# BCS' Response to DSIT's Technology Adoption Review call for evidence

**February 2025**

Compiled by Claire Penketh BCS Policy and Public Affairs Manager and Dr. Bill Mitchell OBE, BCS Fellow

## Table of Contents

## Introduction

The Department for Science Technology and Innovation launched the Technology Adoption Review call for evidence to gain views on what has worked well and what needs to change to ensure the UK remains at the forefront of successful technology adoption. The consultation's forward stated that technology adoption is a key driver of productivity growth and is thus an important priority for the government in delivering its growth mission.

**Research Methods**

BCS, as the professional body for the tech sector, responded to the questions using evidence from its own original research and analysis, earlier BCS consultation responses, and other sources using desk top research.

## Technology Adoption Review Call for Evidence questions:

### 1. Why does the UK rank lower than some OECD countries in technology adoption? What dynamics exist in the UK, but not in countries such as Germany or Estonia that might explain it?

The UK's lower ranking in technology adoption compared to some OECD countries, such as Germany and Estonia, is due to a variety of factors.

**Germany's Success:**

Germany's robust vocational training system, particularly the Dual vocational training system, provides a strong pipeline of skilled workers. Half of German school leavers enter

vocational training, compared to only 6% in England[1, 2]. Furthermore, German apprenticeships are predominantly with SMEs (98%), whereas only 41% in England are with SMEs. Germany also has stable R&D funding programs whereas the UK suffers from unpredictable funding and lagging investment in R&D, hindering commercialisation.

**Estonia's Success:**
Estonia's investment in its X-Road system[3] has facilitated secure data exchange between public and private sectors, driving digital transformation. In contrast, the UK's broadband infrastructure struggles, especially in rural areas, due to inconsistent 5G rollout.[4]

**SME Challenges:**
**UK SMEs encounter barriers, including limited access to affordable tech solutions and financing.** In contrast, Germany's Mittelstand benefits from long-term, low-interest credit schemes tailored for technology adoption. A 2023 Bank of England survey indicated that financial constraints are a principal obstacle for UK SMEs.[5]

## 2. What are the biggest barriers to technology adoption in your sector and/or across sectors? Does business size and geographic location affect how firms are impacted by these barriers?

**Professional Qualifications**: The UK places less emphasis on professional qualifications for workers than other G7 countries. This limits staff engagement in communities of practice run by professional bodies and others that accelerate diffusion of skills. Developing communities of professional practice is one of BCS' main priorities.[6]

The BCS report '*Tech priorities, skills and the AI outlook for 2025'* shows a lack of professionals with Chartered Status may be a factor that is hindering technology adoption. The report found that:

- IT leaders identify cybersecurity (74%), Artificial Intelligence (63%) and Chief Information Officers (48%) as the top IT roles that should have chartered status.
- 63% of IT leaders felt that their organisation needed better IT capability and skills in their existing workforce to achieve their priorities:[7]

[1] https://www.make-it-in-germany.com/en/study-vocational-training/training-in-germany/vocational/dual-system
[2] [2] https://www.nocn.org.uk/Data/Products_Downloads/EnglandvsGermany;theapprenticeshipgame.pdf
[3] https://www.publictechnology.net/2023/12/20/society-and-welfare/estonia-how-the-x-road-paved-the-way-to-a-digital-society/
[4] https://www.theguardian.com/commentisfree/2024/oct/24/uk-5g-connection-really-is-crap-mobile-phones?
[5] https://www.bankofengland.co.uk/quarterly-bulletin/2024/2024/identifying-barriers-to-productive-investment-and-external-finance-a-survey-of-uk-smes
[6] https://www.bcs.org/articles-opinion-and-research/the-computing-revolution-how-the-next-government-can-transform-society-with-ethics-education-and-equity-in-technology/
[7] https://www.bcs.org/policy-and-influence/tech-and-society/tech-priorities-skills-and-the-ai-outlook-for-2025/resources-needs-and-filling-the-gaps/

**Essential Digital Skills Gap**: The report from future.now – The Essential Skills Gap found[8] found 21.7m of working-age adults don't have the necessary essential digital tasks for the workplace and 1.9m working-age adults cannot complete any of the essential digital work tasks.

## 3. What is the evidence for technology adoption across different sizes of businesses?

Based on BCS research through our membership we find that SMEs often struggle to adopt new technology because of lack of expertise and information[9] . SMEs would benefit from a one-stop shop on gov.uk with guidance that is accessible, understandable and relevant to them.

BCS, as a leading end point assessment organisation for digital apprenticeships , produced a recent report 'Protect. Improve. Grow The Future of Digital Apprenticeships'[10]. It found SMEs were struggling to navigate an overly complicated system to recruit trainees in, for instance, AI or cybersecurity. The BCS report found that '*It is essential that these employers feel part of the system, encouraging, for example, more localised participation.'*

## 4. What are the differences in technology adoption rates in the nations and regions of the UK, and how can they be explained

BCS' regional IT adoption analysis reveals the following: In England, the Southeast and London lead in IT adoption due to better infrastructure, talent, and funding. Scotland has seen progress through initiatives like DigitalBoost, but rural areas still face challenges. In Wales, Superfast Cymru has improved broadband access, though adoption remains uneven. Northern Ireland is developing Belfast as a tech hub, but other regions lag, with BCS regional chapters reporting low adoption outside urban centres.

## 5. Do technology adoption rates differ at a worker level, including by gender, ethnicity or other protected characteristics? If so, does this have wider effects on professions and sectors where a large proportion of that workforce comes from a lower technology adopting group?

**As highlighted by BCS's 2024 Diversity Report[11]:**

[8] https://futuredotnow.uk/about-us/the-essential-digital-skills-gap/
[9] https://www.bcs.org/media/quoic0s4/aime-ai-management-essentials-consultation.pdf
[10] https://www.bcs.org/media/lxjjuglz/the-future-of-digital-apprenticeships.pdf
[11] https://www.bcs.org/policy-and-influence/equity-diversity-and-inclusion/bcs-diversity-report-2024-addressing-the-under-representation-of-women-in-technology/women-in-technology-key-findings/

- **Gender:** Women make up just 21% of the UK's IT workforce, Black Women make up less than 1%.
- **Disability:** if representation in IT were equal to the workforce 'norm' there **would be an additional 66,000 IT specialists in the UK with disabilities.**
- **Age:** Of the 2 million IT specialists based in the UK in 2023, just over one fifth (22% or 446,000) were aged 50 or above, and if representation in IT were equal to the workforce 'norm' there would have been an additional 148,000 IT specialists in the UK aged 50 or more**.**

## 5b. If so, does this have wider effects on professions and sectors where a large proportions of that workforce comes from a lower technology adopting group?

The tech sector has a largely untapped talent pool, including women, career changers, over-50s, and disabled and neurodivergent individuals. To meet the AI Opportunities Action Plan's goal of training tens of thousands by 2030, the UK must prioritise diversity, ensuring technological advancements are ethical, accessible, and representative. Closing the gender gap is urgent—at current rates, equal representation in tech could take nearly 300 years. Diverse teams not only drive inclusivity but also boost business success, with McKinsey research showing they outperform less diverse counterparts.

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

**Strengths**: Innovate UK and Catapult Centres have driven innovation in various sectors. **Improvements Needed**: Enhance guidance and IT grants for training in SMEs. Professional registration to be a key part of government strategy to accelerate diffusion of STEM skills.

## 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?

R&D tax credits encourage IT innovation but remain challenging for SMEs to access [13]. UKRI initiatives help drive economic growth[14], and industry bodies like BCS, The Chartered Institute for IT provide essential professional development.[15] Digital apprenticeships have grown by 47% since 2020, with rising demand for higher-level roles like AI Data Specialists. MSc AI and data science conversion courses are improving sector diversity.[16] Digital Skills Partnerships offer vital training opportunities, and regional programmes like the West Midlands Digital Skills Consortium show promise with a focus on supporting SMEs.[17]

## 8. The availability of skilled employees is a significant enabler of technology adoption. What are the main skills needs across the economy/in your sector required to drive technology adoption and where are the most significant gaps?

BCS has found the following professional skills are needed across the economy:
**Knowledge transfer**: skills for transferring a deep scientific knowledge of computing into organisational/business contexts.

**Sustainable deployment**: skills for engineering data driven systems that can sustainably meet organisational/business needs.

**Strategic vision**: skills for adoption of data driven technologies and maximising their value whilst ensuring they achieve outcomes aligned with an organisation's strategic vision.

**Organisational values**: skills for embedding innovative thinking as a core component of organisational/business values and behaviours.

The employer led **SFIA competency framework**[12] skill sets that cover: Digital Transformation skills, Agile development skills, DevOps skills, Big data/Data science skills, Information and cyber security skills, Enterprise IT skills'. Also the AI Skills for Business Competency Framework, produced by the Alan Turing Institute.[13]

## 8b. Where there are gaps, how can the UK effectively up/reskill domestic workers for roles that involve technology adoption? This could focus on any of the following groups: Leadership (management, C-suite)

## - IT experts (e.g. requiring technical expertise with university or equivalent-level qualification)
## - Lower technical ability adoption skills (e.g. addressed via re- or upskilling programmes, typically shorter than for experts)
## - All (e.g. safety, ethics and governance)

**Leadership (Management & C-Suite)**
Many organisations, particularly in health and social care, lack IT expertise at board level, limiting tech adoption and compliance. Leaders must be trained in AI ethics, data governance, and compliance, with Chartered IT Professional (CITP) status setting the standard for accountability.

[12] https://sfia-online.org/en/sfia-8/sfia-views:
[13] https://www.turing.ac.uk/skills/collaborate/ai-skills-business-framework 19

**IT Experts (High Technical Expertise)** Government-subsidised training, degree apprenticeships, hackathons, and exposure to global best practices can help develop the AI and digital workforce.

**Lower Technical Ability (Re-/Upskilling Programmes)** Short, modular courses, employer-led training, and community-based programmes can provide accessible upskilling, while fast-tracking learning for those with transferable skills ensures an inclusive workforce transition.

**Safety, Ethics & Governance.** IT professionals should be encouraged to achieve Chartered IT Professional status, as advocated by BCS, ensuring accountability against a code of conduct.

**Key Enablers for Success** Government investment, employer collaboration, accessible learning platforms, and a culture of lifelong learning are essential to developing a skilled, diverse, and globally competitive workforce.

## 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?

BCS highlights the following: **Estonia**: Digital ID and e-Government systems have driven widespread IT adoption. **Germany**: The Mittelstand's use of Fraunhofer Institutes ensures SME innovation. **Singapore**: SME Go Digital provides targeted IT support.

## 10. What are the top two transformational technologies for productivity in your sector and/or across sectors, and why?

- **AI**: Drives efficiencies across IT operations and decision-making.
- **Cloud Computing**: Enhances scalability and collaboration for IT teams.

## 11. Where is government uniquely placed to drive technology adoption?

Targeted grants, tax incentives, and direct support for SMEs can accelerate digital transformation, while expanding regional growth hubs will ensure tailored business support. National digital literacy initiatives and sector-specific tech awareness campaigns will help industries adapt. Clear roadmaps for digital-first strategies, lifelong learning funding, and government-backed AI and cybersecurity apprenticeships will strengthen the workforce.

Retraining schemes for automation-affected jobs and improved broadband access are critical for inclusivity. The government should also act as a neutral facilitator, bringing together academia, industry, and the public sector to tackle key challenges—BCS, with its 70,000-strong membership, is well-placed to support this.

## 12. Where is industry uniquely placed to drive technology adoption in your sector and/or across sectors? Where could industry go further to support the objectives of this review?

Industry can invest in scalable IT solutions. Companies should make professional registration a key part of their strategy to accelerate diffusion of the professional STEM skills needed to adopt technology. BCS recommends partnerships between tech firms and training providers to address skills gaps.

## 13. What opportunities are there for government and industry partnerships to drive technology adoption in your sector and/or across sectors?

Government and industry should co-develop IT apprenticeships, jointly fund innovation centres, and prioritise professional registration to accelerate the adoption of STEM skills.

## 14. What approach or policies should government consider to accelerate technology adoption across the economy and/or within sectors?

- Streamline access to IT funding programs.
- Invest in digital inclusion initiatives.
- Government and industry should make professional registration a key part of their strategy to accelerate diffusion of the professional STEM skills needed to adopt technology.

## Who we are

BCS, The Chartered Institute for IT is the professional body for information technology. Our purpose as defined by our Royal Charter is to promote and advance the education and practice of computing for the benefit of the public. We bring together industry, academics, practitioners, and government to share knowledge, promote new thinking, inform, and shape public policy. BCS has over 70,000 members including businesses, entrepreneurs, public sector leaders, academics, educators, and students, in the UK and internationally.

**BCS**
The Chartered Institute for IT
3 Newbridge House,
Newbridge Square,
Swindon SN1 1BY
BCS is a registered charity: No 292786