UNIVERSITY OF CAMBRIDGE

Cambridge Industrial Innovation Policy

The UK technology adoption support system and lessons from the international experience

A SUBMISSION TO THE TECHNOLOGY ADOPTION REVIEW OF THE DEPARTMENT FOR SCIENCE, INNOVATION & TECHNOLOGY

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About this document

A SUBMISSION TO THE DEPARTMENT FOR SCIENCE, INNOVATION & TECHNOLOGY

Contributors

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About us

Cambridge Industrial Innovation Policy (CIIP) is a global, not-for-profit policy group based at the Institute for Manufacturing (IfM), University of Cambridge. CIIP works with governments and global organisations to promote industrial competitiveness and technological innovation. We offer new evidence, insights and tools based on the latest academic thinking and international best practices.

Our services are delivered through IfM Engage, the knowledge-transfer arm of the Institute for Manufacturing (IfM), University of Cambridge.

The Technology Adoption Review

At Autumn Budget 2024, the Chancellor announced that the government will task the Government Chief Scientific Adviser (GCSA), Professor Dame Angela McLean, and the National Technology Adviser (NTA), Dr Dave Smith, to lead a review of barriers to the adoption of transformative technologies that could enhance productivity, with a focus on the growth-driving sectors identified in the Industrial Strategy green paper.

The review will identify the barriers businesses face when adopting both established and novel technologies, building from existing analysis, industry insights, and the forthcoming AI Opportunities Action Plan. It will provide practical recommendations on how the government can work with businesses to address these obstacles, with a focus on the 8 growth-driving sectors identified in the Industrial Strategy green paper.

Questions addressed in this submission

Question 6

How effectively does the UK support the adoption of new technology? What could be improved in your sector and/or across sectors?

Question 7

What current policies and/or initiatives support technology adoption in your sector and/or across sectors? Have these policies been successful at supporting technology adoption and why?

Question 9

What international examples of technology adoption have been most successful, specifically from countries with economies similar to the UK and/or any novel or effective approaches from other countries?

1. The UK's history of support for new technology adoption

*Question 6 - **How effectively does the UK support the adoption of new technology? What could be improved in your sector and/or across sectors?***

From the 1990s until the early 2010s, the UK had developed a promising system of public support to help businesses—particularly small and medium-sized enterprises (SMEs)—adopt new technologies and improve productivity. This system was spearheaded by organisations such as the Regional Development Agencies (RDAs), Business Link, and the Manufacturing Advisory Service (MAS). However, this infrastructure has gradually eroded, leaving a more fragmented environment with fewer nationally coordinated programmes for technology adoption and business growth.

Despite the variety in their structures and focuses, formal reviews and evaluations of the three organisations were predominantly positive, and in some cases very strong. For example, the RDAs were independently credited by PwC with generating up to £4.50 in regional gross value added (GVA) for every £1 spent, with similar success observed in their skills and job creation programmes. Business Link's services, although diverse across regions, routinely received client satisfaction rates close to 90% and were shown by academic studies to positively influence business performance. Likewise, MAS—which drew inspiration from the highly regarded US Manufacturing Extension Partnership—was found through quasi-experimental methods to have reduced firm closures and, on average, raised participating firms' GVA by amounts larger than the service's delivery cost.

In spite of these findings, these organisations were disbanded with questionable evidence as a basis. When RDAs were abolished under the Public Bodies Act 2011, cost-cutting amid the global financial crisis was emphasised as a key motive, alongside the view that these agencies were "quangos"—unelected bodies perceived by some stakeholders to operate without sufficient local accountability. The shift in political administrations from Labour to Conservative-Liberal Democrat also contributed to a preference for smaller-scale, locally run initiatives over nationally coordinated programmes. Meanwhile, the Richard Report was influential in shaping doubts around Business Link, although many commentators believe the report omitted or overlooked positive evaluations. MAS, too, was ultimately closed with little public consultation, again under the rationale of reducing central government interventions. Thus, the closure of these organisations appears to have followed political cycles rather than being an evidence-based decision.

As a result, the UK's current business support landscape now relies on local Growth Hubs – which are themselves being phased out – and a patchwork of region-specific programmes, making it harder to reach the consistency and breadth of coverage once offered by national bodies. While some notable initiatives exist—such as the Made Smarter Adoption programme—these often confront a lack of unified, country-wide infrastructure for technology diffusion. This can lead to gaps in support, variations in service quality, and missed opportunities for scaling up successful innovations.

In conclusion, the UK formerly had a strong and coordinated system to foster technology adoption, but has since lost key parts of that system because of funding constraints and political preferences rather than any inherent failings in the programmes. Policymakers should recognise how these shifts may have negatively impacted business innovation and productivity in the long run. Any new national-level strategy aimed at accelerating technology adoption could benefit from revisiting, updating, and scaling up the most effective elements of the earlier programmes, ensuring they are adequately resourced and aligned with both local needs and broader national priorities.

2. Recent UK technology adoption programmes

Question 7 - What current policies and/or initiatives support technology adoption in your sector and/or across sectors? Have these policies been successful at supporting technology adoption and why?

Several policies in the UK aim to encourage businesses—particularly small and medium-sized enterprises (SMEs)—to adopt new technologies. Two notable programmes are Made Smarter Adoption (MSA) and Help to Grow: Digital, both introduced over recent years to boost digitalisation across sectors.

Made Smarter Adoption (MSA) began in 2018 as a regional pilot in North West England, primarily supporting manufacturing SMEs in adopting industrial digital technologies. Its services range from expert technology advice and leadership training to match-funding opportunities. Although the UK's fragmented business support system creates significant implementation challenges, MSA has shown positive outcomes in helping SMEs enhance productivity, reduce waste, and improve operational efficiency. Successive evaluations using control groups of non-participant firms have documented productivity gains and cost reductions among participating businesses, leading to strong calls for a nationwide rollout.

However, the varied local landscape means that each new region MSA enters requires negotiation with multiple, sometimes overlapping, organisations—such as Growth Hubs, mayoral authorities, universities, and regional technology centres. This diversity can delay the programme's expansion by increasing coordination tasks and duplicating administrative and outreach efforts. Despite these coordination issues, the positive results highlight the substantial benefits that technology adoption programmes can deliver, and underscore their potential for broader success if they are more robustly implemented on a consistent, country-wide scale.

By contrast, Help to Grow: Digital was introduced in December 2021 as a national policy to support 100,000 SMEs over three years. It comprised an online platform offering impartial technology integration advice and a grant token worth up to £5,000 towards pre-approved software. In practice, the programme struggled to attract its intended audience, issuing fewer than 1,000 grant tokens despite a considerable marketing budget. Critics pointed to strict eligibility criteria, a limited set of software vendors, and the programme's top-down design, which did not utilise locally embedded organisations with relevant technical expertise. This meant that, unlike MSA, Help to Grow: Digital lacked on-the-ground support or one-to-one interactions that could have engaged SMEs more effectively.

The absence of deeper local involvement severely undermined the programme's outreach and capacity to tailor solutions to diverse business needs. While the government did relax some eligibility requirements, participation remained far below target, leading to the announcement of the programme's discontinuation in late 2022. Many commentators believe that with better local and regional engagement—mirroring elements of MSA's success—Help to Grow: Digital could have been more effective.

In summary, Made Smarter Adoption demonstrates that well-designed programmes offering direct, expert-led support can indeed bolster technology adoption, even if implementing them across a fragmented support system is challenging. On the other hand, Help to Grow: Digital shows how a lack of localised infrastructure and technical expertise can limit a programme's effectiveness, ultimately curtailing its impact. Both experiences suggest that a more integrated institutional framework, combining national coordination with strong regional delivery, is crucial for the success of UK technology adoption initiatives.

3. International examples of technology adoption systems

Question 9 - What international examples of technology adoption have been most successful, specifically from countries with economies similar to the UK and/or any novel or effective approaches from other countries?

The US, Japan, and the UK use very different approaches to support technology adoption in their manufacturing sectors. The US Manufacturing Extension Partnership (MEP), established in 1989 under the National Institute of Standards and Technology (NIST), operates through a network of regional centres across all 50 states and Puerto Rico. With roughly 1,400 employees in total, these centres provide a range of services—from business growth and improvement to risk mitigation. They offer practical support such as market research, workforce development, lean manufacturing techniques, and cybersecurity consulting. MEP centres use two main service delivery models. Some employ in-house specialists who work directly with small and medium-sized manufacturers, while others act as brokers connecting businesses with external technical consultants. Oversight by NIST, through a cooperative agreement renewed every five years, ensures that each centre meets standard governance and performance benchmarks. Recent increases in federal funding, including proposals under the Chips and Science Act, demonstrate a strong national commitment to supporting domestic manufacturing and technology adoption through this model.

In contrast, Japan's SME Support system operates under a highly centralized model managed by the Ministry of Economy, Trade and Industry (METI). This organization provides uniform and standardized support across the country via its headquarters and 10 regional centres. Its services are designed to be consistent nationwide, ensuring that SMEs receive the same level of support regardless of their location. The support offered combines hands-on consultations—where experts visit SMEs to identify challenges and develop tailored business plans—with financial assistance. Through its Total Support Programme for Productivity Revolution, SME Support offers a suite of grants aimed at different needs, such as manufacturing upgrades, business sustainability, IT implementation, and business succession. This centrally coordinated approach ensures that support is delivered impartially and equitably, reducing regional disparities and avoiding local political conflicts, since the programme focuses solely on business support rather than broader planning or infrastructure issues.

Comparing these systems with the UK's approach reveals some important lessons. The UK currently relies on a fragmented network of business support organisations, with local Growth Hubs acting as signposts for various government initiatives like the Made Smarter Adoption programme. This fragmented system contrasts with the more robust and coordinated networks in the US and Japan. In the US, decentralization is balanced by strong central oversight that standardizes service quality across regional centres, while in Japan, a fully centralized model ensures uniformity and impartiality nationwide.

The experiences of the US and Japan suggest that a well-funded, coordinated support system can significantly improve technology adoption among SMEs. Both countries have dedicated substantial public resources to these programmes, which are underpinned by strong technical expertise and established networks of local partners. Such models have allowed for efficient programme rollouts and high engagement levels among businesses, ensuring that support is closely aligned with the specific needs of SMEs.

For the UK, these examples highlight the challenges of a fragmented approach. The difficulties in scaling up national programmes like Made Smarter Adoption and the low uptake of Help to Grow: Digital partly stem from the lack of a unified, robust infrastructure for delivering technical support. Moving forward, policymakers might consider increasing funding and creating a more centralized or better-coordinated system that combines the strengths of both the US and Japanese models. Such a system would likely enhance consistency, improve SME engagement, and ultimately drive more effective technology adoption across the country.

4. How could the UK system be improved? From fragmentation to decentralisation

*Question 6 - How effectively does the UK support the adoption of new technology? **What could be improved in your sector and/or across sectors?***

A potential path to improve the UK's technology adoption system involves accepting a more active role for the central government in delivering technology adoption services. This initial proposal suggests moving towards a decentralised model with stronger central oversight, yet it is important to stress that these ideas are preliminary. Further studies and stakeholder consultations are necessary to design a system that effectively meets the needs of the UK's unique business environment.

Three main options emerge from this discussion. The first, and more far-fetched, option is to enhance the existing local delivery mechanisms, such as Local Enterprise Partnerships (LEPs) and Growth Hubs. This approach would involve ensuring these bodies are properly resourced, endowed with technical advisors (potentially as full-time employees), and equipped with the organisational capacity to effectively deliver technology adoption programmes. Strengthening these entities could help align regional efforts with national priorities by increasing central oversight and promoting knowledge sharing between regions. However, this option is likely no longer feasible due to the current policy of phasing out LEPs and integrating them with local mayoral authorities.

A second option is to adopt a model similar to the former Business Link programme, where the central government administers the technology adoption programme. Under this model, regional delivery organisations—whether they are LEPs, Growth Hubs, Catapults, universities, or private firms—would be selected through competitive bidding processes. Crucially, these delivery organisations should possess in-house technical capabilities to reduce reliance on outsourcing and to improve the monitoring and quality of services. This method could bring about a more standardised and centrally coordinated delivery of support services, while still utilising a network of capable local organisations to tailor the programme to regional needs.

The third option is to establish or expand a national organisation with its own regional centres dedicated to technology adoption. This approach might involve re-establishing a central body similar to the Manufacturing Advisory Service (MAS), but redesigned to focus exclusively on business support without the broader planning and infrastructure roles that previously complicated the UK landscape. Alternatively, expanding the remit of existing entities such as the Catapult Centres or Innovate UK's Knowledge Transfer Partnerships (KTPs) could be considered. Both of these models would centralise control while still maintaining a regional presence, ensuring that best practices and technical expertise are consistently available across the country.

Each of these options aims to address current shortcomings in the UK's fragmented system of business support. The ultimate goal is to develop a system that combines strong central coordination with the flexibility and local knowledge necessary to meet the diverse needs of SMEs. However, given the complexities involved, these suggestions are merely an initial framework. Detailed studies and comprehensive consultations with all relevant stakeholders—including industry experts, local authorities, and central government bodies—are essential before any new design can be implemented.

In summary, a shift towards a more decentralised, yet centrally coordinated, model offers promising routes to enhance technology adoption services in the UK. Whether through strengthening existing local mechanisms, adopting a competitive, centrally administered delivery model, or creating a dedicated national organisation, the potential benefits are significant. Yet, a cautious and consultative approach is necessary to ensure that any future system is robust, effective, and politically viable.

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