ai@cam

ai.cam.ac.uk

Navigating AI Sovereignty: Strategic Choices for the UK

October 2025

In partnership with:

MINDEROO CENTRE FOR TECHNOLOGY & DEMOCRACY

Bennett School of Public Policy Cambridge

Countries worldwide are making strategic choices about AI capabilities. Some are committing hundreds of billions to technological leadership. Others are building regulatory frameworks to shape global standards. All recognise that AI will influence economic competitiveness, national security, and democratic governance.

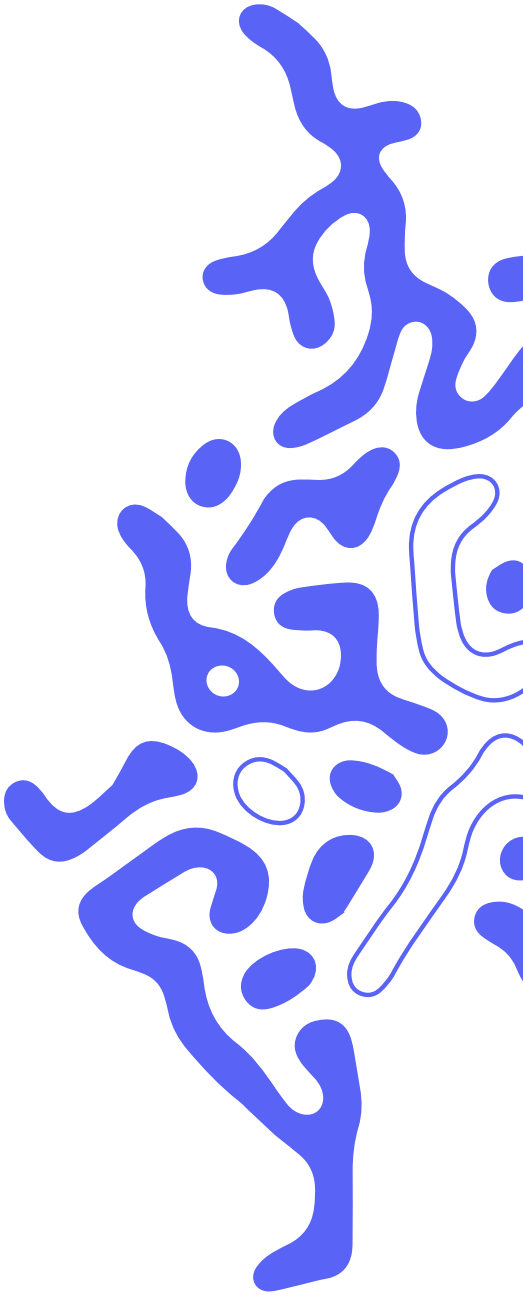
AI sovereignty refers to a nation's capacity to develop, control, and govern AI technologies according to its own priorities, ensuring both sovereignty over AI infrastructure and sovereignty through AI-enabled governance and security.

The UK Government has committed significant resources to AI in pursuit of AI sovereignty; £2 billion in investments, partnerships with leading US technology companies, ambitious plans for compute infrastructure, proposals for new AI Growth Zones, and international collaborations such as the US-UK Technology Prosperity Partnership. The question is whether they add up to sovereignty or to managed dependence.

The Government has committed to investments in AI infrastructure, research, and partnerships, but these supply-side actions sit alongside deepening dependencies on foreign AI systems. Without demand-side mechanisms, however, these partnerships provide temporary access rather than lasting capacity. Public services adopt AI to improve efficiency, but defaulting to established tech providers entrenches dependencies. UK AI companies, lacking anchor customers, struggle to secure the revenue and real-world validation needed to scale. Competition policy could encourage diversified supply chains, but is sidelined when regulatory interventions are seen as a threat to inward investment. What follows is an innovation ecosystem that delivers world-class capabilities for overseas businesses, while public spending entrenches the dependencies a sovereign AI strategy should seek to reduce.

Integration across these domains can help the UK move toward shared sovereignty goals. World-class research needs adoption pathways. Infrastructure investments need to reduce strategic dependencies. Partnerships need to build domestic capacity in the long-term, not only provide access to technology today. Without integration across these supply-side and demand-side aspects of AI development, even substantial commitments risk leaving the UK in a position where it lacks the autonomy to make strategic choices.

AI brings with it a larger interface with economics, security, and democracy than traditional infrastructure; its deployment has multiple points of exposure where foreign control affects UK operations, from the data centres, to models, to applications. In managing these points of exposure, the UK possesses distinctive assets in research, sectoral expertise, regulatory credibility, and international networks. Whether current policy structures can leverage these assets effectively, or whether achieving meaningful sovereignty requires rethinking how supply-side investments, defensive priorities, and demand-side decisions connect, is the question this brief addresses.



Summary: Making AI sovereignty work for the UK

The UK's new AI Minister, Kanishka Narayan MP, told the recent Labour Party Conference he wants to build a British story about AI; one rooted in the UK's heritage and with a clear vision that shows AI delivering value for the public. Meeting this aspiration will require the UK to be able to influence the AI systems shaping its future; the UK needs a sovereign AI agenda that preserves the ability to make strategic choices about how AI develops and is used domestically. The question that follows is whether the UK's current approach to sovereign AI is able to deliver this goal.

The answer emerging from ai@cam's community engagement is not yet, unless domestic AI capabilities grow alongside investments in foreign suppliers to minimise dependencies on decisions taken overseas. The government has committed to investments in AI infrastructure, research, and partnerships, but these supply-side actions sit alongside deepening dependencies on foreign AI systems. Research and innovation capabilities grow without a domestic demand base. Public institutions adopt AI services from foreign providers. The result: an innovation ecosystem that delivers world-class capabilities for overseas businesses, while public spending entrenches the dependencies a sovereign AI strategy should seek to reduce.

Policy levers already exist in many relevant areas, but the gaps between them create vulnerabilities and dependencies. The AI Opportunities Action Plan commits to infrastructure investment, innovation support, and talent development. The Industrial Strategy identifies sectors where UK strengths create distinctive advantages worth building on, including AI and other advanced technology sectors that use AI. Competition policy provides tools to ensure contestable markets that prevent lock-in to foreign providers and create opportunities for domestic entrants. The Regulatory Innovation Office's AI Growth Labs aim to support innovation in target sectors or areas by providing spaces to experiment with new products or services in live markets.

The problem is not the absence of tools; it is the lack of policy integration. Innovation policy invests in compute and research capabilities without connecting them to institutional adoption commitments that would create scaling pathways for successful innovations. Industrial strategy identifies sector and technological strengths, but does not link those insights to procurement policies that could provide anchor customers for UK capabilities. Competition policy could prevent market concentration that locks in dependencies, but is separated from sovereignty considerations. Bringing these levers together can help the UK move toward a shared goal of building domestic AI capabilities that serve UK interests by:

Making government an anchor customer for UK AI: Government procurement helps reduce investment risk for UK suppliers by confirming that a domestic anchor customer will exist for successful suppliers. Public sector AI procurement could include an assessment of whether spending builds UK capabilities or reinforces dependencies. The NHS, government digital services, and regulated sectors provide proving grounds where UK-developed AI could demonstrate effectiveness before scaling globally.

Using competition policy to keep markets contestable: Competition policy provides tools to ensure markets remain contestable rather than embedding dominant incumbents. Preventing anti-competitive practices that lock customers into proprietary systems creates space for UK alternatives. Intellectual property frameworks can enable innovation by allowing AI training on appropriate data while preventing overseas suppliers being the only ones to profit from publicly-funded assets like NHS data or government research.

Partnering to build capacity, not only access near term capabilities: Current partnerships with major technology companies provide valuable access to frontier capabilities, but are structured as access agreements rather than capacity-building for domestic capabilities. A sovereignty-oriented approach would restructure partnerships around knowledge transfer requirements and joint development programmes.

Supporting open-source AI development reduces barriers for UK researchers and companies to access frontier capabilities without proprietary dependencies. An integrated approach would connect open-source model development with public compute resources and institutional adoption. This positions the UK as a hub for open-source AI development rather than merely a consumer of models developed elsewhere.

A UK vision for AI grounded in these principles would leverage the UK's distinctive strengths; research excellence, regulatory credibility, sectoral expertise, democratic accountability. It would build capabilities that serve UK interests while remaining open to collaboration. The result would be AI capabilities that remain responsive to UK priorities, competitive markets that prevent lock-in, and public institutions that use their purchasing power to build domestic capacity. The alternative is continued investment in capabilities without adoption pathways, and public services that entrench rather than reduce strategic dependencies.

1. Understanding AI sovereignty

1.1 Purpose, positioning, and pathways for delivery

As AI systems are deployed in critical national functions - in healthcare, defence, education, or in the machinery of democratic institutions - Government faces complex policy choices about how to build and secure national AI capabilities.

AI sovereignty refers to the strategically important system of policy interventions that influence a country's approach to building national AI capabilities. AI sovereignty seeks to preserve the ability to make strategic choices about how AI is developed and deployed within national borders. This means navigating trade-offs: building domestic capabilities while maintaining international partnerships, managing dependencies where self-sufficiency is not possible or desirable, and ensuring AI systems serve national interests while accessing global innovation networks.

Examining AI sovereignty through three lenses can help make sense of this landscape: strategic purpose (why pursue sovereignty), strategic positioning (where to focus limited resources), and strategic delivery (how sovereignty works in practice). Each lens illustrates different trade-offs.

Purpose: Maintaining agency in conditions of uncertainty

Three types of concern drive national AI sovereignty agendas:

Economic competitiveness:

Without domestic AI capabilities, critical business functions become dependent on foreign providers who can withdraw access or modify systems. Several countries have invested in 'sovereign models' to grow national innovation capabilities or develop foundation models aligned with national language, culture, or values[1] However, achieving AI sovereignty requires creating sufficient domestic demand to sustain capabilities long-term. Without active adoption by UK businesses and public services, domestic AI capabilities may be acquired by overseas owners or relocate to markets with greater scaling opportunities. Recent analysis shows this pattern: AI platform Tract closed after two years, with founders citing the British market as 'too small, fragmented, and resistant to change' for venture-scale growth.[2] Building trillion-dollar technology businesses[3] requires not only ensuring domestic companies can access essential AI capabilities, but also providing the commercial environment where AI innovations can find early adoption and scale globally from a UK base.[4]

Security:

Dependencies on external AI providers create vulnerabilities during international tensions or supply chain disruptions. AI investments to secure access to data, technology, and infrastructure - including compute and data centres[5] – are core parts of many sovereign AI agendas.[6]

Democratic governance:

When corporations control the AI systems delivering public services or moderating public discourse, democratic institutions lose the ability to ensure these systems reflect national values and priorities.[7][8]

These concerns can pull in different directions. Economic efficiency may require accepting foreign dependencies that create security vulnerabilities. Competitive pressure may favour partnerships with corporations that have limited public accountability. Democratic processes might slow decision-making but bring competitive assets like public trust and regulatory credibility.

Underpinning responses to these challenges is institutional capacity: maintaining the capabilities and enforcement mechanisms necessary to govern AI systems, ensure compliance with domestic standards, and intervene when systems fail to serve national interests. As AI systems advance and deployment practices change, sovereignty depends on adaptive institutional foundations that can respond to new challenges, oversight systems with clear accountability, and feedback loops that identify emerging vulnerabilities before they become critical failures.

Each of these areas is served by a different collection of policy levers in the UK's current sovereign AI policy agenda

Domain	Objectives	Examples of policy interventions
Economic Competition	→ Build trillion-dollar tech businesses → Lead international AI cooperation and standard-setting	→ Sovereign AI Unit (£500m) investments in UK companies → OpenBind consortium (£8m for AI drug discovery) → AI Growth Zones for private sector scaling → MOUs with Anthropic, OpenAI, Cohere for UK operations → AI Adoption Fund for SME competitiveness
Cybersecurity and Infrastructure Concerns	→ Protect sensitive data → Maintain operational resilience → Enable access to compute for AI development → Test capabilities of frontier models and assess risks	→ AI Research Resource (£1bn investment and aim to scaling by 20 times) → Investment in AI Security Institute and security evaluations of foundation models → UK Compute Roadmap for domestic infrastructure development
Democratic Values	→ Shape AI development according to UK values → Transform public services → Maintain democratic oversight	→ AI and copyright framework consultation → Public sector AI adoption programmes

Positioning: Sovereignty across the value chain

Strategic positioning involves identifying which technology layers provide the most leverage given resource constraints.

The AI value chain spans:

AI R&D capability:
Influences the direction of AI research and ability to leverage advances in AI for wider social and commercial gain. Determines whether AI development serves national interests and values.

Data:
Shapes how AI reflects domestic culture, language, and priorities, and how domestic regulation applies to AI development.

Infrastructure and hardware:
Provides computational resources needed for AI development. Determines whether a nation can access resources and continue operations during supply chain disruptions.

Models:
Affects whether a nation depends on foreign-controlled systems that could be withdrawn or modified, including control over updates and algorithmic changes.

Applications:
Deliver direct services to citizens and businesses. Determines whether critical functions depend on foreign-controlled systems and the scope for commercial development.

Governance and regulation:
Sets rules for AI development and deployment, shaping activities, setting boundaries, supporting domestic markets, and protecting citizens from harms.

Commercial AI ecosystem:
Determines whether domestic businesses can access and benefit from AI capabilities.

Strategic positioning means identifying critical dependencies and making informed trade-offs. Rather than asking 'should we build foundation models?', the question becomes 'which layers give us the most leverage?'[9] For certain critical national functions involving national security or essential democratic processes, domestic control may be necessary. For many applications, strategic positioning within global networks combined with domestic capabilities offers a more pragmatic approach.

AI capabilities cannot be 'banked' for future use - they improve through deployment and real-world testing. Without adoption, models become outdated and researchers lose touch with practical constraints. Companies need revenue streams and scaling opportunities, creating pressure to relocate to markets that will adopt their solutions. Sovereignty strategies must therefore address both supply-side capability building and demand-side adoption.

Delivery: The everyday resilience challenge

AI sovereignty extends beyond crisis scenarios to everyday dependencies. At the start of the COVID-19 pandemic, for example, having AstraZeneca as a UK-based vaccine manufacturer provided strategic resilience when global supply chains faced disruption and other countries restricted exports. Unlike physical manufacturing, AI dependencies can be disrupted remotely and instantly, creating a much larger attack surface with multiple potential disruption points. The recent AWS outage demonstrates the breadth of the 'blast radius' of tech dependencies, with a single provider influential across a wide range of digital services.[10]

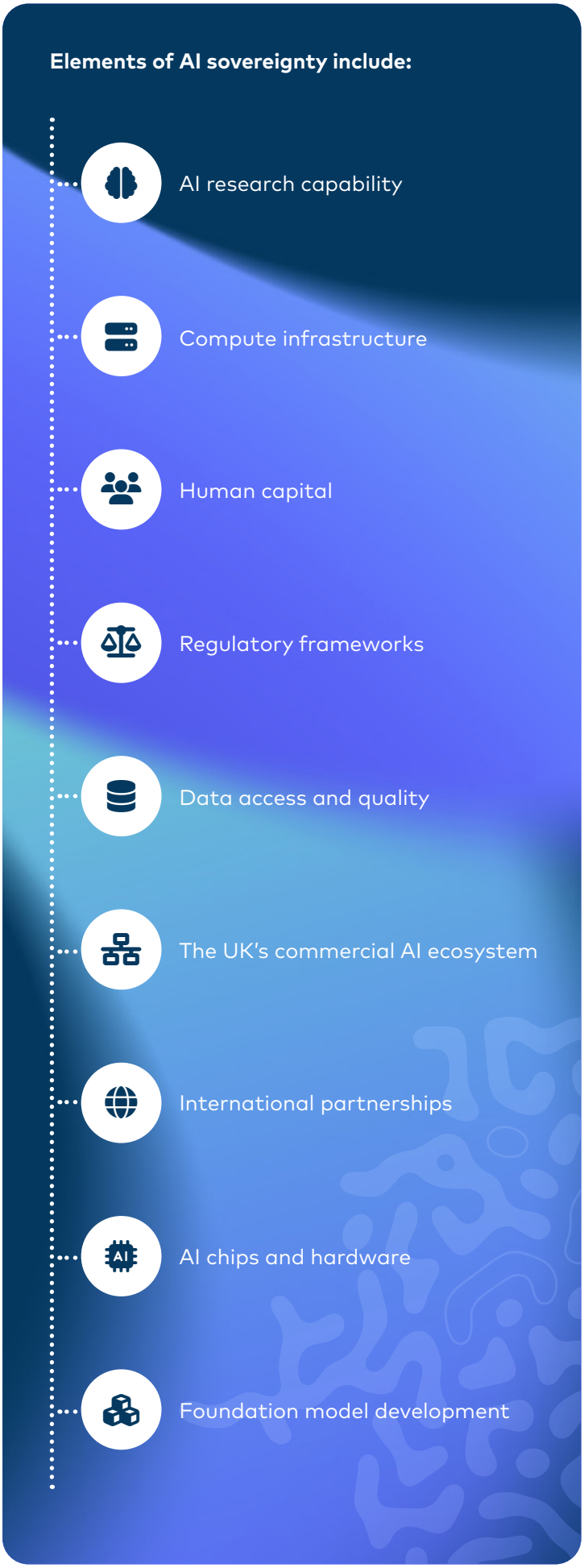
For example:

Healthcare delivery: NHS diagnostic systems or resource allocation tools increasingly rely on digital and AI capabilities.[11] If these systems depend entirely on foreign providers, disruption could affect millions of patients. Unlike traditional medical equipment, AI systems require updates, data connections, and algorithmic adjustments that providers could restrict or modify without warning.

Financial services: Banking and fintech firms are deploying AI in applications including fraud detection, credit decisions, and operational efficiency.[12] The interconnected nature of financial systems and reliance on a small number of providers also creates business risks in the case of AI failures.[13]

Business operations: AI platforms provide infrastructure for customer service, marketing, and operations. Small businesses typically concentrate operations on a few platform providers.

Service disruptions, price increases, or changes to terms of



service could simultaneously affect thousands of businesses Some UK AI businesses, for example, have expressed concerns about their reliance on foreign platforms and technology.[14]

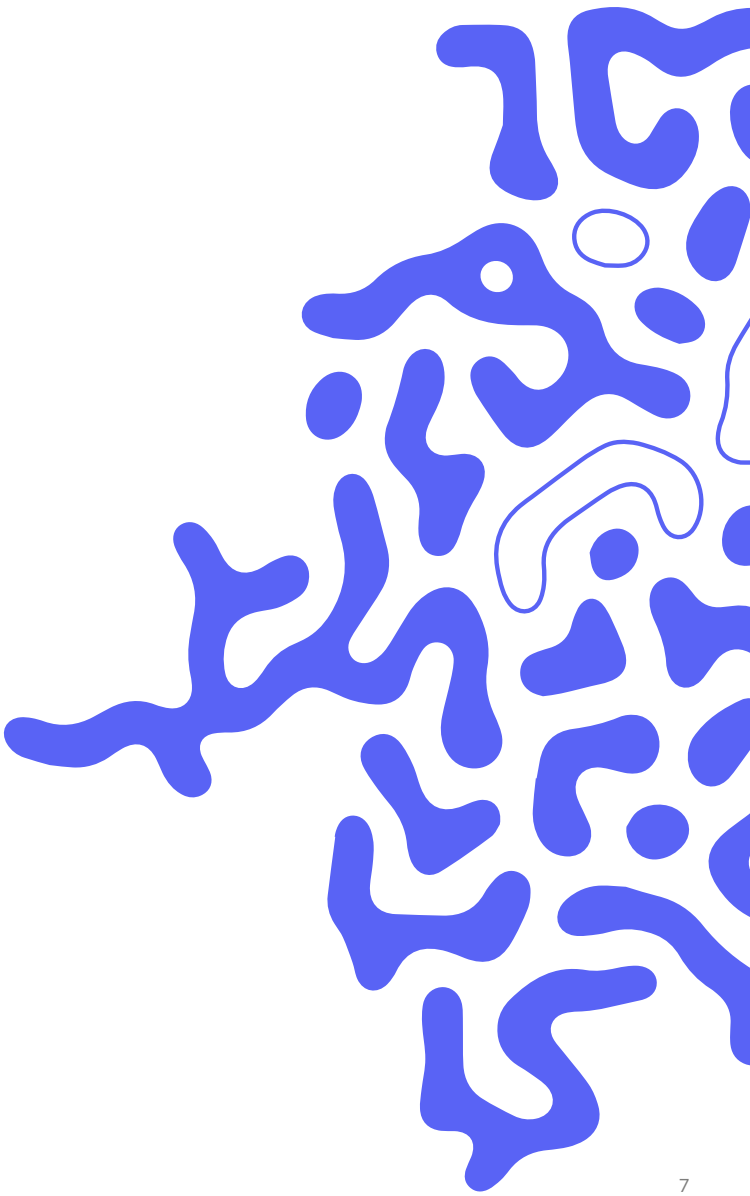
Government and public institutions are not just potential victims of AI dependencies; they are major customers whose adoption decisions shape commercial viability and create the conditions to deliver public value from AI, connecting AI sovereignty directly to industrial strategy. Procurement that preferences UK-developed solutions reduces dependencies while creating anchor customers for UK AI companies to reach commercial scale. Regulatory frameworks requiring resilience create demand for UK-based alternatives. Government support for AI adoption creates the domestic market base from which companies can scale internationally.

Many demand-side levers already exist in policy frameworks but are typically framed as growth measures rather than sovereignty mechanisms.[15] The gap is not the absence of these levers, but their lack of integration into a sovereignty strategy that connects government demand to capability building and dependency reduction.

1.2 Strategic focus in sovereign AI

The UK faces near-term decisions about compute infrastructure investments, partnership agreements, and regulatory approaches that will shape its AI capabilities. Success means creating conditions where AI enhances UK prosperity, security, and democratic values while maintaining the flexibility to adapt as technologies and geopolitical circumstances evolve.

Rather than pursuing self-sufficiency across every technology layer, the UK must maintain sufficient capabilities and partnerships to avoid having critical decisions imposed from outside. Sovereignty policy operates on three dimensions: supply-side capability building, defensive management of dependencies, and demand-side coordination to ensure domestic adoption pathways.



2. Current Approaches to AI Sovereignty

Drawing from the framework established above, this section examines how the UK's current approach addresses the three dimensions of AI sovereignty: supply-side capability building, defensive management of dependencies, and demand-side coordination.

2.1 The UK's sovereign AI agenda

The UK Government aims to secure "the UK's future as a sovereign AI nation",[16] creating a sovereign AI unit supported by up to £500 million public funding. The Unit has three primary objectives: investing in UK companies to support AI national champions, creating UK AI assets and enablers, and making the UK the partner of choice for frontier AI companies.[17]

Key initiatives include research investments (the £8 million OpenBind consortium for AI-driven drug discovery),[18] talent development (the Encode Fellowship with ARIA), and infrastructure development (the AI Research Resource and UK Compute Roadmap). The Unit has also signed memoranda of understanding with major US technology companies - Anthropic,[19] Cohere,[20] OpenAI,[21] and Nvidia[22] - focused on public sector AI adoption, talent development, AI security research, and expanding UK operations. These non-binding agreements explore opportunities for government services, supply chain security, and supporting the UK's startup ecosystem.

These interventions sit alongside a raft of other AI policy initiatives, many of which are set out in 2025's AI Opportunities Action Plan,[23] including Growth Zones, talent attraction, AI safety, and national security, and the development of the National AI Research Resource.[24]

In September 2025 the UK and US formalised some of these partnerships through the Technology Prosperity Deal.[25]

Elements of this framework include:

- **AI infrastructure collaboration:** Development of secure AI infrastructure and shared compute resources through the UK AI Research Resource and US National AI Research Resource.
- **Research partnerships:** Creation of shared research programmes in priority areas, such as AI for science, between US and UK research funding organisations.
- **Regulatory alignment:** Collaboration on "pro-innovation AI policy frameworks".

The deal was accompanied by private sector commitments: Microsoft announced £22bn infrastructure investment, Google committed £5bn for AI research and infrastructure, and an Nvidia-backed collaboration to develop data centres.[26] This represents significant transatlantic AI cooperation but raises questions about balancing access to frontier capabilities against building domestic capacity, and weighing incoming investment benefits against risks of deepening technological dependence.

The UK's approach to sovereign AI to date shows several tensions:

Between partnership and dependence:
US companies sit at the centre of UK AI policy. These partnerships promise to accelerate capability development and provide access to frontier models, but create dependencies on foreign-controlled technologies and cede influence over AI systems to corporations with limited public accountability. The non-binding nature of agreements provides limited enforcement mechanisms should partners fail to deliver or act against UK interests, highlighting the importance of ensuring partnerships build domestic capacity alongside providing access.

Between scale of ambition and scale of resources:
The UK's £2 billion AI investment sits alongside larger commitments from other nations[27] - the US Stargate Project[28] involves multi-billion-dollar initial investments, while France announced over 100 billion euros at the 2025 Paris AI Action Summit.[29] This reflects the need for strategic focus: identifying where sovereignty matters most rather than attempting self-sufficiency across all dimensions.

Between international access and democratic accountability:
The MoUs establish significant relationships with foreign corporations affecting public services, yet provide limited mechanisms for public oversight or intervention. This creates potential conflicts between economic competitiveness goals (attracting investment) and democratic governance principles (ensuring AI systems serving citizens reflect UK values and remain subject to democratic oversight).

Between regulatory sovereignty and investment attraction:
The pursuit of foreign tech investment could create pressure to align domestic regulatory frameworks with investor preferences. Countries may compete for investment by offering more permissive regulatory

environments,[30] with implications for security (reduced oversight of critical systems) and democratic goals (weakened ability to govern technology according to domestic priorities).[31] Recent developments illustrate both the market response to regulatory requirements, and the limitations of these responses. In October 2025, OpenAI announced UK data residency options,[32] positioning this as a response to concerns about AI adoption in government and sensitive sectors. However, the extent to which data localisation delivers data sovereignty, given the powers provided by legal frameworks in the US, is open to debate.

Supply-side measures dominate recent policy developments, particularly infrastructure investments and corporate partnerships. Defensive concerns receive growing attention through the AI Security Institute. However, the demand-side dimension remains underdeveloped. The Industrial Strategy and AI Action Plan reference procurement and adoption programmes, but these exist as separate growth initiatives rather than integrated components of a sovereignty strategy

The tensions in the UK's current approach are not unique. Both international examples and domestic policy precedents offer insights into how to navigate competing sovereignty demands, both in terms of strategic direction and operational design of policy interventions.

2.2 Lessons from other countries

International approaches to AI and digital sovereignty illustrate different ways of balancing competing needs or constraints in the development and governance of sovereign technology.

EU digital sovereignty

The EU's approach to digital sovereignty since 2019 operates across two dimensions: sovereignty over digital infrastructure (such as semiconductors and data centres) and sovereignty through digital tools for governance and security.[33] This agenda responded to concerns about economic dependency on US and Chinese technology companies, security vulnerabilities from foreign-controlled infrastructure, loss of regulatory autonomy, and perceived threats to European values.[34]

In response, key interventions include infrastructure control (the Chips Act[35] and Critical Raw Materials Act[36] to bring semiconductor production into the EU's sphere), data sovereignty (the Data Governance Act [37] and Data Act[38] establishing European data spaces while setting parameters for third-country access), and regulatory standards (the Cyber Resilience Act[39] and GDPR[40] setting standards for market access and extending regulatory influence beyond borders). The EU's new Apply AI strategy explicitly positions AI as a 'strategic asset' requiring integration across institutional, industrial and security systems.[41]

The EU's approach demonstrates that digital sovereignty requires both political autonomy and physical infrastructure. Infrastructure investments address supply-side capability and defensive resilience simultaneously. Regulatory frameworks act as demand-side levers, allowing the EU to shape global AI development by setting standards for market access.

US AI Action Plan

The US approach frames AI as a race where "whoever has the largest AI ecosystem will set global AI standards and reap broad economic and military benefits". The 2025 AI Action Plan pursues AI dominance through innovation (removing regulatory barriers, ensuring AI reflects "American values", promoting open-source models), infrastructure (streamlining data centre permitting, supporting domestic semiconductor manufacturing), and technology export (establishing "full-stack AI export packages" to allies and strengthening export controls to deny adversaries access to advanced semiconductors).[42]

The US commits large-scale resources to maintain technological leadership, integrating innovation policy, energy policy, and trade policy toward this goal. Export controls limit adversary access while 'full-stack AI export packages' to allies shape how other countries develop their AI ecosystems.

Singapore's approach to technology sovereignty

Singapore's technology sovereignty strategy integrates regulatory leadership and strategic partnerships. The AI Singapore initiative (launched 2017, backed by $500 million) accelerates R&D to "anchor national capabilities",[43] including the recent SEA-LION project building a Large Language Model trained on local languages.[44] Digital Economy Agreements with Chile, New Zealand, Australia, and the UK establish digital trade rules and data flow arrangements.[45] The Cybersecurity Act[46] establishes requirements for critical information infrastructure, while the proposed Digital Infrastructure Act would regulate systemically important digital infrastructure providers.[47]

Singapore demonstrates how nations can leverage partnerships and focused R&D support to increase supply-side capability in strategic areas. Sovereignty does not require self-sufficiency but strategic positioning at critical nodes in global networks.

Lessons for the UK

These approaches share several characteristics: they leverage distinctive national assets, combine domestic capability building with international relationships, and treat sovereignty as positioning within technology supply chains and political networks. The EU emphasises regulatory projection. The US leverages massive resources. Singapore uses governance innovation and partnerships.

For the UK, these examples suggest sovereignty requires identifying which capabilities demand domestic control, which can be secured through strategic partnerships with like-minded democracies, and where positioning within international networks serves national interests better than independent capability building. The UK's network of relationships, for example through Five Eyes, NATO, and bilateral partnerships with nations like Japan, Singapore, Australia, Canada, and key

European states, creates opportunities for this kind of strategic positioning. The question is whether current policy structures can leverage these relationships to build collective capability while preserving autonomy over critical decisions.

2.3 Lessons from other policy areas

The UK's own policy experience offers additional lessons about managing technological capabilities for national advantage. Table X suggests lessons from five recent technology policy programmes for the sovereign AI agenda.

Policy Area	Features
Strategic Defence Review[48]	1. Cross-sector cooperation: "integrated force" models coordinate public, private and international capabilities across traditional departmental boundaries. 2. Parallel international and domestic strategy: maintain alliance commitments (NATO-first) while preserving autonomous national capabilities. 3. Strategic sectors as economic drivers: defence capabilities identified as both security tools and engines for growth and innovation.
Science and Technology Framework[49]	1. Systems-level policy coordination: integrated, cross-government approach with long-term objectives are more effective than fragmented departmental initiatives. 2. Foundational capability investments: long-term funding for core research capabilities, talent pipelines and digital infrastructure enables broader ecosystem development. 3. Strategic signalling: clear communication of national leadership in strategic technologies builds stakeholder confidence and attracts private sector investment.
National Security and Investment Act 2021[50]	1. Retain intervention powers for strategic acquisitions: legislative powers allow government to review, block or impose conditions on acquisitions that could impact national security. 2. Sectoral coverage: investment screening can cover minority investments, asset acquisitions, and voting rights changes across multiple technology sectors.
Fibre Rollout[51]	1. Target-driven infrastructure delivery: Specific coverage targets with dedicated delivery bodies and funding mechanisms help coordinate large-scale infrastructure programmes. 2. Strategic public-private division: public subsidy can target commercially unviable areas while private sector delivers to profitable markets. 3. Regulatory reform: planning reforms and streamlined access processes can accelerate private sector infrastructure deployment.
5G Deployment[52]	1. 1. Security-by-design policy framework: Security requirements can be embedded in the market from the outset through legislation, vendor restrictions, and design principles. 2. 2. Standards leadership: Leading development of open, interoperable standards while coordinating internationally can reduce single-vendor dependency. 3. 3. Supply chain diversification: Targeted investment programmes can support new market entrants and accelerate alternative technological solutions.

These experiences demonstrate the benefits of cross-government coordination. The UK's approach to sovereign AI shows the opposite: supply-side, defensive, and demand-side dimensions deployed in parallel rather than as levers sharing a strategic goal. The Sovereign AI Unit focuses on supply-side partnerships. The AI Security Institute addresses frontier model risks in the abstract rather than in the context of critical national infrastructure. Procurement and adoption initiatives exist across departments without links to a sovereign AI agenda.

Without integration across these dimensions of sovereign AI, individual initiatives undermine each other's effectiveness: research investments fail to find adoption pathways that would build UK capabilities; dependencies persist in critical systems despite parallel investments in domestic alternatives; partnerships with foreign companies build access to capabilities but not domestic capacity.

3. The UK's strategic position

Given this framework for understanding AI sovereignty, how does the UK currently stack up across the different dimensions? In July 2025, ai@cam convened stakeholders from academia, civil society, industry, and policy communities to explore the UK's current position in relation to sovereign AI and opportunities to accelerate progress. Insights from these discussions are synthesised here.

3.1 UK position across the AI value chain

The UK's capabilities vary across the AI value chain:.

Infrastructure capabilities including both strengths and constraints
The UK has committed £1 billion to the AI Research Resource, which will scale compute capacity by 20 times by 2030,[53] and is developing AI Growth Zones to attract private data centre investment. The UK is home to an ecosystem of design companies, though it lacks semiconductor fabrication capacity.[54]

Model development presents resource trade-offs.
Training costs for advanced foundation models now exceed £1 billion and require sustained investment. The UK has instead focused on sector-specific R&D, such as the £8 million OpenBind consortium developing datasets for AI-driven drug discovery.

Application development represents a UK strength.
The presence of major financial institutions, the NHS as a large-scale healthcare system, and digital government services gives the UK demand-side assets. These can serve as testbeds for AI applications and as anchor customers.[55]

Regulatory capabilities offer a trustworthy environment for development.
Stable regulatory institutions provide a trustworthy environment for development, representing competitive advantage based on shaping global standards rather than direct technological capability

Data capabilities are potentially strong but not sufficiently developed.
The UK has regulatory frameworks for data governance but has not fully leveraged data assets for AI development. The tension between protecting creative industries through copyright and enabling AI development through data access remains unresolved.

Research and talent capabilities maintain world-class standards
UK universities continue to attract international researchers and are the primary driver of the UK's strong international standing in AI rankings.[56]

Criticality for sovereignty

High Criticality, Weak UK Position	High Criticality, Strong UK Position
→ **Compute infrastructure:** Need for sovereign compute capacity → **Foundation Model development:** Limited compared to US/China → **Manufacturing/Hardware production:** Weak fabrication capabilities → **Energy capacity:** Infrastructure constraints for data centres → **Finance:** Availability of scale-up opportunities for UK firms → **Institutional adoption capacity:** Ability to leverage public institutions as anchor customers for innovation	→ **AI research capability:** UK has world-class research institutions → **Talent pipeline:** Strong academic base and expertise → **Data:** Good regulatory frameworks and data capabilities → **AI hardware design:** ARM and growing chip design ecosystem → **Regulatory frameworks:** Advanced AI governance and safety approaches
Low Criticality, Weak UK Position	**Low Criticality, Strong UK Position**
→ **AI regulatory frameworks:** Enforcement mechanisms still developing → **AI ecosystem (some aspects):** Less mature than leading markets → **Tech transfer:** Commercialisation pathways could be stronger	→ **Research institutions:** Excellence in universities and research centres → **International partnerships:** Strong alliances and collaborations → **Commercial AI ecosystem:** Growing startup and venture ecosystem → **UK Government Digital Services:** Advanced digital government capabilities

Strength of UK position

[Figure: Table X summarises discussions at a Policy Lab workshop in July 2025]

3.2 Resource constraints and structural forces

Several structural forces constrain the UK's strategic options:

Scale of investment relative to competitors. The UK's AI investment of over £2 billion sits alongside much larger international commitments. The UK cannot compete through direct spending matches. Reliance on overseas investment for core infrastructure creates potential vulnerabilities.

Energy economics create costs. The UK faces Europe's highest energy costs for AI training infrastructure, creating structural disadvantages for energy-intensive operations. This forces choices between energy subsidies, energy-efficient alternatives, or focus on less energy-intensive parts of the value chain.

Infrastructure sustainability: Data centre expansion for AI compute creates competing demands for grid capacity, renewable energy, and water resources. Without integrated planning, compute infrastructure risks crowding out other critical infrastructure needs or undermining climate commitments.

Democratic governance processes influence speed of intervention. Transparency requirements and public accountability mechanisms may slow decision-making compared to authoritarian alternatives.

Capital market constraints limit scale of investment. UK venture

capital and private equity markets, while substantial, operate at different scales than US or Chinese markets, affecting UK companies' ability to access multi-billion dollar funding rounds.

Talent pipeline vulnerabilities. While the UK maintains strong academic institutions, there is a risk that changes to immigration policy could undermine the ability to attract and retain international researchers and AI specialists.

Supply chain dependencies limit autonomous capability. Critical hardware components remain concentrated in a small number of global suppliers.

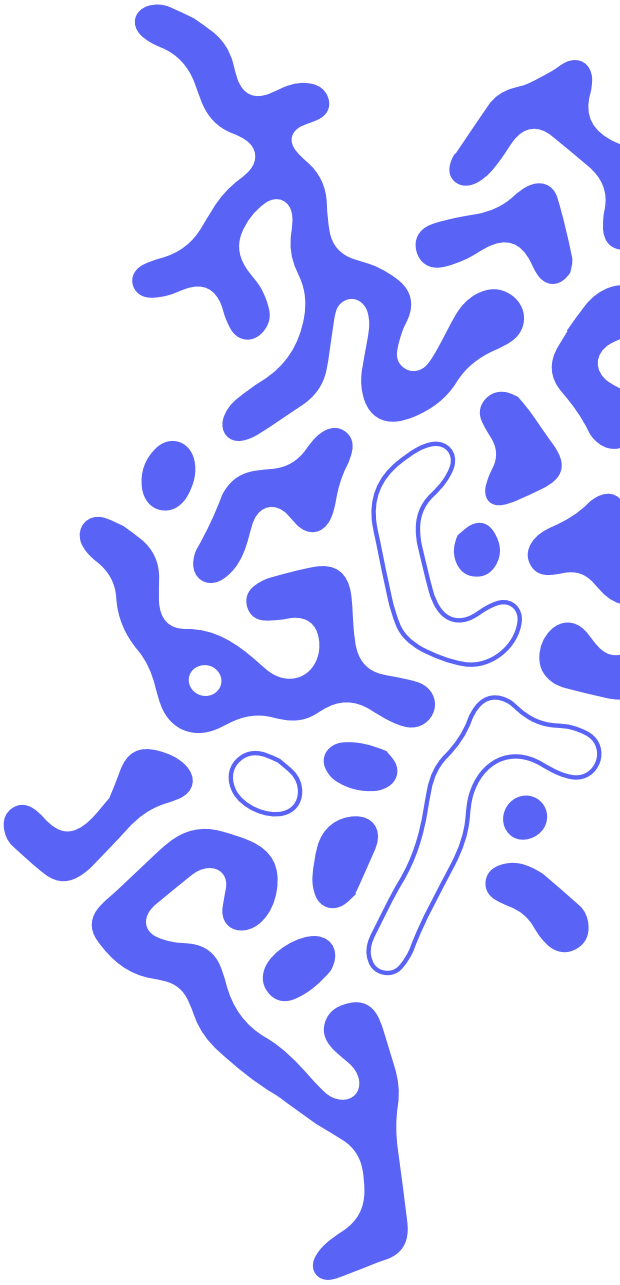
Institutional adoption capacity remains a challenge. Despite procurement and public sector adoption being acknowledged as levers for industrial policy, translating this into practice remains difficult.[57]

3.3 UK strengths and strategic assets

The UK possesses several strategic assets that competitors struggle to replicate:

- → **Research excellence.** World-class universities and research institutions continue to attract global talent and produce breakthrough research.
- → **Regulatory credibility.** Democratic oversight processes and transparent regulatory development create international trust, enabling the UK to shape global AI governance. Rule of law and institutional quality create conditions that support effective governance.
- → **Sectoral expertise.** The NHS as Europe's largest healthcare system, UK digital government services, and London as a global financial centre create opportunities for AI solutions to be tested, refined, and scaled. These institutions can serve as proving grounds for UK-developed capabilities. This advantage requires coordination between research development and institutional adoption
- → **International networks.** Diplomatic experience and alliance relationships provide access to global AI development networks. The UK's position within NATO, the G7, and other frameworks creates opportunities for collaborative development while maintaining influence over outcomes.
- → **Commercial ecosystem.** London leads Europe in AI venture capital investment, with substantial funding flowing to AI startups in recent years.[58] Beyond the capital, AI hubs in Cambridge, Oxford, Manchester, Edinburgh, and other cities demonstrate growing regional capacity. The presence of major international AI companies alongside growing domestic capabilities creates a foundation for continued development.

The UK's path to AI sovereignty should leverage these assets rather than attempting resource-intensive competition across all capabilities. Success requires strategic focus on areas where UK advantages create influence and value, while managing dependencies where self-sufficiency is neither feasible nor optimal.



4. An integrated approach to AI sovereignty

The UK has committed significant resources to AI through existing national policy and international agreements. The infrastructure investments, partnership agreements, and institutional relationships already established can serve sovereignty goals if complemented by coordination mechanisms that connect supply-side capability building with demand-side adoption. However, AI strategy and sovereignty initiatives currently operate in parallel. The Sovereign AI Unit invests in supply-side capabilities. The AI Security Institute addresses defensive concerns. Public sector adoption is supported through different incubator or accelerator functions.

Effective sovereign AI policy requires connecting three dimensions: supply-side capability building, demand-side coordination, and defensive management of dependencies. Without this integration, research investments fail to find adoption pathways; dependencies persist despite investments in alternatives; and partnerships provide access but build limited domestic capacity.

A starting point is clarity about what sovereignty means in the UK context. Economic sovereignty emphasises domestic commercial capabilities and competitive positioning. Security sovereignty prioritises resilience in critical systems and supply chain independence. Democratic sovereignty focuses on public accountability and alignment with UK values. These can pull in different directions: economic efficiency may create dependencies that bring security vulnerabilities; competitive pressure may favour partnerships with corporations that have limited public accountability. Understanding the UK's current position means assessing capabilities and dependencies in relation to these sovereignty priorities.

Given these trade-offs, what would integration look like in practice? Government can make use of a range of existing levers to integrate its sovereign AI agenda:

Government as anchor customer.

The UK is world-leading in AI research and human capital but struggles to scale companies domestically. Integration would position government as anchor customer for UK AI capabilities, with institutional adoption validating solutions and creating scaling pathways that enable companies to reach commercial maturity. Relevant levers already exist in industrial strategy and innovation policy: for example, procurement processes could be revisited to consider whether spending builds domestic capabilities or reinforces dependencies that sovereignty investments aim to reduce.

Competitive, contestable markets.

Competition policy provides tools to ensure markets remain contestable rather than embedding dominant incumbents. Preventing anti-competitive practices that lock customers into proprietary systems creates space for UK alternatives. Intellectual property frameworks can enable innovation by allowing AI training on appropriate data while preventing overseas suppliers being the primary beneficiaries from publicly-funded assets like NHS data or government research. Supporting open-source AI development reduces barriers for UK researchers and companies to access frontier capabilities without proprietary dependencies.

Partnerships that build capacity.

Existing partnership agreements and infrastructure investments can serve sovereignty goals if structured appropriately. Partnership agreements could address specific needs rather than simply providing general access to frontier models. Sovereign AI Unit funding, compute allocation, and Growth Zone design offer near-term levers for creating supply-demand connections: sovereign investments tied to institutional adoption commitments, localised ecosystems where public services trial UK capabilities, and partnerships structured to build domestic capacity rather than simply provide access to foreign models. Compute allocation could prioritise areas of identified dependency, ensuring infrastructure investments reduce strategic vulnerabilities.

Using these levers effectively requires coordination mechanisms. Supply-side, defensive, and demand-side functions sit in different parts of government with different objectives. The AI Security Institute evaluates frontier model safety but there is no clear process for identifying where dependencies on foreign-controlled AI create vulnerabilities in deployed systems. Supply-side investments through the Sovereign AI Unit target capability development without explicit connection to dependency reduction. Procurement decisions proceed without assessing strategic implications. Creating connections requires establishing some focal point responsible for ensuring these dimensions work toward shared sovereignty goals.

Conclusion

Meeting the Government's aspiration for AI development to be guided by British interests will require the UK to be able to influence the AI systems shaping its future. The question that follows is whether the UK's current approach to sovereign AI is able to deliver this goal. The answer emerging from ai@cam's community engagement is not yet, unless domestic AI capabilities grow alongside investments in foreign suppliers to minimise the bottlenecks and dependencies on decisions taken overseas.

The UK possesses distinctive assets to achieve sovereignty outcomes. Research excellence provides world-class capability in AI development. Regulatory credibility creates international trust and influence over global AI governance. Sectoral expertise provides proving grounds where AI solutions can be tested and refined. International networks through NATO, G7, and bilateral partnerships create opportunities for collaborative development while maintaining influence over outcomes.

Leveraging these assets requires clarity about what sovereignty is for. A vision for UK AI grounded in delivering public value would ensure AI systems improve public services, create economic benefits and jobs, protect critical infrastructure, and remain subject to democratic accountability that reflects UK values and priorities.

Achieving this vision depends on integration across supply-side investments, defensive priorities, and demand-side decisions. Without integration, world-class research lacks domestic adoption pathways, substantial investments fail to reduce dependencies, and partnerships provide access without building capacity. Integration requires a focal point for ensuring these dimensions work toward shared sovereignty goals - connecting research capabilities to institutional adoption, defensive assessments to capability investments, and partnership agreements to domestic capacity building. Without this strategic coordination, even significant commitments risk leaving the UK unable to make strategic choices about how AI develops and is used domestically.

Endnotes

1. https://www.lawfaremedia.org/article/sovereign-ai-in-a-hybrid-world--national-strategies-and-policy-responses
2. https://www.bennettschool.cam.ac.uk/wp-content/uploads/2025/09/Start-ups-and-Scale-ups-in-UK-Technology-Sectors.pdf
3. https://www.gov.uk/government/publications/ai-opportunities-action-plan/ai-opportunities-action-plan
4. https://thepurposefulcompany.org/wp-content/uploads/2025/09/The-Growth-Trilogy-Paper-3-1.pdf
5. https://www.politico.eu/wp-content/uploads/2024/09/15/Sovereign-AI-Ecosystems.pdf
6. https://www.weforum.org/stories/2024/04/sovereign-ai-what-is-ways-states-building/
7. https://www.project-syndicate.org/commentary/breaking-dependence-on-us-big-tech-starts-with-building-european-ai-by-diane-coyle-2025-04
8. https://sycamore-collective.org/how-can-the-we-strengthen-the-role-of-people-and-communities-in-sovereign-ai/
9. https://press.airstreet.com/p/sovereign-ai-paradox
10. https://www.wired.com/story/what-that-huge-aws-outage-reveals-about-the-internet/
11. https://www.gov.uk/government/news/21-million-to-roll-out-artificial-intelligence-across-the-nhs
12. https://www.bankofengland.co.uk/report/2024/artificial-intelligence-in-uk-financial-services-2024#:~:text=adoption%20and%20use-,2.1%3A%20AI%20use%20and%20adoption,were%20planning%20to%20do%20so.
13. https://www.bankofengland.co.uk/financial-stability-in-focus/2025/april-2025
14. https://www.gov.uk/government/publications/artificial-intelligence-sector-study-2024/artificial-intelligence-sector-study-2024
15. Such as the Industrial Strategy: https://assets.publishing.service.gov.uk/media/68595e56db8e139f95652dc6/industrial_strategy_policy_paper.pdf
16. https://www.gov.uk/government/publications/uk-compute-roadmap/uk-compute-roadmap
17. https://www.gov.uk/government/collections/sovereign-ai-unit
18. https://www.gov.uk/government/news/uk-to-become-world-leader-in-drug-discovery-as-technology-secretary-heads-for-london-tech-week
19. https://www.gov.uk/government/publications/memorandum-of-understanding-between-the-uk-and-anthropic-on-ai-opportunities/memorandum-of-understanding-between-uk-and-anthropic-on-ai-opportunities#section-ii-on-our-ambitions-for-ongoing-collaboration
20. https://www.gov.uk/government/publications/memorandum-of-understanding-between-the-uk-and-cohere-on-ai-opportunities/memorandum-of-understanding-between-uk-and-cohere-on-ai-opportunities
21. https://www.gov.uk/government/publications/memorandum-of-understanding-between-the-uk-and-openai-on-ai-opportunities/memorandum-of-understanding-between-uk-and-openai-on-ai-opportunities
22. https://www.gov.uk/government/publications/memorandum-of-understanding-between-the-uk-and-nvidia-on-ai-skills/memorandum-of-understanding-between-uk-and-nvidia-on-ai-skills
23. https://www.gov.uk/government/publications/ai-opportunities-action-plan/ai-opportunities-action-plan
24. https://www.gov.uk/government/publications/sovereign-ai-airr-launch-opportunity-call-for-researchers
25. https://www.gov.uk/government/news/memorandum-of-understanding-between-the-government-of-the-united-states-of-america-and-the-government-of-the-united-kingdom-of-great-britain-and-north
26. https://www.bbc.co.uk/news/articles/c7016ljre03o
27. https://assets.ctfassets.net/75ila1cntaeh/26cFT8vhrk0ZzwjnL3m3nk/5704f1c6c13c2b1835d704271ea85eee/53j8xT7AqKwsnhF3Hu6sYA--120728072025
28. https://openai.com/index/announcing-the-stargate-project/
29. https://www.reuters.com/technology/artificial-intelligence/france-invest-109-billion-euros-ai-macron-announces-2025-02-09/
30. https://www.bbc.co.uk/news/articles/cn4w7wp24llo
31. https://www.politico.eu/research-and-analysis/sovereign-ai-ecosystems/
32. https://www.reuters.com/legal/litigation/openai-offer-uk-data-residency-driven-by-government-partnership-2025-10-22/
33. https://www.tandfonline.com/doi/full/10.1080/09662839.2022.2101887#abstract
34. https://academic.oup.com/ia/article/100/6/2379/7852665
35. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-chips-act_en
36. https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/critical-raw-materials/critical-raw-materials-act_en
37. https://digital-strategy.ec.europa.eu/en/policies/data-governance-act
38. https://digital-strategy.ec.europa.eu/en/policies/data-act#:~:text=The%20Data%20Act%20is%20designed,and%20competitive%20European%20data%20economy.
39. https://eur-lex.europa.eu/eli/reg/2024/2847/oj/eng
40. https://eur-lex.europa.eu/eli/reg/2016/679/oj/eng
41. https://digital-strategy.ec.europa.eu/en/policies/apply-ai

42. https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf
43. https://aisingapore.org
44. https://deepmind.google/models/gemma/gemmaverse/sea-lion/
45. https://www.mti.gov.sg/Trade/Digital-Economy-Agreements/The-Digital-Economy-Partnership-Agreement
46. https://sso.agc.gov.sg/Act/CA2018
47. https://govinsider.asia/intl-en/article/singapore-to-introduce-digital-infrastructure-act-later-this-year
48. https://www.gov.uk/government/publications/the-strategic-defence-review-2025-making-britain-safer-secure-at-home-strong-abroad
49. https://www.gov.uk/government/publications/science-and-technology-framework/science-and-technology-framework
50. https://www.blueboxcfg.com/blog/national-security-and-investment-act-2021-ten-key-lessons/
51. https://commonslibrary.parliament.uk/research-briefings/cbp-8392/
52. https://www.gov.uk/government/publications/5g-supply-chain-diversification-strategy/5g-supply-chain-diversification-strategy
53. https://www.gov.uk/government/publications/ai-research-resource/airr-advanced-supercomputers-for-the-uk
54. https://www.gov.uk/government/publications/building-a-sovereign-ai-chip-design-industry-in-the-uk
55. https://www.bennettschool.cam.ac.uk/wp-content/uploads/2025/09/Start-ups-and-Scale-ups-in-UK-Technology-Sectors.pdf
56. https://www.tortoisemedia.com/data/global-ai#rankings
57. https://www.mctd.ac.uk/big-tech-climate-performance-policy-uk/
58. https://londonhigher.ac.uk/london-higher-responds-to-ai-growth-zones/

ai@cam

ai.cam.ac.uk

For questions about this report, get in touch via the information below:

Email:
contact@ai.cam.ac.uk

Visit:
ai.cam.ac.uk

Connect on X:
@ai_cam_mission

LinkedIn:
@ai-cambridge

Connect on Bluesky:
@ai.cam.ac.uk

In partnership with:

MINDEROO CENTRE FOR TECHNOLOGY & DEMOCRACY

Bennett School of Public Policy Cambridge