Department for
Science, Innovation
& Technology

Policy paper

Science and Technology Framework

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Introduction

This government has promised to deliver change and improve lives for citizens in every part of the UK. Achieving this ambition will require us to unlock the full potential of UK science and technology (S&T) to drive growth, create jobs, and ensure all citizens live healthy, secure, and sustainable lives.

S&T is at the heart of the government's ambitious agenda across the National Missions, the Industrial Strategy and our Plan for Change (https://www.gov.uk/missions). From the transition to clean energy or understanding the impact of climate change, to achieving safer streets, securing resilience against natural or malicious threats, tackling migration, or ensuring that every child can take advantage of educational opportunities – every area of government policy or operational activity is impacted by science, technology or engineering. We know that the NHS cannot become sustainable or efficient without rapid adoption of technologies, and the economy cannot grow faster than average if we do not start, scale and sustain S&T companies.

With the rapid pace of modern technological and scientific development, we must have an integrated, systems-level approach to science and technology policy across the whole of government if we are to succeed.

This government is committed to using the S&T Framework as an enduring, systems-level approach to delivering on our national missions and driving growth through science and technology.

The S&T Framework provides a holistic set of 10 critical levers that government can use to embed a full range of considerations into decision-making. This government is committed to applying these levers to ensure that S&T is at the centre of delivering our core priorities. The Framework will ensure that S&T informs all aspects of the Industrial Strategy, delivering the private sector investment needed for long-term economic growth.

1. Developing and deploying critical technologies

Technology has the potential to significantly influence the UK's future prosperity, security, and global leadership. By making best use of our strengths, we can improve lives for citizens, create opportunities for growth and maximise the strategic advantage we create.

The government is committed to making strategic choices and supporting the technologies which are most critical to the UK, including:

- advanced connectivity technologies (formerly called future telecoms)
- artificial intelligence
- engineering biology
- quantum technologies and
- semiconductors

2. Signalling UK strengths and ambitions

The UK must clearly communicate its global leadership in science and technology, demonstrating its capacity for innovation, research, and industrial excellence. Signalling our ambitions and capabilities creates an environment where stakeholders have the confidence to invest in and contribute towards the science and technology that underpin our Missions. Building awareness and support for the Industrial Strategy will be a key part of bringing the S&T Framework to life and provides a signal to industry and citizens that we are focused on growth – creating the right conditions for investment so that we can raise living standards in every part of the UK.

Industry and academia are not our only stakeholders. Building public trust in science and technology helps to ensure every citizen benefits as they should, such as our AI Opportunities Action Plan (https://www.gov.uk/government/publications/ai-opportunities-action-plan/ai-opportunities-action-plan) setting out how we will capture the benefits AI is delivering.

3. Investment in research and development

By harnessing public and private investment, the UK can maintain its competitive edge, foster collaboration with international partners, and ensure that cutting-edge technologies and scientific advancements benefit society as a whole. Individual public investments in R&D should work together, alongside private sector investment, as a complementary portfolio to maximise the real-world impact. A successful R&D sector is essential for growth.

At the Autumn 2024 Budget (https://www.gov.uk/government/publications/autumn-budget-2024), the Chancellor underscored R&D as a central pillar to this government's plan to drive economic growth by announcing a record

£20.4 billion investment. Through the Spending Review process, we are working to ensure that R&D investment supports the aims and objectives of the UK's National Missions and the 8 growth-driving sectors of the Industrial Strategy.

4. Talent and skills

Building a highly skilled workforce is essential to maintaining the UK's leadership in science and technology. To do so we must ensure the UK continues to attract, develop and retain talented scientists, researchers, entrepreneurs and innovators across all career stages. It also requires developing talent pipelines in schools, universities, and research institutions, and creating systems for lifelong learning and reskilling to keep pace with technological changes. The UK must also foster digital and STEM skills across all sectors, enabling individuals to participate in and benefit from a technology-driven economy.

The establishment of Skills England is a crucial part of this government's plan to build and maintain the science and technology skills the UK needs. Skills England (https://www.gov.uk/government/collections/skills-england) will:

- form a coherent picture of where skills gaps exist and how they can be addressed
- unify the skills landscape to ensure that the workforce is equipped with the skills needed to power economic growth
- shape technical education to respond to skills needs and
- advise on the highly trained workforce needed to deliver a clear, long-term plan for the future economy

5. Financing innovative science and technology companies

Access to the right finance at the right time is essential for UK science and technology companies to start-up, scale-up, and ultimately drive economic growth. The UK is a world leader in the financing of innovative businesses, with the UK raising $16.2 billion of venture capital investment in 2024, the highest total in Europe and more than double the amount raised by Germany and France combined. The UK is also home to the third most valuable tech ecosystem in the world, valued at $1.2 trillion, ranking behind only the US and China, underlining the UK's position as a global hub for innovation and entrepreneurship. However, there is more to do to close funding gaps for our deep tech companies, which often require high upfront investment and have long lead times to market coupled with technological uncertainties.

To drive investment into the UK's growth industries, including science and technology sectors, the UK Infrastructure Bank has been restructured as the National Wealth Fund, with an additional £5.8 billion, raising its total capitalisation to £27.8 billion. The British Business Bank will be reformed and the British Growth Partnership will start making its first investments in 2025 to better mobilise institutional capital, supported by pension reforms set to unlock £80 billion for infrastructure and future-focused businesses. The government continues to support delivery of the Mansion House Compact under which 11 of the UK's largest pension funds committed to allocating 5% of their total funds to unlisted equities which could unlock £50 billion by 2030.

6. Procurement

Government procurement is a powerful tool for catalysing innovation by creating demand for emerging technologies. Public sector organisations can act as early adopters, using their purchasing power to support novel solutions. By articulating the outcomes we want to achieve, rather than specifying exact solutions, the government can create demand and drive innovation across the UK's science and technology sector.

Putting this ambition into practice, the government will use the legal framework created by the Procurement Act 2023 to deliver economic growth, raise standards and deliver greater social value, opening up procurement to new entrants such as small businesses and social enterprises. The Act came into force in February 2025 and will deliver better value for money and allow us to set clear strategic direction for procurement in line with the government's National Missions – including economic growth. A new commercial innovation hub will trial new approaches to service design

7. International opportunities

The UK benefits from engaging internationally on S&T, enabling partnerships for growth, innovation, and tackling global challenges. International relationships with governments, industry and academia are essential to the UK's S&T capabilities. We influence the global landscape, embed our values into technology, and protect our security interests by championing principles that guide technology to be open, responsible, secure, and resilient.

Collaborating with international partners allows us to access global expertise and accelerate innovation. Our association to Horizon Europe enables UK researchers and businesses to participate in the world's largest research cooperation programme. By leveraging our strong international relationships, we build mutually beneficial S&T partnerships, to support growth, and attract investment. We recently welcomed £6.3 billion of overseas investment into UK data centres by US tech firms, which will create jobs, grow the economy, and spur on AI development. Our AI Opportunities Plan is expected to attract significant investment, we will continue collaborations to attract talent and business, and work with our partners to tackle global challenges, such as with the AI for Development programme. The UK is committed to shaping the global governance of technologies and to strengthening science cooperation with international partners through the G7, G20 and other international fora, including championing the United Nations Global Digital Compact.

8. Research and innovation infrastructure (physical and digital)

World-class national and international infrastructure delivers both scientific and societal benefits. Government is working with stakeholders to determine how it can best deliver government priorities across the whole lifecycle of infrastructure (options analysis, construction, operation or repurpose, and decommissioning). Government will work to understand technological dependencies and opportunities for convergence to maximise the impact of these investments, for example, using artificial intelligence and engineering biology in the development of personalised medicines. This government will pursue opportunities to improve researcher data access, learning from our £5 million pilot programme with UKRI, and launching a National Data Library to provide simple, secure and ethical access to key public data assets. The government is also continuing with the delivery of the AI Research Resource, a £300 million programme that will provide access to cutting edge computational resources in Bristol and Cambridge.

In 2023, government invested £127.6 million to upgrade the UK Biobank in Manchester, alongside £8 million match funding in 2024 for cloud computing storage, opening up new ways to investigate disease. Following the introduction of the AI Opportunities Action Plan with its dedicated AI Growth Zones, 3 major tech companies have committed £14 billion of investment to build the AI infrastructure the UK needs to harness the potential of the technology.

9. Regulation and standards

Having a strong understanding of how regulations and technical standards influence the behaviours of science and technology companies enables us to promote innovation and support the creation of new markets and technologies across the UK. The burden of navigating new regulations or standards on UK priority sectors can be minimised by developing policy in close collaboration with stakeholders and expert advisors.

The government have established the ambitious Regulatory Innovation Office (RIO) in order to help innovative businesses navigate challenges present in the regulatory landscape. The RIO will reduce the burden of red tape, enabling innovative businesses to bring new products and services to market quickly and safely in some of the UK's fastest growing sectors, helping to kickstart economic growth and improve lives. To address the most critical barriers, the RIO will set clear priorities for regulatory innovation, aligning with the government's Missions and Industrial Strategy. The RIO will initially support the growth of 4 fast-growing areas of technology – engineering biology, space, artificial intelligence, and drones and other autonomous technologies – before expanding its focus to other technologies and sectors as the Office evolves.

10. Innovative public sector

Science, technology and innovation have the potential to transform the UK public sector. By embedding a pro-innovation culture, identifying opportunities early, adopting the latest technologies and collaborating with partners in industry, we can ensure that our public services deliver the best possible outcomes for citizens and businesses across the UK. The public sector's embrace of innovation not only improves its operations but also serves as a model for private sector adoption.

This government is set to deliver on this ambition. DSIT recently laid out a clear vision for a modern digital government that delivers reliable next-generation public services to improve the lives of citizens and boost productivity in the public sector and broader economy. As part of this drive, DSIT announced a new package of AI tools – nicknamed Humphrey – that will become available to civil servants to speed up the work of Whitehall and cut back spending on external consultants.