prospective new partners to accelerate the adoption of AI in alignment with the UK government's AI Opportunities Action Plan.

When adopted efficiently and responsibly, artificial intelligence (AI) technologies offer vast potential for productivity gains and enhancing human creativity. However, adoption of AI is uneven across industry sectors and businesses within the UK economy. Barriers to adoption may result from market structures and dynamics, such as the degree of information-sharing and collaboration possible within market sectors; access to funding; and constraints at individual organisation level, such as existing data/digital architectures and access to specific skills.

Small- and medium-sized enterprises (SMEs) are the lifeblood of the UK economy. The UK government estimates that they represent 99% of the total business population in the UK, contributing 60% of total employment and approximately 50% of total business turnover. Overcoming barriers and shaping the effective and responsible adoption of AI can catalyse SME growth, and the political, social and economic goals of the UK government's Modern Industrial Strategy, AI Opportunities Action Plan, and Growth Mission.

This report draws on NICD and Digital Catapult's expertise to articulate the potential benefits and barriers to AI adoption, and provides recommendations for an accelerated, uniform and responsible adoption of AI technologies by UK industry. It first looks at the potential productivity gains implied by AI adoption through the lens of welfare economics, and provides an overview of the state of AI adoption in the UK economy today. It then offers insights into the primary barriers to AI adoption and outlines case studies that illustrate how these barriers can be successfully navigated. Finally, leveraging AI to deliver on the UK's economic and political objectives will require dedicated and persistent investment in the programmes, tools and models to enable UK SMEs to adopt and benefit from AI and data innovation, and this report concludes with four key recommendations for tackling barriers to adoption, in line with government goals.

AI and welfare economics

Welfare economics is the study of how economic policies and systems affect people's wellbeing and overall happiness. Within welfare economics, *producer surplus* and *consumer surplus* are the two key measures of the benefits being gained by sellers and buyers in a market.

- Producer surplus is the difference between the amount a producer is paid for goods or services, and the minimum amount they are willing to accept to produce them. It represents the producer's gain from trade.

- Consumer surplus is the difference between the maximum price a consumer is willing to pay for goods or services and the price they actually pay. It measures the consumer's benefit from the purchase.

Together, these two measures enable the assessment of the overall efficiency and wellbeing created as a result of economic activity. When both surpluses are maximised, total economic welfare is considered to be at its highest, while changes in these surpluses can inform the evaluation of a policy, tax, or technological change on society's economic well-being.

The adoption of AI can enhance producer surplus by lowering production costs and improving efficiency, allowing firms to increase output and generate higher profits. This translates into greater product variety, improved service quality, and lower prices for consumer goods, thereby increasing consumer surplus as well.

Through its contribution to innovation and productivity, AI can drive economic growth leading to higher wages and employment in complementary sectors. Published in 2025, the latest BridgeAI annual report predicts that the efficient adoption of AI could unleash £119 billion in productivity gains in sectors with high adoption rates and capacity. Overall, these effects will contribute to greater total welfare in the economy.

AI's contribution to the producer and consumer surplus

In the 2024 CCIA paper, State of the UK Digital Economy, economists Scott Corfe and Jonathan Dupont highlight the substantial contributions to both consumer and producer surplus made by the UK's thriving digital sector, of which AI is a sub-sector.

On the producer side, the digital economy directly contributes £227 billion in gross value added (GVA) and supports 2.6 million jobs, with a further £113 billion in GVA and 1.6 million jobs generated through indirect supply chain effects. Additionally, digital tools significantly enhance business productivity and efficiency. These advancements allow businesses to efficiently enter new markets and improve operational effectiveness, enhancing producer surplus.

For consumers, the digital economy provides an immense surplus through access to free or low-cost online services. In 2023, ad-supported digital services alone generated an estimated £412 billion in consumer surplus, equivalent to approximately £7,400 per adult in the UK. While innovations such as search engines, online marketplaces, and streaming platforms not only reduce living costs through lower inflation in digital goods but also dramatically expand choice and convenience. Corfe and Dupont highlight that increased product variety and tailored consumption from online platforms could be worth over £18 billion annually in consumer welfare. These findings underscore the transformational impact of digital innovation in amplifying consumer benefit across various dimensions.

AI is emerging as a key contributor to producer surplus by enhancing productivity and turnover per worker. A recent study by PwC shows that economic sectors more exposed to AI experience 4.8 times greater labour productivity growth than those that are less exposed. The adoption of AI is strongly associated with related advanced digital technologies, such as cloud computing, and businesses that adopt AI report that they use it as a tool, primarily for upgrading processes and automating tasks.

AI in the UK economy

The UK digital economy and innovation ecosystem is uniquely positioned to seize AI as an opportunity to enhance producer and consumer surplus. The UK is a world leader in AI research, development and deployment (behind only the USA and China), which can be attributed to the vibrancy of the UK's research landscape and knowledge economy.

An analysis of the UK's AI sector has highlighted the following trends and characteristics: *(This was collated from a combination of secondary sources and data analysis of the real-time industry classification (RTIC) of companies developing and applying AI provided by the Data City Platform)*

- According to the latest government study, published in 2025, there are 5,862 AI companies in the UK with a revenue of £23.9 billion in 2024 (up 68% on 2023).

- Most AI companies identified through the RTIC analysis (73%) are **AI sector-specialists** – businesses that have embedded AI technologies into their operations and are applying them across various non-AI sectors. This distinguishes them from **AI service providers**, who operate solely within the AI sector.

- **SMEs play a vital role within the AI sector**. AI sector-specialists are more likely to be SMEs (73%) than AI service providers (59%). This potentially reflects the broader trend of SMEs leading innovation in applied technologies. AI startups tend to show a higher risk appetite and lower debt constraints, demonstrating a higher ability and likelihood to innovate.

- **AI sector specialist SMEs also demonstrate slightly stronger access to finance**. To date 17% of AI sector-specialist SMEs have secured private funding (during their company lifetime), compared to 14% for all sector specialists (including larger businesses). This figure also incorporates venture capital – which highlights investor confidence in this segment of the market.

- Since July 2024, **the UK AI sector has attracted £200 million a day in private investment**, with AI startups securing 25% of all venture capital funding.

Of all the companies operating within the AI sector, AI sector-specialists have a unique transformative potential: they apply AI technology in non-AI sectors to drive overall AI adoption. This is particularly important, when considering their prominence in sectors that are key to advancing Industrial Strategy objectives, such life sciences, defence, and advanced manufacturing. Within these sectors, AI sector-specialists SMEs consistently outperform their peers, underlining the potential of AI in driving productivity and innovation.

AI is at the heart of the government's plans to kickstart economic growth and improve public services. Nevertheless, AI-related economic activity in the UK remains concentrated in certain industries and is often within internationally-owned companies. Digital and AI adoption will remain

patchy and uneven across the UK unless a cross-sectoral and coherent approach is taken to promote private sector adoption of digital and AI technologies. Supporting AI sector-specialists in driving greater adoption across multiple sectors of the economy provides a potential path forward.

Insights on barriers to AI adoption

SMEs can encounter a range of barriers to AI adoption at both market level and individual company level. Drawing from ONS reporting and research into the adoption of advanced digital technologies by the University of Manchester, this section outlines the most significant of these barriers.

Common market-level barriers

Difficulty in identifying use cases

The most frequently cited barrier was the challenge in identifying appropriate activities or business use cases for AI, as reported by 39% of companies (ONS). In many cases they were unsure to what extent the adoption of AI technology was relevant to their operations. This signals a problematic lack of understanding of the benefits that AI technologies can render in specific business processes.

Technology risk and lack of maturity

In the Manchester survey, 24% of businesses reported that a perceived lack of maturity in AI technology was a primary barrier hindering adoption. Some were sceptical about whether the technology was reliable enough to deliver its promised results. The smaller sample size of working examples of AI compared to existing practices significantly contributed to this view. Similarly, 17% of surveyed firms reported they had concerns about the safety and security of AI technologies.

Cost and lack of access to finance

Financial constraints were the second most common barrier, with 21% of businesses indicating that the cost of AI technologies was prohibitive. This barrier was particularly constraining for smaller

firms. The costs associated with initial purchase, implementation, and ongoing maintenance of AI were important considerations across interviews. Specifically, firms were weary of contracts with subscription-based costs that may lock them into increases in expenditure in the future. Moreover, ROI projections that firms consider can, in some instances, fail to adequately account for the potential benefits of adoption, because of the way AI technology is utilised.

Of the companies planning to incorporate AI into their business, 69% reported that they would do so to improve the quality or efficiency of their processes or methods. In these cases, where benefits of adoption are less tangible, than – for example – increases in sales, it can be difficult for smaller businesses to assess affordability, especially if they have fewer resources to dedicate to projecting potential costs and ROI.

Regulatory and standards uncertainty

Businesses surveyed reported fears of unintentional non-compliance as a result of lack of sufficient knowledge or understanding of existing regulation. Companies were afraid of the legal or reputational consequences should their adoption and subsequent use turn out to be non-compliant. They listed worries about unintentionally violating data privacy requirements or copyright and intellectual property laws as potential pitfalls.

Secondly, many respondents held assumptions that AI regulations would be subject to change soon and become stricter. This has led to delays in adoption, so that businesses can avoid having to reassess whether their use remains in line with potential new regulations. Importantly, some firms reported that the existence of standards or broad guidelines in the AI sector would have increased their confidence in adopting the technology.

Negative public attitudes to AI

Scepticism and lack of public trust in AI technologies could impact overall adoption and impede productivity gains. However, this trend appears to be diminishing. Attest's 2025 Consumer Adoption of AI report reveals a significant shift in consumer attitudes to AI across the UK, USA, Canada and Australia:

- Worries about job losses due to AI have decreased from 59% in 2024 to 57% in 2025, with the UK the lowest at 54%
- Opposition to AI-generated models in advertising has lessened, dropping from 49% to 46% globally, indicating growing acceptance of AI's role in marketing
- Consumer adoption of AI tools is also on the rise: 47% of respondents say they are likely to use generative AI tools like ChatGPT to research purchases; 52% have already experimented with ChatGPT; and 30% have used Google Gemini

However, 80% of respondents still support regulations to control data collection via AI, underscoring the need for brands to prioritise transparency and ethical considerations within their AI implementations.

Organisation-level barriers

Lack of technical expertise and skills

16% of companies noted that insufficient AI-related expertise and skills within their workforce hindered adoption. Businesses need managers with the right blend of technical proficiency, leadership ability, and business acumen to be able to adequately adopt, implement, and use AI technology. Organisations with ageing or lower-skilled workforces had concerns about their staff's ability to make use of AI systems, and how this would make potential efficiency gains harder to realise.

Managerial capacity

Companies with higher management scores were more likely to cite uncertainty about government regulations or industry standards (7% vs. 3% for lower scores) and the level of AI expertise or skills (21% vs. 12%) as barriers, suggesting there is a deeper awareness of regulatory and capability-related challenges within better-managed firms. Despite this, higher management scores correlated with higher adoption rates, even when allowing for other characteristics.

Access to trusted advice

The level of access to trusted advice impacted on how confident companies felt in their ability to make an adequately informed decision on AI adoption. Large corporations were able to rely on in-house teams of specialists, while SMEs regularly had to seek out external advice (from consultants, or from seemingly impartial sources such as universities).

Most businesses surveyed in Barriers and Enablers to Advanced Technology Adoption for UK Businesses (2025) said they would not see the government as a source of advice on advanced technology adoption.

The interrelationship between barriers

It is important to recognise that the barriers to AI adoption often interrelate and influence each other. For example, difficulty in identifying use cases may stem from a lack of the necessary expertise, skills, and knowledge to recognise them. Similarly, lack of relevant expertise can contribute to perceptions of lack of maturity and safety, which in turn impacts on attitude to costs. Uncertainty about regulations can have the same effect, impacting a company's willingness to take on costs and access finance. The presence and prominence of these barriers to adoption can also inhibit investment.

Promisingly, this interrelationship can also have a positive effect – for example, access to trusted advice can mitigate perceived deficiencies in AI maturity and safety. Potential solutions must therefore show sensitivity to the relational aspects of the barriers they aim to remove.

AI success stories

The following example case studies from NICD and Digital Catapult show how – with the right support – AI is being successfully applied in diverse industries.

NICD case studies

NICD upskills staff in companies and the public sector so that organisations can exploit AI to increase productivity and launch new, profitable products and services. It does this through its unique Data Skills projects in which employees are upskilled by working on projects to realise a business opportunity, in close collaboration with NICD's team of expert Data Scientists.

For three years, NICD has run the Hartree Centre NE Hub in partnership with Sunderland Software City. The hub provides dedicated innovation and technical expertise to businesses that are looking to either begin or strengthen their journeys in data and AI.

As well as delivering solutions, these projects also transfer insights, innovations, and skills into the business. An independent economic evaluation found that these projects have proved highly successful across all sectors of the economy, and all sizes of companies - from SMEs through to scale-ups to multi-nationals (around 50% of NICD projects have been with SMEs).

An independent report by Ortus Ltd into the economic impact of the National Innovation Centre for Data in the North East concluded that its 90 regional projects, most with SMEs, had created 184 new jobs and would generate over £200M GVA over the decade to 2033. Further, the presence of on-tap AI expertise in the region had encouraged inward investment that had created a further 1,370 new jobs, and would add a further £742M to the regional economy by 2033.

Connected Energy: Anomaly detection for optimised battery health and performance

Connected Energy identified advanced anomaly detection as a critical challenge in optimising the performance and safety of second-life EV batteries. Given the complexity of battery health data and the diversity of battery types and conditions, the company sought to refine their ability to predict and respond to potential issues before they impacted system performance, and in particular to:

- Predict and identify deviations in battery performance in real-time
- Enhance safety and reliability of battery storage systems
- Provide actionable insights to improve battery management and maintenance

To achieve these objectives, Connected Energy partnered with the National Innovation Centre for Data (NICD) to leverage cutting-edge data science and AI techniques. Their joint exploratory journey involved a range of data science tools and techniques – the initial plan encompassed a variety of potential solutions, including K-means, DBSCAN, OneClass SVM, scalable unsupervised outlier detection (SUOD), and LSTM autoencoder. NICD provided introductory tutorials on these approaches, after which both Connected Energy and NICD implemented and tested each method using Connected Energy's data.

Key achievements

The foundation of an advanced anomaly detection system was created, with the promising ability for continuous improvement through gathering data to support Connected Energy's operations and customer relations.

- Early detection of anomalies has reduced downtime and extended the lifespan of battery systems
- Customers benefit from more reliable and efficient energy storage solutions, backed by data-driven insights into battery health
- The automated anomaly detection process has streamlined maintenance schedules, reduced costs and improved service delivery

The project has positioned Connected Energy as a leader in battery health management, opening new opportunities for collaboration and expansion in the sustainable energy sector.

> ''Our projects with the National Innovation Centre for Data have allowed us to explore the new and evolving areas of data science and grow our own team within the company. The guidance and skills developed were invaluable in pushing the team toward our ambitious data goals."
>
> Frazer Wagg
> Head of Data Services, Connected Energy

iCOR: Optimising the process of keeping up with environmental legislation

iCOR, which provides environmental and health and safety legislation advice, faced a significant challenge in keeping up with the ever-growing volume of UK legislation. Their team had to manually review extensive amounts of new legislation each month, identify relevant sections, and generate reports for their clients. This process was time-consuming and resource-intensive, hindering efficiency and the ability to scale their services.

iCOR Systems partnered with the Hartree Centre North East Hub (for which NICD is a primary delivery partner) to develop a proof-of-concept for an AI natural language processor (NLP) that would:

- Automatically review and sort large volumes of legislation
- Identify which legislation is relevant to the organisation
- Provide accurate and consistent summaries and analysis of relevant legislation

The team began by gathering and processing a vast amount of legislative data from government websites, ensuring its quality and suitability for analysis. NLP and LLM models were then applied to automatically categorise and filter the legislation, identifying the most relevant information for iCOR's clients. Finally, the team leveraged LLMs to generate concise summaries of key legislative documents and highlight their potential impact.

Increasing efficiency and competitive advantage

The resulting PoC significantly reduced the time and effort required by iCOR Systems to provide timely and accurate advice to their clients. It provided iCOR's legal experts with a powerful assistant, allowing them to focus their expertise on interpretation, strategy, and client interaction, rather than getting bogged down in manual document reviews. This increased efficiency allows iCOR to scale their operations, expand their client base, and focus on higher-value tasks such as strategic consulting and client engagement.

The use of LLMs ensures that iCOR stays at the forefront of legal tech innovation, enhancing their reputation and competitive advantage, as well as ensuring that advice given to clients is accurate, up-to-date and specific.

> "Working with the Hartree Centre North East Hub has been a game-changer. The proof-of-concept AI solution created on the project will not only save us valuable time and resources, but it will also allow our legal experts to focus on what they do best: providing insightful and strategic advice to our clients."
>
> Tamma Carel
> Co-founder, iCOR

Kinewell: Applying innovative machine learning to meet the needs of SMEs

Kinewell provides scalable software solutions that improve offshore wind farm design, delivering cost savings and enhancing productivity. They required an innovative machine learning model that could:

- Assist in the transferring of skills to offshore energy experts
- Provide important metadata to users to boost their productivity on the platform
- Enable users to interact and perform relevant actions, such as query the database

The NICD team collaborated with Kinewell to transfer skills that would help them to accomplish these goals, bolstering their core competencies of optimisation, and adding new data science-related tools and advanced methods techniques to enhance their already excellent user interface.

"Through the collaboration and skills transferred I became and took on more of a role of a data scientist, being able to query data from a database, clean data, and go through standardised step-by-step methods… They [NICD] were dynamic and flexible, and always very quick to respond. It made the whole project feel more fun and collaborative."

Steven Ziolkowski
R&D and Consultant Engineer, Kinewell

Digital Catapult case studies

Innovation AI Accelerators and BridgeAI: accelerating practical AI adoption

Digital Catapult's AI accelerator capability has demonstrated an award-winning history of success across two main programmes: Machine Intelligence Garage (MIG) and the current BridgeAI-funded High Growth AI Accelerators.

MIG addressed the lack of access to essential computation power for UK-based AI startups, giving accelerator participants access to myriad benefits: mentorship, computation resources, technical workshops, and engagement with industry partners including Amazon Web Services (AWS), Google Cloud Platform (GCP), NVIDIA, Graphcore, STFC Hartree Centre, and more.

Building on the success of MIG, Digital Catapult developed its AI accelerator model into the High Growth AI Accelerators funded by Innovate UK's BridgeAI programme. Since 2023, these have been offering similar support for developing product and market readiness, implementing responsible and ethical AI, and technical advancement. They invite industry challenge owners (ICOs) to present startups with real-world challenges to solve using AI, so solutions are developed collaboratively to be market-ready, enabling startups and SMEs to scale through commercialisation, and increasing the speed of impact for the ICOs.

Digital Catapult has continued to broaden its reach to include a wider range of key partners to deliver various aspects of support. These include the Information Commissioner's Office and the British Standards Institute (in relation to the ethics and governance of AI systems), and industry partners that include NVIDIA, OVH Cloud and Graphcore.

Key achievements

- In total, MIG supported more than 100 startups across 17 cohorts, helping participants raise over £52 million in investment, with half of those going on to secure further funding after completing the programme. MIG alumni continue to see high levels of private investment and growth – for example, Climate tech startup Carbon Re has raised £4.2 million in seed funding for its AI platform, which spots inefficiencies in energy-intensive industries to enable reductions in carbon emissions. And ToffeeAM raised £5 million in Series A funding helping to optimise their engineering component designs and thermo-fluid and structural performance simulation.

- The High Growth AI Accelerators have supported 24 startups to date, who have raised £2.4 million in funding within one year of graduation from the accelerator. A third of these companies are located outside the London-Oxford- Cambridge triangle.

These contributions are indicative of Digital Catapult's distinct approach to solving the adoption challenges in the UK economy, not only through accelerating startups and SMEs, but engaging with other relevant stakeholders to enable the ecosystem to flourish.

Demonstrating the need for a national programme

The successes of these accelerators have led to Digital Catapult, amongst others, to advocate for the BridgeAI programme to be augmented into a national AI adoption programme, with the goal of addressing market imbalances: specifically, the fact that less than 85% of UK AI companies are focused on areas of critical importance to the UK economy. This would extend the support of supply- side AI companies by providing them with assistance in upskilling and navigating other business challenges.

TRUSS

TRUSS uses AI to simplify the fashion resale process by turning data into detailed product information. It reduces the labour-intensive and manual process of cataloguing items for resale in the second-hand market. Through the High Growth AI Accelerator delivered by Digital Catapult, the TRUSS team aimed to build connections in the AI ecosystem, and gain access to resources, support, and mentorship while advancing the development of their solution. They benefited from business and product mentorship, as well as ethical AI guidance.

The company used out-of-the-box AI (OBAI) to develop a cutting-edge AI solution that identifies clothing pieces across the internet, finding multiple versions of the item to instantly provide rich product information and pricing recommendations based on historical sales data. By leveraging advanced image recognition and machine learning, their AutoID solution streamlines the cataloguing process, offering retailers, brands, and consumers unprecedented access to fashion data.

Key achievements

During the High Growth AI Accelerator, Truss cemented its position as an innovative leader in AI-driven solutions by:

- Developing new categories and expanding datasets to enhance the scalability and application of the solution
- Securing a £1.1 million CR&D BridgeAI grant, in partnership with Depop and Selfridges, to develop a multimodal catalogue search for second-hand apparel valuations, and to roll out automatic product identification with AutoID
- Presenting at the High Growth AI accelerator showcase, where Truss' solution garnered widespread interest from key industry leaders and potential business partners

Truss has since expanded its team to support its continued growth – the brand's Instagram following surged by 7,475%, reflecting its growing market presence and increased visibility. With a strengthened team and fresh innovations, Truss is set to drive sustainable practices and support a circular economy by contributing to waste reduction and extending the lifecycle of garments.

> "It was a transformative experience, marking a significant period in our business development. Throughout the accelerator programme, we not only gained early customers and secured funding but also forged lasting connections that I will continue to value.
>
> Digital Catapult's guidance was crucial in boosting our confidence in our solutions and affirming our potential to build a remarkable company in this dynamic field of AI."
>
> Woody Lello
> CEO & Co-Founder, Truss Technologies

Greyparrot

Greyparrot uses AI-powered computer vision to rapidly recognise, audit, and sort large waste flows at scale. It analyses waste streams, monitoring and automating operations in sorting facilities to help drive efficiency and profitability for waste managers. The solution can be incorporated into smart systems and hardware, such as bins, trucks and robotics.

Greyparrot joined Digital Catapult's MIG to access valuable support with AI acceleration, as well as $100,000 of credits from programme partner AWS for developing essential machine learning algorithms. Digital Catapult provided the Greyparrot team with guidance and mentorship in understanding the investment landscape, as well as a credible platform from which they could pitch their solution to more than 100 investors.

Preparation for the Investor Showcase included time with investors and a session on fundraising, as well as pitch practice and storytelling workshops. This work successfully focused efforts for the investor presentation, helping the company hone their narrative and sales pitch. The team met their lead investor, Speedinvest, through an introduction made by Digital Catapult after the cohort showcase.

Key achievements

Greyparrot has excelled since it began working with Digital Catapult in 2020. The opportunities, skills, and platform that Digital Catapult provided have benefited Greyparrot's business in multiple ways.

- The initial investment, led by Speedinvest, resulted in a total seed round of £2.75 million, supporting product development and funding its expansion across markets in Europe and Asia
- In May 2022, Greyparrot closed a $11 million Series A funding round, enabling further international growth, expansion to new waste types, and boosting research and development
- In 2024 Greyparrot received a strategic investment of $12.8 million from Dutch recycling giant Bollegraaf, with a subsequent exclusive partnership with VAN DYK Recycling Solutions, North America's leading provider of recycling and waste sorting systems
- CEO and co-founder Mikela Druckman won 'High Growth Woman Founder of the Year' at the Angel Investor Awards 2021

- Greyparrot was listed in the World Economic Forum's 100 most promising global technology pioneers of 2021 and was recognised by private equity firm CB Insights as one of the world's top 100 most promising AI companies
- In 2024, Greyparrot appeared in the Global Cleantech 100 list
- Greyparrot was selected as a finalist for the first round of the Manchester Prize (2023-2025), receiving a £100,000 grant to enable further development of their AI solution

> "Digital Catapult has been a huge part of our careers, driving invaluable leads for us that have helped facilitate our success. We're now present in 10 countries and looking forward to putting our foot to the pedal to accelerate our growth even further on a global scale."
>
> Alisa Pritchard
> Head of Marketing and Operations, Greyparrot

Recommendations

AI represents an opportunity for the UK to be a global leader, supporting its responsible deployment, driving economy-wide adoption, and creating an agile and dynamic innovation ecosystem. For that to happen, widespread, cross-sectoral initiatives are needed.

Accelerating the adoption of AI into UK industry will require material changes. New skills, business models, funding and investments models and government regulation/support programmes are all needed to ensure that AI's social and economic benefits can be realised.

Digital Catapult and NICD make five joint recommendations for enhancing AI adoption across the UK economy:

- Facilitate and expand BridgeAI's regional partnerships
- Introduce a regulation innovation challenge
- introduce a defence innovation challenge

- Leverage devolution to unlock new opportunities for AI adoption
- Facilitate expansion of the Hartree Centre's Regional Hubs

Facilitate and expand BridgeAI's regional partnerships

Bridge AI's proven approach to enabling SMEs to grow and scale their AI developments provides a blueprint for future success. Learning from and building on the programme's excellence in providing market readiness, technical and ethical design, and usage support would enable the creation of AI-first innovation clusters that are linked to local industry in the foundational economy, as part of the UK's Industrial Strategy.

New technologies present a challenge to policymakers in ensuring all businesses can understand their potential application. By providing SMEs with resources and opportunities to align AI developments with the requirements and challenges of industry and sectors, BridgeAI has modelled how to effectively advance the adoption of AI technologies. Through this industry-first approach we can ensure that the Industrial Strategy drives AI success for SMEs as well as industry.

Connecting with local industry and authorities to solve regional challenges

Enabling BridgeAI partnerships in regional clusters would connect SMEs with local industry, enhancing the programme's ability to solve challenges that may be specific to each region. There is a need for a sector-agnostic digital adoption programme for foundational economy businesses that can be delivered in partnership with Combined and Strategic Authorities, to help capture and share learning across local ecosystems.

Birmingham, Bristol, Edinburgh, Manchester, and Newcastle have a collective footprint of over 28,000 digital-focused SMEs. Expanding BridgeAI's reach to partner with these businesses in each region presents a huge opportunity to upskill these digital-first SMEs into AI-first SMEs, creating localised clusters of AI innovation. BridgeAI would operate as an intermediary to forge relationships within and between innovation and industry clusters, connecting SMEs with industry goals. Building these relationships will bring AI solutions to real-world industry challenges, benefitting the SMEs, local industry, and the local economy.

For instance, the Black Country Industrial Cluster consists of over 3,000 energy-intense manufacturing businesses, which poses a challenge for the management of industrial and domestic energy demand – a task for which AI solutions are extremely well-suited. Local AI-first SMEs from

cities in the West Midlands could be upskilled and connected to this challenge by BridgeAI to deliver benefits for local industry and residents.

Leveraging proven success

Deploying and expanding programmes with established and successful track records can minimise the risk of negative impact. For example, negative attitudes to AI could inhibit the potential of upskilling, adoption programmes or use cases, impacting on local economic growth. BridgeAI's wealth of experience in navigating the challenges involved in connecting industry, AI and SMEs positions it as the best choice to minimise this possibility. The programme's record of excellence will make it an appealing partner for both SMEs and industry.

The expansion and extension of BridgeAI into additional regions can also help to overcome other adoption barriers, by increasing awareness of the support, established resources and expertise that it offers. For instance, awareness of the BridgeAI standards community could ameliorate organisational fears about any lack of standards in the AI space, and encourage wider adoption of the technology.

BridgeAI's expertise and connections within government and industry provide access to trusted information and advice, helping to build corporate confidence in AI adoption. This access could be facilitated through Local Innovation Partnership Regional AI Adoption hubs and the Hartree Centre's Regional Hubs, thereby encouraging publicly-funded tech, data and AI expertise to work with the local industry base.

As an example, the three existing regional Hartree hubs have shown the success of a regional model that delivers real value to local SMEs. The North East Hub (a collaboration between NICD and a regional delivery partner, Sunderland Software City) has regular calls for new projects which are, on average, oversubscribed by a factor of 10. This shows that regional industry recognises the impact that AI could have on their business. However, realising that potential is only possible if those businesses can partner with a regional source of AI expertise, further backed by national programmes.

Meeting local need by raising regional awareness

Reaching SMEs (microbusinesses and startups in particular) to raise awareness and inform them of the help available can be difficult. Innovators can take advantage of offers targeted at their community, but this reach could be widened.

BridgeAI's successes could be leveraged to create targeted programmes outside national innovation funding calls or competitions, based on assessment of local needs. Funding could still be nationally overseen through the Industrial Strategy, while advanced technology support is communicated on a regional basis, in ways that are accessible to local businesses.

Introduce a regulation innovation challenge

Regulators have an important role in shaping digital markets: establishing standards drives interoperability and unlocks the potential of big data. As businesses develop new technology products and services that disrupt existing models, putting regulation in place will balance interests and concerns.

The UK government's new Regulatory Innovation Office (RIO) works with the tech sector, Catapults and academia to support innovation while putting standards in place. As regulation is often required to identify and underpin new markets, tech companies can help the wider economy to adapt and thrive by helping to build tools and processes that conform to new rules while increasing business performance.

Using a proven model to leverage data insights

A regulation innovation challenge can build on NICD's innovative and tested model of supporting businesses, public services and the voluntary sector by helping them to understand insights from their own data to drive productivity and growth. It can also leverage the deep-tech facilities and translational expertise of Digital Catapult to mitigate the risk of innovative SMEs being overly nervous around new regulation, or being wary of entering highly regulated markets.

As part of this challenge, the RIO, Digital Catapult and NICD could help government to educate public organisations in ways of working with companies safely and innovatively to improve services through data insights, an approach that is often under-leveraged due to a lack of understanding about the opportunities this offers, and how it can be achieved.

DSIT's ambition to drive improvements in public services through engagement and collaboration with industry will require renewed efforts to look at appropriate business models which flow from new regulation. The involvement of businesses in a regulation innovation challenge would help overcome the current uncertainty around AI regulation and standards, leading to greater overall AI adoption.

Introduce a defence innovation challenge

Defence is a highly specialised sector with a limited customer base, making it difficult for SMEs to innovate and contribute. Enabling AI SMEs to engage with the defence industry through a defence innovation challenge would drive engagement and product innovation.

The scale of the 2025 Strategic Defence Review has effectively made defence innovation 'Mission 6' for the UK government's delivery priorities, and the Science and Technology Secretary's instruction to The Turing Institute to make national defence a primary focus of their activities reflects the growing importance of AI technologies in the UK defence industry.

Leveraging the benefits of partnerships and collaboration

In the United States, DARPA provides SMEs with a guaranteed customer, enabling them to test, pilot and scale AI innovation. In the UK, we have seen excellent examples of SMEs developing technology for potential application in the defence sector, despite the lack of a designated pathway to collaborative innovation for tech companies. Digital Catapult and NICD have worked with industry to deliver collaborative R&D and innovation projects to drive AI adoption in defence. These experiences inform the understanding that purpose-built programmes geared at incorporating and encouraging contributions from SMEs into this sector could provide substantial benefits, and a defence innovation challenge for AI SMEs would therefore drive engagement and product innovation.

With certainty around long-term provision and the ability to crowd in national sector agencies and universities, we can match industry demand with innovation across the whole of the UK in a way that gives large corporates, government and SMEs the confidence to invest and collaborate. The defence innovation challenge would enable the defence industry to work with the creators and providers of new technologies that typically operate in very different networks, and the adoption of AI technologies by the Ministry of Defence alongside defence innovation challenges would signal to other would-be adopters that any lack of safety and maturity in AI technologies is overstated.

Potential partners for delivering a defence innovation challenge for AI SMEs would include trade and industry associations (such as the ADS group) alongside other actors with substantial footholds in defence. As recognised translational innovation institutions, Digital Catapult and NICD sit at the intersection of industry, innovation and markets, enabling us to play a substantial role in the programme's co-ordination and delivery. With experience working with the Ministry of Defence and

other large defence contractors, such as BAE Systems, our joint expertise could also make a significant contribution to the programme.

Successful use cases in other sectors include open banking, and addressing the privacy challenges relating to tracking when improving transport services. These both required use of data to train models designed to improve services for customers, bringing together the interests of companies of all sizes, public infrastructure and regulatory frameworks.

The decentralised nature of the UK's defence apparatus could contribute substantially to AI innovation practices and applications in regional clusters, serving as a gateway to the development of supportive infrastructure that could also be leveraged by regional industry.

Leverage devolution to unlock new opportunities for AI adoption

Devolved innovation funding can connect nationally significant innovation assets with local leadership, deliver impactful programmes, and align the tech adoption needs of regions and their local industries. It provides opportunities for local tech firms to deliver solutions to local innovation challenges, while sharing learnings across the UK.

NICD and Digital Catapult have worked closely with local partners to drive regional growth, and the local growth plans that underpin the UK Industrial Strategy will be a crucial mechanism for accelerating AI adoption among businesses of all sizes. The UK government can now co-deliver with a cohort of Metro Mayors, and an increasing number of businesses and innovation institutions are now able to shape – and benefit from – devolved funding and governance arrangements. This creates increasing potential for new partnerships and models of working, and for coordination between national and regional delivery, especially as Mayoral Combined Authorities will soon be joined by a new wave of Strategic Authorities that will enable better coordination of economic strategy in more regions.

Supporting Mayoral, Combined and Strategic Authorities

The government's Industrial Strategy will drive the adoption of advanced technology and explore new ways to harness the power of data. By improving matchmaking to appropriate support and reducing the complexity of navigating the current landscape, we can partner with local universities and industry to deliver regional benefits across the UK. Facilitation of BridgeAI using regional centres would provide a successful model for local authorities to use in developing and delivering their own tailored programmes.

We recommend that the UK government progresses and extends place-based innovation funding – building on models including the Innovation Accelerators, Local Innovation Partnerships and Innovation Launchpads – and considers a new wave of Innovation Deals as part of the joint Innovate

UK/Combined Authority Action Plans currently in development. This would help Mayoral and Strategic Authorities to collaborate with innovation partners, while support for deployment and funding from devolved authorities could positively impact consumer perception, by providing more people in more areas with the benefits that AI technologies can provide.

Conclusion

Artificial intelligence holds transformative potential for the UK's economy, particularly within its vibrant SME community. As this report shows, AI can drive productivity, unlock new markets, and deliver significant gains in both consumer and producer welfare. However, achieving these benefits at scale requires more than just technological capability – it demands an ecosystem that provides the right support, investment, and regulation.

The case studies in this document show that when AI adoption is approached through collaborative, skills-building initiatives, it can lead to sustained innovation and growth across sectors. Yet persistent barriers - including limited awareness, skills gaps, and high costs - continue to hinder the widespread uptake of AI. Addressing these challenges through targeted programmes, regulatory innovation, and regional partnerships will be critical.

By fostering a supportive environment that prioritises accessibility, ethical implementation, and cross-sector collaboration, the UK can position itself at the forefront of AI-driven economic advancement.

Digital Catapult and the National Innovation Centre for Data stand ready to expand their work with industry, government, and academia to ensure AI adoption is both inclusive and impactful. We invite stakeholders from across the UK to engage with us as we build a more innovative, resilient, and prosperous future through responsible AI adoption.

Any reader interested in finding out more information about Digital Catapult's AI interventions or discussing any recommendations outlined in this report, can do so here. For further information on the work of the National Innovation Centre for Data, please visit our website.

About the National Innovation Centre for Data (NICD)

The National Innovation Centre for Data (NICD) enables organisations to harness the power of their own data to make better decisions, improve productivity and create new products and services.

Through its collaborative approach to projects, the NICD team of data and AI experts embeds key skills within external organisations, upskilling staff so that they can identify and realise future opportunities themselves. Since it was established in 2017 by the UK government and Newcastle University this approach has been successful in delivering value to large corporates and SMEs from all sectors of the economy. NICD's programmes include a partnership with Sunderland Software City (SSC) to run the Hartree Centre ¦ NE Hub that provides dedicated innovation and technical expertise to businesses that are looking to either begin or strengthen their journeys in data and AI. The Centre has seen first-hand how data science and AI can drive business growth in a variety of ways, including improving productivity, maximising customer retention, and creating new data-driven products.

About Digital Catapult

Digital Catapult is a deep tech innovation organisation part of the Innovate UK Catapult Network, and works with businesses, government, academic institutions and more to accelerate the practical application of deep technology.

By bridging the gap between cutting-edge research and real-world deployment of emerging technologies, Digital Catapult aims to drive innovation, enhance competitiveness, and create a more prosperous future for the UK. Working in collaboration with startups, scaleups, and established enterprises, it offers a range of services including access to state-of-the-art facilities, expert knowledge, and funding opportunities to help businesses de-risk innovation, scale faster, and ensure that breakthrough technologies translate into tangible economic and social benefits.