ARTIFICIAL INTELLIGENCE

The UK's £1 Trillion AI Opportunity Depends on Getting Adoption Right

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Executive Summary

- To fully realise the potential productivity gains from artificial intelligence (AI) for the UK economy, it must be adopted in the right way. The UK cannot repeat the failure to fully diffuse new technologies and best practice, as has often been the case in the past.
- The right kind of adoption also means not just speed and breadth of adoption, but also depth. This requires moving beyond adopting horizontal off-the-shelf tools to utilising vertical or custom AI tools (those that are domain-specific and/or reshape workflows) and deeply integrating them into businesses. This involves true innovation and leadership development as well as complementary intangible capital investments such as reshaping workflows, upskilling workers and reorganising processes to reflect new ways of operating.
- On the surface, the UK performs well when it comes to overall AI usage. This is a good base to build from, but we see two challenges in business adoption. First, it is too narrow, confined to only the largest and most productive firms. Second, it is too shallow: even those that are adopting AI often aren't doing so in the right way.

- Our new economic modelling highlights the benefits of getting this right. Broad use of off-the-shelf tools could add around £400 billion to GDP over a decade, lifting labour productivity by about 0.3 points a year. Adding deeper, workflow-integrated vertical or custom AI tools in the most exposed sectors could substantially increase potential gains to around £1 trillion, lifting productivity by about 0.8 points a year.

- Our analysis provides four key insights:

  1. Broad adoption is a stepping stone, not the destination. Off-the-shelf tools deliver modest gains but, more importantly, build the skills and confidence firms need before they can adopt more deeply.
  2. Depth matters. The potential productivity gains are not equal across types of AI. Getting deeper integration of vertical or more sophisticated domain-specific AI tools adds significant economic gains.
  3. Targeting is important. Most of the prize is concentrated in a few highly exposed sectors, so there should be added focus on achieving deep adoption here, rather than spreading focus thinly across the economy.
  4. AI can already deliver significant gains, so don't wait. Today's tools are enough to move the needle. Waiting risks both forgoing gains now and falling further behind the frontier, making it harder to catch up in the future.

- There are several market failures and barriers to diffusion of AI that suggest government has an important role to play in ensuring the right kind of AI adoption in the UK. But it must be targeted at specific outcomes and areas where government can feasibly make a difference.

  We see four key areas for action: Government dependencies; areas where businesses face resource constraints; areas where businesses lack awareness of best practice; and areas where there are broader externalities. The second part of our research, which will be published later this summer, will set out key policy interventions across these areas to help drive the right kind of adoption.

A significant part of the UK's long-running challenge of low productivity growth is down to the lack of diffusion (spread) of best practice, new technologies, and innovation from the most productive

firms to the middle and less-productive firms. This has created a long tail of lower-productivity firms, which act as a drag on economic growth in the UK.

As a new general-purpose technology (one that can be used across different sectors of the economy such as the internet or electricity), AI offers a real opportunity to address this longstanding issue and kickstart productivity growth in the UK. But only if it is adopted in the right way by a wide variety of businesses across the economy. This means it must diffuse across firms, sectors and regions. If the UK repeats its previous path of insufficiently spreading new technologies and best practice, it will miss out on the opportunity to improve productivity rapidly. Furthermore, with other countries moving quickly on this, it may also become a competitive threat, particularly given the UK's services-heavy economy – the sectors and professions where the landscape is likely to be reshaped most significantly by AI.

This is partly why the UK government has set the ambition to "achieve the fastest AI adoption in the G7".[1] This is a welcome target. But it is important to recognise that adoption is not just about speed or breadth but about getting the right type of adoption. This means adopting and deeply integrating AI in the areas of the economy with the greatest potential gains.

In this two-part series, we aim to answer four important questions:

1. **How is the UK currently performing when it comes to AI adoption?**
2. **What does deep AI adoption mean at both the firm and national levels?**
3. **What are the potential gains from getting AI adoption right?**
4. **How can the UK government help drive the right kind of adoption?**

In this first part, we address the first three questions above. Later this summer, we will publish our full research, which will set out how the UK government and business can work together to drive the right kind of AI adoption.

How is the UK currently performing when it comes to AI adoption?

So far, plenty of AI surveys suggest that adoption is already happening fairly rapidly and that the UK is at the forefront of this. For example, Microsoft's Global AI Diffusion Index for Q1 2026 ranks the UK eighth globally, with 42.2% of the population using AI.[2]

However, while this is welcome and a good base to build from, once we dig beneath the surface, the picture is less positive:

- **First, adoption remains too narrow.** While the largest firms are investing and driving usage, this is a small subset of the economy. SMEs lag far behind. The ONS BICS survey shows that 65% of UK firms are not currently using AI at all.[3] This falls to 33% of firms with over 250 employees, compared with 60% of firms with 10-49 employees. The UK is already at risk of repeating the historic approach of failing to diffuse the adoption of a new technology.

- **Second, it remains too shallow.** Even where firms are adopting AI, they are not doing so in a way that will deliver significant and sustainable productivity improvements. Of firms currently using AI, 85% are using natural language processing and text generation, while just 7% are using agentic AI.[4] Furthermore, 77% of those firms said less than half of their staff are currently using AI. This is reflected in the benefits workers are seeing from adoption too: 75% of frontline workers in the UK say they use AI, but only 36% say they save more than eight hours a week doing so – compared to 86% and 59% respectively in Australia, for example.[5] High usage without meaningful time saved signals that AI is being deployed but not deeply. As part of this, most firms are often not making the necessary investments into complementary intangible capital (such as organisational redesign or training programmes)when it comes to adopting and integrating AI. This mirrors what was seen early in the adoption of IT within businesses, and why a J curve effect on productivity impact was observed.[6]

This lack of diffusion of deep adoption is also part of the reason why we have yet to truly see the impact of AI show up in UK macro-level productivity data. There remains no clear correlation or link between productivity growth and AI exposure or adoption in the UK at this stage.[7] The UK is not alone in either of these challenges, but its history in terms of diffusing technologies across the economy is notably worse than others.

What does deep AI adoption mean at both the firm and national levels?

At BCG, we have already documented extensively what best practice looks like at the firm and micro level through two key frameworks:

- Deploy, Reshape, Invent. This framework highlights that adopting AI is not a one-off but often a journey. At the Deploy stage, firms adopt off-the-shelf, general-purpose tools such as writing assistants, code completion and chatbots. The main benefit is often that they can build confidence, generate enthusiasm and create a foundation for broader change. But, since they leave underlying workflows intact, productivity gains are usually limited. At the Reshape stage, firms move beyond off-the-shelf tools to redesign end-to-end business processes around AI, usually with more tailored or domain-specific tools, which together deliver much

more significant productivity improvements. At the Invent stage, firms use more custom AI to create entirely new products, services, or revenue streams, and the potential to deliver gains is even greater.

- **10/20/70.** This addresses why so many firms stall in their journey from deploying off-the-shelf AI to being able to reshape workflows around AI. This in turn is often why productivity gains fail to materialise. BCG's experience across hundreds of AI transformations consistently finds that roughly 10% of the effort required to succeed relates to the algorithms themselves, 20% to technology and data infrastructure and 70% to people and processes. This means that the dominant barriers to capturing AI value are organisational. Technology is necessary but not sufficient.

With this in mind, we define deep adoption as the integration of vertical or custom AI tools alongside the reshaping of processes, workflows and investments into other forms of intangible capital, such as staff upskilling and retraining. By contrast, we define broad AI as horizontal off-the-shelf domain-agnostic tools. While the precise details will look different for different sectors, the broad principles are very similar. For example, Reckitt, a global consumer goods company, implemented custom AI tools across their marketing function. The tools automate tasks that account for 30-50% of employees' time. As a result, time spent on routine activities has declined by up to 90%, while output quality has doubled. In the airline industry, Cathay Pacific transformed their operations using a sophisticated AI decision-support system. The system helps them manage complex day-to-day operational decisions, strengthening their resilience and improving the passenger experience, while saving millions of dollars in disruption and operational costs. In both cases, specific workflows were transformed end-to-end and processes fundamentally redesigned – helping to boost the gains from AI adoption.

This has important lessons at the macro level. The aim should be to support and facilitate the use of vertical and custom AI tools by helping to tackle the barriers that most often limit the ability to adopt these tools or reduce their impact. Often, these relate to people and process issues.

What are the potential gains from getting AI adoption right?

Part of the challenge is understanding what is really at stake and the gains from getting AI adoption right. It is important to connect the firm-level insights with the macroeconomic impacts.

There is already considerable literature out there on this topic, but it suffers from three challenges, which we seek to address in our new economic modelling.

First, there is a lack of data around differentiated productivity impacts from AI. Most studies draw on three to four control trials to provide a flat estimate of the productivity impacts of AI. We reviewed over 175 sources on the productivity effects of AI within businesses. These brought

together academic studies, randomised control trials, and BCG insights from working with clients through AI transformations. From these, we identified 90 credible results to provide sector-specific productivity gains from both horizontal AI tools and vertical/custom tools. We set out the sector-specific productivity uplifts in Exhibit 1. Some will expect the gains to be higher; others will expect them to be lower. It is worth noting that because we have focused on realised outcomes, many of these relate to transformations and tools which may have already been surpassed to some extent. Take coding and the ICT/software sector more broadly. The productivity gains may seem modest given the tools we see today, but this is because we have yet to see the gains fully realised from the rapid advances since the start of 2026. These are also deliberately targeted outcomes; they focus on the potential gains from getting this right. Other aspects of our model, such as task exposure and the adoption curve, account for differentiated impact and integration across tasks, firms and sectors.

Two key points emerged from these sources:

- Utilising LLMs and other entry-level, off-the-shelf tools delivered significantly less productivity uplift than vertical or custom AI tools.
- To fully capture the impact of these vertical or custom tools, their adoption needs to go hand in hand with other investments in intangible capital, such as upskilling, reshaping workflows, and updating internal processes.

EXHIBIT 1

Potential Gains Vary Significantly by Sector and Depth of Adoption

ISIC	Sector	Broad TFP assumption	Deep TFP assumption	Scenario definitions
ALL	Baseline broad assumption	14%	N/A	
Scenario One only:				Scenario One: Broad adoption of horizontal tools
H	Transport and storage	14%	N/A	
A	Agriculture, forestry and fishing	14%	N/A	• All UK sectors adopt horizontal AI tools
Q	Health and social work	14%	N/A	• Broad productivity uplift applied to employment-weighted task share in ILO AI exposure gradients 3 and 4
F	Construction	14%	N/A	
P	Education	23%	N/A	• Gradients 3 and 4 represent tasks with significant automation or augmentation potential
I	Accommodation and food service	14%	N/A	
E	Water supply and waste	9%	N/A	
Scenario Two:				Scenario Two: Deep adoption in select sectors
L	Real estate	14%	21%	• Builds on Scenario 1 but six sectors adopt vertical or custom AI tools with workflow redesign, warranting a higher sector-specific productivity uplift
J	ICT / software	34%	44%	• These sectors are selected where at least a third of employment sits within ILO AI exposure gradients 2, 3 and 4 – occupations where AI can meaningfully assist with a moderate share of tasks
K	Finance and insurance	19%	43%	
O	Public administration	21%	34%	
D	Electricity, gas and steam	9%	17%	
M	Professional and scientific	22%	43%	
Scenario Three:				Scenario Three: Deep adoption in expanded sectors
C	Manufacturing	14%	34%	• Builds on Scenario 2 but expands deep adoption to include a further six sectors to a total of 12 sectors
G	Wholesale and retail	21%	21%	
N	Admin and support	18%	40%	• These sectors are chosen using the same logic as Scenario 2, but where at least one fifth of employment sits within ILO AI exposure gradients 2, 3 and 4
R	Arts and recreation	14%	14%	
B	Mining and quarrying	14%	17%	
S	Other services	14%	14%	

Source N=90

Second, and linked to the above, there is a lack of differentiation between different forms of adoption, partly due to a lack of data. There are some studies that consider different speeds of adoption, but few differentiate between broad adoption and deep adoption. BCG's experience is that these have very different impacts, reinforced by our data gathering set out above.

Third, the analysis is often not country-specific, particularly outside of the US. Understandably, many studies look at the G7 economies in the round. Where possible our model uses UK-specific data. For example, we model our adoption curve on what we believe is the closest historical parallel – internet adoption in the UK. We also use a UK-specific view of employment exposure to AI by sector. This is important as the productivity uplift alone is not sufficient to capture local specifics. The productivity uplift captures the micro-level gain (how much more productive an individual worker can become when using AI), while exposure captures what share of a sector's workforce is in roles where AI can meaningfully assist (and therefore realistically capture this gain). One captures the gain conditional on use; the other measures the reach of that gain across the sector. Together, our approach allows for a more specific and tailored view of the impacts in the UK.

With this in mind, and building on work done by the OECD, we developed three scenarios to model the impact of different levels of AI adoption across the UK economy.[8] You can read our detailed methodology note here, which sets out all our inputs in full.

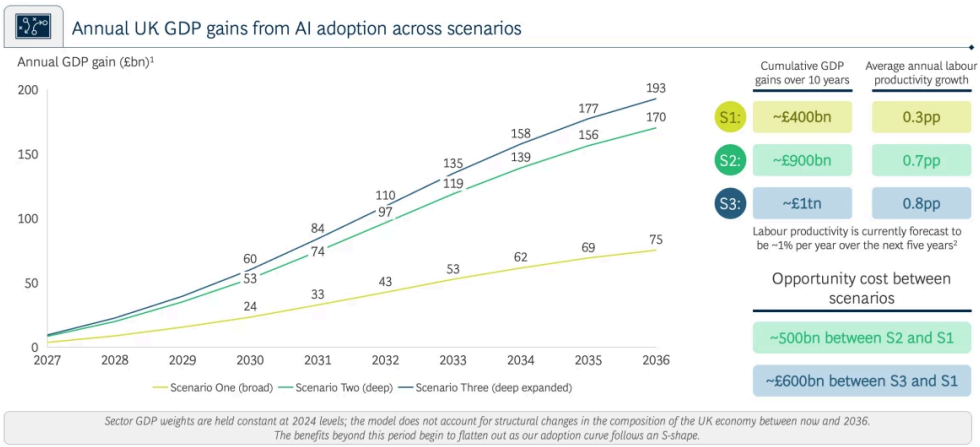
- **Scenario 1 – Broad adoption of horizontal tools.** This scenario sees all sectors of the UK economy utilising horizontal AI tools. Using our evidence base above, we apply a baseline or sector-specific productivity uplift for broad AI. We apply this uplift to the employment-weighted share of tasks within occupations in that sector that fall within ILO gradients 2,3 and 4 – areas where tasks show significant potential for automation or augmentation through AI.[9]

- **Scenario 2 – Deep adoption in select sectors.** This scenario builds on Scenario 1, but sees six sectors (finance and insurance, ICT, professional and scientific services, public administration, real estate, and electricity, gas and steam) adopting AI more deeply. This means utilising vertical or custom tools, but in doing so, properly integrating them into reshaped workflows. Drawing on our evidence base set out above, we apply a higher sector-specific productivity uplift for these sectors in this scenario. Our six sectors are selected based on where at least one-third of employment sits within ILO gradients 2, 3 and 4 – occupations where AI can meaningfully assist with at least a moderate share of tasks.

- **Scenario 3 – Deep adoption in expanded sectors.** This builds on Scenario 2 but expands deep adoption to 12 sectors in total (the six sectors in scenario two and manufacturing, wholesale and retail, admin and support services, arts and recreation, mining and quarrying, and other services). These sectors are chosen using the same logic as Scenario 2, but where at least one-fifth of employment sits within ILO gradients 2, 3 and 4.

EXHIBIT 2

How Much More Beneficial Is Deep Adoption of AI, in Terms of Productivity of Workers and Economic Growth?



Our results, set out in Exhibit 2, show that the gains from getting this right are significant. We find that broad adoption of horizontal tools can lift labour productivity by 0.3 percentage points per year, adding £400 billion to the UK economy over a decade. However, pursuing deeper AI adoption, as in Scenario 2, can raise labour productivity by 0.7 percentage points per year and add £900 billion to the UK economy over a decade. Scenario 3 sees this increase slightly to 0.8 percentage points per year, adding £1 trillion to the UK economy over a decade. To put this in context, the OBR forecasts UK labour productivity growth of 1% per year over the medium term[10] – our Scenario 2 contribution of 0.7 percentage points would on its own represent 70% of that baseline. The benefits beyond this period flatten out as our adoption curve follows an S-shape, consistent with previous technology adoption cycles, and the share of firms yet to adopt AI diminishes.

Our new data and modelling results deliver important insights when it comes to thinking about driving AI adoption at the national level:

1. **Broad adoption is a stepping stone.** It is important to recognise that our analysis doesn't suggest that utilising horizontal, off-the-shelf tools is unimportant. First, broad adoption can deliver economy-wide gains relatively quickly, given that many of these tools are easy to incorporate into day-to-day work. Second, and more importantly, the use of these tools should be seen as a stepping stone. In reality, firms and workers are unlikely to be able to jump straight to utilising vertical or custom tools without first having understood how to use horizontal tools. It is important from an upskilling perspective, but also from a cultural standpoint, to build familiarity with these tools and understand what they can and can't assist with. That said, this shouldn't be treated as entirely separate from deep adoption. Given it is a stepping stone, they should be envisaged as part of a single journey, not one then the other.

2. **Depth of adoption matters.** The additional gain for the UK economy from pursuing deep adoption is significant at £500-600 billion. This suggests that, when thinking about how

government policy can help firms with adoption, targeting deep adoption of vertical and custom tools is the outcome to aim for. This, in turn, means focusing on the particular barriers to deeper adoption, which are often different to those for broader adoption.

3. **Targeting is important.** The difference in economic gains between Scenario 2 and 3 is not that significant. Pushing deep adoption into sectors where AI capabilities can currently improve only a limited share of tasks means that the productivity gains will also be limited. From a policy perspective, this suggests that particular attention should be given to certain sectors. However, this analysis is based on current AI capabilities. As these capabilities improve over time, the sectoral distribution of opportunities may shift, and the findings should therefore be kept under review.

4. **AI can already deliver significant gains. Don't wait.** One of the challenges when it comes to AI adoption, at both the macro and micro levels, is that it is moving so quickly. It is very easy for individuals, firms and even governments to be overwhelmed by the speed of progress and pace of iteration we are seeing. Many ask: how can we keep up? Our analysis suggests that this is the wrong question. It is important not to let the perfect be the enemy of the good. Our analysis shows that, even with current capabilities, AI can deliver substantial productivity improvements and drive significant economic gains if adopted the right way. While it will be important for some firms and sectors to try and keep up with the frontier, for many, the aim should simply be to improve. Utilise the available tools and bank the gains on offer. Of course, things will change and new opportunities will arise in the future. But waiting has two significant risks. First, missing out on the gains on offer now. Second, the gap to the frontier grows; by deeply adopting AI tools now, it will likely be easier to integrate future tools and improvements. There is an important capability-building element here.

It is also critical to understand what our analysis does and doesn't address. The question we are asking is: what are the productivity gains from a variety of current AI tools and differentiated forms of adoption? We don't account for future improvements in AI. That is deliberate, given how uncertain the future is. Furthermore, our model is not dynamic, in that it doesn't consider the reallocation of resources across sectors, and/or the creation of new demand, new roles, or even new sectors. This also means it doesn't account for some sectors growing at the expense of others. Finally, it doesn't account for external shocks or changes in the UK's competitive position. This all likely means that our estimates in terms of productivity gains and economic growth are relatively conservative.

How can the UK government help drive the right kind of adoption?

All of this shows that, at a macro level and for the future of the UK economy, getting AI adoption right is crucial. The majority of this effort rests at the firm-level. But as the UK's recent economic

history has shown, relying on natural diffusion of new technologies and best practice across the UK economy is unlikely to be sufficient. There are several market failures and barriers to diffusion of AI adoption that suggest a meaningful role for government in helping to achieve this goal.

However, a role for government does not mean we should expect government to solve this entirely. Policy in this space is notoriously difficult. Two conditions determine whether intervention helps.

First, government must target the right outcome. As we've established, the goal is not adoption for its own sake. It is the deeper, value-generating adoption that drives productivity, targeted first in the sectors where it has the greatest payoff. Being relentlessly focused on what outcome you are trying to achieve is crucial for any policy in this space.

Second, government must be specific about the barriers it can help address. Not every barrier is amenable to public action, and the barriers differ depending on where sectors and firms are in their journey on AI adoption.

This leads us to four broad areas for action, where we believe the UK government can play a role in addressing the barriers to adoption:

1. **Government dependencies.** There are areas where the inputs or underpinnings for broad and deep adoption are reliant on government action. For example, infrastructure requirements, leveraging national data resources, or providing regulatory clarity where necessary. These are things which firms alone cannot solve.

2. **Resource constraints.** Often firms know they should act when it comes to AI but lack the means to do so. For example, they may lack the skills, capital, and/or the organisational capacity to make the necessary investments. Here, the role of government is to help ease these particular barriers.

3. **Lack of awareness.** Some firms do not act because they do not know what is possible or what is needed. For example, the absence of clear, relevant use cases and the resulting uncertainty about whether AI is worth the investment. Here, government can play a role in bringing together those with the necessary experience and those who need it.

4. **Externalities.** Finally, some firms do not see a reason to act, even though the economy as a whole benefits if they do. The obvious example here relates to security and trust. Here, government may need to encourage action that individual firms would not take on their own account, but which will have broader national and social benefits. It is vital that the right governance and security processes are put in place when integrating AI into workflows and with personal data.

This first part of our analysis has set out the challenge and the prize. Part two will turn to solutions in detail, expanding on the four areas for action above. It will map the full set of barriers to deep AI adoption, draw lessons from history on what has worked to spread previous general-purpose technologies, and analyse the approaches of more than a dozen peer countries to see what the UK can learn. From this, we will set out specific recommendations for how the UK government can act, focused on where public action can make a genuine difference.

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