



National Audit Office

An Overview of the
**Department for Science,
Innovation & Technology**
for the new Parliament 2023-24

November 2024

OVERVIEW

Contents

| | | | |
|--|-----------|--|-----------|
| Introduction to the National Audit Office | 3 | Rollout of mobile connectivity and broadband | 12 |
| How the NAO can help you as a Member of Parliament | 4 | Online safety | 14 |
| About this Overview | 5 | Cyber security | 16 |
| The Department for Science, Innovation & Technology | 6 | Science and technology in the UK | 17 |
| How DSIT is structured | 7 | Government support for research | 18 |
| Where DSIT spends its money | 8 | The innovation system in the UK | 19 |
| DSIT's internal structure | 9 | Government support for innovation | 21 |
| Timeline of DSIT's key ambitions and commitments, 2021–2024 | 10 | Recent independent reviews related to DSIT's work | 22 |
| DSIT as the digital centre of government | 11 | DSIT's role in supporting the space sector | 23 |
| | | What to look out for | 25 |
| | | More information about our work on DSIT | 27 |



1 Introduction to the National Audit Office

Welcome to our Overview on the Department for Science, Innovation & Technology, part of our series of Overviews for the new Parliament, covering government departments and cross-cutting issues.

The National Audit Office (NAO) is the UK's independent public spending watchdog and is responsible for scrutinising public spending for Parliament. We audit the financial accounts of all departments, executive agencies, arm's-length bodies, some companies and charities, and other public bodies. We also examine and report on the value for money of how public money has been spent.

The NAO is independent of government and the civil service. The NAO's wide remit and unique access rights enables us to investigate whether taxpayers' money is being spent in line with Parliament's intention and to respond to concerns where value for money may be at risk.

We support all Members of Parliament to hold government to account and we use our insights to help those who manage and govern public bodies to improve public services. In 2023, the NAO's work led to a positive financial impact through reduced costs, improved service delivery, or other benefits to citizens, of £1.59 billion.

We are funded by, and accountable to, Parliament. As an Officer of the House of Commons, I am committed to ensuring that we support you and your staff in your work as a Member of Parliament, and your scrutiny of public spending and performance.

Our dedicated Parliamentary team can offer you support and put you in touch with our experts on subjects of interest to you and your constituents. If you would like more information about our work, or to arrange a briefing with me or one of my teams, please contact our Parliamentary Relations team at parliament@nao.org.uk.



Gareth Davies

COMPTROLLER & AUDITOR GENERAL
NATIONAL AUDIT OFFICE

Gareth Davies was appointed Comptroller & Auditor General (C&AG) in June 2019. He was appointed by the Monarch, following the approval of the House of Commons.

The C&AG has statutory authority to examine and to report directly to Parliament on whether government departments and other public sector bodies have spent taxpayers' money in the way Parliament intended. The C&AG and his staff are totally independent of government.

Gareth is a Fellow of the Chartered Institute of Public Finance and Accountancy and a Fellow of the Institute of Chartered Accountants in England and Wales. He is a non-executive Board member of the INTOSAI Development Initiative (IDI), which supports Supreme Audit Institutions (SAIs) in developing countries to sustainably enhance their performance and capacity.

→ Next

← Back

☰ Contents

2 How the NAO can help you as a Member of Parliament

→ Next

← Back

☰ Contents

How we support Parliament

We produce reports:

- on the annual accounts of government departments and their agencies;
- on the economy, efficiency and effectiveness with which government has spent public money; and
- to establish the facts where there are concerns about public spending issues.

We do not question government policy objectives. We look at how government has spent money delivering those policies and if that money has been used in the best way to achieve the intended outcome.

What we can offer

Through our website or our Parliamentary Relations team, MPs, peers and staff can:

- request a personal briefing on areas of our work that are of interest to them;
- sign up to receive embargoed copies of our reports on subjects of interest;
- make general queries about public spending, or raise concerns with us about value for money; and
- request advice on understanding and scrutinising departments' annual reports and accounts.

Resources available on our website

- **Reports:** Reviews of public spending and how well government is delivering.
- **Insights:** Learning and best practice to help people across government and the wider public sector.
- **Overviews:** Factual overviews of government departments, sectors and services.
- **Work in progress:** Our schedule of future publications.
- **Briefings:** Background information and factual analysis to support Select Committees.

Keep up to date with our work

- Sign up to our [latest report updates](#)
- Follow us on [X](#) or [LinkedIn](#)

How to get in touch

- Via our Parliamentary email inbox: parliament@nao.org.uk.



Auditing the accounts of all government departments and public organisations, helping assure money is being spent the way Parliament intended



Reporting to Parliament on the value for money of how public money has been spent and what has been achieved



Sending you embargoed copies of our reports before they are available to the public



Providing briefings to you or a member of your team on our work



Providing advice and training on examining government departments' annual reports and accounts



Giving evidence to Select Committees



Our fortnightly newsletter with our latest reports and new work



You can write to us with any queries or concerns about the misuse of public money or behaviour in public bodies we audit

3 About this Overview

This report has been produced to provide an introduction to Department for Science, Innovation & Technology (DSIT) and the NAO's examination of its spending and performance.

It is intended to support the Science, Innovation and Technology Committee and Members across the House in their examination of DSIT.

It summarises the key information and insights that can be gained from our examinations of DSIT and related bodies in the sector in England and of DSIT's *Annual report and accounts 2023-24*. DSIT and its arm's-length bodies and executive agencies spent around **£13 billion in 2023-24** to encourage scientific and technological advancement by supplying research and development (R&D) funding, other activity to support innovation, talent programmes, physical and digital infrastructure, and regulation.

The report includes:

- the role and remit of DSIT;
- how DSIT is structured;
- where DSIT spends its money;
- key ambitions and spending commitments;
- DSIT's role as the digital centre of government;
- government's support for research and innovation;
- things to look out for; and
- more information about our work on DSIT.

This report updates our previous report, [Department for Science, Innovation & Technology: Departmental Overview 2022-23](#), published in December 2023.

How we have prepared this report

The information in this report draws on the findings and recommendations from our financial audit and value-for-money work, and from publicly available sources, including the annual report and accounts of the department and its bodies.

We have cited these sources throughout the guide to enable readers to seek further information if required. Where analysis has been taken directly from our value-for-money or other reports, details of our audit approach can be found in

the Appendix of each report, including any evaluative criteria and the evidence base used.

Other analysis in the guide has been directly drawn from publicly available data and includes the relevant source as well as any appropriate notes to help the reader understand our analysis.

Other relevant publications

More information about our work on science, innovation and technology in England, as well as information about our other recent and upcoming reports can be found on the [NAO website](#).



4 The Department for Science, Innovation & Technology

→ Next

← Back

☰ Contents

DSIT was formed in February 2023, following the government's machinery of government changes, and brought together the relevant parts of the former Department for Business, Energy & Industrial Strategy, the former Department for Digital, Culture, Media & Sport and the Cabinet Office. During 2023-24, DSIT set out five early priorities for its operations, which are set out below. These have since been updated (see section 19).

Priority outcomes in DSIT's Annual report and accounts 2023-24

DSIT's description of some of its activities in 2023-24

| | |
|---|--|
| <p>1 To optimise public research and development (R&D) investment to support areas of relative UK strength and increase the level of private R&D to make the UK economy the most innovative in the world.</p> | <ul style="list-style-type: none"> Identified five critical technologies based on their ability to build strategic advantage, create opportunities for growth, and capitalise on existing UK strengths. It published plans and investment for each: Artificial Intelligence (AI), engineering biology, future telecoms, semiconductors, and quantum. Early achievement of government's total R&D public spending target of £20 billion by 2024-25. Announced over £1 billion of funding in the life sciences sector, including £520 million for life sciences manufacturing and £100 million for the AI in healthcare fund. |
| <p>2 To promote a diverse research and innovation system that connects discovery to new companies, growth and jobs.</p> | <ul style="list-style-type: none"> Supported the Prime Minister's second UK Global Investment Summit, resulting in £29.5 billion of new investment in the UK. DSIT also championed the UK's science and technology sector at London Tech week, which attracted over 30,000 visitors from across the globe. Published the Wireless Infrastructure Strategy in April 2023 and made progress upgrading and expanding digital connectivity by delivering digital infrastructure. |
| <p>3 To strengthen international collaboration on science and technology in line with the Integrated Review, and ensure UK researchers are able to continue to work with leading scientists in Europe and around the world.</p> | <ul style="list-style-type: none"> Secured the UK's association to Horizon Europe and Copernicus. Hosted the world's first AI summit in November 2023 at Bletchley Park. |
| <p>4 To deliver key legislative and regulatory reforms to drive competition and promote innovation, including the Data Protection and Digital Information Bill, the Digital Markets, Competition and Consumer Bill and the pro-innovation approach to regulating AI.</p> | <ul style="list-style-type: none"> Continuing to progress the Data Protection and Digital Information Bill to create a UK data protection regime. Also developed the Digital Markets and Consumer Competition Bill. The government's response to the AI white paper, published in February 2024, sets out its commitment to implement a pro-innovation approach. |
| <p>5 To implement the reformed Online Safety Act to keep British people, especially children, safe online.</p> | <ul style="list-style-type: none"> The Online Safety Act was passed into law in October 2023, aiming to put the requirements in place to make the UK the safest place in the world to be online. |

Source: National Audit Office analysis of the Department for Science, Innovation & Technology's Annual report and accounts 2023-24, September 2024

5 How DSIT is structured

→ Next

← Back

≡ Contents

DSIT works with 17 agencies and public bodies to deliver its objectives

The departmental group includes the core department, four executive agencies, three executive non-departmental public bodies, one tribunal, two public corporations, and seven other bodies. These organisations have a wide range of policy and operational responsibilities.

Executive agencies

Building Digital UK

Responsible for the rollout of gigabit-capable broadband and the expansion of 4G mobile coverage in hard-to-reach areas of the UK.

Intellectual Property Office

Responsible for intellectual property rights, including patents, designs, trademarks and copyright.

Met Office

The national meteorological service for the UK.

UK Space Agency

Responsible for the delivery of UK civil space programmes.

Executive non-departmental public bodies

Advanced Research and Invention Agency

An independent research body, designed to fund high-risk, high-reward scientific research.

Information Commissioner's Office

Responsible for upholding information rights in the public interest, promoting openness by public bodies and data privacy for individuals.

UK Research & Innovation (UKRI)

National funding agency investing in science and research in the UK.

Tribunal

Copyright Tribunal

Responsible for resolving UK commercial licensing disputes between copyright owners or their agents (collective management organisations) and people who use copyright material in their business.

Public corporation

National Physical Laboratory

The UK's national metrology institute, providing measurement capability.

Ordnance Survey

Great Britain's national mapping agency.

Other

British Technology Investments Ltd

Invests in advanced technology firms through the National Security Strategic Investment Fund.

Government Office for Science

Advises the Prime Minister and Cabinet to ensure that policy and decision-making are informed by the best scientific evidence and strategic long-term thinking.

UK Shared Business Services Ltd

Shared services provider to government.

Incubator for Artificial Intelligence (i.AI)

Technical experts which aim to help departments harness the potential of AI to improve lives and the delivery of public services. i.AI is embedded within DSIT.

Office of Communications (Ofcom)

Regulator and competition authority for the UK communications industries.

Phone-paid Services Authority

UK regulator for content, goods and services charged to a phone-bill.

Regulatory Horizons Council

An independent expert committee responsible for identifying the implications of technological innovation and providing impartial, expert advice on regulation for rapid and safe introduction of technologies.

Notes

- 1 The organisations shown include those that primarily work with the Department for Science, Innovation & Technology (DSIT), as identified on the government's [Departments, agencies and public bodies](#) webpage. Some of these bodies are consolidated within the departmental group accounts, see note 23 in DSIT's [Annual report and accounts 2023-24](#), September 2024, for a full list of those that are consolidated.
- 2 In July 2024, DSIT announced that it would expand in both scope and size and bring in experts in data, digital and AI from the Government Digital Service and the Central Digital and Data Office. As at October 2024, the government had not published whether these teams are based within the departmental group; we have therefore not included them in the graphic to the left.

Source: National Audit Office analysis of published information

6 Where DSIT spends its money

In 2023-24, DSIT spent a total of £13.1 billion through its core department, arm's-length bodies and executive agencies. Of this:

- £2.7 billion (20% of total) was spent within the core department;
- £9.7 billion (74% of total) was spent through DSIT's arm's-length bodies; and
- £767 million (6% of total) was spent through two executive agencies.

The arm's-length bodies and executive agencies with the largest spend were:

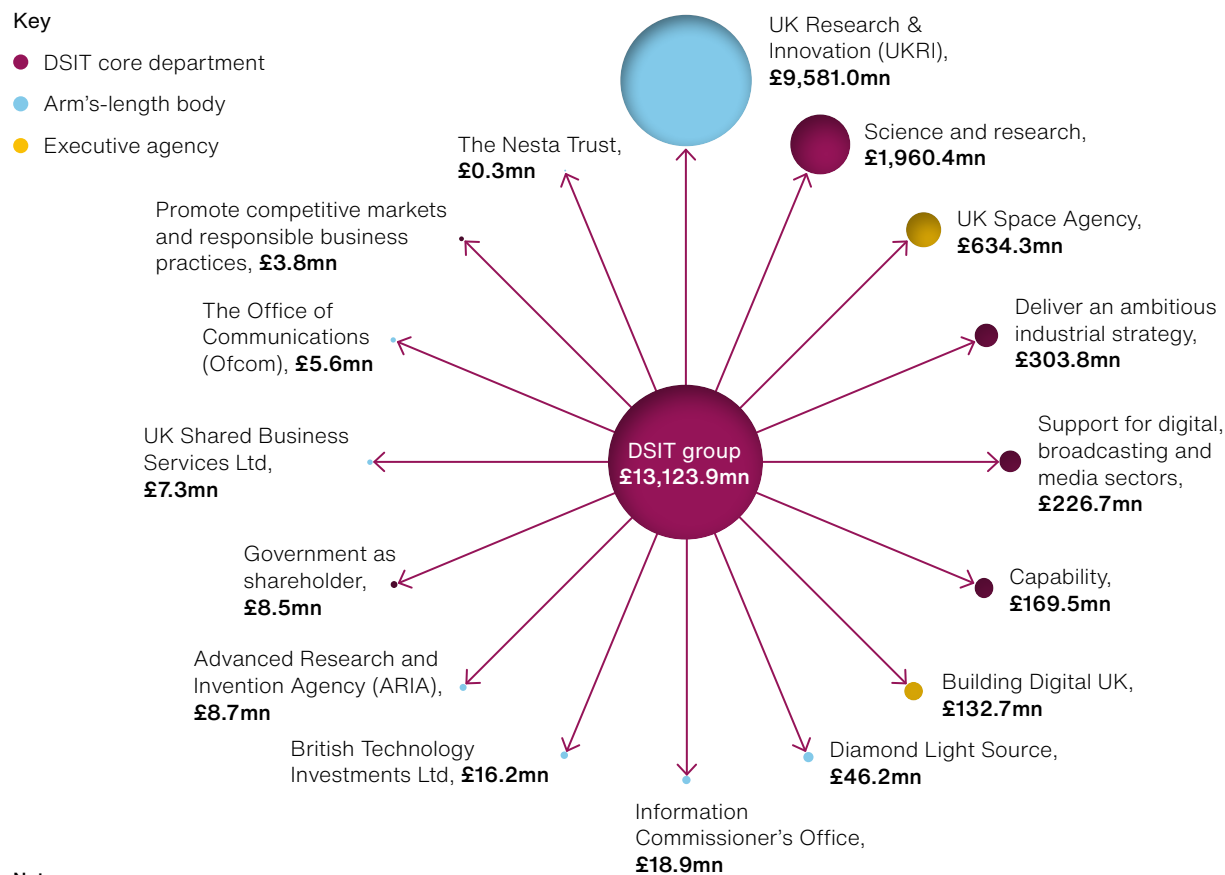
- UKRI: £9.6 billion (73% of total spend);
- UK Space Agency: £634 million (5% of total spend); and
- Building Digital UK: £133 million (1% of total spend).

The spending covers both the Departmental Expenditure Limit (DEL)¹ and Annually Managed Expenditure (AME)² within DSIT, arm's-length bodies and executive agencies in 2023-24.

1 DEL expenditure is spending by the departmental group within the limits set at Spending Reviews. Things that departmental budgets can be spent on include the running of the programmes that they oversee, such as the participation fee for Horizon Europe association or for the Met Office Supercomputer programme, and the everyday cost of resources such as staff.

2 AME relates to spending set by HM Treasury with limits set yearly, and includes areas of inherently volatile, demand-led spend and technical accounting matters. It is spent on items that may be unpredictable or not easily controlled by departments and are relatively large in comparison to other government departments.

The Department for Science, Innovation & Technology's (DSIT's) total spending in 2023-24



Notes

- 1 Figures may not sum due to rounding.
- 2 For the core department, spend is shown by the Estimate line. For all arm's-length bodies and agencies, spend is shown by entity. Some entities are included within DSIT core in line with estimate reporting.

Source: National Audit Office analysis of the Department for Science, Innovation & Technology's *Annual report and accounts 2023-24*, September 2024

7 DSIT's internal structure

DSIT is structured with three policy-based groups, and a Corporate Services group. It is also supported by two cross-government advisers who provide advice to DSIT and sit on its departmental board.

In July 2024, DSIT announced that it would expand in both scope and size and bring in experts in data, digital and AI from the Government Digital Service, the Central Digital and Data Office, and the Incubator for AI. This forms part of wider efforts to launch DSIT as the digital centre of government, working closely with the Cabinet Office and HM Treasury, looking to maximise the potential of digital, data and technology to deliver for the British public. As at October 2024, the government had not published whether the Government Digital Service and the Central Digital and Data Office teams are based within DSIT's internal structure; we have therefore not included them in the graphic to the right.

Director General groups

Digital Technology and Telecoms

Director General responsible for:

- Digital infrastructure.
- Digital economy and data policy.
- International and economic security.
- Cyber security and digital identity.
- Security and online harms.
- Artificial Intelligence (AI) policy.
- AI safety institute.
- Incubator for AI.
- Responsible technology adoption unit.

Science, Innovation and Growth

Director General responsible for:

- International science and innovation.
- UK science, research and innovation.
- Technology transfer.
- Technologies and innovative regulation.
- Life sciences.
- Space.

Digital Centre Design

Director General responsible for:

- The Digital Centre Design project, designing the scope, strategy and structure of the new digital centre of government.

Corporate Services

Director General responsible for:

- Human resources.
- Finance.
- Transformation.
- Communications.
- Analysis.
- Commercial and grants.
- Matrix Programme.

Cross-government advisers

Government Chief Scientific Adviser

Adviser responsible for:

- the provision of proactive and demand-led science advice to the Prime Minister and Cabinet; and
- working across government to implement science advice mechanisms that aim to be efficient, effective and are embedded in government systems.

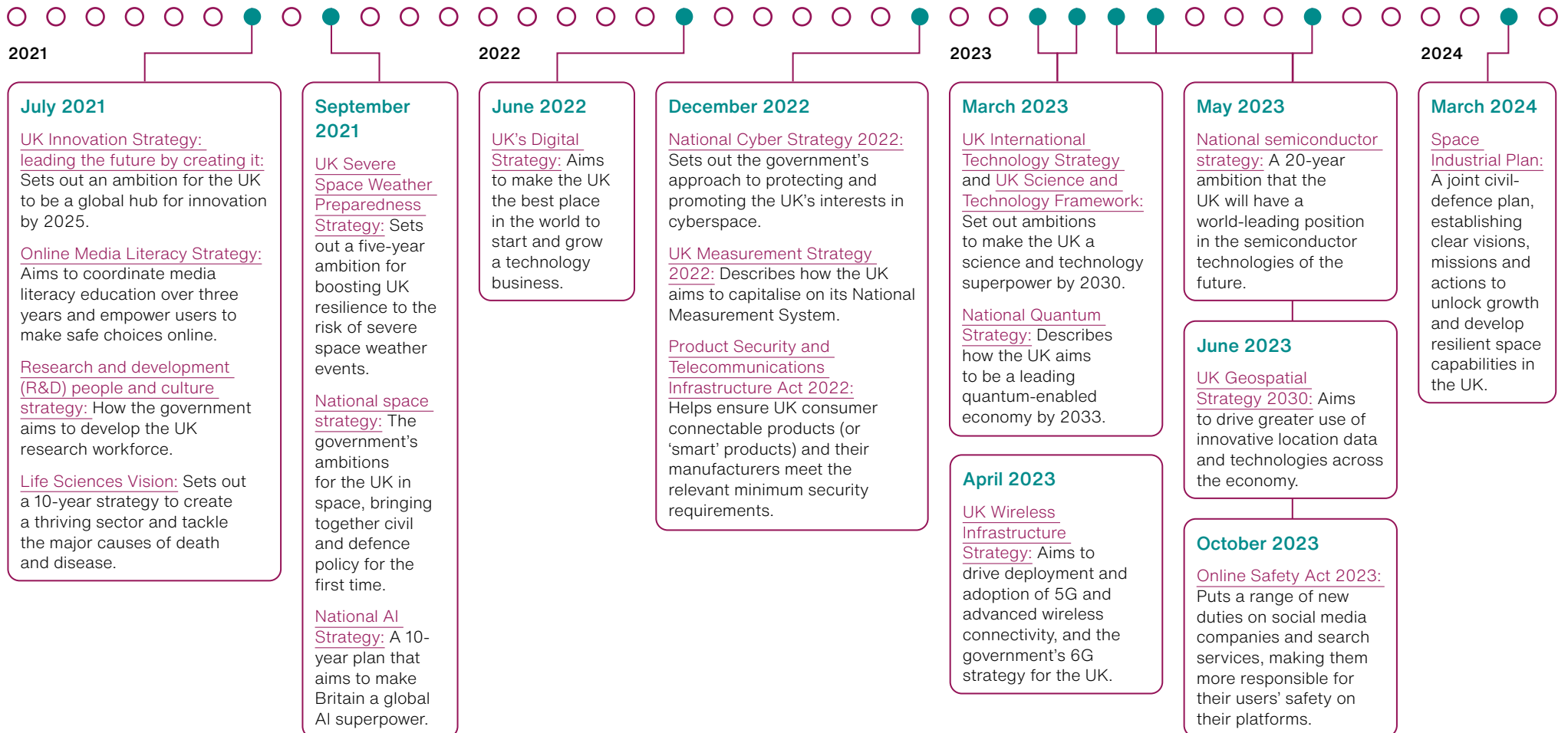
National Technology Adviser

Adviser responsible for:

- advising the Technology Secretary on the best approach to building and enhancing the UK's technology strengths;
- working across government to champion the science and technology industries; and
- building networks across industry and academia to draw the best minds into policymaking.

8 Timeline of DSIT's key ambitions and commitments, 2021–2024

DSIT is responsible for the delivery of more than 18 strategies, frameworks and Acts that have been published or become law since 2021



9 DSIT as the digital centre of government

On 8 July 2024 [the government announced](#) that DSIT would become the digital centre of government, working with the Cabinet Office and HM Treasury, to help maximise the potential of digital, data and technology to deliver for the British public.

Digital transformation of public services

The government stated that DSIT will expand in scope and size to bring together efforts in the digital transformation of public services under one department. This includes bringing in experts in data, digital and AI from the Government Digital Service, the Central Digital and Data Office, and the Incubator for AI. The extent of this expansion has not yet been set out publicly.

Use of digital across government

The government also announced that DSIT will partner with, and set standards for, government departments as it supports them to use technology across a range of areas. It will aim to upskill civil servants in using digital and AI and ensure the government has the right digital infrastructure and regulation.

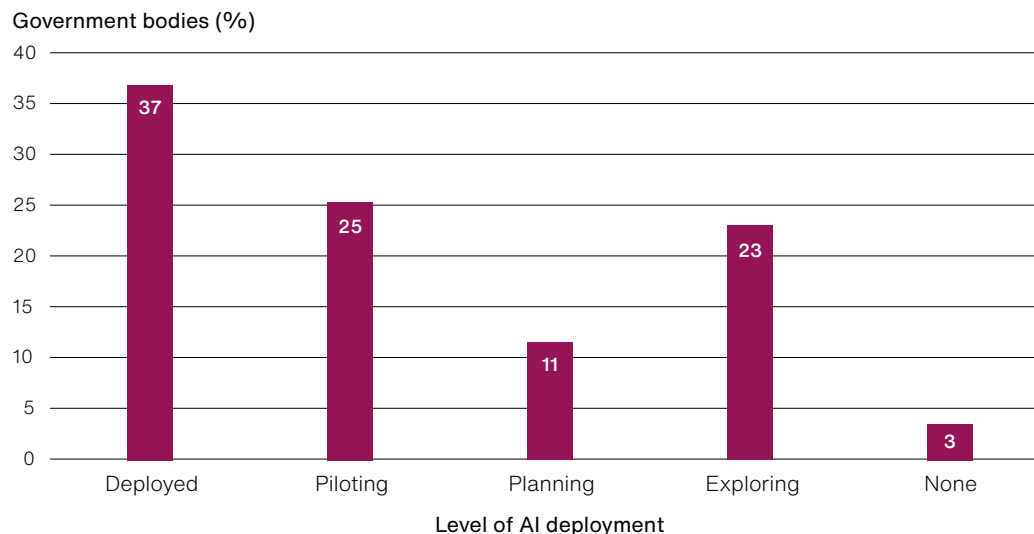
In 2024, we examined the [use of artificial intelligence in government](#). Our report considered how effectively the government has set itself up to maximise the opportunities and mitigate the risks of AI in providing public services.

Our survey of government bodies found that AI was not yet widely used across government, but 70% of respondents were piloting and planning AI use cases.

Achieving large-scale benefits is likely to require significant changes in business processes and corresponding workforce changes. We recommended that the government needs to ensure its overall programme for AI adoption is ambitious and supported by a realistic plan, and must continue addressing other fundamental barriers to AI adoption.

Levels of artificial intelligence (AI) use in government, autumn 2023

Just over a third (37%) of responding bodies were actively using AI, and a further 37% were actively piloting (25%) or planning (11%) use of AI³



Notes

- 1 In autumn 2023, we surveyed 89 government bodies, including the main government departments and the majority of arm's-length bodies with annual operational expenditure over approximately £83 million. The response rate was 98% (or 87 bodies).
- 2 The relevant survey question was, "How would you describe your organisation's deployment of AI?" (87 respondents) with the following response options:
 - **Deployed:** "At least one AI use case is fully deployed."
 - **Piloting:** "No AI use cases fully deployed but at least one pilot is in progress or complete."
 - **Planning:** "No AI use cases fully deployed or in pilot, but planning started for at least one AI use case."
 - **Exploring:** "No plans yet for any AI use cases, but opportunities are being explored."
 - **None:** "No plans yet for any AI use cases."
- 3 Figures may not sum due to rounding.

Source: National Audit Office survey of artificial intelligence use in government

10 Rollout of mobile connectivity and broadband

→ Next

← Back

☰ Contents

DSIT is responsible for government policy on digital connectivity, including on the rollout of mobile connectivity and internet broadband.

Mobile connectivity

The government considers that access to good-quality mobile connectivity is key to growing the economy. Although the future pace is uncertain, demand is expected to continue to grow as greater use is made of data-intensive services and as new technologies enable new uses.

In 2020, the government committed around £500 million to the Shared Rural Network programme to increase 4G coverage to 95% of the UK landmass by December 2025.

Our 2024 report [Supporting mobile connectivity](#) found that delays in building new masts mean that it is currently unclear whether the programme will meet its target, and there are concerns about its affordability. DSIT will need to resolve what it is aiming to achieve in different parts of the UK and economic sectors and communicate how connectivity can deliver these outcomes.

Internet rollout

In 2010, the government established the Superfast Broadband Programme (the Superfast Programme) to support broadband rollout to areas which were not commercially viable. It has since committed to provide nationwide coverage of gigabit-capable infrastructure by 2025. In 2020, it allocated £5 billion for its UK gigabit programme (the Future Programme), to subsidise rollout to the most difficult-to-reach 20% of premises.

Our 2020 report [Improving broadband](#) examined progress of the rollout of the Superfast Programme and lessons to learn for the Future Programme. It found that, under the Superfast Programme, suppliers who received public subsidies were able to prioritise rollout to easier-to-reach premises, which left the rural divide in place. We recommended that, for the Future Programme, the government must manage the tension between meeting a timeline and serving those in greatest need.

In January 2024, the government announced that gigabit broadband coverage in the UK had increased to 81%, up from 6% in 2019, and it reported it was on track to meet its objective of 85% coverage by 2025.



Section 10: Rollout of mobile connectivity and broadband *continued*

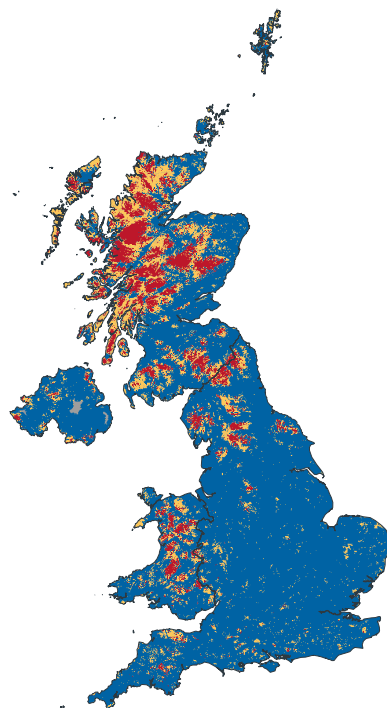
4G total and partial not spots in 2020 and 2023

Since 2020, the percentage of the UK landmass with no 4G signal from any operator has fallen from 8.6% to 7.3%

2020

Coverage status (proportion of the UK)

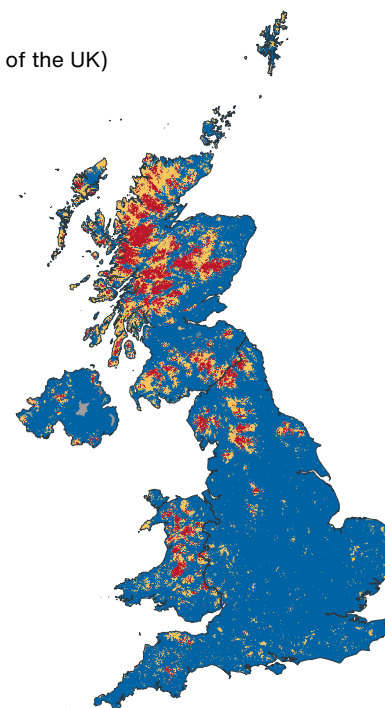
- Full coverage (68.9%)
- Partial not spots (22.5%)
- Total not spots (8.6%)
- No data



2023

Coverage status (proportion of the UK)

- Full coverage (71.1%)
- Partial not spots (21.5%)
- Total not spots (7.3%)
- No data



Notes

- 1 Areas with no coverage from any mobile network operator (MNO) are termed 'total not spots' and areas with coverage from at least one, but not all four, MNOs are termed 'partial not spots'. 'Full coverage' refers to areas with coverage from all MNOs.
- 2 Coverage data are based on modelling by MNOs. Ofcom collect the data as 100 metre x 100 metre pixels against the Ordnance Survey Great Britain grid system. These data have been aggregated to a 1,000 metre x 1,000 metre grid, selecting the modal value within each pixel.
- 3 Ofcom defines a good 4G signal as the ability to make a 90 second phone call and achieve a download speed of 2 Mbps (megabits per second).
- 4 'No data' refers to areas where Ofcom does not record coverage, such as lakes.
- 5 Data for 2020 are from September 2020. Data for 2023 are from September 2023.
- 6 Percentages may not sum to 100% due to rounding.

11 Online safety

→ Next

← Back

☰ Contents

Preparedness for online safety

According to research by Ofcom, of internet users in the UK, 70% of those aged 13 to 17 (children), and 67% of those aged over 18 (adults), indicated in January 2024 that they had experienced at least one potential online harm in the last four weeks. Harmful content can vary in nature, from child sexual abuse material and terrorist content to online fraud and the encouragement of self-harm.

The government has set itself an objective of making the UK the safest place in the world to go online. To achieve this, the government introduced to Parliament the Online Safety Bill, which became an Act in October 2023.

Our 2023 [Preparedness for online safety](#) regulation report examined the preparations undertaken by DSIT and Ofcom for the implementation of the new online safety legislation.

We found that securing adequate protection of citizens from online harm will be a major new role for Ofcom. At the time of our report, it had made a good start to its preparations and had taken the steps it could reasonably have done by this point. By July 2023, however, it had yet to secure the funding for the extra staff it would require.

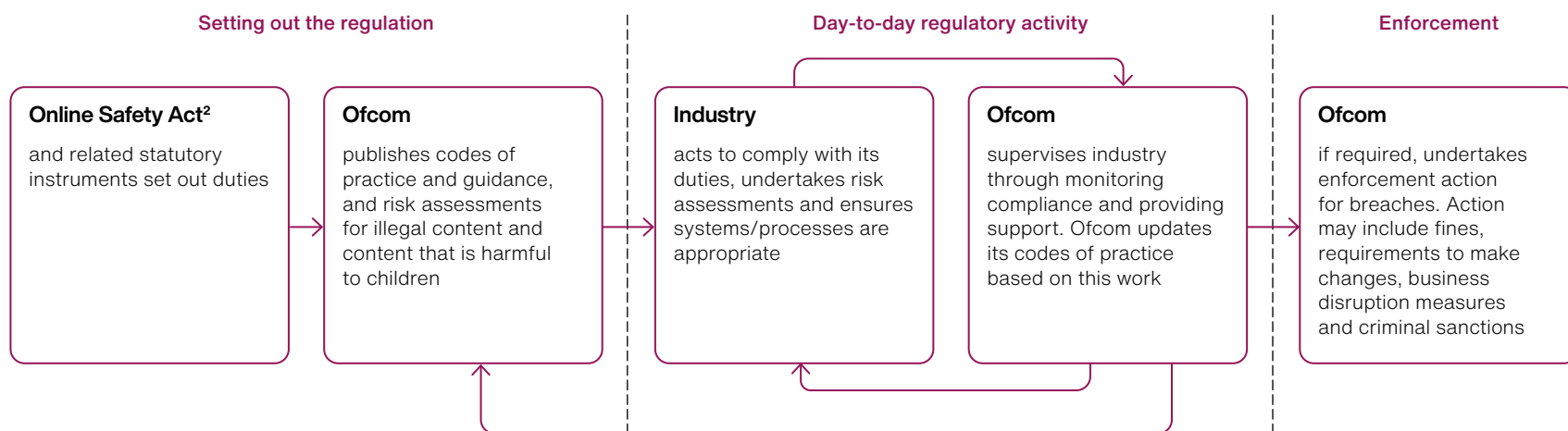
We found that Ofcom would need to regulate a very large number of services, the great majority of which had not been regulated before and were unfamiliar with Ofcom and how it works, and had no UK corporate or economic presence. It will be vital for Ofcom to secure public trust by managing the public's expectations about the regime's impact in its early years.



Section 11: Online safety *continued*

Outline of the online safety regulatory regime¹

The day-to-day regulatory activities will involve industry actions to comply with the regime, with monitoring and supervision by Ofcom



→ Direction of action

Note

¹ This figure was produced in early June 2023. At that point, the scope of the regulatory regime had not yet been finalised. The Online Safety Act was passed into law in October 2023.

Source: National Audit Office analysis of Ofcom documents

12 Cyber security

→ Next

← Back

☰ Contents

Who is responsible for cyber security?

Cyber security is a cross-cutting issue that multiple government organisations are responsible for, including the Cabinet Office, the National Cyber Security Centre (NCSC), DSIT and the Home Office.

The National Cyber Strategy 2022

The [National Cyber Strategy](#) describes the UK's overarching cyber policy. The strategy takes a 'whole of society' approach, arguing that the government must work in partnership with private sector organisations and cyber security professionals to improve cyber security.

In the strategy, the government committed to invest £2.6 billion in cyber and legacy IT over the next three years. This was in addition to substantial investment in the National Cyber Force announced in Spending Review 2020.

The Government Cyber Security Strategy 2022

The [Government Cyber Security Strategy](#) aims to make the whole public sector resilient to the known cyber threats it faces by 2030. The strategy sets out that, to achieve this, government organisations will need to both build their cyber resilience individually and collectively "defend as one".

We [will report](#) on the government's efforts to improve its own cyber resilience in early 2025.

Cyber security regulation

The UK's regulatory framework for cyber security comes from multiple pieces of primary and secondary legislation. Different legislation covers the cyber security of IT systems, internet-connected products and personal data. The legal obligations in cyber security legislation apply to sectors and organisations where cyber security breaches would have a significant impact on society, the economy or individual rights. The [Product Security and Telecommunications Infrastructure Act 2022](#) also places cyber security requirements on manufacturers and distributors of internet-connected consumer products.

The government has committed to introducing a Cyber Security and Resilience Bill, which will include measures to mandate cyber incident reporting and bring more sectors into the scope of current cyber regulations.

DSIT's role

DSIT is responsible for the implementation of the Network and Information Systems (NIS) Regulations 2018 and other aspects of domestic cyber security policy.

The NIS regulations established a new regulatory regime within the UK that requires designated operators of essential services and relevant digital service providers to put in place technical and organisational measures to secure their network and information systems.

Cyber Security Breaches Survey 2024

DSIT and the Home Office undertake an annual [Cyber Security Breaches Survey](#). The latest survey, published in April 2024, found the following:

- In the past year 50% of businesses and 32% of charities had identified a cyber breach or cyber-attack.
- The most common type of breach or attack is phishing (84% of businesses and 83% of charities).
- Three-quarters of businesses (75%) and more than six in 10 charities (63%) report that cyber security is a high priority for their senior management.

13 Science and technology in the UK

In March 2023, DSIT published the [UK Science and Technology Framework](#). The framework included 10 priority strands for cross-government action. According to DSIT's *Annual report and accounts 2023-24*, published in September 2024, it is leading on five of these strands – indicated in green below – and takes a central role in the others by driving, coordinating and enabling delivery. The priorities in the framework, correspond to DSIT's five early priorities (set out on section 4).

1 Developing and deploying critical technologies

2 Signalling UK strengths and ambitions

3 Investment in research and development

4 Talent and skills

5 Financing innovative science and technology companies

6 Procurement

7 International opportunities

8 Access to physical and digital infrastructure

9 Regulation and standards

10 Innovative public sector

■ DSIT leads on □ Cross-government led

Five critical technologies

The Science and Technology Framework identified five critical technologies as opportunities for the UK to continue its track record of defining, pursuing and achieving a strategic advantage in areas of science and technology for prosperity and safety in the UK and delivering benefits globally

| Artificial Intelligence (AI) | Engineering biology | Future tele-communications | Semiconductors | Quantum technologies |
|--|--|--|---|---|
| <p>Machines that perform tasks normally performed by human intelligence, especially when the machines learn from data how to do those tasks.</p> <p>DSIT aims to further its understanding of global AI risks, the efficacy of AI safety mitigations, the impacts of AI in the economy and society, and the applicability of AI in public sector services, especially in the civil service as a workplace.</p> | <p>Engineering biology applies engineering principles to the design of biological systems. It builds on synthetic biology to turn its biological discoveries into products.</p> <p>The UK government aims to drive commercial and societal benefits, while protecting the UK from new kinds of security risks.</p> | <p>Telecoms networks underpin global economic growth and are part of the UK's Critical National Infrastructure.</p> <p>The next generation of telecoms technologies, including 6G, could transform the way people live, and to enable other technologies such as quantum and AI.</p> <p>The UK government aims to support the security and resilience of the UK's telecoms infrastructure.</p> | <p>Semiconductors are critical for the functioning of the modern economy. They are used to create the hardware which underpin electronic devices and are important for achieving the UK's strategic advantage in next-generation technological areas such as net zero, quantum and AI.</p> <p>The UK government aims to secure the UK's access to the underlying technology and build resilience in the sector.</p> | <p>Quantum technologies use the principles of quantum mechanics to unlock new technological advances in areas such as sensing, imaging, communications and computing. They have the potential to transform global security, economies and societies and underpin solutions to some major global challenges.</p> <p>The UK government aims to become a global centre of excellence for quantum technologies.</p> |

Source: National Audit Office analysis of DSIT's *Science and Technology Framework*, 2023, and other published documentation

14 Government support for research

→ Next

← Back

☰ Contents

UK Research and Innovation (UKRI) is DSIT's biggest arm's-length body and is the largest public funder of research and innovation in the UK. Alongside UKRI, DSIT supports research through various other mechanisms, including through association to Horizon Europe and through the UK Space Agency (see section 18), the National Physical Laboratory (see section 5) and the Advanced Research and Invention Agency (ARIA).

UKRI

UKRI is the national funding agency investing in research and innovation in the UK. It was created in 2017 to bring together seven research councils, Innovate UK and Research England, and harmonise and strengthen the UK's research and innovation landscape.

UKRI supports research and innovation through various means including funding for infrastructure, investing in skills and talent, competitive grants to academia and businesses, and block grants to universities for research and knowledge exchange activities. In 2023-24, it spent £9.6 billion (see section 6).

ARIA

ARIA was formally established in January 2023 as an executive non-departmental public body, sponsored by DSIT. It is an independent research body, designed to fund high-risk, high-reward scientific research.

ARIA was set up to have maximum autonomy over its research and project choice, its procedures and its institutional culture. Its programmes and projects are directed by programme directors, scientific and technical leaders with deep expertise and a focused, creative vision for how technology can enable a better future.

ARIA has launched funding calls for each of its first seven programmes, having announced its founding cohort of programme directors in September 2023.

Horizon Europe and Copernicus

In September 2023, DSIT secured the UK's reassociation with Horizon Europe, the world's largest research collaboration programme, and Copernicus, the European Earth Observation programme. Prior to re-joining Horizon Europe, DSIT supported over 3,000 UK researchers and innovators with over £1.5 billion of funding since November 2021 through the Horizon Europe Guarantee scheme.

Look out for our [upcoming report on UKRI's provision of support through grants and loans](#). This report will consider the extent to which UKRI's management of its grants and loans is consistent with the principles of good funding support for research and innovation, with a particular focus on the actions UKRI takes both at a corporate and individual level to support well-managed risk taking.

15 The innovation system in the UK

→ Next

← Back

≡ Contents

The *UK Innovation Strategy*, published in July 2021, sets out that the innovation process features innovators, businesses and researchers at the cutting edge, doing applied research or generating new products and services. It can also involve those businesses seeking to effectively adopt and implement existing innovations. The process occurs in an ecosystem of companies, public research institutions, further education providers, financial institutions, charities, government bodies and many other players who interact through the exchange of skills, knowledge and ideas, both domestically and internationally.

Stages of the innovation process

For illustrative purposes, research and innovation can be broken down into stages. In practice, innovation often does not follow a neat stage-by-stage process and will take a less predictable path to market, and many ideas do not succeed.

| Stage of the innovation process | Types of activities undertaken at this stage |
|--------------------------------------|---|
| Research and development | Research and development can be understood as creating and advancing ideas or concepts, typically in science and technology. |
| Commercial prototype | Prototyping is the process of developing an idea into a material form so it can be validated. This stage typically includes testing the technical aspects of the idea, for example, its performance and safety. |
| Build and scale | Build and scale involves building an idea to full size to allow for more testing. |
| Proven commercial proposition | Once an idea meets its requirements and it can be rolled out profitably, it is said to be at the proven commercial proposition phase. From this point, it can go into large-scale production. |
| Capital markets-ready | An innovation is capital markets-ready when it has been fully developed, and it can establish a new market, or gain a share of an existing market. |

Note

¹ The stages of the innovation process are as presented in the government's *Net Zero Strategy* and *Net Zero Research and Innovation Framework*. The Department for Energy Security & Net Zero has not defined these terms and, therefore, the types of activities undertaken at each stage set out in this figure are compiled by the National Audit Office.

Source: National Audit Office analysis of the government's *Net Zero Research and Innovation Framework*, October 2021



Section 15:

The innovation system in the UK *continued*

Organisations in the innovation system

There are many public and private organisations involved in the innovation system at different stages of the innovation process. The graphic to the right sets out examples of where some of these types of bodies are involved across different stages.

Some individual organisations could be categorised in multiple categories. UKRI, for example, could be classified under ‘creating knowledge’ as the research councils provide competitive grants for research projects and programmes. However, UKRI could also be classified under the ‘supporting innovation’ category, for example, as Innovate UK provides loans for innovative activity.

Creating knowledge: a stable, independent science and research funding sector

- Universities
- Public Sector Research Establishments
- Research funding bodies

Exploiting knowledge: strong university – business interaction

- Intermediary organisations
- Technology transfer offices
- Business incubation
- Science and innovation parks

Enabling innovation: good framework conditions for innovation

- Standards, measurement and accreditation
- Intellectual property
- Lobbying and influencing policy

Supporting innovation: direct and indirect financial support

- Subsidies/grants/contracts for innovation
- Advisory services
- Indirect financial support (eg research and development tax credits)
- Networking

Source: National Audit Office analysis of published information



16 Government support for innovation

→ Next

← Back

≡ Contents

A large number of public and private bodies support the research and innovation system at different stages of the innovation process, from research and development to capital markets-ready. To the right, we outline some of the key public bodies and their roles.

DSIT and wider government can use a variety of levers to support the commercialisation of research and innovation, including:

- Finance
- International opportunities
- Procurement
- Skilled workforce
- Intellectual property
- Regulation and standards
- Infrastructure

DSIT Group

DSIT

Driving innovation to deliver improved public services, create new better-paid jobs and grow the economy.

UK Research and Innovation

Provides funding and support for research and innovation with academia and industry.

UK Space Agency

Responsible for developing and delivering UK civil space programmes across the UK space sector and with international space institutions.

Advanced Research and Invention Agency

Funds projects across the full spectrum of research and development (R&D) disciplines, approaches, and institutions.

Intellectual Property Office

Responsible for intellectual property rights including patents, designs, trademarks and copyright.

Regulatory Horizons Council

Identifies the implications of technological innovation and advises government on the regulatory reform required to support its rapid and safe introduction.

Copyright Tribunal

Resolves UK commercial licensing disputes between copyright owners or their agents and people who use copyright material in their business.

Department for Business and Trade Group

Department for Business and Trade

Support businesses to invest, grow and export, creating jobs and opportunities across the country.

British Business Bank

Support businesses by providing improved access to financing, supplying information and tools, and building regional networks.

British Patient Capital

A subsidiary of British Business Bank, it is the UK's largest domestic investor in venture and venture growth opportunities.

Department for Education

Department for Education

Supporting development of skills into the R&D sectors.

HM Revenue & Customs

HM Revenue & Customs

R&D tax credits support UK companies working on innovative projects in science and technology.

HM Treasury

UK Infrastructure Bank

Support the private sector and local government by providing finance and partnerships.

Other public sector bodies

Public Sector Research and Technology Organisations

Provide facilities and services to support research and innovation, such as through Innovate UK's catapults.

Public Sector Research Establishments

Mission-driven bodies that provide critical research capabilities, services, infrastructure and expertise.

Other public sector funding bodies

Bodies include the National Institute for Health Research (NIHR), the Scottish National Investment Bank and Invest Northern Ireland.

Source: National Audit Office analysis of published information

17 Recent independent reviews related to DSIT's work

→ Next

← Back

☰ Contents

There have been a number of independent reviews related to the innovation landscape since 2022, including the following:

[Independent Review of Research Bureaucracy](#)

July 2022

Overview: A review of research bureaucracy and methods to free up and support researchers to focus on research.

Key findings and recommendations: The review identified six themes where there is scope for significant positive change: assurance, applying for funding, grant implementation and in-grant management, digital platforms, institutional bureaucracy, and communications. The review made 32 recommendations across these themes.

The government published [its response to the review](#) in February 2024.

[Independent review of university spin-out companies](#)

November 2023

Overview: The review looked at the most successful university spin-out ecosystems across the world, and within the UK, to identify best practices and opportunities to support spin-outs to generate greater investment and grow faster in the UK.

Key findings and recommendations: The review made 11 recommendations to help improve the creation and growth of university spin-out companies.

The government published its [response to the review](#) in November 2023.

[Independent review of UK Research and Innovation \(UKRI\): final report and recommendations](#)

July 2022

Overview: An assessment of how UKRI is performing.

Key findings and recommendations: The review found that there were risks to efficiency due to legacy systems and uncoordinated processes, insufficient cross-council (or cross-discipline) cooperation and a lack of clarity on organisational aims and purpose. The review made a series of recommendations on UKRI's efficacy, efficiency, governance and accountability.

UKRI has set out how it is responding to some of the recommendations in its [corporate plan 2023 to 2024 update](#).

[Independent review of the research, development and innovation \(RDI\) organisational landscape](#)

March 2023

Overview: An examination of the mix of UK organisations performing RDI.

Key findings and recommendations: The review found that funding, particularly that provided by the government, was limited and was below other competitive nations. It also found that the way the UK delivered and supported research was not optimal. It made 29 recommendations to help make the most of the UK's research organisational landscape, ensuring it is effective, sustainable and responsive to global challenges.

The government published its [response to the review](#) in November 2023.

[Independent review of the DSIT business case and approvals process](#)

February 2024

Overview: A review of DSIT's business case approvals process.

Key findings and recommendations: The review found that producing and approving business cases takes up an excessive amount of time and effort. It made six recommendations to render the process more efficient and streamlined.

The government published its response to the review, [Innovating for success](#), in May 2024.

18 DSIT's role in supporting the space sector

→ Next

← Back

☰ Contents

Space plays a critical role in modern everyday life in the UK. It is vital for scientific discovery and is a fast-developing UK commercial sector which has grown to around £17.5 billion in 2020-21. In September 2021, DSIT and the Ministry of Defence published the government's [National Space Strategy](#) (the Strategy). It set an ambition to make the UK one of the world's most innovative and attractive space economies.

DSIT is responsible for coordinating civil space policy and the UK Space Agency (UKSA), is the government's key delivery agency with a budget of £642 million in 2023-24.

Our July 2024 report the [National Space Strategy and the role of the UK Space Agency](#) found that the government did well to draw its many different interests and activities into a single vision in its Strategy, which set high ambitions and helped galvanise the sector's interest. But DSIT did not provide clarity on the aims, outcomes or priorities for what UKSA was supposed to deliver and by when.

UKSA was proactive in working to align its activities with the Strategy and identifying a need to make structural and governance changes, but it did not have sufficient planning, monitoring or evaluation arrangements or capabilities in place.

To ensure effective and transparent cross-government working arrangements in the space sector, we recommended that DSIT should map out and publish the roles and responsibilities of public bodies, and should explore and implement the appropriate cross-government working arrangements.

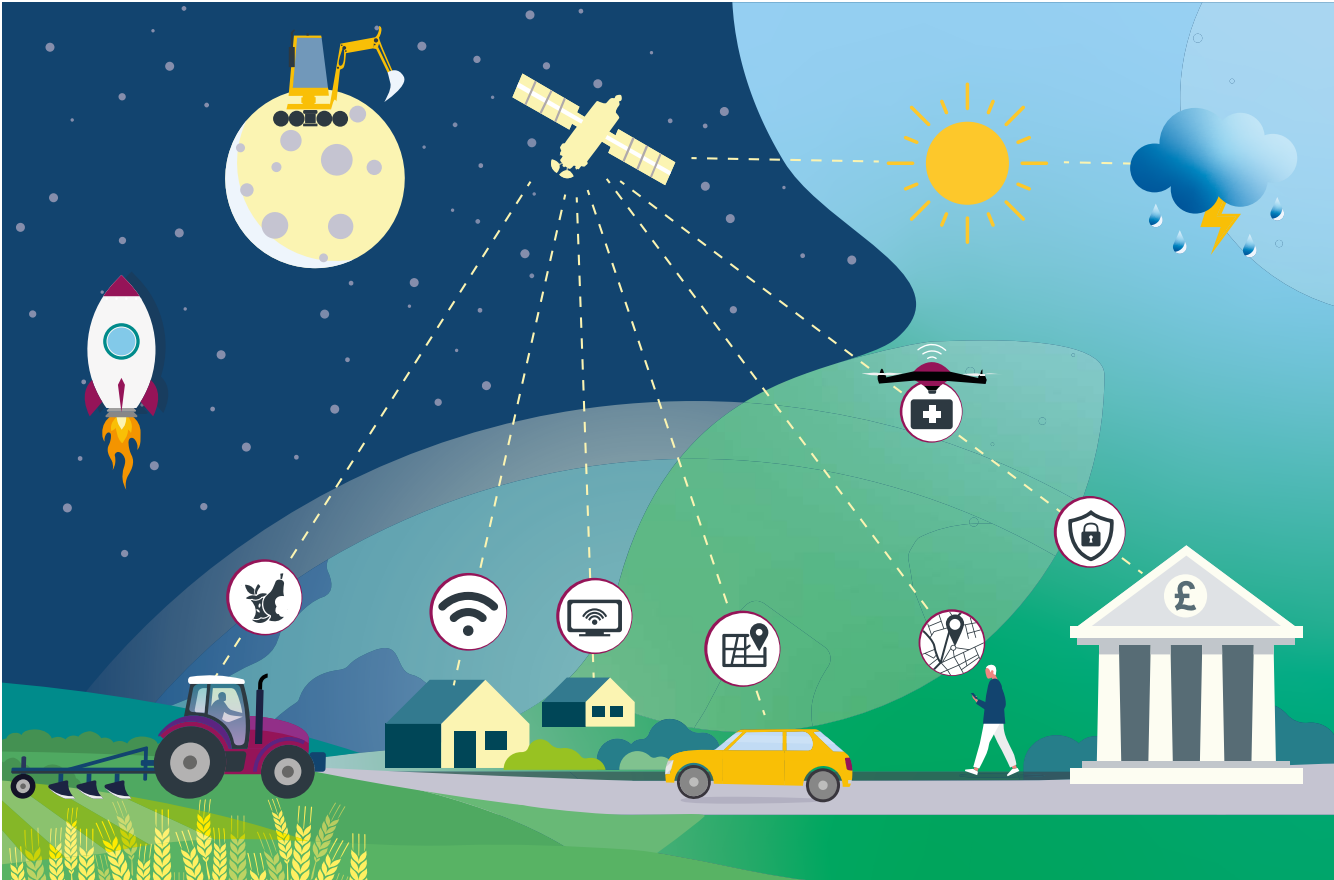


Section 18:

DSIT's role in supporting the space sector *continued*

Examples of the uses of space technology

There is a wide variety of current and potential future uses of space technology, affecting day-to-day life, some of which are captured below



- Resources**
e.g. mining asteroids, comets and planets for resources such as water and metals
- Tourism**
e.g. human space travel for recreational purposes
- Agriculture**
e.g. more precise farming using satellites to reduce food waste
- Internet**
e.g. communication satellites provide internet access in rural areas
- Television**
e.g. wider variety of channels through satellite television
- Transport**
e.g. self-driving cars use navigation satellites for routing
- Navigation**
e.g. using navigation satellites to track location on a phone
- Weather and climate**
e.g. more accurate tracking and predictions
- Health**
e.g. satellite-enabled drones to carry medication to patients in remote areas
- Finance**
e.g. satellites enable secure digital financial transactions

Source: National Audit Office analysis of publicly available documents

19 What to look out for

→ Next

← Back

☰ Contents

Digital

DSIT's expansion in size and scope relating to digital, announced in July 2024, will see it take on new responsibilities in the use of digital technologies across government, and the digital transformation of public services (section 9).

Key areas to look out for include:

- **Artificial intelligence (AI) regulation:** In February 2024, DSIT committed to undertake a regulatory gap analysis to ensure regulators are equipped to address AI risks and opportunities.
- **Supporting mobile connectivity:** £500 million Shared Rural Network programme to increase 4G coverage to 95% of the UK landmass by December 2025 (section 10).
- **Broadband rollout:** £5 billion Project Gigabit programme to deliver gigabit-capable broadband to at least 85% of UK premises by 2025 (section 10).

Upcoming NAO studies:

[Government cyber resilience](#) – section 12.

[How government works with technology suppliers](#) – This study will examine the government's approach to its dealings with digital and technology suppliers.

Research and innovation

DSIT supports science, research and innovation through its funding to UK Research and Innovation (£10 billion in 2023-24) (section 14), and through other bodies and mechanisms.

Key areas to look out for include:

- **UK Space Agency (UKSA):** Our 2024 report found that the UKSA has more work underway than it can afford to continue, unchanged, beyond March 2025 without a budget uplift, and it may have to make difficult decisions on which of the National Space Strategy's ambitions to prioritise depending on future spending review outcomes (section 18).
- **Arrangements for funding budgets:** Currently, R&D budgets are typically based on one- to three-year funding cycles. Look out for potential changes to the length of budget settlements.
- **Progress on announcements in the government's October 2024 budget.** Announcements included:
 - For 2025-26, £20.4 billion investment for UK R&D. Of this, £13.9 billion is for DSIT's own R&D budget, including £6.1 billion for core research funding.
 - Commitment of up to £520 million to the Life Sciences Innovative Manufacturing Fund.
 - Investments into the new R&D Missions Programme (£25 million in 2025-26) and regional innovation accelerators to support growth across the country.

Upcoming NAO studies:

[UK Research and Innovation: providing support through grants and loans](#) – section 14.

Section 19:

What to look out for *continued*

DSIT structure

DSIT is still a relatively new department, having formed in February 2023, following the machinery of government changes (section 4).

Key areas to look out for include:

- **Public body reviews:** Reviews of Building Digital UK and the Intellectual Property Office are due in 2024-25. These aim to ensure the bodies operate effectively, have the right governance structures in place and are accountable for delivering the government's priorities.
- **New bodies:** For example, a new Regulatory Innovation Office, launched in October 2024, to speed up public access to new technologies. In addition, in May 2024, DSIT announced that it would create a new semiconductor institute, tasked with building on the government's £1 billion strategy to grow the semiconductor sector.
- **Progress on the Shared Services Strategy:** The government has announced DSIT will invest up to £80 million to enhance corporate functions across nine government departments, to transform shared services and streamline systems.

DSIT has updated its priorities since it set out its early priorities in section 4. These are:

- 1 Accelerate innovation, investment and productivity through world-class science, research and development.**
- 2 Use technology for good by ensuring that new and existing technologies are safely developed and deployed across the UK, with the benefits more widely shared.**
- 3 Drive forward a modern digital government which gives citizens a more satisfying experience and their time back.**



20 More information about our work on DSIT

→ Next

← Back

☰ Contents

Use of artificial intelligence in government

March 2024

This report considers how effectively the government has set itself up to maximise the opportunities and mitigate the risks of AI in providing public services.

Our survey of government bodies found that AI was not yet widely used across government, but that 70% of respondents were piloting and planning AI use cases.

Achieving large-scale benefits is likely to require significant changes in business processes and corresponding workforce changes. The government needs to ensure its overall programme for AI adoption is ambitious and supported by a realistic plan and must continue addressing other fundamental barriers to AI adoption.

Supporting mobile connectivity

February 2024

This report examines whether DSIT is on track to deliver UK-wide reliable mobile connectivity.

DSIT and Building Digital UK have committed around £500 million to the Shared Rural Network programme to increase 4G coverage to 95% of the UK landmass by December 2025.

However, delays in building new masts mean that it is currently unclear whether the programme will meet its target, and there are concerns about its affordability.

The National Space Strategy and the role of the UK Space Agency

July 2024

This report examines the work of DSIT and the UK Space Agency (UKSA) in overseeing and delivering the National Space Strategy.

The government did well to draw its many different interests into a single vision in its 2021 strategy, but DSIT did not provide clarity on the aims, outcomes or priorities for what UKSA was supposed to deliver and by when.

UKSA was proactive in working to align its activities with the strategy and identifying a need to make structural and governance changes, but it did not have sufficient planning, monitoring or evaluation arrangements or capabilities in place.

Preparedness for online safety regulation

July 2023

This report examines preparations undertaken by DSIT and Ofcom for the implementation of new online safety legislation.

The government finalised the Online Safety Act in October 2023, to help achieve its objective of making the UK the safest place in the world to go online. The full regulatory regime will be phased in over the following two years.

Ofcom has made a good start to its regulatory preparations, but, by July 2023, it had yet to secure the funding for the required extra staff. It will need to regulate a large number of services, many of which have not been regulated before, are unfamiliar with Ofcom, and have no UK corporate or economic presence. It will be vital for Ofcom to manage the public's expectations in the regime's early years.